

LA06 / 2020 / 0097

Report on a Bat Survey of a Site of Proposed Development, off Queens Parade, Bangor, County Down



For Atkins Ltd and the
Department of Social Development

By
Hopkirk & Russ
Bat Ecology

Document
Number 07
Ards and North Down
Borough Council

June, July, September 2014

Ards and North Down
Borough Council
28 JAN 2020

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1.0.0 Introduction

1.0.1 On the 30th April 2014, Michael McLarnon of Atkins Ltd. acting for the Department of Social Development asked Hopkirk and Russ Bat Ecology to carry out a bat survey of a site of proposed development between, Queens Parade, Main Street, King Street and Southwell Road with the late addition of the Marine Gardens to facilitate Public Realm space, in Bangor, Co. Down.

1.0.2 Site description

The study site is on northern edge of Bangor town and is comprised largely of a block of largely Victorian era derelict terraced dwellings and largely vacant former retail shops and the Marine Gardens, which is currently an area of car parking and vegetated pedestrian walkways south of the marina. Towards the centre of the block is an area of hard standing used as car parking and for individual shipping containers converted into retail art outlets. There is an area of rank grassland with Buddleia and Elder growing as shrubs in the east and south of the site, with fringes of grassland and wildflower and a few self seeded broadleaf trees at the edge of the site. A row of young broadleaf trees lies along Queens Parade. The study site is approximately centered at map reference J50313 81869.

1.1.2 Proposed works

1.1.3 It is proposed to demolish the site buildings, construct a new development and redesign the Marine Gardens into a Public Realm space. The proposed development is still at the public consultation stage.

1.1.4 Aims of study

1. The aims of the survey were:
2. To describe any evidence of bats in the study area
3. To describe bat usage of the site
4. To assess the impact of a change in use of the study area
5. To suggest mitigation measures if appropriate.

1.1.4 Bat Biology

1.1.5 There are 8 known species of bat in Northern Ireland

Common pipistrelle (*Pipistrellus pipistrellus*)

Brown long-eared bat (*Plecotus auritus*)

Daubenton's bat (*Myotis daubentonii*)

Leisler's bat (*Nyctalus leisleri*)

Nathusius' pipistrelle (*Pipistrellus nathusii*)

Natterers's bat (*Myotis nattereri*)

Soprano pipistrelle (*Pipistrellus pygmaeus*)

Whiskered bat (*Myotis mystacinus*)

- 1.1.6 In March, female bats begin to form maternity colonies (a gathering of bats that live in a cohesive, generally species-specific group) begin to roost collectively. In the months from May to August each female bat may give birth to a single baby bat (pup), exceptionally, twins may be born. The pups are cared for in a nursery colony until they are able to fly at 4 weeks and are weaned at 6 weeks.
- 1.1.7 Bats have been found roosting in many types of location; abandoned mines, bridges, caves, in trees and almost every area of buildings, modern and old. Each species of bat has specific foraging and roosting requirements. The disturbance of bats when in their roosts or the loss of a roost or their habitat has been shown to have detrimental effect on all species of bat.
- 1.1.8 Throughout the spring, summer and autumn months, bats emerge at night to forage for their insect prey. During autumn, they must seek to store enough body fat to sustain them through the winter, a time when insect abundance is markedly reduced. From the month of September, bats in Ireland enter a state of hibernation or they may migrate. They are prompted to enter hibernation by changing day length, which stimulates hormonal changes.
- 1.1.9 During warm winter nights bats may emerge to forage or in response to their metabolic needs. Hibernating bats are particularly vulnerable because it may take 20 minutes for them to become active from a torpid state using up valuable food reserves each time they are aroused from hibernation.
- 1.2.0 Factors affecting the reproductive success of bats are:
 1. Low reproductive rate
 2. Sensitivity to disturbance
 3. Changes in land use
 4. Exposure to toxic chemicals due to remedial timber treatment
 5. Deliberate and unintended exclusion or entombment
 6. Vandalism
- 1.2.1 Bats rest during the day in roosts (day roosts), where for most species, they will be completely hidden, even when using a roost such as roof voids. Bats may also use night roosts to temporarily rest or as feeding perches.
- 1.2.2 Day roosts may be further categorised as:
 1. Individual roost, used by single male or female bats
 2. Transition roost, used by small numbers of bats as they begin to gather into colonies or disperse from larger colony roosts.
 3. Maternity roost, used by a colony of female bats usually ranging from a few tens to exceptionally over 1000 animals that are engaged in parturition (the birthing process)
 4. Harem, one male and up to nine female animals
 5. Hibernacula, where bats enter prolonged periods of torpor
- 1.2.3 Some species of bat are relatively abundant but many are vulnerable or threatened with extinction. It is because of these factors that bats are legally protected with both national and European legislation.

2.0.0 Legislation

2.0.1 Under the Habitats and Species Directive (92/43/EC), enacted through **The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)** which states that it is an offence to deliberately capture, injure or kill a wild animal of a European protected species included in Schedule II of these Regulations, which includes all species of bat. It is also an offence to;

(a) Deliberately to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;

(b) Deliberately to disturb such an animal in such a way as to be likely to;

(i) Affect the local distribution or abundance of the species to which it belongs;

(ii) Impair its ability to survive, breed or reproduce, or rear or care for its young; or

(iii) Impair its ability to hibernate or migrate;

(c) Deliberately to obstruct access to a breeding site or resting place of such an animal; or

(d) To damage or destroy a breeding site or resting place of such an animal.

This explanation should be regarded only as a guide to the law. In case of doubt, reference should be made to the legislation which may be found at:

<http://www.legislation.gov.uk/nisr/2011/216/made>

A European Protected Species license may be obtained from:

Dr. Declan Looney

Wildlife Officer

The Northern Ireland Environment Agency

Klondyke Building

Cromac Avenue

Gasworks Business Park

Lower Ormeau Road,

Belfast

BT7 2JA

Tele: 028 90569602

Email: declan.looney@doeni.gov.uk

3.0.0 Methods

3.0.1 Desktop study

3.0.2 A trawl of records held by the Northern Ireland Bat Group was made.

3.0.3 Surveyor

3.0.4 All surveys were carried out by Austin Hopkirk ACIEEM, a bat consultant since 2001, a member of the panel of bat experts maintained by the Heritage Council of Ireland and council member of Bat Conservation Ireland, NIEA Bat licensee No. 641.

3.0.5 Day Surveys

3.0.6 Day surveys for potential bat roosts and were carried out on the 3rd June, 20th June and 3rd July with a predawn survey on the 4th July 2014. The day surveys looked for bats, bat droppings and related indications of bat activity on the exterior of buildings and trees, in roof voids and those building interiors which were accessible. However, most of the derelict buildings were boarded up and access was restricted to spot samples through the site.

