



Preliminary Roost Assessment including Bat Emergence Survey

Woodlands, 5 The Cottages, Uxbridge Middlesex, UB10 8AQ

Faten Muheadeen

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Executive summary

Arbtech was commissioned by Faten Muheadeen to undertake a Preliminary Roost Assessment and one Bat Emergence Survey at Woodlands, 5 The Cottages, Uxbridge Middlesex, UB10 8AQ. The Preliminary Roost Assessment Survey was completed on 1st September 2020 and the Bat Emergence Survey was completed on 5th September 2020. The aim of the assessment was to confirm the presence or likely-absence of a bat roost and to provide a current status on all survey features. This includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape.

The development proposals include the demolition of the building. A planning application is being prepared for submission to The London Borough of Hillingdon.

Recommendations

Two further bat emergence and re-entry surveys are required during the next active bat season (May – September 2021) to characterise the bat roost in the building. Both of the surveys should be completed during the optimal survey period mid-May to August inclusive.

Sub-optimal: early May and September.

One of these surveys must be a dawn re-entry survey.

Four surveyors are required to provide full coverage of the building.

A European protected species Mitigation Licence application to Natural England will be required once planning permission has been granted.

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1.0 Introduction and Context

1.1 Background

Arbtech was commissioned by Faten Muheadeen to undertake a Preliminary Roost Assessment and one Bat Emergence Survey at Woodlands, 5 The Cottages, Uxbridge Middlesex, UB10 8AQ. The Preliminary Roost Assessment Survey was completed on 1st September 2020 and the Bat Emergence Survey was completed on 5th September 2020. The assessment is informed by the Bat Conservation Trust publication, *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous reports are known for this site by Arbtech Consulting Ltd or others.

1.2 Site Context

The development area is located at National Grid Reference TQ 06192 86697 and has an area of approximately 0.1ha.

1.3 Scope of the report

This report provides a description of the bat activity observed and recorded during each survey. The aim of the assessment was to characterise any roosts present including species, number of individuals, number and location of roost access points, and to gain an understanding of how bats use the site.

Robust data has been collected, following good practice guidelines, to inform an assessment of the potential impacts of the proposed development on bats, and inform mitigation and enhancements. This report provides information on constraints to the proposals as a result of roosting bats, and summarises any mitigation required to achieve planning permission, and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out.
- Field survey(s) has been undertaken, including an external survey and internal inspection.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on the requirements of a European protected species mitigation licence (EPSML) application if appropriate.

A survey plan is presented in Appendix 1 showing the location of each surveyor and the bat activity observed and recorded during each survey, proposed plans in Appendix 2 (where available), desk study results are provided in Appendix 3, and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposals include the demolition of the building. A planning application is being prepared for submission to The London Borough of Hillingdon.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records for bats held on Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release and once received will be analysed and summarised in Appendix 3 of this report.

2.2 Site Survey methodology

The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections with suitable roosting features could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used heterodyne and frequency division bat detectors, and Wildlife Acoustics EM3+ and Echo Meter Touch detectors connected to iPads. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. The Echo Meter Touch includes an auto ID function for bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species that could not be identified by the auto ID software during the survey. Surveyors also used head torches, survey record sheets and pens/pencils for recording all activity observed during the surveys. Each surveyor was also provided with a handheld radio for communication between surveyors to assist with confirming ambiguous bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility. Dawn re-entry surveys commenced 2 hours before sunrise and continued until 15 minutes after sunrise.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these adverse weather conditions can impact upon bat emergence and foraging behaviour.

2.3 Surveyors

The Preliminary Roost Assessment was carried out by Nicole Gullan BSc (Hons) AMRSB, Consultant (Accredited Agent to Natural England Bat Licence Number: 2019-43774-CLS-CLS).

The lead surveyor for the Bat Emergence/Re-Entry Survey was Ejaz Majoka BSc (Hons) and was assisted by experienced surveyors with several years of bat survey experience. Three surveyors were used to provide sufficient cover of the building during each survey. The designated position of each surveyor during each survey is detailed in the tables in Section 3.1 below and shown on the plan in Appendix 1.

2.4 Limitations

These surveys follow best practice guidance to confirm presence/likely absence of roosting bats and where present, characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the buildings and the site as a whole by bats, at all times cannot be established based on this information.

