



ST WILLIAM HOMES LLP

HERTFORD GAS WORKS,
MARSHGATE DRIVE,
HERTFORD

Ecological Report

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CONTENTS

1	INTRODUCTION	1
2	SURVEY METHODOLOGY	2
3	ECOLOGICAL FEATURES	5
4	WILDLIFE USE OF THE SITE	8
5	ECOLOGICAL EVALUATION	13
6	PLANNING POLICY CONTEXT	18
7	SUMMARY AND CONCLUSIONS	22

PLANS

PLAN ECO1	Site Location and Ecological Designations
PLAN ECO2	Ecological Features
PLAN ECO3	Protected Species

APPENDICES

APPENDIX 1	Information Obtained from the MAGIC Online Database
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1. INTRODUCTION

1.1. Background

- 1.1.1. Ecology Solutions were commissioned by St William Homes LLP in March 2017 to carry out an Ecological Assessment of Land at Hertford Gas Works, Hertford, hereafter referred to as the site.

1.2. Site Characteristics

- 1.2.1. The site is located north-west of Hertford (see Plan ECO1). The immediate surroundings of the site consist of existing commercial and industrial developments to the south, east and west, beyond which lies open countryside and existing residential development. A canalised section of the River Lea is located immediately adjacent to the northern boundary of the site.
- 1.2.2. The site primarily comprises areas of recolonising hardstanding, bisected by an area of existing commercial development (not included within this Ecological Assessment). The hardstanding is typically bordered by bands of linear scrub, occasional trees and a hedgerow, with the southern part of the site also supporting a small area of semi-improved grassland. Other habitats present within the site include ruderal vegetation and a waterbody.

1.3. Ecological Assessment

- 1.3.1. This document assesses the ecological interest of the site as a whole. The importance of the habitats present is evaluated with regard to current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹.
- 1.3.2. The report also sets out the existing baseline conditions for the site, setting these in the correct planning policy and legal framework and assessing any potential impacts which could occur from the proposed development. Appropriate mitigation where necessary is identified such that it will offset any negative impacts and where possible provide for an ecological enhancement of the site, in accordance with relevant planning policy.

¹ CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the site and its immediate surroundings Ecology Solutions contacted Herts Ecological Record Centre (HERC) and the Herts and Middlesex Bat Group (HMBG).

2.2.2. Information has been received from HERC and is referenced within this report where necessary. To date, no information has been returned from HMBG. Information regarding designated sites is also shown where appropriate on Plan ECO1. The records received are collated data from a number of sources and provide information on an array of notable species (covering a 3km search radius from the site) and designated sites (covering a 5km search radius from the site).

2.2.3. Information on designated sites has also been obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)² database. This information is reproduced at Appendix 1 and shown where appropriate on Plan ECO1.

2.3. Habitat Survey Methodology

2.3.1. Habitat surveys were undertaken in April and May 2017 to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and associated plant species, with notes on fauna utilising the site.

2.3.2. The site was surveyed based around extended Phase 1 survey methodology³, as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. However given the habitats present within the site, it is considered that an accurate and robust assessment has been made.

² <http://magic.defra.gov.uk/>

³ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. JNCC, Peterborough.

2.4. Faunal Survey

- 2.4.1. General faunal activity observed during the course of the survey was recorded, whether visually or by call. Specific attention was paid to the potential presence of any protected, rare, notable or Priority species. In addition, specific surveys were undertaken for bats and Badgers *Meles meles*.
- 1.1.2. **Bats.** Specific survey and assessment work was undertaken in April and May 2017 to assess the potential for roosting bats within the site. The work was undertaken by an experienced bat worker and aimed to establish the likelihood of presence / absence of bats.
- 1.1.3. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004⁴), the Joint Nature Conservation Committee (2004⁵) and the Bat Conservation Trust (2016⁶).
- 2.4.2. All trees present within the site were assessed for their potential to support roosting bat in April and May 2017. For a tree to be classed as having some potential for roosting bats it must usually have one or more of the following characteristics:
- obvious holes, e.g. rot holes and old woodpecker holes;
 - dark staining on the tree below a hole;
 - tiny scratch marks around a hole from bats' claws;
 - cavities, splits and / or loose bark from broken or fallen branches, lightning strikes etc; and / or
 - very dense covering of mature Ivy *Hedera helix* over trunk.
- 2.4.3. For trees that were assessed to have potential for roosting bats, dusk emergence and dawn re-entry surveys were undertaken. Surveyors were positioned so as to observe all aspects of the feature (including any potential access points) where applicable, with survey visits undertaken during suitable weather conditions. Emergence surveys were conducted from ½ hour before sunset, until 2 hours after sunset. Re-entry surveys were conducted 2 hours before sunrise, until 15 minutes after sunrise. Surveyors' utilised EchoMeter 3 (SM3) bat detectors to aid identification of bats and record data, which was subsequently analysed using Analook bat sound analysis software.

⁴ Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

⁵ Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.

⁶ Collins, J. (Eds.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. Bat Conservation Trust, London.