3.0.7 Night Surveys

3.0.8 Night bat detector surveys commenced 20-30 minutes before sunset on 3rd June, 20th June, 3rd July and 12th September and a predawn survey which commenced 1.5 to 2 hours before dawn on 4th July 2014.

3.0.9 The bat detector surveys consisted of constantly walking transects around and through the site buildings and trees using a Pettersson D240X and MP3 for later computer sonagraph analysis using Bat Sound IV software (Pettersson Electronic & i-River).

3.1.0 The 12th September 2018 survey included an extension to 'The Winter Gardens' the area of car parking and walks north the site buildings and south of the Marina.

3.1.1 Weather conditions: The survey weather was dry and still conditions with an ambient temperature in the region of 9-14° Celsius and 20% cloud cover for the summer surveys and clear skies for the September survey.

4.0.0 Results

4.0.1 Conditions

4.0.2 The level of bat activity at an area depends on many site-specific conditions, but in general bats are more active in the months from April to September. Where a colony of bats has occupied a roost, discrete evidence in the form of droppings and other signs may remain for weeks or even years. However, in some locations, evidence of bat activity may disappear quite quickly. The degradation rate of evidence such as bat droppings is determined by factors such as exposure to weather and by insect or fungal destruction.

4.0.3 Bats are a cryptic species and may not leave any evidence. In particular, bats may be completely hidden when they roost deep within a structure and may occupy holes or crevices at any time after a survey. Most species of bat move roost frequently.

4.0.4 Bat surveys should normally be carried out throughout the active season, in spring summer and autumn and depending on the site, tree or underground hibernacula surveys may also need to be carried out.

4.0.6 Desk study

4.0.7 There are no entries for a bat record at Queens Parade, Main Street, King Street, Southwell Road or the Vennel but there are 26 bat records including some more with more than one species, with a unique address on Bangor in the database of the Northern Ireland Bat Group. Eight of the records are of bats unidentified to species level, sixteen records are for a pipistrelle species and five records are for Leisler's *N.leisleri*.

4.0.7 Day surveys

4.0.8 The terrace of derelict housing at King Street had main roof void conversions in four of the houses but most of the main and return roofs at the dwellings, those on Southwell Road and those over former shops on Queens Parade were intact and had some bat roost potential. However, it was found that most of the King Street houses were boarded, had impenetrable thickets of Elder and in the one building which was entered, wet rot and dry rot had rendered the staircase and floors structurally unsafe. It was observed that a return roof from the former pool hall had window openings but no fitted windows.

4.0.9 Of the buildings over shops in the east of Queens Parade, one had no roof voids the other had both return and main roofs surveyed. The former pool hall at the extreme west of Queens Parade was found to have its ceilings completely stripped out removing any potential evidence of bat activity.

4.1.0 The trees within the car parking and pedestrian walks area south of the marina were immature and had no potential bat roost cavities. An ash tree in a garden in the southwest of King street had rot cavities with some bat roost potential. The Coastguard building 'Bregenz House' had some theoretical bat roost potential. No evidence of bats or bat activity was found within the site.

4.1.1 Night Surveys

4.1.2 **3rd June**, Survey commenced at 21.30hrs - Sunset at 21.52hrs

4.1.3 22.00hrs a Leisler's *N. leisleri* was observed to fly from the east outside the site heading west.

22.03hrs a Leisler's *N. leisleri* flew from the southeast of Southwell Road heading north towards the area between Queens Parade and the marina.

22.06hrs a pair of Leisler's *N. leisleri* were observed foraging over the area between Queens Parade and the marina as far as the McKee clock.

22.14hrs No further Leisler's *N. leisleri* activity was observed in the area.

22.23hrs a Leisler's *N. leisleri* was observed again in the area between Queens Parade and the Marina foraging as far as the former Winter Gardens

22.56hrs a common pipistrelle *P.pipistrellus* was observed flying over the derelict housing in King Street and foraging briefly by an ash tree

23.05hrs a common pipistrelle *P.pipistrellus* was observed flying from the south foraging over vegetation east of The Vennel, a road running north to south through the middle of the study site main block.

23.15hrs No further bat activity was observed until survey end at 23.30hrs

- 4.1.4 **Night 20th June 2014** Survey commenced at 21.40hrs Sunset was at 22.03hrs
- 4.1.5 22.49hrs a Leisler's *N. leisleri* was heard faintly at the corner of Main Street and King Street. No further bat activity was heard.
23.30hrs, Survey ended.
- 4.1.9 **Night 3rd July 2014** Survey commenced at 21.35hrs Sunset was at 22.01hrs
- 4.2.0 Survey concentrated at the vegetated area east of The Vennel and no bat activity was observed.
23.17hrs a Leisler's *N. leisleri* was heard over the north of The Vennel.
23.30hrs No other bat activity was heard and survey ended
- 4.2.1 **Night survey 12th September 2014** Commenced 19.30hrs Sunset: 19.45hrs
- 4.2.2 No bat activity was observed at the main study site block of buildings.
20.28hrs An individual common pipistrelle *P.pipistrellus* was observed commuting west to east along the line of immature broadleaf trees close to the marina north of the guest houses at Queens Parade.
20.48hrs an individual common pipistrelle *P.pipistrellus* was observed foraging at the line of immature maple trees running north of the McKee clock to the marina in the Marine Gardens
20.55hrs a pair of common pipistrelles *P.pipistrellus* was observed foraging at the tree line running north of the McKee Clock
It was noted that the area of bat activity area north of the McKee clock was where the lamp post lighting and a floodlight was not working.
21.40hrs survey ended with no bat activity observed elsewhere on the site.
- 4.2.3 **Predawn survey 4th July 2014** Commenced 03.58hrs, Sunrise 04.53hrs
- 4.2.4 No bat activity was heard until survey ended at 04.57hrs
- 4.2.5 **Other Species**
- 4.2.6 At 23.00hrs on the 3rd July at the vegetated area east of The Vennel a hedgehog *Erinaceus europaeus* was observed foraging in the grassland. It is possible that the hedgehog depends on the cat food regularly provided by a volunteer at that location. The observed hedgehog *E. europaeus* may live in the shelter provided for cats or beneath debris or the Buddleia in the area east of the Vennel. During clearance of this area and the rear of King Street an ecologist should attend and relocate any hedgehog *E. Europaeus*. (Plate 8).
- 4.2.7 Swallows *Hirundo rustica* were observed flying in through the window openings at the return roof of the former pool hall in Southwell Road
Works in areas where bird nesting activity occurs should only occur outside the bird nesting season March to August inclusive. The observed Swallows *H.rustica* were found entering window openings east of Southwell Road and

these were probably nesting in the upper floor rooms. Other parts of the site may be used by other bird species. Works should ideally occur after Swallows *H.rustica* have migrated which may be as late as early September and before the onset of the nesting season (Plate 7).