3.0 Results and Evaluation

3.1 Survey Results

PRA building descriptions and photographs:

B1 Exterior

B1 – southern elevation

B1 is a detached residential building of brick construction with a cross-gabled, clay tiled roof. There are loose or missing roof tiles in several places; these gaps will create ideal roosting habitat for crevice-dwelling species, such as common and soprano pipistrelle bats.



B1 – southern elevation

This photograph shows a section of slipped tiles on the porch area on the southern elevation of B2.



B1 – western elevation

There is a conservatory to the west of the building, which appears to be tightly sealed; this part of the building will offer negligible habitat value for bats.

The dormer windows on the western and eastern elevations are clad in timber weatherboarding, which is weathered in some areas, creating gaps that will provide habitat for crevice-roosting bats. The lead flashing around the dormer windows and chimney is also loose in places.



B2 – western elevation

Gaps in the weatherboarding on the dormer windows will provide roosting habitat for bats; so too will gaps under the lead flashing around these windows.



B1 – western elevation

There is a gap between the brickwork and soffit on the western elevation of B1, where the conservatory joins the main building; this could provide access into the building for bats.



B1 – eastern elevation

The weatherboarding above the windows on the eastern elevation appears to be in excellent condition. Likewise, the soffit boards and brickwork have no visible gaps or crevices that would provide habitat value for bats.

There are loose, slipped or missing roof tiles on the eastern elevation, and these will provide habitat value for bats.



B1 – southern elevation

Climbing plants cover the northern elevation and ruderal plants have grown up between the hedge and the building; it was difficult to access this area of the building to assess the bat roost value, however, the brickwork that was visible appeared to be mostly intact.

**B1 Interior**

There is a narrow loft space inside B1. The roof structure is constructed from modern timber beams. The tiles are insulated with bitumen felt, which appears to be intact, with no obvious gaps or tears.

There were various stored items inside the loft, which made it easier to search for bat droppings; none were found.



The loft space is small and fairly cluttered with timber beams. It is unlikely that it would provide sufficient flight space for void-dwelling species such as brown long-eared bats.



Bat emergence survey:

The results of the survey are provided in the tables below.

Table 1: Survey results

Date		05/09/2020	
Start and End Times		19:200 – 22:15 Sunset: 19:38	
Weather Conditions		Start: Temp: 16°C Relative Humidity: 59% Cloud Cover: 60% Wind: 5 mph Rain: None	End: Temp: 13°C Relative Humidity: 72% Cloud Cover: 100% Wind: 4 mph Rain: None
Surveyor (position) As shown in Appendix 1		Ejaz Majoka (lead surveyor) – two years' experience undertaking these types of surveys (Position 1 – observing the eastern elevation and roof structure of B1). Mark Taroni – five years' experience undertaking these types of surveys (Position 2 – observing the southern elevation and roof structure of B1). Deqa Mohamed – two years' experience undertaking these types of surveys (Position 3 – observing the western and northern elevations and roof structures of B1).	
Building Reference	Surveyor Position	Notes/observations:	
B1	1	<i>A common pipistrelle emerged from under a loose tile on the eastern elevation of B1 at 19:57 and was seen heading south.</i>	



Photo 1: emergence point of common pipistrelle.

A distant pass by a common pipistrelle was heard at 20:39, the bat was not seen.

A noctule was observed foraging at height along south-west and north-west above B1 at 20:02. A distant pass by a noctule was heard at 20:09.

A soprano pipistrelle was observed foraging at roof height along the eastern end of B1 at 20:06. A distant pass by a soprano pipistrelle was heard at 20:34, the bat was not seen.

B1	2	Foraging activity by common pipistrelles, soprano pipistrelles and noctule bats was heard for the duration of the survey. The bats could occasionally be seen commuting east to west over B1; the majority of the foraging activity appeared to take place in the treeline to the west of B1.
B1	3	Same as surveyor 2.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

When bat roosts are present, the bat surveys undertaken at a site facilitate the characterisation of the roost type. This allows for appropriate mitigation and compensation to be designed to inform a European Protected Species Mitigation Licence (EPSML) application to Natural England.

The definitions of bat roost types are provided below, taken from the *Bat Mitigation Guidelines* (English Nature, 2004) and the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

Day roost: a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost: a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.

Transitional / occasional roost: used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites

Mating sites: sites where mating takes place from later summer and can continue through winter.

