Bat Survey Report

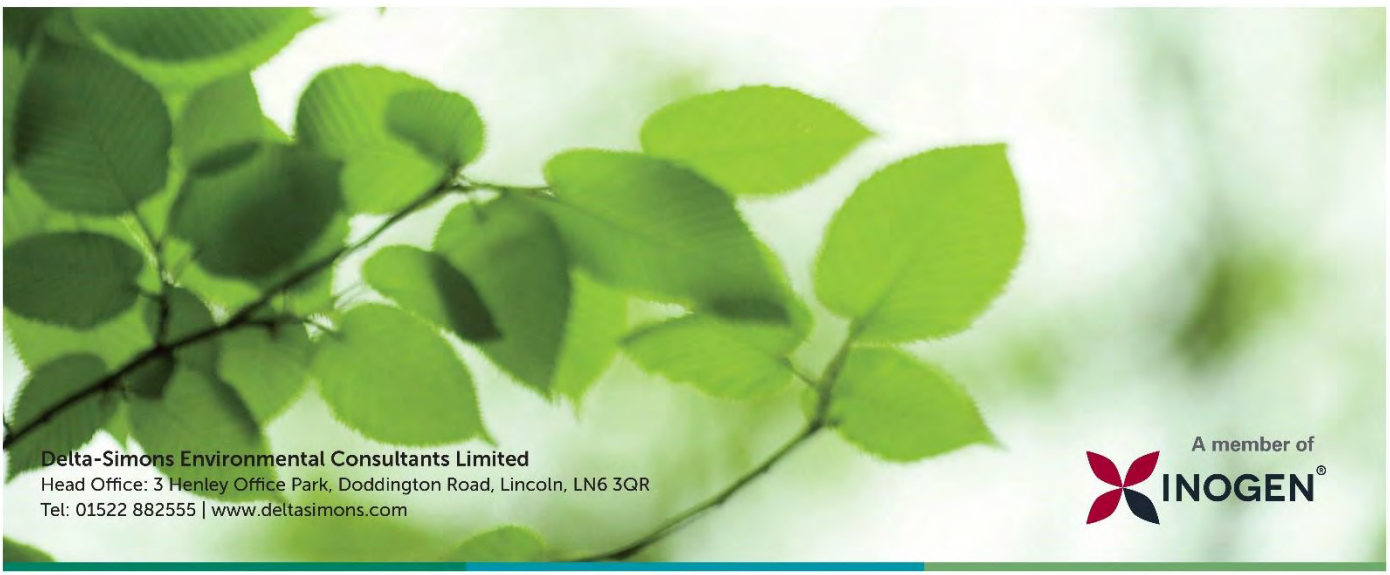
Wheelwright Centre, Kirklees College, Dewsbury

Presented to **MMR Construction Limited**

Issued: August 2019

Delta-Simons Project No. 19-0651.05

deltasimons



Delta-Simons Environmental Consultants Limited
Head Office: 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR
Tel: 01522 882555 | www.deltasimons.com

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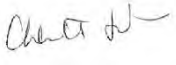
Report Details

Client	MMR Construction Limited
Report Title	Bat Survey Report
Site Address	Wheelwright Centre, Kirklees College, off Birkdale Road, Dewsbury, WF13 4HG
Project No.	19-0651.05
Delta-Simons Contact	Jonathan Spencer (jonathan.spencer@deltasimons.com)

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	27/08/2019				
				Craig Dickson Graduate Ecologist	**Jon Spencer Principal Ecologist**	**Charlotte Sanderson-Lewis Associate and Ecology Team Leader**