- 2.4.4. One emergence survey of the existing trees present at the site was undertaken on 10 August 2017, with a re-entry survey undertaken on 29 August 2017.
- 2.4.5. Evening activity surveys were also undertaken to ascertain whether the site supports any features of potential importance for foraging and commuting bats. A total of two initial activity surveys were undertaken in August 2017.
- 2.4.6. The evening activity bat surveys were conducted from 15 minutes before sunset to approximately 2 hours after sunset. Surveyors again utilised EM3 bat detectors to aid identification of bats and record data. Surveyors walked transects in order to encompass all features of potential value to foraging and commuting bats, including hedgerows, treelines and scrub. All bat data recorded was subsequently analysed using Anlook bat sound analysis software.
- 2.4.7. Song Meter 4 detectors were also deployed overnight following the activity surveys in strategic locations to ascertain longer term data regarding the use of the site by foraging and commuting bats.
- 2.4.8. **Badgers.** Specific surveys were undertaken to search for evidence of Badgers in April and May 2017 and comprised two main elements. The first of these was a thorough search for evidence of Badger setts. For any setts that were encountered each sett entrance was noted and plotted even if the entrance appeared disused. The following information was recorded if appropriate:
- i) The number and location of well used or very active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.
 - ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.
 - iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.
- 2.4.9. Secondly, Badger activity such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the site by Badgers.

3. ECOLOGICAL FEATURES

3.1. The site was subject to ecological surveys in April and May 2017. The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.

3.2. The following main habitat / vegetation types were identified:

- Hardstanding;
- Scrub;
- Semi-improved Grassland;
- Trees;
- Hedgerow;
- Ruderal Vegetation; and
- Waterbody.

3.3. The location of these habitats is shown on Plan ECO2.

3.4. Each habitat present is described below with an account of the representative plant species present.

3.5. Hardstanding

3.5.1. The vast majority of the site comprises hardstanding associated with former development. Areas of hardstanding typically support very little ground flora, with the exception of scrub and ruderal vegetation which is becoming established in a number of small areas.

3.5.2. Recolonising species associated with the hardstanding include Bramble *fruticosus agg.*, Greater Plantain *Plantago major*, Spear Thistle *Cirsium vulgare*, Cow Parsley *Anthriscus sylvestris*, Herb Robert, Common Mallow *Malva sylvestris*, Dandelion *Taraxacum officinale* agg Buddleja *Buddleja davidii*, Dog-rose *Rosa canina* and Nettle *Urtica dioica*. Occasional Sycamore *Acer pseudoplatanus* and Buddleja *Buddleja davidii* saplings were also regularly recorded within the northern part of the site.

3.6. Scrub

3.6.1. The site supports large areas of dense scrub, typically along the boundaries (as shown on Plan ECO2). Scrub species present include Buddleja, Hawthorn *Crataegus monogyna*, Dog-rose *Rosa canina* and Bramble *Rubus fruticosus agg.*, Silver Birch *Betula pendula*, Willow *Salix sp* and Sycamore.

3.6.2. Scattered scrub is also present throughout the site, and primarily comprises Willow and Birch saplings, in addition to Buddleja and Bramble. Other species associated with the scrub include Comfrey *Symphytum sp.*, and Traveller's-joy *Clematis vitalba*.

3.7. Semi-improved Grassland

- 3.7.1. The southern part of the site also includes small areas of semi-improved grassland which appear to be managed on occasion.
- 3.7.2. The grassland supports a short, species-poor sward with a relatively limited number of common and widespread species present, including Cock's-foot *Dactylis glomerata*, Common Bent *Agrostis capillaris*, White Clover *Trifolium repens*, Yarrow *Achillea millefolium*, Dove's-foot Crane's-bill *Geranium molle*, Herb-Robert *Geranium robertanum*, Selfheal *Prunella vulgaris* and Common Mouse-ear *Cerastium fontanum* and Ragwort *Senecio jacobaea*,

3.8. Trees

- 3.8.1. A number of mature trees are present along the boundaries of the site, both in the north and the south. Species present include Sycamore, Willow and Silver Birch.
- 3.8.2. A cypress *Cupressocyparis leylandii* treeline is present within the south-western corner of the site (labelled on Plan ECO2 and T1). The treeline is tall and mature and managed from off-site. The ground flora species associated with this treeline are limited, with species recorded including Common Nettle *Urtica dioica*, Wood Avens *Geum urbanum*, Garlic Mustard *Alliaria petiolata*, Ivy *Hedera helix*, Purple Toadflax *Linaria purpurea* and Cleavers *Galium aparine*.

3.9. Hedgerow

- 3.9.1. A single hedgerow is present along the very most northern boundary of the site. The hedgerow is associated with a derelict wall which is collapsing in a number of places, alongside a chain-link fence.
- 3.9.2. Species present include Hazel *Corylus avellana*, Hawthorn, Privet *Ligustrum vulgare*, Willow, Dog Rose, ivy, Bramble and a number of amenity plants. Due to a lack of management the hedgerow is becoming heavily dominated by Buddleja scrub.

3.10. Ruderal Vegetation

- 3.10.1. Ruderal and recolonising vegetation is scattered throughout the site in areas where it has penetrated through the hardstanding, although none of these areas are extensive. Species present include, Great Willowherb *Epilobium hirsutum*, Common Nettle *Urtica dioica*, Cow Parsley and Hedge Bindweed *Calystegia sepium*.