Maternity roost: where female bats give birth and raise their young to independence.

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Sites where hibernating bats have been confirmed by appropriate survey effort should be classed as 'hibernation confirmed'.

Satellite roost: an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Other: roost types are interchangeable and not always easy to classify according to the nuances of certain species.

The surveys undertaken to date in and around B1 **do not** provide sufficient information to inform a planning application. Two further emergence/re-entry surveys will be required during the active bat season next year (May – September 2021).

4.2 Evaluation

The following recommendations are provided taking the desk-based assessment and site survey results into account.

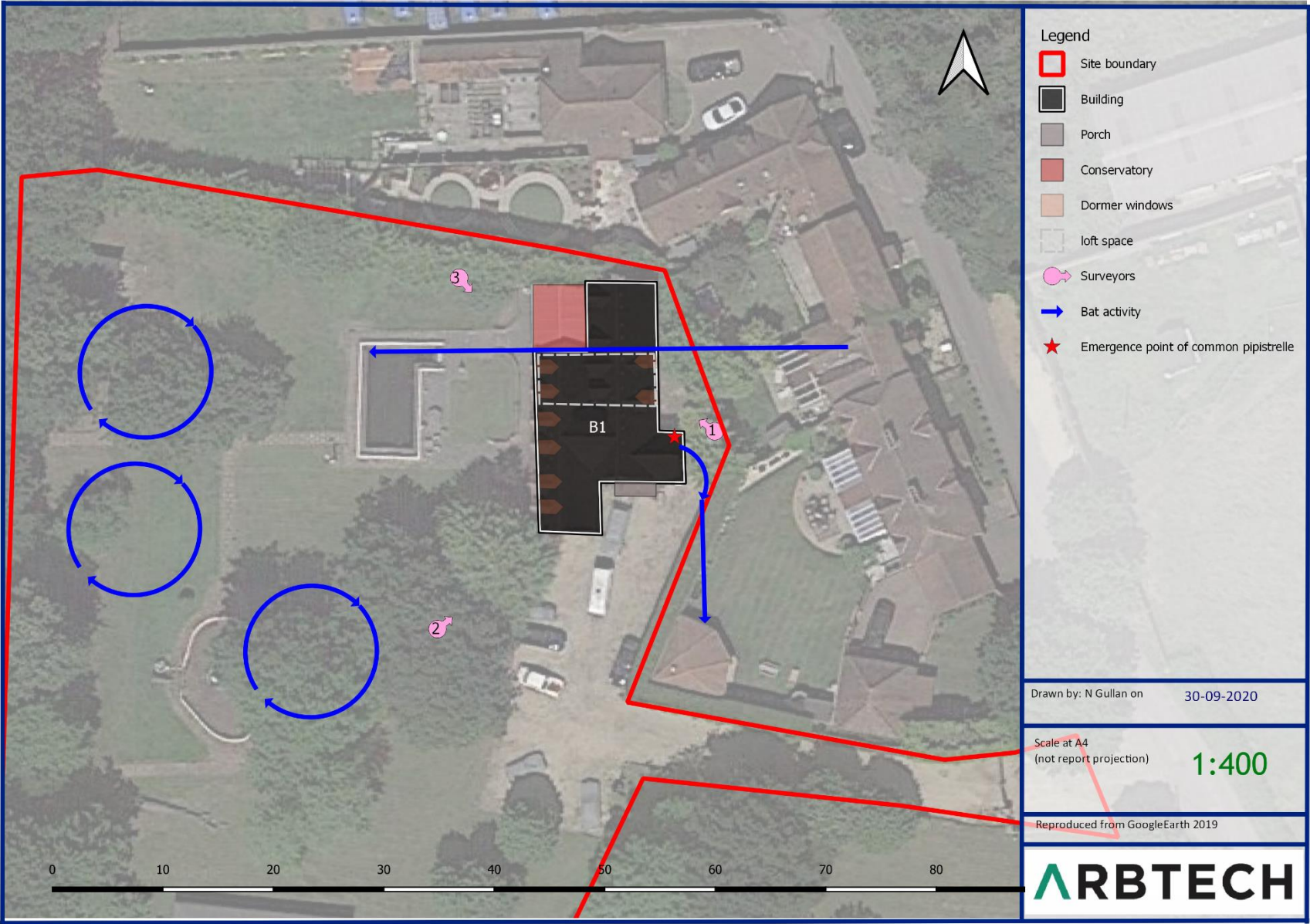
Table 4: Evaluation of buildings on site