About us

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Executive Summary

Scope of Works	Delta-Simons Environmental Consultants Ltd was instructed by MMR Construction Limited ('the Client') to undertake bat presence/ absence surveys of buildings at the Wheelwright Centre, Kirklees College, off Birkdale Road, Dewsbury, WF13 4HG (hereafter referred to as the "Site"). The surveys were undertaken to inform the Client of any constraints, and associated requirements for avoidance, mitigation and compensation measures, with regards to bats and to inform a planning application for the redevelopment of the Site for residential use.
Current Site Status	Half of the Site comprises a combination of buildings, hard standing, scattered trees and ornamental planting whilst the other half comprises amenity grassland playing fields with scattered trees and scrub around the periphery. The buildings are found in the west and were previously occupied by Kirklees College until July 2018. Since then the Site has been vacant. There are areas of hardstanding around the buildings which comprise the access road and former car parking. The access road continues to the north and north-east of the Site. The playing fields are present in the east of the Site with soft landscaping present on the north-western, western and south-western boundaries, comprising mainly of mature trees and shrubbery, whilst mature scattered trees could be found forming the southern and eastern boundaries.
Proposed Development	It is understood that the Main Building and the 1980's extension on the western aspect, are to be renovated and repurposed for a total of 65 residential apartments, with the 1960's extension on the northern aspect is to be demolished. Additional car parking may be provided in the east of the Site where the playing field is currently located.
Results: **<u>Bat Results</u>**	A common pipistrelle was recorded emerging from a roost on the northern aspect of the Main Building during the dusk emergence survey on 8th July 2019 at 21:47, 13 minutes after sunset. A second common pipistrelle emergence from the western aspect of the Main Building was also recorded during the survey. Low numbers of common pipistrelle commuting and foraging passes were recorded, with a peak count of two bats at any one time. Noctules were recorded routinely commuting over the Site. The dawn return survey on 9th July 2019 recorded very low numbers of bats, with common pipistrelle and noctules both heard but not seen by the surveyors. No bats were recorded returning to roost. During the dusk emergence survey on the 25th July 2019, a common pipistrelle emerged from the same roost location as the previous survey on the northern aspect of the Main Building. Activity levels during the dusk survey were moderate, with extensive common pipistrelle foraging activity recorded from low numbers of bats (peak count 3) and occasional commuting and foraging noctules also recorded. A single common pipistrelle was recorded returning to roost on the western aspect of the Main Building during the dawn survey on 26th July 2019. Activity levels during the fourth survey, a dusk emergence on 26th July 2019, were low, and infrequent common pipistrelles were recorded foraging as the only species of bat recorded (peak count one). This first recording was of an emergence on the western aspect of the Main Building, at 20:54, 18 minutes after sunset. A second emergence occurred on the northern aspect of the building, at 21:01, 25 minutes after sunset. Both were consistent with the previous survey results. Whilst the Main Building contains two roosts, they are considered to be day roosts used by lone males or non-breeding females. The roosts were of common pipistrelle, a commonly occurring and widespread species, and no rare species were recorded during the surveys, such that given the species and roost type, the roosts are considered to be of low conservation status.

	Whilst there is security lighting at the ground and first floor levels around the buildings, it does not adversely affect the dispersal of common pipistrelle or noctule bats since they are somewhat light tolerant though they do not roost in lit locations, however, there is no lighting on the roosting features on the Main Building. The college grounds with the boundary trees, ornamental planting and scrub, and open areas of grassland provide suitable foraging opportunities for light tolerant bat species found in urban areas.
Recommendations	**Recommendation 1 (European Protected Species Licence (EPSL))** An EPSL must be obtained from Natural England prior to any renovation works commencing on the Main Building. In order for the licence to be granted by Natural England, the application must include appropriate mitigation to limit any disturbance to bats through appropriate working methodologies and timing of works, and compensatory bat roosts. **Recommendation 2 (Lighting)** To prevent any adverse impact upon the potential roosting, commuting, and foraging habitats for bats on and adjacent to the Site following the development, the lighting plan for the Site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security) such that there is no increase in lighting from that currently present. **Recommendation 3** (Post Development Enhancements) Following the issue of the revised NPPF (2019), by the Ministry of Housing, Communities and Local Government, *"Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…"* and, therefore, we recommend the following principles of design should be followed: ▲ Planting should aim to enhance retained or adjacent vegetation and be of native species, or those of known value to wildlife, sourced from local nurseries to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. It is recommended that where trees are planted, they have a functional understorey. A species list of recommended trees and shrubs is provided in Appendix F; and ▲ Installation of bat boxes on buildings or trees to be retained around the Site. Delta-Simons can provide further advice on the type and locations of bird and bat boxes for the Site once the final development plans are known.
This Bat Survey Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full report.	