3.11. Waterbody

- 3.11.1. A small waterbody is situated within the northern part of the site (as shown on Plan ECO2). The water body is approximately 2m x 2m and appears to be formed from remnant foundations associated with previous development. The waterbody has steep brick wall sides and is inundated with duck weed *Lemna minor*.

3.12. Background Records

- 3.12.1. The desk study undertaken with HER identified a number of records of notable plant species from the surrounding area, however no records were returned from within or immediately adjacent to the site. The closest record was of Tower Mustard *Arabis glabra* from a location approximately 0.7km east of the site in 2001.
- 3.12.2. A record of a Indian Balsam *Impatiens glandulifera* (a Schedule 9 species of the Wildlife and Countryside Act 1981) was also returned from a location approximately 0.3km north of the site in 2012. However this species was not recorded within or in close proximity to the site.

4. WILDLIFE USE OF THE SITE

4.1. During the survey general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected or notable species. In addition, specific survey work was also undertaken in relation to bats and Badgers.

4.2. Bats

Emergence and Re-entry Surveys

4.2.1. A total of four trees within the site were considered to provide low potential opportunities for roosting bats, in the form of dense ivy covering. The approximate location of these trees is shown on Plan ECO2.

4.2.2. Each tree was subject to evening emergence and dawn re-entry surveys during suitable weather conditions in order to ascertain whether they are utilised by roosting bats. Emergence surveys were undertaken on 10 August 2017, with dawn re-entry surveys undertaken on 01 September 2017.

4.2.3. No bats were recorded emerging or re-entering the trees during either survey undertaken. During these surveys, general bat activity was recorded within the vicinity of the trees. Both Common Pipistrelle *Pipistrellus pipistrellus* (total 28 registrations) and Soprano Pipistrelle *Pipistrellus pygmaeus* (total 18 registrations) were recorded during the early august survey.

Bat Activity Surveys

4.2.4. The linear scrub, tree and grassland habitats with the site were identified to have potential value for foraging and commuting bats. As such, a total of three bat activity surveys were undertaken, in line with the methodology outlined in Section 2 above. Table 1 below outlines the weather conditions during each survey visit.

Date	Weather Conditions
10.08.2017	16C, 0% cloud cover, dry, still
31.08.2017	17C, 75% cloud cover, light breeze, dry

Table 1: Weather conditions during bat activity surveys

4.2.5. The activity survey on August 10th primarily recorded low numbers of Common Pipistrelle (135 registrations) and Soprano Pipistrelle (14 registrations). Most bat activity was concentrated in the southern parcel of land.

4.2.6. Following the activity survey on August 10th two static detectors were deployed at locations D1 and D2 (as shown on Plan ECO3) for five nights. The detector at D1 (SM4 G) mostly recorded

Noctule *Nyctalus noctula* (335 registrations), Common Pipistrelle (156 registrations) and Soprano Pipistrelle (60 registrations). Other species included Brown Long-eared Bat *Plecotus auritus* (four registrations), Serotine *Eptesicus serotinus* (three registrations), one unidentified Myotis species (single registration) and a Myotis species suspected to be Daubenton's *Myotis daubentonii* (single registration).

1.1.4. The detector at location D2 (SM4 L) recorded more Common Pipistrelle (949 registrations) and Soprano Pipistrelle (139 registrations), but fewer Noctule (18 registrations). Other species included Nathusius' Pipistrelle *Pipistrellus nathusii* (single registration), Serotine *Eptesicus serotinus* (single registration) and one unidentified Myotis species (single registration).

1.1.5. Relatively higher lower levels of activity were detected in the August 31st activity survey, with Common Pipistrelle (48 registrations), Soprano Pipistrelle (22 registrations) and Noctule (four registrations) recorded. The majority of activity was recorded along the boundary of the Northern parcel of land.

1.1.6. Following the activity survey on August 31st two static detectors were deployed at locations D3 and D4 for five nights. The detector at D3 (SM4 P) mostly recorded Noctule (2764 registrations). It also recorded Common Pipistrelle (165 registrations) and Soprano Pipistrelle (17 registrations). The detector at D4 (SM4 B) recorded mostly Common Pipistrelle (497 registrations). It also recorded Noctule (27 registrations) and Soprano Pipistrelle (20 registrations), in addition to a single registration each of Nathusius' Pipistrelle *Pipistrellus nathusii* and a Myotis species.

4.2.7. **Background records.** The desk study undertaken with HERC returned a number of bat records from the local area, including four species within a 1km² grid reference containing the site. These were Brown Long-eared Bat *Plecotus auritus* (recorded 1996), Common Pipistrelle *Pipistrellus pipistrellus* (2010), Daubenton's Bat *Myotis daubentonii* (1996) and Soprano Pipistrelle *Pipistrellus pygmaeus* (2010). Three unspecified Pipistrelle species were also recorded in the same area, including two roosts dating from 1996 and 1998.

4.3. Badgers

4.3.1. No evidence of Badger, in the form of pathways, foraging signs, latrines, hairs or setts, was identified within the site during the surveys undertaken in April and May 2017.