Ref	Survey conclusions	Foreseen impacts	Recommendations / Mitigation
B1	The building is a confirmed roost of at least one common pipistrelle. The roost cannot be fully characterised from the surveys undertaken to date.	The works could destroy bat roost(s) of unknown conservation value. Any bats present could be injured or killed.	Two further bat emergence and re-entry surveys are required during the next active bat season (May – September 2021) to characterise the bat roost in the building. Both of the surveys should be completed during the optimal survey period mid-May to August inclusive. Sub-optimal: early May and September. One of these surveys must be a dawn re-entry survey. Three surveyors are required to provide full coverage of the building. A European protected species Mitigation Licence application to Natural England will be required once planning permission has been granted.

5.0 Bibliography

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- Natural England (2020) <https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1002024.pdf> accessed on 30/09/2020.

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan

None available at time of writing.

Appendix 3: Desk Study Information

Full historical records can be provided on request.

Desk Study Results

A summary of desk study results is provided below.

Designated sites

Details of any statutory and non-statutory designated sites within a 2km radius of the survey site, including their reasons for notification, are provided in the table below.

Designated sites within 2km radius of the site

Designated Name	Site	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites			
Fray's Farm Meadows Site of Special Scientific Interest (SSSI)		~400m west	<i>Fray's Farm Meadows are one of the last remaining examples of relatively unimproved wet alluvial grassland in Greater London and the Colne Valley. The meadows contain a variety of grassland communities which range from the grazed grassland of sweet vernal-grass Anthoxanthum odoratum, crested dog's-tail Cynosurus cristatus and perennial rye-grass Lolium perenne through to areas of tall sedge dominated marshy grassland with lesser pond sedge Carex acutiformis and reed-grass Glyceria maxima. The linear features of the site - ditches, hedges and railway embankment - add further habitat diversity, and contribute to the richness of plants and animals present.</i>
Frays Valley Local Nature Reserve (LNR)		~400m west	<i>The wildlife-rich Frays River meanders through the luxuriant Frays Farm Meadows SSSI. In spring, kingcups vividly pick out the damper areas and hard on their heels comes a splendid expanse of ragged-robin. Species include snipe; water vole and harvest mouse; kingcups and ragged robin; slow worm; willow; banded demoiselle.</i>
Denham Lock Wood Site of Special Scientific Interest (SSSI)		~500m south-east	<i>Denham Lock Wood is a diverse area of open mire and wet woodland which shows a zonation of wetland habitats occurring rarely in Greater London. The woodland herb flora is particularly varied and reflects subtle differences in topography and drainage.</i>
Ruislip Woods National Nature Reserve (NNR)		~600m west	<i>Ruislip Woods National Nature Reserve is the largest block of ancient, semi-natural woodland in Greater London and include one of the most extensive oak/hornbeam coppice woods in southeast England. The site also includes acid and neutral grassland, ponds, streams and marshland.</i>
Denham Quarry Local Nature Reserve (LNR)		~1100m west	<i>The park is home to a mix of wildlife. Visitors may catch a glimpse of herons and kingfishers while in summer damselflies and dragonflies dart over the wet meadows and Flooded quarry. Denham Quarry Park is close by to Frays Valley Local Nature Reserve in the Greater London area.</i>
Denham Country Park Local Nature Reserve (LNR)		~1100m north-west	<i>A scenic and relaxing location on the banks of the rivers Colne, Misbourne and Frays, the park is home to a mix of wildlife. You may catch a glimpse of herons and kingfishers while in summer damselflies and dragonflies dart over the wet meadows.</i>
Non-statutory Sites			
None.			

Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local bat habitat is described below:

The site is in a semi-rural area. Deciduous woodland forms a large part of the landscape and will provide excellent resources for bats. There are numerous water bodies and water courses in the landscape which will provide a valuable resource for local bat populations.

Priority habitats within 2km of the site are listed in the table below.