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by MMR Construction Limited ('the Client') to undertake Bat Presence/ Absence Surveys of land at the Wheelwright Centre, Kirklees College, off Birkdale Road, Dewsbury, WF13 4HG (hereafter referred to as the "Site"). The Site location is shown in Figure 1. This follows the recommendations of the Preliminary Ecological Appraisal (PEA) and Bat Roost Potential (BRP) undertaken by Delta-Simons in May 2019 (Delta-Simons Project no. 19-0651.03), and was undertaken to inform the Client of any constraints and associated requirements for avoidance, mitigation and compensation measures with regards to bats and to inform a planning application for the development of the Site for residential use.

The aim of the bat survey was to:

- Determine the suitability of the Site for roosting, foraging and commuting bats;
- Determine the usage of the Site by bats;
- Assess the results of the surveys and determine the potential impact of the proposed development works on any bats that might use the Site; and
- Provide recommendations for mitigation, working methodologies, further surveys and/ or the need for a European Protected Species Licence (EPSL) from Natural England, depending on the survey results.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SE 23765 22542, to the north-west of Dewsbury town centre in West Yorkshire. The Site covers an area of 2.16 hectares (ha) and comprises two distinct areas, since several buildings in the west surrounded by hard standing with ornamental planting and trees on the boundaries, and amenity grassland playing fields in the east bounded by scattered trees and scrub. The Site was previously occupied by Kirklees College until July 2018. Since then the Site has been vacant. There are areas of hardstanding around the buildings in the west which comprise the access road and former car parking. The access road continues to the north and north-east of the Site. Playing fields in the east of the Site have soft landscaping on the north-western, western and south-western boundaries, comprising mainly of mature trees and ornamental planting, whilst mature scattered trees could be found forming the southern and eastern boundaries.

Further amenity grassland can be found directly to the north of the Site, and Halifax Road lies immediately beyond the eastern boundary with residential properties beyond. Birkdale Road and residential properties can be found beyond the southern boundary, whilst further residential properties are immediately to the west of the Site.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the Main Building and the 1980's extension on the western aspect are to be renovated and repurposed for 65 residential apartments, with the 1960's extension on the northern aspect to be demolished. Additional car parking may be provided in the east of the Site where the playing field are currently located. The proposed development plan is shown in Figure 3.

2.0 Legislation and Policy

Bats

All bats are protected under Section 9(4)(b) and (c) of the Wildlife and Countryside Act (WCA) 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017.

It is an offence to destroy or damage a breeding site or resting place of a bat, to intentionally or recklessly obstruct access to any place of shelter or protection for bats, to deliberately disturb bat species, to intentionally or recklessly disturb a bat whilst in its place of shelter or protection, or deliberately capture, injure or kill a bat. It should be noted that a breeding site or resting place of a bat is protected whether or not bats are present, as long as it is likely that they will return, and any activity or works damaging or destroying such a breeding site or resting place are likely to require a Natural England European Protected Species Licence (EPSL).

Planning

As referenced in the National Planning Policy Framework (NPPF, 2019), the Office of the Deputy Prime Minister Circular (2005) advises that ecological surveys are undertaken before planning permission is determined. The circular states "*The need to ensure that ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances*" (see References, Appendix A).

The NPPF also states "*Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…*"

3.0 Methodology

This bat survey has been undertaken to the following current guidance: Collins ed. (2016) Bat Surveys for Professional Ecologists Good Practice Guidelines, English Nature (2004) Bat Mitigation Guidelines, and BS 42020: 2013 Biodiversity. Code of Practice for Planning and Development.

3.1 Desk Search

The results of the data search received from the local record centre, West Yorkshire Ecological Services (WYES) for the initial PEA (Delta-Simons Project no. 19-0651.03), in May 2019 were reviewed for records of bats, and any non-statutory designated sites known to support bat species, within a 2 km radius of the Site centre.