- 4.2.8 Japanese Knotweed was observed growing at the rear of third building west of the Project T24 area and in the rear of the boarded up dwelling at the corner of Southwell Road and King Street. Northern Ireland Environment Agency (NIEA) policy on disposal of Japanese knotweed (*Fallopia japonica*) material and contaminated soils places a duty of care on all waste producers to ensure that plant material and soil contaminated with root and rhizome fragments, plus the Japanese Knotweed canes themselves, be either treated or disposed of correctly on site, or sent to a licensed landfill site. Japanese Knotweed (*Fallopia japonica*) requires repeated herbicide spraying over at least two growing seasons or stem injection to kill the plants. No part of the living plant may be spread.

5.0.0 Conclusions and Mitigation

- 5.0.1 Commuting into the site and foraging by two Leisler's *N.leisleri* took place briefly on the night of 3rd June in the Marine Gardens north of the main study site block of buildings.
Common pipistrelles *P.pipistrellus* were observed commuting from the southeast to forage over the grassland area east of The Vennel in the night survey on 3rd June. The Marine Gardens was flown over by commuting and foraging Common pipistrelles *P.pipistrellus* took place in the vicinity of trees north of the McKee Clock during the 12th September night survey.
- 5.0.2 No bat emergence or return to roost activity was observed. There are roof voids and many gaps with roost potential in the study site buildings. However, most of the buildings are unheated and dusty with a lack of surrounding vegetation and have lowered potential as bat roosts. Surveys of all the site roof voids would require breaking into boarded up buildings and then securing the properties again and properties such as that in King street may in any case be structurally unsafe due to rot.
- 5.0.3 The main study site block of buildings was largely only commuted over by observed bats with grassland east of The Vennel and trees in Marine Garden area north of the main study site building block being the area where most bat foraging occurred. It is proposed that that Marine Gardens will be made into an area for pedestrians only and if the proposal includes loss of the existing trees and repair of the existing lighting there will be some loss of common pipistrelle *P.pipistrellus* and Leisler's *N. leisleri* bat foraging.

It is unknown if there will be a detrimental effect on the local bat populations but that would seem improbable given the low number of bats observed using the area. Retention of trees would be desirable but the increased lighting after repair of the lights may make the area too bright for pipistrelle species bats. It was noticed that the globe lights present in the west of the Marine Gardens close to the west of Queens Parade were of an amber colour and such lights

usually emit low ultraviolet light levels and are less disturbing to bats.
No NIEA licence or mitigation such as putting up bat boxes on the basis of the present bat survey results is required.

Signed



Date: 12th September 2014

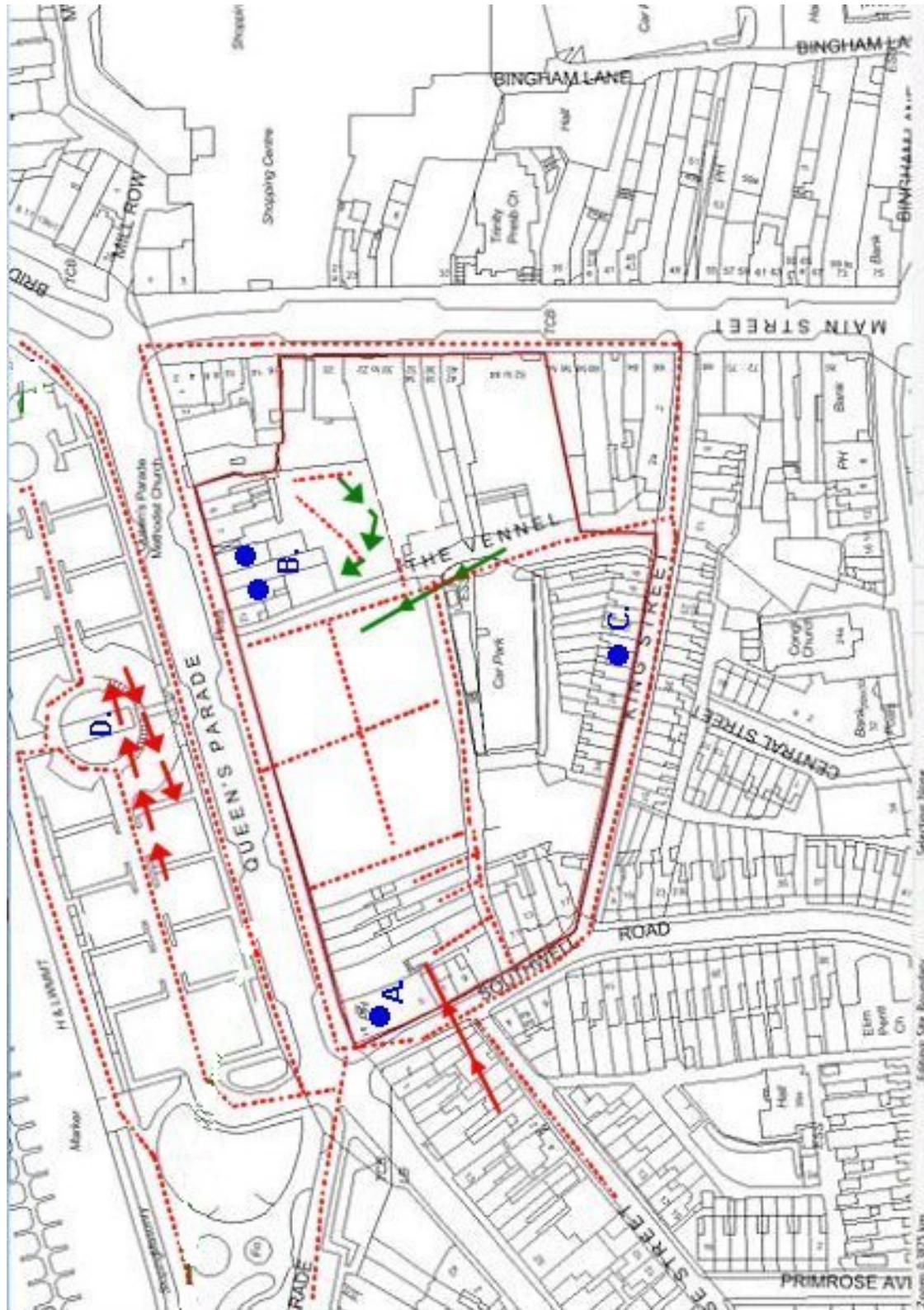


Figure 1 Map of the site with a representation of bat activity in the June and July night surveys. Blue dots represent internal building surveys