Priority Habitat Inventory within 2km (Magic.gov.uk):

Habitat	Closest distance from site
Deciduous Woodland	~50m west
Traditional Orchards	~150m south
Ancient Woodland	~200m north-west
Lowland Fens	~400m south-west
Lowland Meadows	~900m south-west
Good quality semi-improved grassland	~1300m north-east

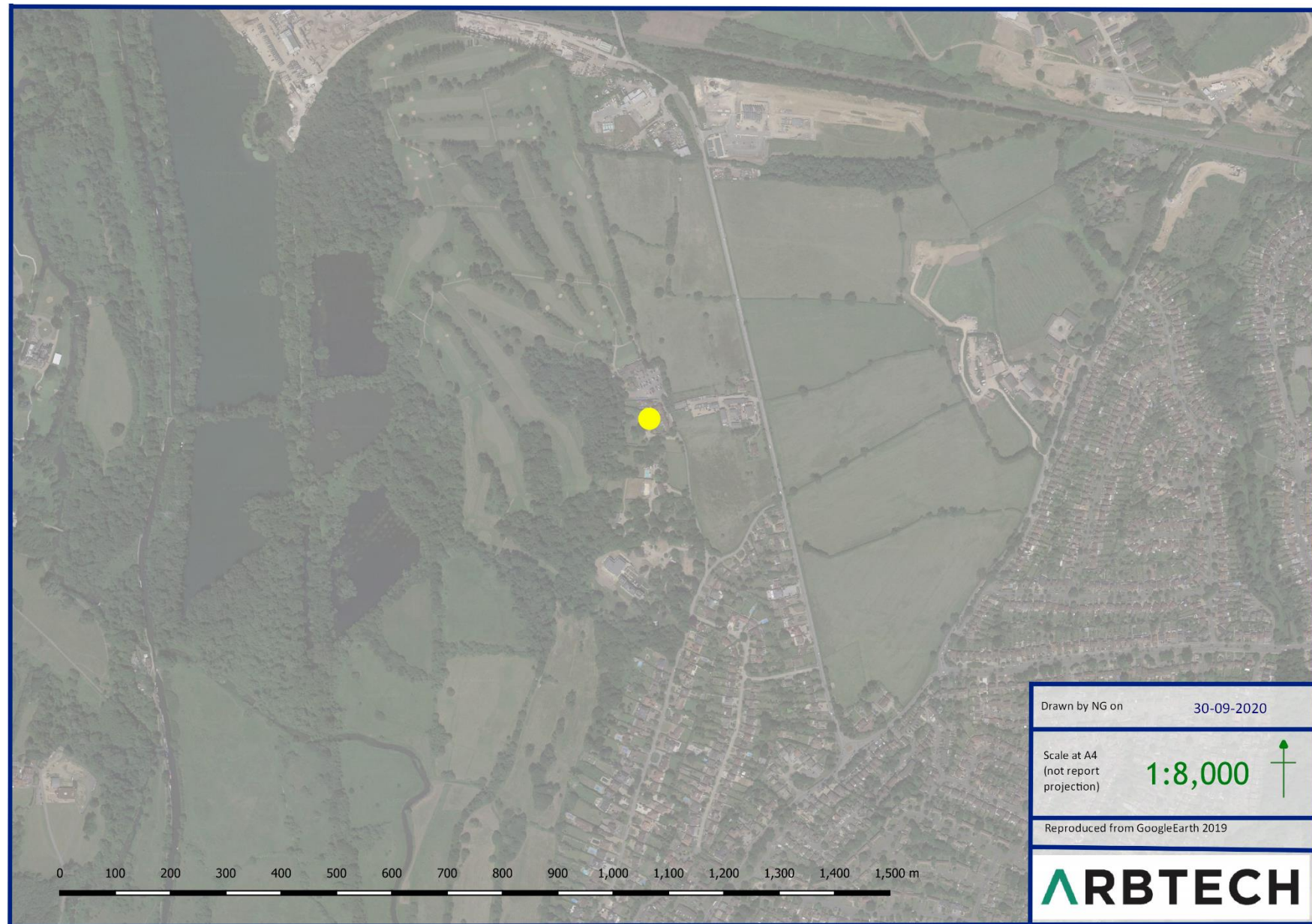


Figure 1: Aerial photo of site, showing landscape structure

Historical records

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release. The client has been advised that biological records data for the local area is necessary to facilitate a complete assessment. To date Arbtech has not been authorised to purchase these records from London Bat Group. The Local Planning Authority (LPA) may request that bat records data are obtained to conform to national guidelines, and these can be incorporated into the report at a later date.