A search for statutory sites designated for bats, and for granted EPSL for bats, within a 2 km radius of the Site centre was performed using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

3.2 Preliminary Habitat and Bat Roost Potential Assessment

A PEA and BRP was undertaken of the Site by Delta-Simons on 10th May 2019. The results of this assessment with regards to the suitability of the habitats to support bats were reviewed (Report Reference 19-0651.03).

3.3 Roost Presence/ Absence Surveys

Dusk emergence and dawn return nocturnal surveys were carried out to determine bat activity associated with the buildings at the Site assessed as having BRP.

The dusk surveys commenced approximately fifteen minutes prior to sunset and ceased approximately one and a half hours following sunset. The dawn surveys commenced approximately one and a half hours prior to sunrise and finished at sunrise, or fifteen minutes after depending on light, weather conditions and bat activity. The surveyors were equipped with Duet bat detectors and Edirol recording equipment or Echometer Meter Touch Pro 2s and iPhones. Recordings were made of any bats seen and/ or heard and the species, the timing, activity, location and direction of flight.

Buildings

A dusk emergence and dawn return survey was undertaken of the Main Building, 1980s Building, and extension to the north-west of the Main Building, and 1960s Building, an extension to the north of the Main Building. The 1960s Building had low BRP and, therefore, one survey visit was completed as no roosting bats were recorded. The Main Building and 1980s Building were assessed as having moderate BRP, requiring two visits, however since bats were found XX and XX, a total of three nocturnal surveys were completed. Table 1 provides details of the surveys and locations of the surveyors.

Table 1 – Timings, Weather Conditions and Location of Surveyors of the Building Surveys

Structure	Date	Timing	Weather	Surveyor Location
Main Building	08/07/2019	21:20 – 23:04 (sunset 21:34)	16 °C, 8/8 cloud cover, F1 wind Light rain, humid	1 – Western aspect, excluding courtyard 2 – Northern aspect, adjoining 1960s building.
	09/07/2019	03:20 – 04:46 (sunrise 04:46)	13 °C, 8/8 cloud cover, F1 wind	1 – Western aspect within courtyard

			Light rain	2 – Southern aspect
	25/07/2019	21:00 – 22:45 (sunset 21:15)	27 °C, 4/8 cloud cover, F0 wind	1 – Western aspect, excluding courtyard 2 – Eastern aspect
	26/07/2019	05:10 – 03:40 (sunrise 05:10)	24 °C, 5/8 cloud cover, F0 wind	1 – Western aspect within courtyard 2 - Western aspect, excluding courtyard
	15/08/2019	20:21 – 22:06 (Sunset 20:36)	16 °C, 0/8 cloud cover, F0 wind	1 – North-west corner of the northern aspect. 2 – North-east corner of northern aspect 3 – Western aspect, within courtyard
1980s Building	08/07/2019	21:20 – 23:04 (sunset 21:34)	16 °C, 8/8 cloud cover, F1 wind Light rain, humid	3 – Eastern aspect, with back to Main building 4 – Southern aspect of building
	26/07/2019	05:10 – 03:40 (sunrise 05:10)	24 °C, 5/8 cloud cover, F0 wind	3 – North-west corner of building
1960s Building	08/07/2019	21:20 – 23:04 (sunset 21:34)	16 °C, 8/8 cloud cover, F1 wind Light rain, humid	5 – Southern aspect of 1960s building, with back to Main Building
	09/07/2019	03:20 – 04:46 (sunrise 04:46)	13 °C, 8/8 cloud cover, F1 wind Light rain	3 – Southern aspect of 1960s building, with back to Main Building 4 – Eastern aspect of 1960s building, including Main Buildings northern aspect.

	25/07/2019	21:00 – 22:45 (sunset 21:15)	27 °C, 4/8 cloud cover, F0 wind	3 – Western aspect with northern aspect of main building

With reference to the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement, the weather conditions during the dusk/dawn surveys were considered suitable for bat activity.

3.4 Sound Analysis

Any bat calls that could not be identified in the field at the time of the individual surveys were subject to analysis using Batsound Version 4.2.

3.5 Limitations to the Survey

During the surveys on the 8th and 9th July 2019, it was raining on Site, the rain was light but persistent, however did not restrict the surveys from being completed, as bats were recorded during both surveys.