4.3.2. Given the absence of any evidence to indicate that the site is utilised by Badgers, it is considered that this species is not reliant on the site for either foraging or sett-building. As such no further consideration has been given to this species in this Ecological Assessment.

- 4.3.3. **Background records.** The desk study undertaken with HERC returned a number of Badger records in the local area, but none within the site. Several records are located within 1km² of the site, but most predate the year 2000. One potential sett was recorded within the search area, but located over 1km from site and dating to 2011.

4.4. Great Crested Newts

- 4.4.1. The small waterbody present within the northern part of the site is not considered to offer any potential opportunities for breeding Great Crested Newts *Triturus cristatus*, on account of its steep-sided nature (prohibiting access by newts) and supporting very little marginal or aquatic vegetation. A review of OS Maps and aerial photography identified drainage ditches in the local area. These ditches are situated approximately 313m east of the site at their closest point. The ditches are separated from the site by existing development and roads.

- 1.1.7. Great Crested Newts are known to travel up to 500 metres – without barriers that inhibit dispersal – to a breeding pond; however it is widely accepted that they most commonly utilise suitable terrestrial habitat within a much closer distance, and activity is usually concentrated within 100 metres of breeding ponds with key habitat being located within 50 metres⁷. Indeed Research Report 576 produced by English Nature (now Natural England) concludes that “Captures on fences (and by other methods) at distances between 100m and 200-250m from breeding ponds tended to be so low as to raise serious doubts about the efficacy of this as an approach”.

- 1.1.8. As such, given the distance between the waterbody and the negligible terrestrial habitat within the site, it is considered that the site does not support amphibian species, including Great Crested Newts. No further consideration is therefore provided in relation to amphibians within this Ecological Assessment.

- 4.4.2. **Background records.** The desk study undertaken with HERC returned a small number of Great Crested Newt records, only one of which was located within a 1km² grid reference containing the site, dating from 1981.

4.5. Reptiles

- 4.5.1. The habitats present within the site do not provide potential opportunities for reptile species, with unsuitable and limited grassland habitats supporting a short sward. The majority of the site is comprises expansive areas of hardstanding.

⁷ English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough

4.5.2. As such it is considered that the site does not support any reptile species, and therefore no further consideration has been given to this species in this Ecological Assessment.

4.5.3. **Background records.** The desk study undertaken with HERC returned a number of reptile records from the local area, including Adder *Vipera berus*, Common Lizard *Zootoca vivipara*, Grass Snake *Natrix natrix* and Slow Worm *Anguis fragilis*. None were located within the site. The closest record was of Grass Snake, approximately 0.1km west of the site boundary, from 1988. The next closest were of Common Lizard and Slow Worm, located 0.55km east of the site and dating from 2006 and 2007 respectively.

4.6. **Birds**

1.1.1. The site offers some opportunities for nesting birds in terms of the scrub and trees, although similar opportunities are available within the wider area, and there is nothing to indicate that the site is likely to be particularly important for nesting or foraging birds.

1.1.2. Bird species recorded at the site during surveys include Robin *Erithacus rubecula* and Woodpigeon *Columba palumbus*.

1.1.3. **Background Information.** The desk study undertaken with HERC returned a large number of bird species. This included 26 schedule 1 species, five of which were located within 1km² and 2km² areas containing the site: Fieldfare *Turdus pilaris*, Greylag Goose *Anser anser*, Kingfisher *Alcedo atthis*, Red Kite *Milvus milvus* and Redwing *Turdus iliacus*. Many other bird species were located within the same 1km² and 2km² areas.

1.1.4. Of the higher resolution records, Grey Wagtail *Motacilla cinerea* was the closest recorded species, located approximately 0.1km north of the site, dating from 2002. The next closest records are of Blue Tit *Cyanistes caeruleus*, Mallard *Anas platyrhynchos*, Moorhen *Gallinula chloropus*, Sparrowhawk *Accipiter nisus* and Wren *Troglodytes troglodytes*, all located approximately 0.2km north of the site, from 2011. The majority of bird records returned are associated with wet habitats associated with the River Lea east of the site.

4.7. **Invertebrates**

4.7.1. The habitats at the site are likely to support a range of common invertebrate species, but there is no evidence to suggest that any protected or notable species would be present due to the habitats present within the site.

4.7.2. **Background records.** The desk search returned a large number of protected or notable invertebrate species from the local area, many of which pre-date the year 2000. No records were returned

definitively from within the site, however a number of records were returned from within a 1km² grid reference which includes the site.