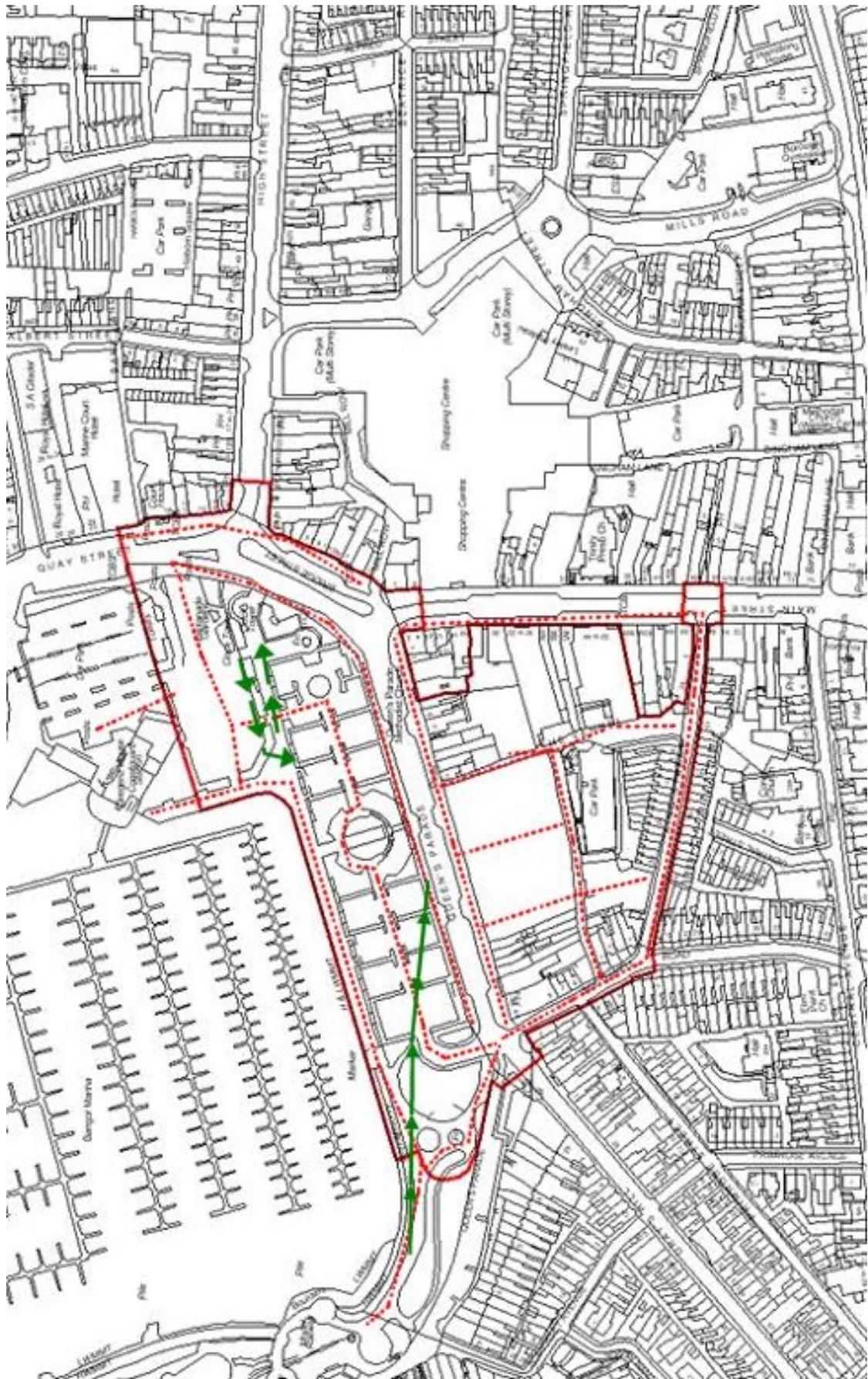


Figure 2 Bat activity in the September night survey

Bat Activity

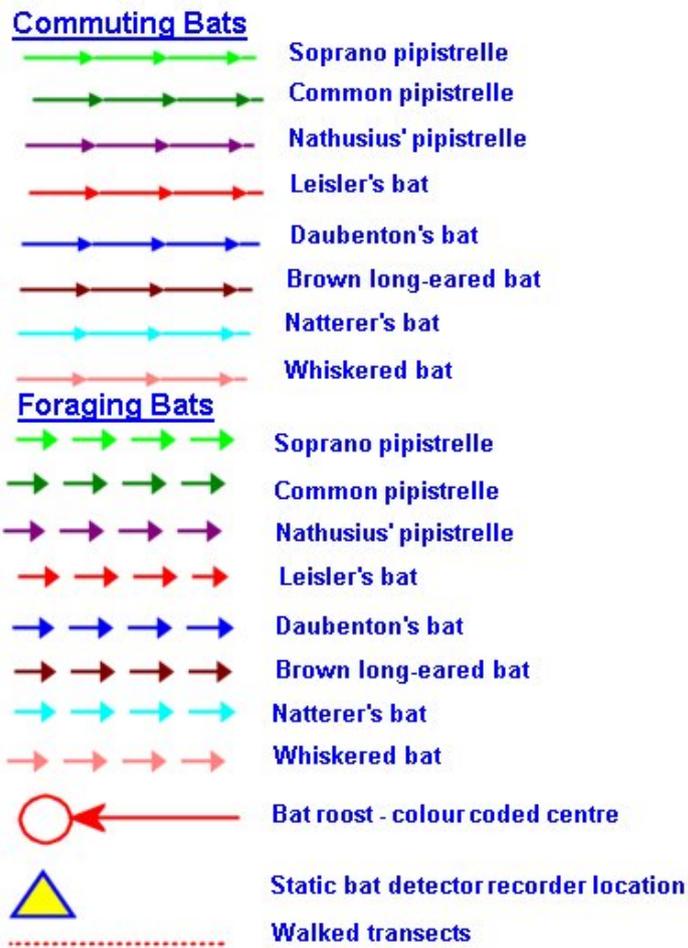


Figure 3 Bat activity key



Figure 3, Map of the proposed development



Plate 1 Rear of Queens Parade and east of The Vennel (Fig 1,B)



Plate 2 Hedgehog in grassland area rear of Queens Parade and east of The Vennel (Fig. 1, B)



Plate 3 Roof void in return roof rear of Queens Parade and east of The Vennel (Fig 1, B)



Plate 4 Attic accommodation over shops east of The Vennel, no trap door was present and therefore no access to the roof void was possible (Fig. 1, B)



Plate 5 Main roof void, No. 9 Queen Parade (Fig 1, B)



Plate 6 Return roof void at rear of 9 Queens Parade (Fig. 1, B)



Plate 7 Interior of return roof void (Fig 1, B)



Plate 8 Dry rot in fabric of derelict house in King Street (Fig. 1, C)



Plate 9 Rear return of former pool hall, corner of Queens Parade and Southwell Road, Swallows observed entering through window opening (Fig. 1, A)



Plate 10 Former pool hall northwest corner of the main study block , there was no access to the rear blocked up area (Fig.1, A)



Plate 11 Upper floor of the former Pool hall, northwest corner of study site at Queens Parade and Southwell Road with stripped out ceilings (Fig.1, A)



Plate 12 Basement area of the former Pool hall (Fig. 1, A)

LEGAL PROTECTION OF BATS

International protection

Bats are protected by national legislation also protected under several international Conventions, Directives or Agreements. Where these place obligations on the U.K. government, they have been translated into domestic legislation.