The baseline conditions described in this report were accurate at the time at which the survey was undertaken. Should at least 18 months pass by, and/or conditions on-Site/ Site usage change prior to the commencement of works, it is recommended that an update survey is undertaken.

3.6 Details of Surveyors

Table 2 - Details of Surveyors

Name and Experience of Surveyor	Preliminary Habitat Assessment	BRP	Presence/ Absence Surveys
Jonathan Spencer MCIEEM, Natural England Licence No. 2017-30828-CLS-CLS Nine years' survey experience	✓	✓	✓
Sue Charlton MCIEEM, Natural England Licence No. 2015-14238-CLS-CLS Sixteen years' survey experience			✓

Charlotte Sanderson-Lewis MCIEEM, Natural England Licence No. 2015-14429-CLS-CLS Thirteen years' survey experience			✓
Craig Dickson Grad CIEEM, Two years' survey experience			✓
Evie Scott Ecological Assistant, One years' survey experience			✓
Isaac Marin-Andrew Ecological Assistant, One years' survey experience			✓

4.0 Results

4.1 Desk Study

4.1.1 Data Search

The results of the MAGIC data search and the WYES desk search indicate that there are no statutory designated or non-statutory designated sites specifically designated for, or known to support, bats within 2 km of the Site centre.

A summary of the closest and most recent records for each species is provided in Table 3, below.

Table 3 – Summary of Data Search Bat Records

Species	Type of record	Date	Distance/direction from nearest Site boundary
Common pipistrelle *Pipistrellus pipistrellus*	Maternity roost	2013	1.7 km north
Common pipistrelle	Transitional roosts – 7	2011- 2012	580 m north-west
Common pipistrelle	Sighting	2011	275 m south
Noctule *Nyctalus noctula*	Sighting	2012	750 m north-east
Myotis species *Myotis* sp.	Sighting	2011	1.4 km north-west
Pipistrelle species *Pipistrellus* sp.	Sighting	2013	1.4 km north-east

A review of the MAGIC website in August 2019 revealed one granted EPSL within a 2 km radius of the centre of the Site. Available details of the licences are shown in Table 4.

Table 4 – Granted EPSL within a 2 km radius of the centre of the Site

Distance from the Site	EPSL Case Reference	Damage to Breeding Site	Damage to Resting Place	Destruction of Breeding Site	Destruction of Resting Place
450 m north-west	EPSM2011-3454	No	No	No	Yes

4.2 Preliminary Habitat Assessment

The PEA undertaken of the Site by Delta-Simons in May 2019 (Report Reference 19-0651.03) identified three buildings and a single sycamore tree to offer roosting potential for bats. Furthermore, the wider Site provided suitable foraging and commuting habitats for bats and good connectivity to the wider landscape. The scattered trees and ornamental planting are considered to provide ideal foraging and commuting habitat for a range of bat species due to their linear nature, the shelter they offer, and abundance of invertebrates that will be attracted to the plants. Therefore, this increases the potential for foraging and commuting bats to utilise the buildings as a potential bat roost. Overall, the Site was assessed as being of good habitat suitability for foraging and commuting bats.

4.3 Presence/Absence and Roost Characterisation Surveys

4.3.1 Buildings

The results of the roost presence/ absence and characterisation surveys of the buildings assessed as having BRP are summarised below, illustrated in Figure 5 - 8, and the raw data is included in Appendix C.

Dusk Survey 8th July 2019

The first bat, a common pipistrelle, was recorded at 21:37, three minutes after sunset, emerging from a roost on the western aspect of the Main Building (Roost 1), within the courtyard connecting to the 1980s Building. Extensive foraging took place in the courtyard, in addition to along the treeline on the western boundary of the Site and the southern boundary of the carpark. A second common pipistrelle was recorded emerging from the northern aspect of the Main Building (Roost 2), at 21:47, 13 minutes after sunset. Activity levels at the Site were from a low number of common pipistrelles (peak count 2), displaying extensive foraging activity, in addition to occasional commuting and foraging noctules high up over the Site.