- 4.7.3. It is considered that the site is unlikely to support any other protected or notable species.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

- 5.1.1. The latest guidelines for ecological evaluation produced by CIEEM proposes an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.
- 5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe⁸. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. For example, current Site of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.
- 5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.
- 5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.
- 5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with comparatively poor species diversity, common in the south of England may be of importance at its northern limits, say in the border country.
- 5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Hertfordshire BAP highlights a number of habitats and species. These are referred to below where relevant.
- 5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the International level.
- 5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

⁸ Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

5.2. Habitat Evaluation

Designated sites

- 5.2.1. **Statutory sites.** There are no statutory designated sites of nature conservation interest within or adjacent to the site, or in close proximity to the site. The nearest statutory designated site is Waterford Heath Local Nature Reserve which is situated approximately 1.7km to the north-west of the site at its closest point (see Plan ECO1).
- 5.2.2. Waterford Heath LNR is designated on account of the range of habitats it supports (including grassland, scrub, plantation woodland and ancient semi-natural woodland) in addition to the breeding birds and reptiles it supports.
- 5.2.3. The next nearest statutory designated site is Hertford Heath Site of Special Scientific Interest (SSSI), which is situated approximately 2.7km to the south-east of the site at its closest point (see Plan ECO1).
- 5.2.4. Hertford Heath SSSI is designated on account of the lowland heath it supports, in addition to the assemblages of floral and invertebrate species found at the site.
- 5.2.5. It is considered that due to significant areas of open countryside between these statutory designated sites and the site, any forthcoming planning application would be unlikely to cause any significant impacts to these statutory designated sites.
- 5.2.6. The nearest European / Internationally designated site is Lee Valley Special Protection Area (SPA) / Ramsar site, the nearest component of which is situated approximately 3.9km east of the site at its closest point. Lee Valley SPA qualifies under Article 4.1 of The Birds Directive (79/409/EEC) by supporting wintering bird populations of European importance, including the Annex 1 bird species Bittern *Botaurus stellari*. This site also qualifies under Article 4.2 of the Directive) by supporting populations of migratory species of European importance including Gadwall *Anas strepera* and Shoveler *Anas clypeata*.
- 5.2.7. A hydrological link exists between the site and Lee Valley SPA via the River Lea. Suitable mitigation will be adopted throughout the construction period in order to minimise the potential for contaminated runoff to enter nearby watercourses. Standard engineering protocols and best practice will be employed throughout the construction period, with care taken to store materials such as oils away from these features. Where necessary, additional mitigation will be employed such as interceptor fencing to further minimise any risk.

- 5.2.8. Another European / Internationally designated site is Wormley-Hoddesdonpark Woods Special Area of Conservation (SAC), the nearest component of which situated approximately 4.3km south of site at its closest point. Wormley-Hoddesdonpark Woods is designated on account of the Annex 1 habitat it supports; Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*.
- 5.2.9. Given the site distance between the site and both these European designated sites, and that they are separated by significant areas of built form, it is not considered that the development proposals would lead to any direct impacts either during the construction or operation period.
- 5.2.10. Subject to the implementation of avoidance and mitigation measures as outlined above, it is therefore considered unlikely that these designated sites would be adversely affected by any forthcoming development proposals.
- 5.2.11. **Non-statutory sites.** There are no non-statutory designated sites of nature conservation interest within the site boundary. The nearest non-statutory designated site is King's Meads Local Wildlife Site (LWS) which is situated approximately 0.1km east of the site at its closest point. The next nearest non-statutory designated site is River Beane, R. Lea & Lower R. Rib Confluence, Hartham LWS which is located approximately 0.2km to the north of the site at its closest point.
- 5.2.12. King's Meads LWS is designated primarily on account of the flora interest its hay meadows and grazing pasture it supports. River Beane, R. Lea & Lower R. Rib Confluence, Hartham LWS is designated on account of the riparian habitats that it supports.
- 5.2.13. Given the proximity to the site and River Beane, R. Lea & Lower R. Rib Confluence, Hartham LWS, suitable mitigation will be adopted throughout the construction period in order to minimise the potential for contaminated runoff to enter nearby watercourses. Standard engineering protocols and best practice will be employed throughout the construction period, with care taken to store materials such as oils away from these features. Where necessary, additional mitigation will be employed such as interceptor fencing to further minimise any risk.
- 5.2.14. Subject to the implementation of best practice and the adoption of standard engineering protocols as outlined above, it is considered that that any forthcoming planning application would be unlikely to result in a direct or indirect adverse impact on these LWS.
- 5.2.15. As such it is considered that development would not have an adverse effect on non-statutory designated sites in the local area.

Habitats within the site

- 5.2.16. Although there are no habitats of significant ecological interest within the site, those habitats that are of some relative ecological interest within the context of the site itself, include the scrub and mature trees.
- 5.2.17. **Hardstanding.** The majority of the site comprises former hardstanding which at the time of surveying supported very little floral species. This habitat is of negligible ecological interest and it is not considered that losses to this habitat would require any specific mitigation.
- 5.2.18. **Scrub.** Areas of scrub present within the site are of negligible ecological value, comprising common and widespread species and with limited structural diversity. It is not considered that losses to this habitat would require any specific mitigation.
- 5.2.19. **Semi-improved Grassland.** The grassland habitats within the site are restricted to very small areas and support a limited range of common and widespread species. It is considered that losses to this habitat may be fully off-set through the provision of wildflower planting within areas of open space.
- 5.2.20. **Trees and Hedgerow.** The trees and hedgerows are considered to be of relatively higher ecological value in the context of the site.
- 5.2.21. As such, it is recommended that these trees be retained, where possible, within any forthcoming planning applications. Notwithstanding this conclusion, should any of these trees or hedgerow be lost, it is again considered that these losses may be adequately mitigated for through the provision of new native landscape planting elsewhere on site.
- 5.2.22. **Ruderal Vegetation.** Areas of ruderal vegetation present within the site are of negligible ecological value, comprising common and widespread species and with limited structural diversity. It is not considered that losses to this habitat would require any specific mitigation.
- 5.2.23. **Waterbody.** The waterbody present within the site is again of limited ecological value in its own right, with limited aquatic vegetation recorded and no marginal vegetation present.