- **European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats and Species Directive).** This Directive places a legal requirement on all Member States of the European Union to protect specified habitats and species through their own domestic legislation. In the U.K. this has been implemented by the Conservation (Natural Habitats, etc.) Regulations (N.I.), 1994. All species of bat in Northern Ireland are on Annex IV ('European protected species of animal'), which requires they be given full protection.
- **Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).** This convention places obligations on Member States to protect threatened or endangered species and their habitats and to ban the use of many unselective methods of capture. It is translated into domestic legislation through the Wildlife (Northern Ireland) Order 1985. All species of bat, except the common pipistrelle, are on Appendix II, which requires that they are given special protection. The common pipistrelle is in Appendix III, which requires the regulation of its exploitation.
- **Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).** This global Convention is intended to encourage co-operation between Member Parties in the conservation of species that move between range states. It provides for the protection of migratory species, but its main intended method of operation is to encourage range states to set up Agreements to benefit species listed in Appendix II, which includes all European bats. One such agreement is the *Agreement on the Conservation of Bats in Europe*, 1994. Its main provisions are to restrict the killing or capture of bats; the protection of key bat habitats; the co-ordination of research and conservation experience and work to increase public awareness of bat conservation. These requirements do not appear to need any changes to current U.K. domestic legislation.

Appendix 7 – Follow - up Bat Surveys at Queens Parade Site, Bangor

1.0.0 Introduction

1.0.1 On 18th June 2019, Paddy McEntee of Atkins asked Hopkirk & Russ for a bat survey update report by Hopkirk & Russ Bat Ecology in the year 2014.

1.0.2 Site location

1.0.3 The extent of the site remains with revision and demolition defined (Fig. 6)

1.0.4 Equipment

1.0.5 Bat detector recordings were carried out by static observations and walked transects around buildings and trees using a Pettersson D240X and MP3 recorder for later analysis on a computer using call analysis software (Bat Sound 4, Pettersson Electronic) and a Batlogger bat detector and recorder was used to record bat calls later analysed with proprietary software BatExplorer 2.1.5.0 and manually corrected to species level by Austin Hopkirk (Elekon SA). A head torch and digital camera was used (Canon 280HS).

1.0.6 Surveyor

1.0.7 All surveys were carried out by Austin Hopkirk ACIEEM, a bat consultant since 2001, a member of the panel of bat experts maintained by the Heritage Council of Ireland and member of Bat Conservation Ireland, Northern Ireland bat group and NIEA Bat licensee since the year 1986, NIEA No. 641. Assisting with June and July surveys were two Hopkirk & Russ Bat Ecology trainee surveyors, Hannah Maxwell BSc. and Seanin Maxwell BSc. who are MSc. students at The Queens University, Belfast.

1.0.8 Methods

1.0.9 Desktop study

1.1.0 A trawl for records in a 2km radius of J50394 81836 to the database of the Northern Ireland Bat Group was made in 2019 (Table 3).

1.0.9 Night and Predawn Surveys

Night survey 11th June 2019

Observer 1 was positioned to the north, observer 2 was positioned to the southwest and observer 3 to the southeast of the block of terraced housing on the south of the site at King Street to look for potential bat emergence and record bat activity with transects around and through the site.

28th June 2019 Night Survey

Observer 1 was positioned to the east, observer 2 was positioned to the northeast and observer 3 to the southeast of the block of housing on the west of the site off Southwell Road to look for potential bat emergence and record bat activity with later transects around and through the site.

1st August 2019 Night Survey

One observer north of Queens Parade to look for potential bat emergence and record bat activity with later transects around and through the site.

3rd August 2019 Predawn Survey to look for potential return to roost and record bat activity. Walked transects around occurred in the early evening and night to listen for potential pre-emergence bat noises before times of expected bat emergence

3.1.1 Weather conditions: The survey weather is described (table 2).

4.0.0 Results**4.0.1 Conditions**

4.0.2 The level of bat activity at an area depends on many site-specific conditions, but in general bats are more active in the months from April to September. Where a colony of bats has occupied a roost, discrete evidence in the form of droppings and other signs may remain for weeks or even years. However, in some locations, evidence of bat activity may disappear quite quickly. The degradation rate of evidence such as bat droppings is determined by factors such as exposure to weather and by insect or fungal destruction.

4.0.3 Bats are a cryptic species and may not leave any evidence. In particular, bats may be completely hidden when they roost deep within a structure and may occupy holes or crevices at any time after a survey. Most species of bat move roost frequently.

4.0.5 **Weather conditions** at the time of bat surveys see Table 2

Table 2.

Date	Start - Sunset/Sunrise	Precipitation and wind	Temperature
11/06/2019	21.40hrs - 21.58hrs	Dry with 2ms breeze	12 Celsius
28/06/2019	21. 30hrs - 22.03hrs	Dry, still	14 Celsius
01/08/2019	21.00hrs – 21.24hrs	Dry, still	18 Celsius
03/08/2019	04.45hrs – 05.36hrs	Dry, still	14 Celsius

Table 3

Grid	Scientific name	Common name	Date	Abundance
J488817	bat sp.	unidentified	20-Jun-88	
J492816	bat sp.	unidentified	26-Jun-85	Present
J4981	Pipistrellus	Pipistrelle Bat species	Summer 1986	1 male

		Pipistrelle Bat species			
J5080	Pipistrellus		05/02/1997	1 male	
				Present +	
J510804	Pipistrellus species	Pipistrelle	18-Jul-91	droppings	
J513810	Nyctalus leisleri	Leisler's Bat	28-Jul-08		1
J517807	Pipistrellus species	Pipistrelle	14-Jun-94		1
	Pipistrellus				
J504810	pygmaeus	Soprano pipistrelle	14/11/2016		2
J503812	Nyctalus leisleri	Leisler's	14/11/2016		2

4.0.6 Night Surveys

- 4.0.7 **11th June 2019 Night Survey** Commenced: 21.40hrs Sunset: 21.58hrs,
No bat activity was observed by any of the three surveyors.
- 4.0.8 **28th June 2019 Night Survey** Commenced: 21.30hrs Sunset: 23.02hrs
22.14hrs faint calls of a Leisler's *N.leisleri* was heard briefly but not seen from the observer static observer 2 position at Queens Parade individual bat far outside the northeast of the site.
22.43hrs, faint calls of a Leisler's *N.leisleri* was heard briefly but not seen outside the site to the south No other bat was observed or bat call heard
23.55hrs, Survey ends.
- 4.0.9 **1st August 2019 Night Survey** Commenced at 21.00hrs Sunset: 21.24hrs
No bat activity was observed.
23.00hrs Survey ended
- 4.1.0 **Predawn survey 3rd August** Commenced 04.45hrs, Sunrise 05.36hrs
Repeated circuits in and around the site found no bat activity
05.45hrs Survey ended
- 4.1.1 **Other species**
- 4.1.2 Nesting activity of common swifts *Apus apus* was observed at the King street and other species such as Swallows and blackbirds. Demolition should occur outside the bird nesting season March to August inclusive.