Dawn Survey 9th July 2019

Activity levels during the dawn survey were low, with occasional common pipistrelle activity and commuting noctules (peak count one bat), which were all heard but not seen by the surveyors. The last record, a commuting noctule bat, came at 04:43, three minutes before sunrise. It should be noted that there was light rain from the commencement of the survey, at 03:20, until approximately 04:20, although bats were still active such that it was not considered a constraint to the survey. No bats were recorded returning to roost.

Dusk Survey 25th July 2019

The first bat, a commuting noctule, was recorded at 21:31, 16 minutes after sunset. A common pipistrelle emerged from Roost 2 at 21:36, 19 minutes after sunset. There was extensive foraging around the Main Building's courtyard by common pipistrelles (peak count three bats), which were mainly associated with the vegetation of the northern and western boundaries. Activity levels during the dusk survey were moderate, with low numbers of common pipistrelle exhibiting extensive foraging behaviour and occasional commuting noctules were also recorded.

Dawn Survey 26th July 2019

Activity levels during the survey were low, except for within the courtyard on the western aspect of the Main building. There was extensive foraging within the courtyard by common pipistrelles (peak count two bats), and the last bat was recorded returning to a roost under a barge board beneath a gable on the western aspect of the Main Building (Roost 1), within the courtyard, at 04:48, 22 minutes before sunrise. A single soprano pipistrelle *Pipistrellus pygmaeus* was recorded at the north-east corner of the Site, whilst a single noctule bat was also recorded commuting over the Site.

Dusk Survey 15th August 2019

Activity levels during the survey were low, and common pipistrelles were the only species of bats recorded. This first recording was of an emergence from Roost 1, at 20:54, 18 minutes after sunset. A second emergence was recorded from Roost 2 at 21:01, 25 minutes after sunset. The roost was located within multiple gaps along a 3 m stretch of coping stone and gutter. A peak count of one bat was recorded foraging at any one time.

4.3.2 Roost Classifications

Table 5 below, Figure 9, and Photographs 1 and 2 (Appendix D) summarise the locations and classifications of the bat roosts identified on Site.

Table 5 – Summary of Roosts Located at the Site

Roost Reference	Location	Species	Peak count	Roost Classification	Photograph

1	Western aspect of the Main Building, under a barge bound beneath a gable, within the courtyard.	Common pipistrelle	1	Day	1
2	Northern aspect of the Main Building, on the western facia. Gaps between coping stone and gutter along 3 m stretch.	Common pipistrelle	1	Day	2

5.0 Conclusions

5.1 Roosting Bats

The Main Building was assessed during the BRP as having moderate potential for bats, and two roosts were located as a result of the surveys. One (Roost 1) was on the western aspect, and supported a single pipistrelle, which was recorded emerging and returning to the roost during the survey visits. The second roost was located on the northern aspect of the Main Building, adjacent to the 1960's building, where a common pipistrelle was recorded emerging from, and returning to, gaps between coping stone and guttering.

It is anticipated that both roosts support lone male or non-breeding females and are used occasionally. The roosts are, therefore, considered to be of low conservation status. However, mitigation will be required to ensure that no bats are unlawfully disturbed during the proposed renovation works.

The 1980s Building had moderate BRP, whilst the 1960's Building had low BRP for bats. The dusk and dawn surveys did not record any signs of roosting, such that a bat roost was considered likely to be absent. However, bats are mobile animals and often change roost sites on a regular basis and during different times of year, such that there is a risk of future colonisation. As such further surveys may be required should works to the buildings be delayed more than 18 months from the date of the surveys and/ or as a precaution prior to any works/ demolition of the building.

5.2 Impact Assessment

The proposed demolition of the adjoining 1960s Building to the Main Building has the potential to adversely disturb the common pipistrelle roost on the northern aspect of the Building (Roost 2), due to the proximity and connecting corridor, whilst any adverse impact on Roost 2 as a result of the refurbishment of the Main Building is anticipated to result in disturbance to the roost. An EPSL is, therefore, required in order to lawfully allow the proposed works to proceed. Given that the roosts both support low numbers of a common and widespread species of bat, with day roosts most likely supporting a non-breeding female or lone male, such that they are considered to be of low conservation status any adverse impact is considered to be low at a site level.