5.3. Faunal Evaluation

- 5.3.1. **Bats.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 ("the Habitats Regulations"), as amended. These include provisions making it an offence:
- Deliberately to kill, injure or take (capture) bats;

- Deliberately to disturb bats in such a way as to:-
 - (i) be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
 - (ii) affect significantly the local distribution or abundance of the species to which they belong;
 - To damage or destroy any breeding or resting place used by bats;
 - Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection.
- 5.3.2. While the legislation is deemed to apply even when bats are not in residence, Natural England guidance suggests that certain activities such as re-roofing can be completed outside sensitive periods when bats are not in residence provided these do not damage or destroy the roost.
- 5.3.3. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.
- 5.3.4. The offence of damaging or destroying a breeding site or resting place (which can be interpreted as making it worse for the bat) is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.
- 5.3.5. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.
- 5.3.6. Licences can usually only be granted if the development is in receipt of full planning permission and it is considered that:
 - (i) The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
 - (ii) There is no satisfactory alternative; and
 - (ii) The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Site Evaluation

- 5.3.7. No bat roosts were recorded within trees during specific dawn and re-entry surveys undertaken, and as such it is considered the site does not support roosting bats.
- 5.3.8. The site offers opportunities for foraging and commuting bats in the form of linear scrub, treelines and hedgerows. However, it is considered that based on initial survey work that the site is not of any particular significance for this group.

- 5.3.9. Notwithstanding the above, it is considered that there is significant scope to enhance opportunities for bat species post-development within the site through the provision of an appropriate landscape planting.
- 5.3.10. Standard mitigation measures are also likely to be required, such as the adoption of a sensitive lighting strategy, utilising measures such as hoods and cowls to minimise light spill where necessary, in order to ensure that dark corridors are retained.
- 5.3.11. There is also scope to provide enhancements to roosting bats in the local area by installing a number of bat boxes on suitable retained trees within the site.
- 5.3.12. **Birds.** Section 1 of the Wildlife & Countryside Act is concerned with the protection of wild birds. With certain exception all wild birds and their eggs are protected from intentional killing, injuring and taking; and their nests, whilst being built or in use, cannot be taken, damaged or destroyed.
- 5.3.13. Schedule 1 of the Wildlife & Countryside Act 1981 is a list of the nationally rarer and uncommon breeding birds for which all offences carry special (i.e. greater) penalties. These species also enjoy additional protection whilst breeding, as it is also an offence to disturb adults or their dependant young when at the nest.

Site Evaluation

- 5.3.14. Habitats within the site which may support nesting birds, include scrub and mature trees. The majority of other habitats present are of limited value to birds, and the existing features offering the most opportunities at the present time are common in the surrounding area.
- 5.3.15. Should losses to features of potential value to breeding birds be required as part of any forthcoming planning application, it is considered that these could be more than compensated for through new planting as well as the provision of dedicated nesting opportunities e.g. Bird boxes on retained trees and new development.
- 5.3.16. Where clearance of trees, hedgerows and scrub may be required, this should be undertaken outside the main breeding season (March to July inclusive) so as to avoid any possible offence. However, should this not be possible, it is recommended that any scrub / trees, which are scheduled to be removed, be checked for nesting birds by a suitably qualified ecologist immediately prior to removal.
- 5.3.17. **Invertebrates.** Given the habitats present it is likely that only common invertebrate species would be present within the site and

there is no evidence to indicate that any protected or notable species' may utilise the site. As such, no specific mitigation is considered likely to be required as part of any development proposals.

6. PLANNING POLICY CONTEXT

- 6.1. The planning policy framework that relates to nature conservation for East Hertfordshire is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPPF); and at the local level through the East Herts Council Local Plan – Second Review (2007).
- 6.2. Any proposed development will be judged in relation to the policies contained within these documents.

6.3. National Policy

National Planning Policy Framework

- 6.3.1. The National Planning Policy Framework (NPPF) sets out the Government's requirements for the planning system and was adopted on 27th March 2012. It replaces previous national planning policy, including Planning Policy Statement 9 (Biodiversity and Geological Conservation) [PPS9] which was published in 2005.
- 6.3.2. The key element of the NPPF is that there should be '*a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking*' (paragraph 14). It is important to note that this presumption '*does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered, planned or determined*' (paragraph 119).
- 6.3.3. The NPPF also considers the strategic approach which Local Authorities should adopt with regard to the protection, enhancement and management of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.
- 6.3.4. Paragraph 118 of the NPPF comprises a number of principles which Local Authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given to European sites to potential SPAs, possible SACs, listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites; and the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.
- 6.3.5. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

East Herts Local Plan – Second Review 2007

- 6.4.1. The current adopted local plan for East Hertfordshire was adopted April 2007 and contains a number of saved policies which are a material consideration in determining planning applications.
- 6.4.2. There are seven policies within the Local Plan for East Herts Council that relate to nature conservation (Policies ENV11 – ENV17). These policy requirements largely reflect and focus the regional policies at the local level and encompass protection to sites which are designated for their nature conservation value, enhancement and provision of wildlife habitats and other nature conservation issues.
- 6.4.3. Policy ENV12 specifically deals with development within proximity of SACs/SPA/Ramsar sites.