5.0.0 Conclusions

- 5.0.1 Despite an intensive effort by all the surveyors, no bats were observed or recorded within or close to the survey area over three night surveys and a predawn survey.
The records trawl indicates two year 2016 bat records of pipistrelle species and Leisler's bat *N. Leisleri* with a grid reference of J503 812 and these relate to bat box inspections in nearby Castle Park which is the likely origin of the recorded bat calls. No bat licence, mitigation or compensation is required. Provision of at least two Schwegler swift nesting boxes is recommended to compensate for the loss of nest site at King Street.

Signed:

Date: 4th August 2018

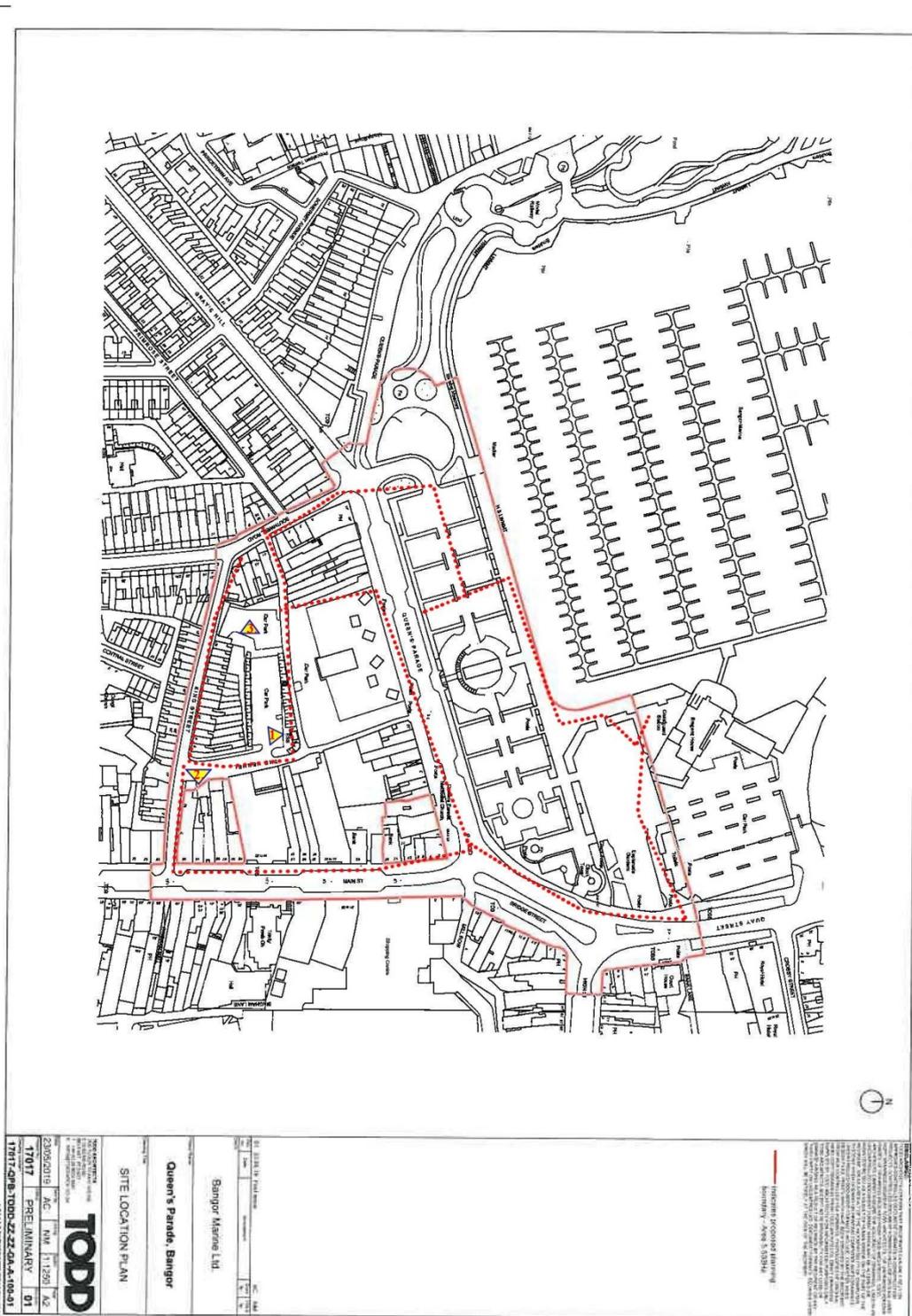


Figure 1 Observer static positions (Triangles) and walked transects (red dots) night survey 11th June 2019