The Site is currently exposed to artificial security lighting, which is mounted on the buildings, which emit moderate directional light levels. The treelines to the north and west of the Site are unlit, however the treeline on the eastern and southern boundaries are exposed to low light levels from street lighting. it is anticipated that the proposed development to refurbish the Main and 1980s Buildings, will result in increased light levels at the Site without appropriate mitigation in place, such that the scheme should incorporate a sensitive lighting plan to include retaining dark corridors for foraging and connectivity across the Site.

6.0 Recommendations

Recommendation 1 (EPSL)

An EPSL must be obtained from Natural England prior to any works commencing to the Main Building and the demolition of the 1960s Building. This will require adequate mitigation and compensation to be incorporated into the proposed development plan in order to negate any adverse impacts upon bats.

A method statement should be prepared to detail the proposed working methodologies, timetable of works and mitigation measures to minimise the direct impact upon bats. This should include supervision by a licenced bat ecologist, pre-commencement surveys, and sensitive working practices, as appropriate.

Recommendation 2 (Lighting)

To prevent any adverse impact upon the potential roosting, commuting and foraging habitats for bats using the Site, the lighting plan for the Site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). It should be achieved through the use of baffles and screens, if necessary, to ensure no light spill onto retained or planted vegetated corridors. No external lighting should be fitted as standard to the parts of the buildings overlooking the communal areas.

There are several methods by which light can be targeted and light trespass avoided to minimise adverse impacts to bats. Lamps with a low UV component should be used. Insects are particularly sensitive to UV light and are attracted in large numbers to lights with a high UV component. This has the effect of reducing insect availability in adjacent dark areas impacting the ability of light-avoiding bats to forage. Design of the luminaire, the luminaire aiming angles and optical control should be such as to reduce glare. If appropriate, physical barriers such as cowls, hoods, louvers and shields should be considered to avoid light trespass onto vegetative corridors, and, the use of highly directional Light Emitting Diodes (LEDS) should be considered.

Recommendation 3 (Post Development Enhancements)

Following the issue of the revised NPPF (2019), by the Ministry of Housing, Communities and Local Government, *"Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…"* and, therefore, we recommend the following principles of design should be followed:

- Planting should aim to enhance retained or adjacent vegetation and be of native species, or those of known value to wildlife, sourced from local nurseries to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. It is recommended that where trees are planted, they have a functional understorey. A species list of recommended trees and shrubs is provided in Appendix F; and
- Installation of three bat boxes on trees to be retained around the Site. Delta-Simons can provide further advice on the type and locations of bat boxes for the Site if required.

7.0 Limitations

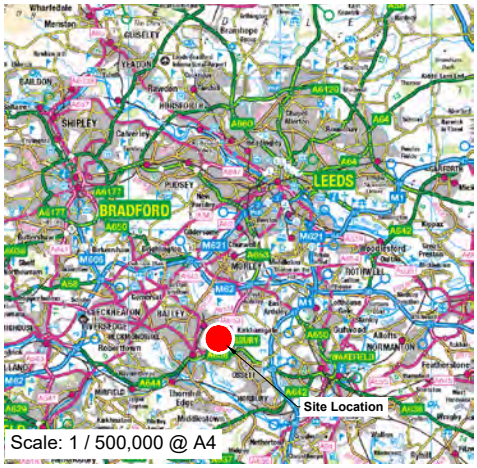
The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 4 of this Report, exercising the duty of care required of an experienced Ecology Consultant.