6.5. Discussion

- 6.5.1. It is considered that following the recommendations in this report, any forthcoming development proposals would fully accord with national and local policy and avoid any significant impacts on any designated sites for nature conservation. The potential presence of protected species is acknowledged with further survey effort recommended, where relevant, to ensure that the presence/absence of these species can be robustly assessed and mitigated for. Those habitats of ecological importance have been identified and measures recommended to ensure their protection. As such there are no ecological reasons why this site should not come forward for development.

7. SUMMARY AND CONCLUSIONS

- 7.1. St William Homes LLP in March 2017 to carry out an Ecological Assessment of Land at Hertford Gas Works, Hertford. The site was surveyed based around extended Phase 1 habitat survey methodology, as recommended by Natural England. In addition, general faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific surveys have been undertaken in respect of Badgers and bat roosting potential.
- 7.2. There are no statutory designations of nature conservation value within or immediately adjacent to the site. The nearest statutorily designated site is Waterford Heath LNR which is situated approximately 1.7km to the north-west of the site. It is considered unlikely that this designated site would be adversely affected by any forthcoming development proposals.
- 7.3. There are no non-statutory designations of nature conservation value within or immediately adjacent to the site. The nearest non-statutory site is King's Meads LWS which is situated approximately 0.1km east of the site. Subject to standard engineering protocols, it is considered that any future development proposals would be unlikely to result in a direct or indirect adverse impact on this LWS.
- 7.4. The closest International / European sites are Lea Valley SPA / Ramsar and Wormley-Hoddesdonpark Woods SAC. Given the site distance between the site and both these European designated sites, and that they are separated by significant areas of built form, it is considered that suitably designed proposals would lead to any direct impacts either during the construction or operation period.
- 7.5. The habitats of greater ecological value within the context of the site itself are the scrub, mature trees and hedgerow. The remainder of the site comprises hardstanding, species poor semi-improved grassland, ruderal vegetation and a waterbody. These are considered to currently be of negligible ecological value in their own right and of no significance.
- 7.6. No evidence of use of the site by Badgers was recorded. No bat roosts were recorded within trees during specific dawn and re-entry surveys undertaken. There is potential for birds to utilise the scrub and trees within the site for nesting and for bats to use these features for foraging and navigating purposes. It is considered that the site does support any other protected species.
- 7.7. It is considered that there is significant opportunity for new habitat creation and ecological enhancement of the site through suitable landscape schemes which would more than mitigate for any loss of existing habitat on site.
- 7.8. From Ecology Solutions' site surveys and the background information obtained, there is no evidence to suggest that there are any overriding