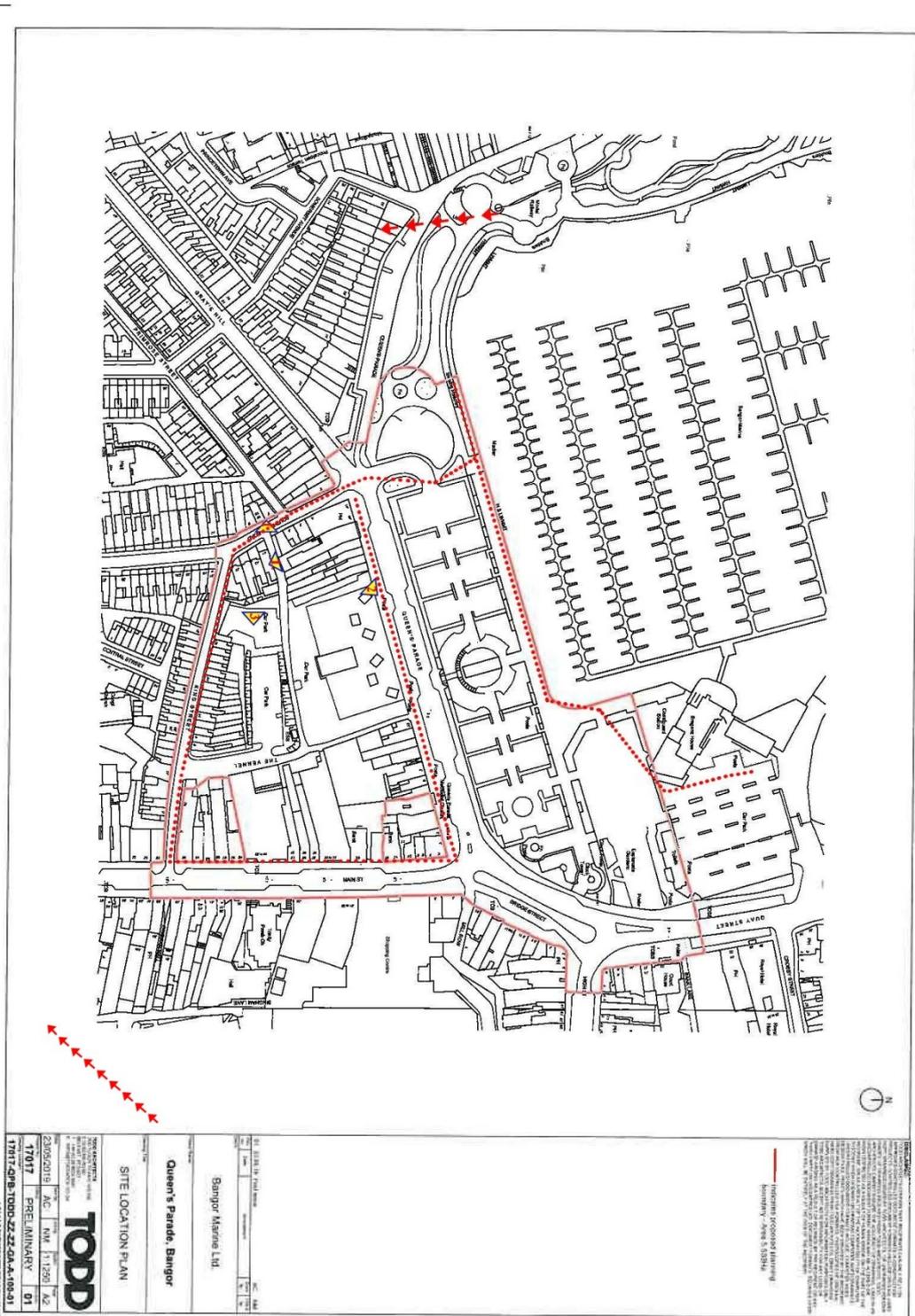


Figure 2 Observer static positions (Triangles) and walked transects (red dots) with red arrows indicating the approximate direction of faint calls night 28th June 2019

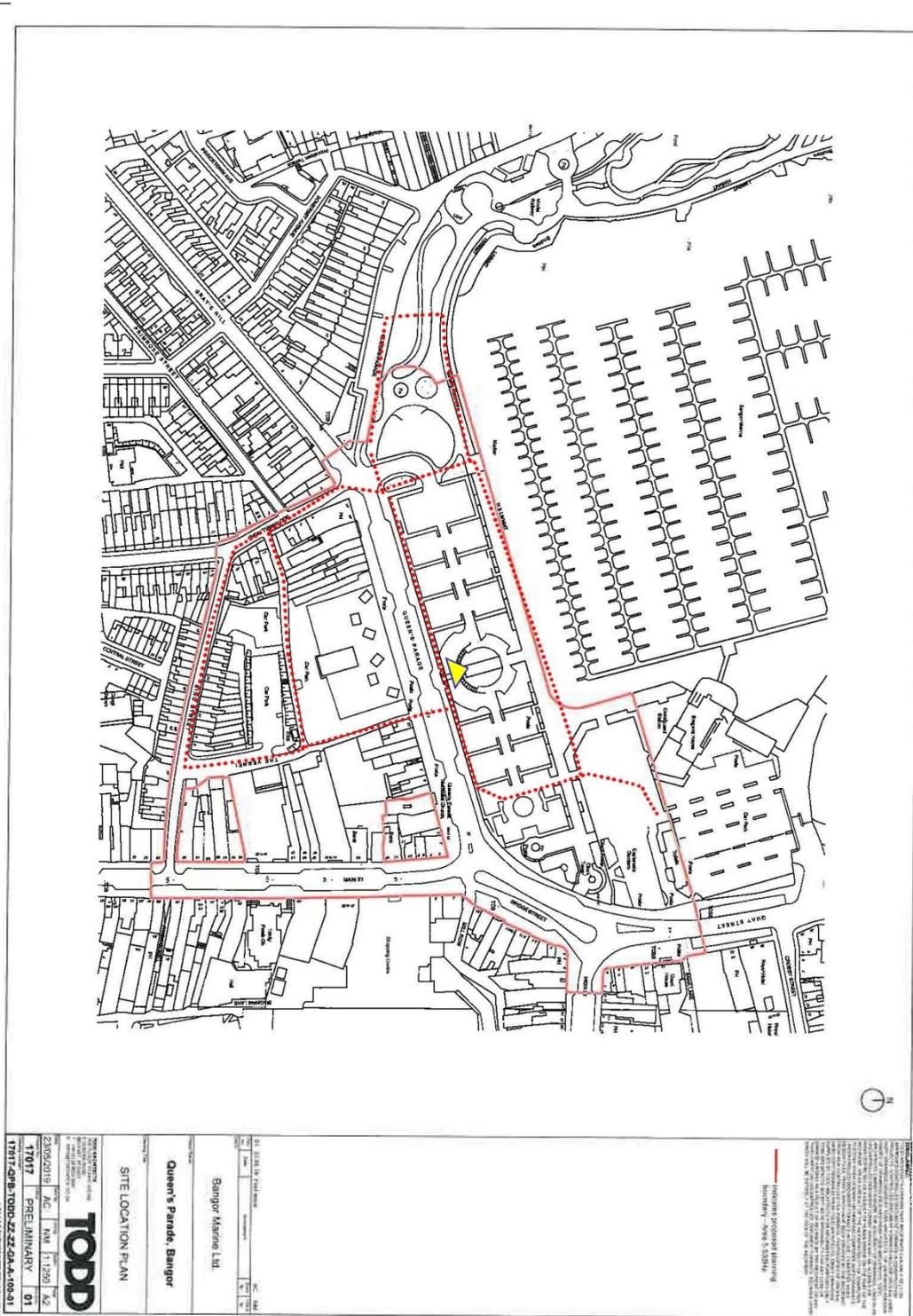


Figure 3 Observer static position and walked transects night 1st August and predawn 3rd August 2019