Historical records of bats within 2km of the site

Common name	Scientific binomial	Number of records	Roost records	Maternity roost records
Not yet received.				

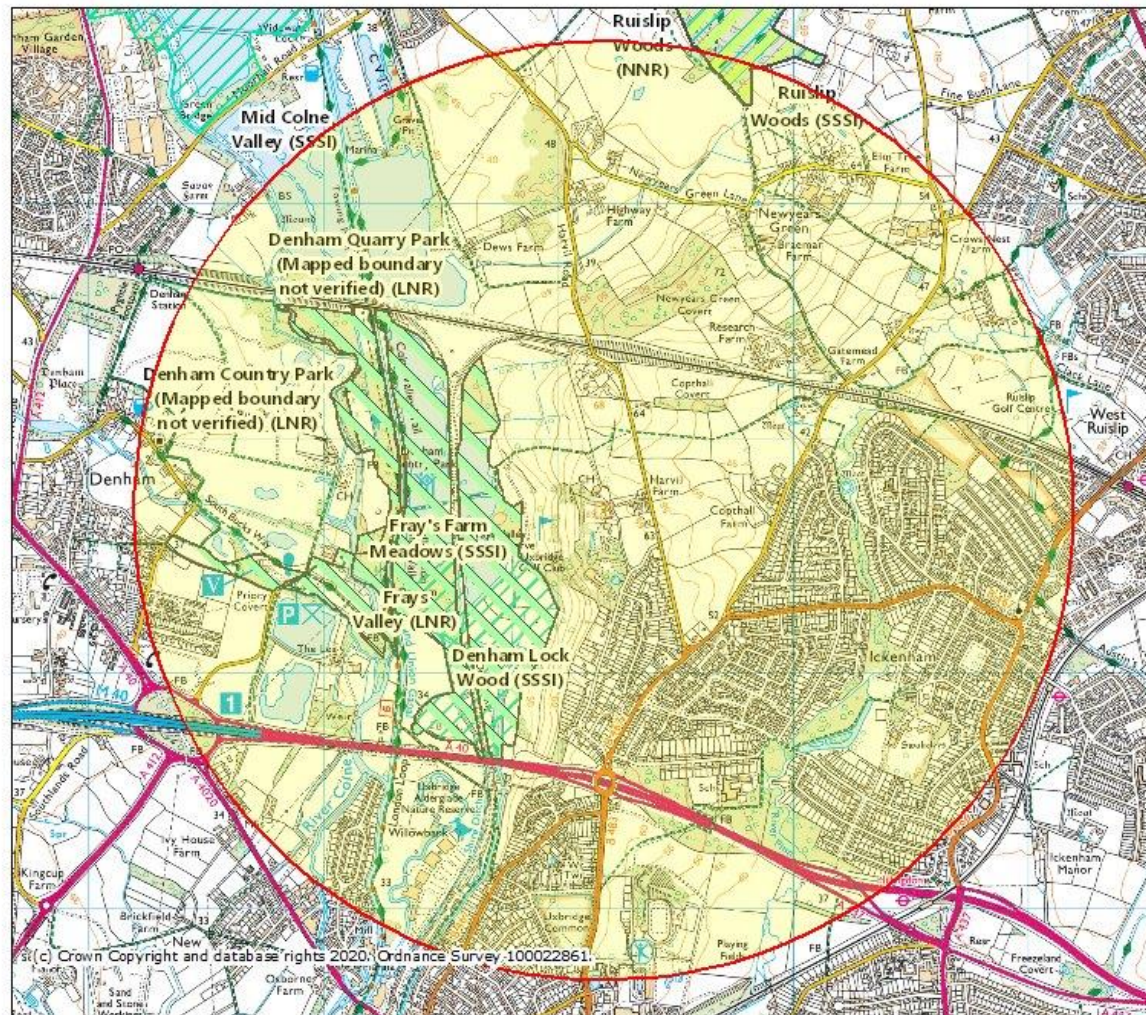
A search of the Magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats within a 2km radius of the site has been completed. Displaced bats from recently destroyed bat roosts >2km away from the survey site will find alternative roosting sites either within the mitigation measures implemented as part of the licence or will relocate to other known roost sites in close proximity to the Licenced site. The EPSML records show no licenced sites within 1km of the survey site. Other EPSML sites are located in the wider landscape.