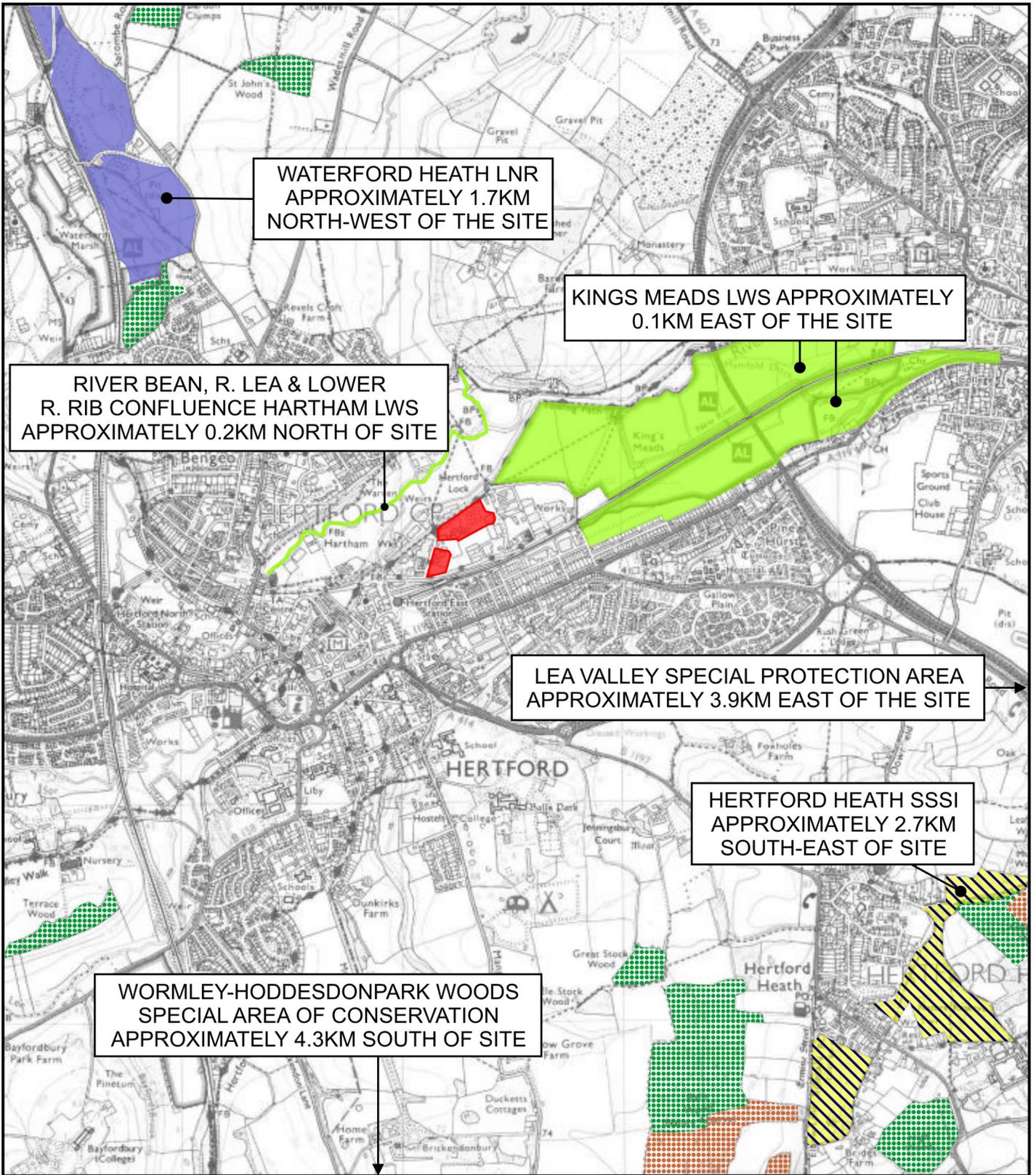
ecological constraints which would prevent an appropriate planning application coming forward for the site. With the implementation of the recommendations in this report, it is considered that any forthcoming proposals may conform to relevant national and local policy with respect to nature conservation and biodiversity and further realise an enhancement over the current situation.

PLANS AND APPENDICES

PLANS

PLAN ECO1

Site Location and Ecological Designations



WATERFORD HEATH LNR
APPROXIMATELY 1.7KM
NORTH-WEST OF THE SITE

KINGS MEADS LWS APPROXIMATELY
0.1KM EAST OF THE SITE

RIVER BEAN, R. LEA & LOWER
R. RIB CONFLUENCE HARTHAM LWS
APPROXIMATELY 0.2KM NORTH OF SITE

LEA VALLEY SPECIAL PROTECTION AREA
APPROXIMATELY 3.9KM EAST OF THE SITE

HERTFORD HEATH SSSI
APPROXIMATELY 2.7KM
SOUTH-EAST OF SITE

WORMLEY-HODDESDONPARK WOODS
SPECIAL AREA OF CONSERVATION
APPROXIMATELY 4.3KM SOUTH OF SITE

KEY:

-  APPLICATION SITE LOCATION
-  LOCAL NATURE RESERVE (LNR)
-  SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
-  ANCIENT AND SEMI-NATURAL WOODLAND
-  ANCIENT REPLANTED WOODLAND
-  LOCAL WILDLIFE SITE (LWS)



7404: HERTFORD GAS WORKS,
MARSHGATE DRIVE, HERTFORD

PLAN ECO1:
APPLICATION SITE LOCATION &
ECOLOGICAL DESIGNATIONS

PLAN ECO2

Ecological Features



KEY:

-  SITE BOUNDARY
-  RECOLONISING HARDSTANDING
-  SPECIES POOR SEMI-IMPROVED GRASSLAND
-  SCRUB
-  RUDERAL
-  HEDGEROW
-  TREE
-  WATERBODY
-  PALISADE FENCE



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MARSHGATE DRIVE, HERTFORD

PLAN ECO2: ECOLOGICAL
FEATURES

PLAN ECO3
PROTECTED SPECIES



KEY:

-  SITE BOUNDARY
-  RECOLONISING HARDSTANDING
-  SPECIES POOR SEMI-IMPROVED GRASSLAND
-  SCRUB
-  RUDERAL
-  HEDGEROW
-  TREE
-  TREE SUBJECT TO EMERGENCE AND RE-ENTRY SURVEYS
-  WATERBODY
-  PALISADE FENCE
-  TRANSECTS
-  STATIC DETECTOR LOCATIONS (10 AUGUST 2017)
-  STATIC DETECTOR LOCATIONS (31 AUGUST 2017)



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MARSHGATE DRIVE, HERTFORD

PLAN ECO3:
PROTECTED SPECIES

APPENDICES

APPENDIX 1

Information Obtained from the MAGIC Online Database



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)
- Ancient Woodland (England)**
 - Ancient and Semi-Natural Woodland
 - Ancient Replanted Woodland

Projection = OSGB36
 xmin = 526200
 ymin = 210300
 xmax = 540800
 ymax = 217400



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