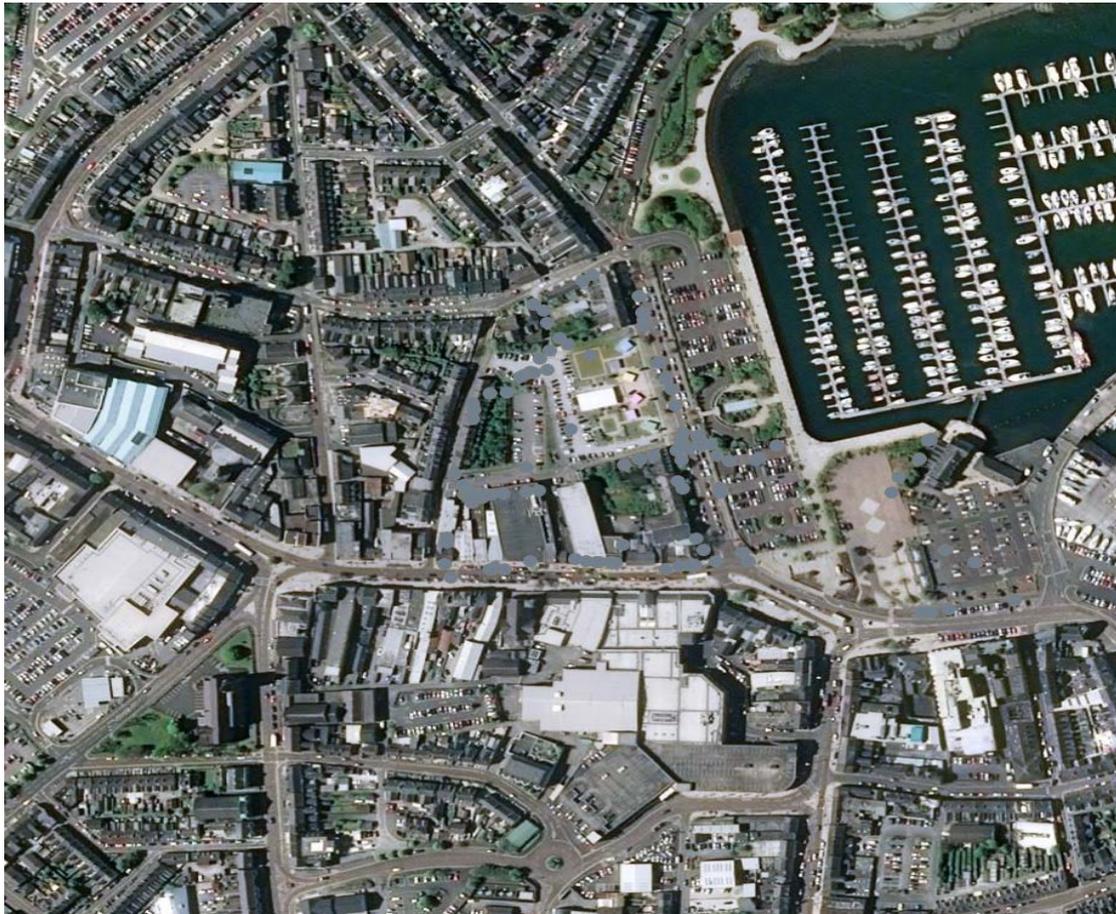


Figure 4 Batlogger bat detector and recorder generated map 11th June 2019. Grey dots indicate recordings at observer positions



Figure 5 Batlogger bat detector and recorder generated map 28th June 2019. Pale blue dots indicate observer position recording of faint calls of a Leisler's bat. Grey dots are ultrasound noise

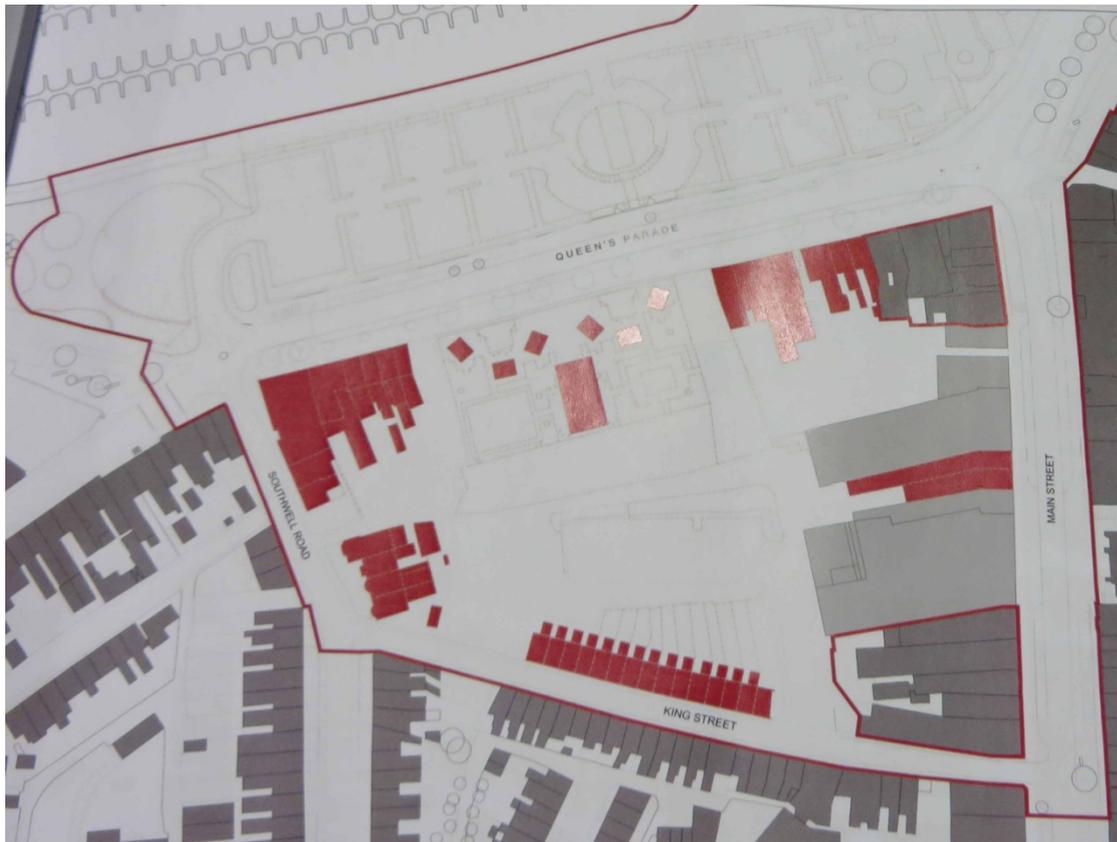


Figure 6 Proposed demolition of buildings coloured in red.



Plate 1 Rear of southeast end of King Street terrace where nesting common swifts were observed



Plate 2 View north of the corner of Southwell Road and King Street



Plate 3 Queens Parade buildings, view to west