Granted EPSMLs (bats) within 1km of the site

Case reference of granted application	Approx. distance from site	Bat Species Affected	Licence Start Date:	Licence End Date:	Impacts allowed by licence
None.					

MAGiC

Designated Sites



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)
- Biosphere Reserves (England)

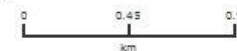
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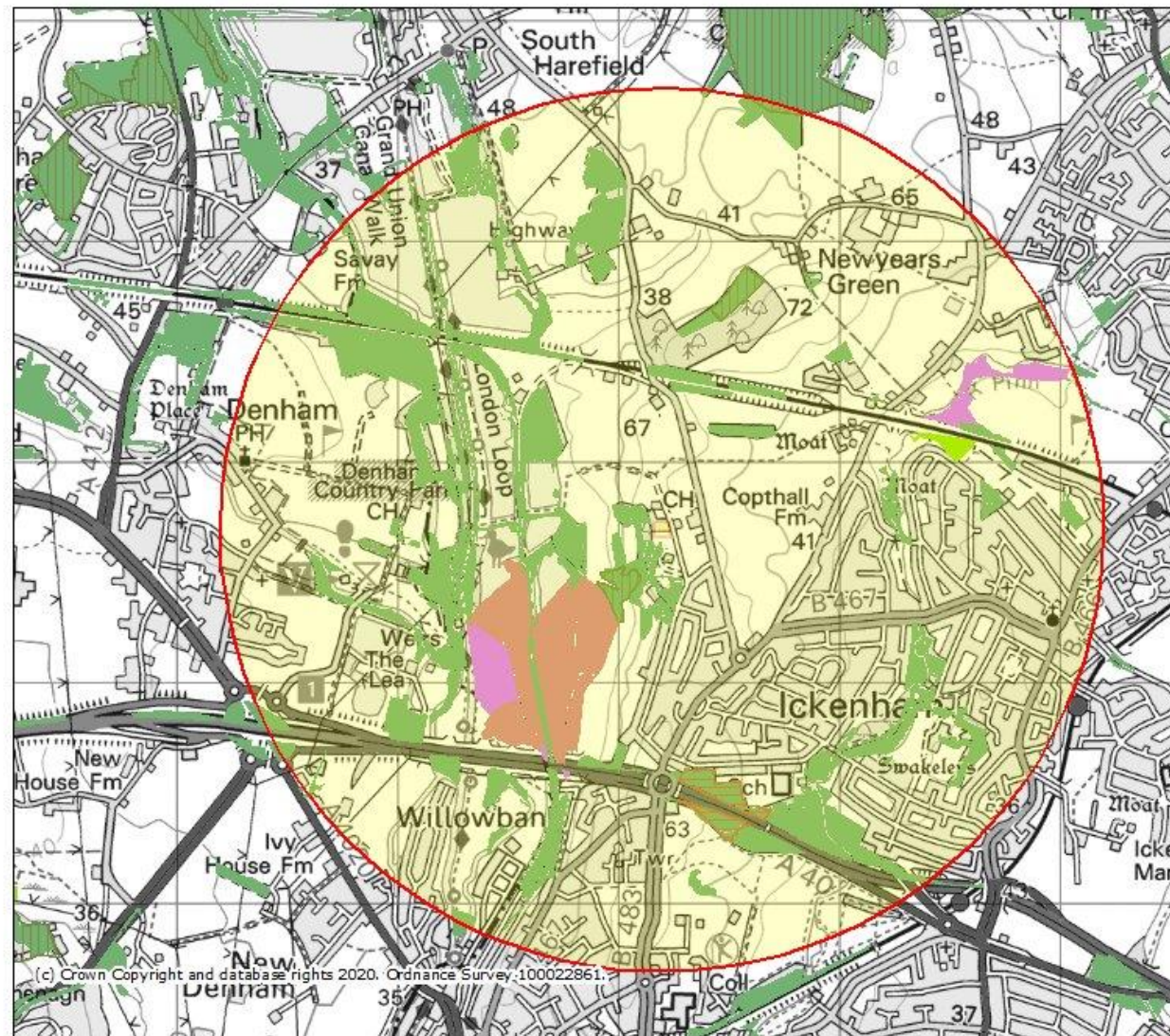
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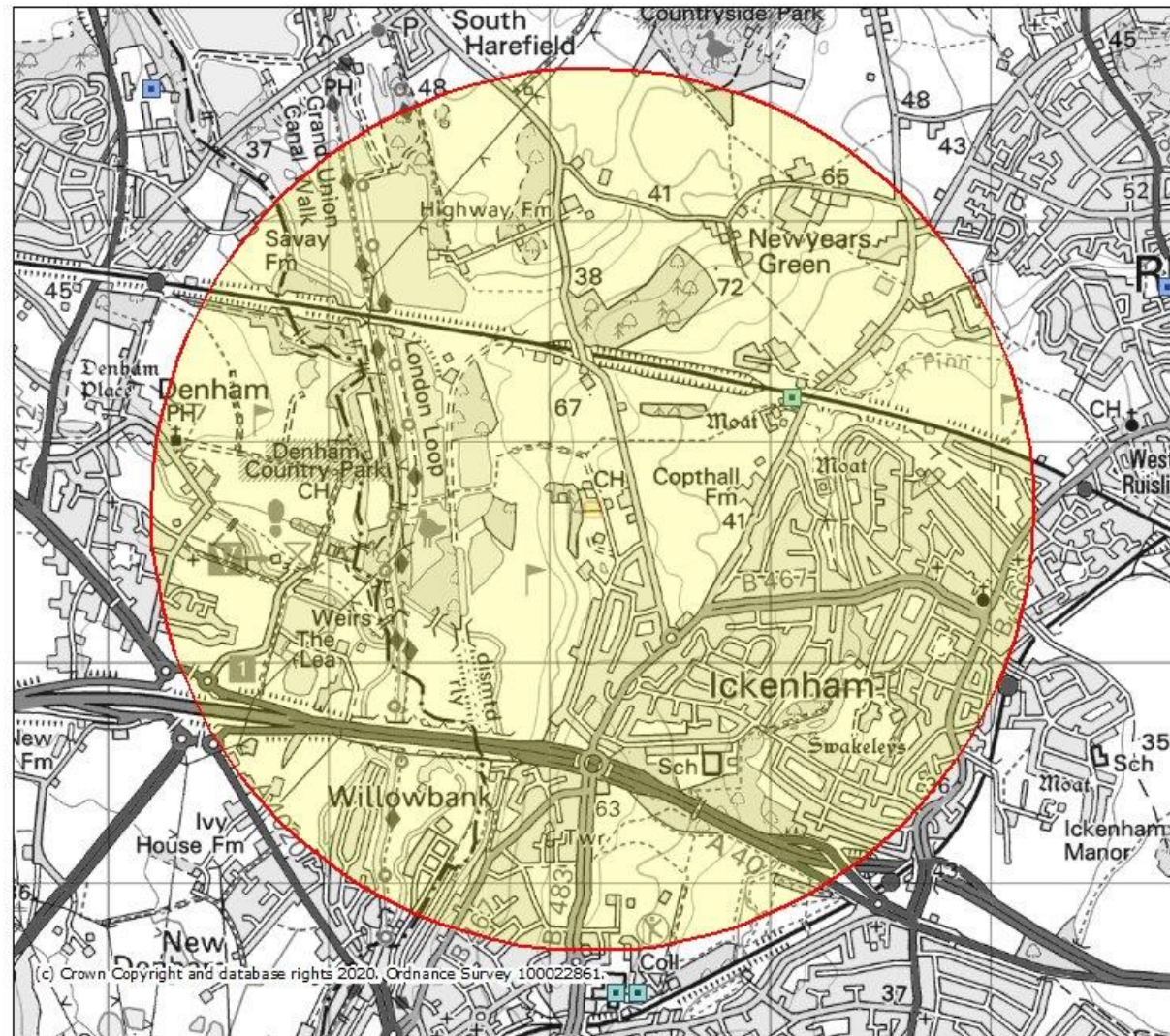
MAGiC

Habitats



MAGiC

EPSLs



Appendix 4: Legislation and Planning Policy related to bats

LEGAL PROTECTION

All species of bat are fully protected under *The Conservation of Habitats and Species Regulations 2017* through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) To impair their ability:
 - (i) To survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the *Wildlife and Countryside Act 1981 (as amended 01.04.1996)* through their inclusion on **Schedule 5**. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2017

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

- ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
- scientific and educational purposes,
- ringing or marking
- conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.