The behaviour of animals can be unpredictable and may not conform to characteristics recorded in current scientific literature. This Report, therefore, cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable

No part of the survey included an assessment of the materials and conditions of the building. No part of the survey included an asbestos assessment, nor did it represent an appraisal of other deleterious materials or hazardous substances.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 – Site Location Map



LEGEND

Site Boundary

Scale: 1 / 5,000 @ A4

deltasimons
Environment - Health & Safety - Sustainability

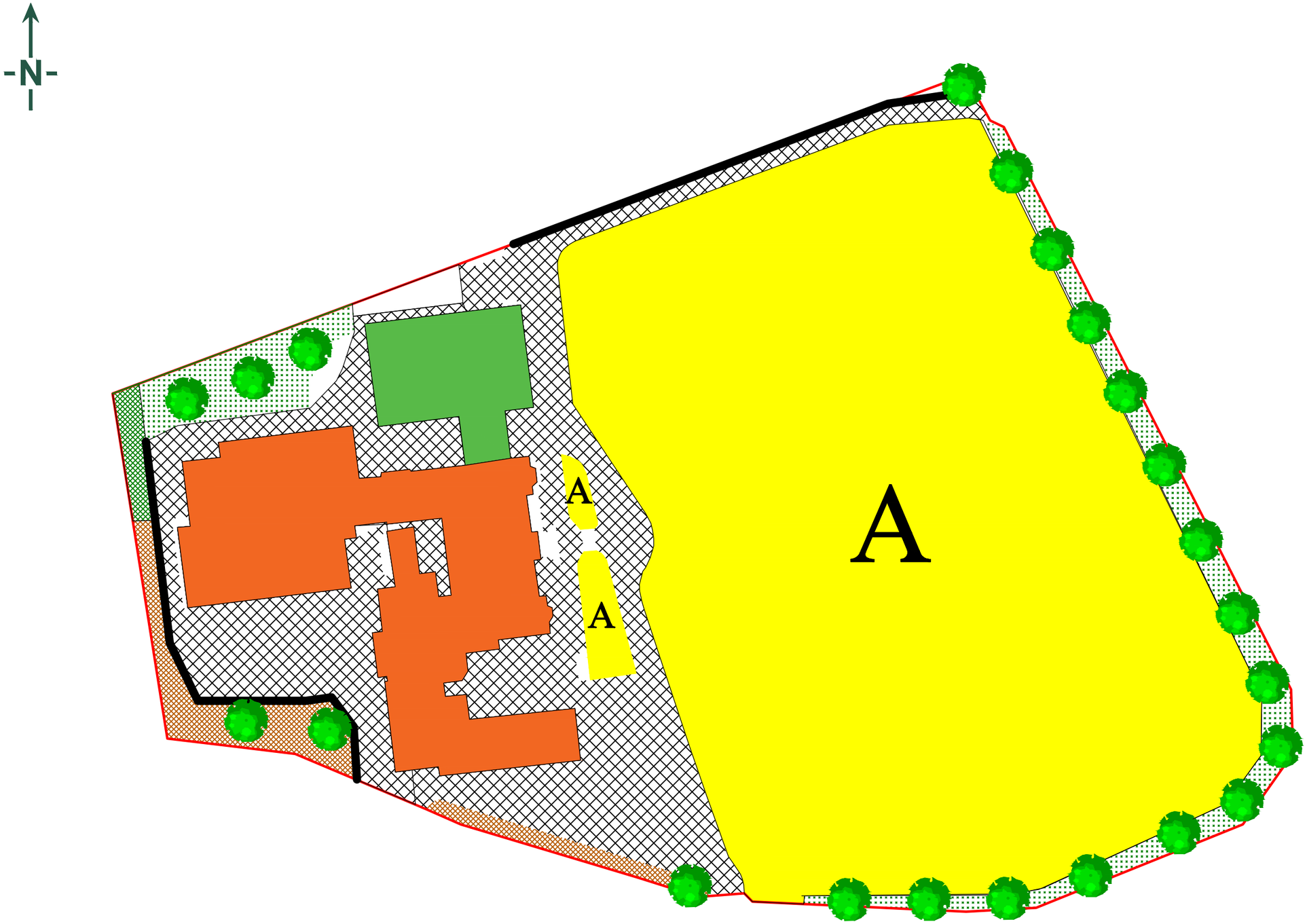
TITLE:
Site Location Map
Wheelwright Centre
Dewsbury

DRAWN BY: RB	SCALE: To Scale@A4
CHECKED BY: PM	REVISION: 1
DATE: 28 May 2019	

PROJECT NO: 19-0651.05

FIGURE NO: 1

Figure 2 – Habitat Survey Plan



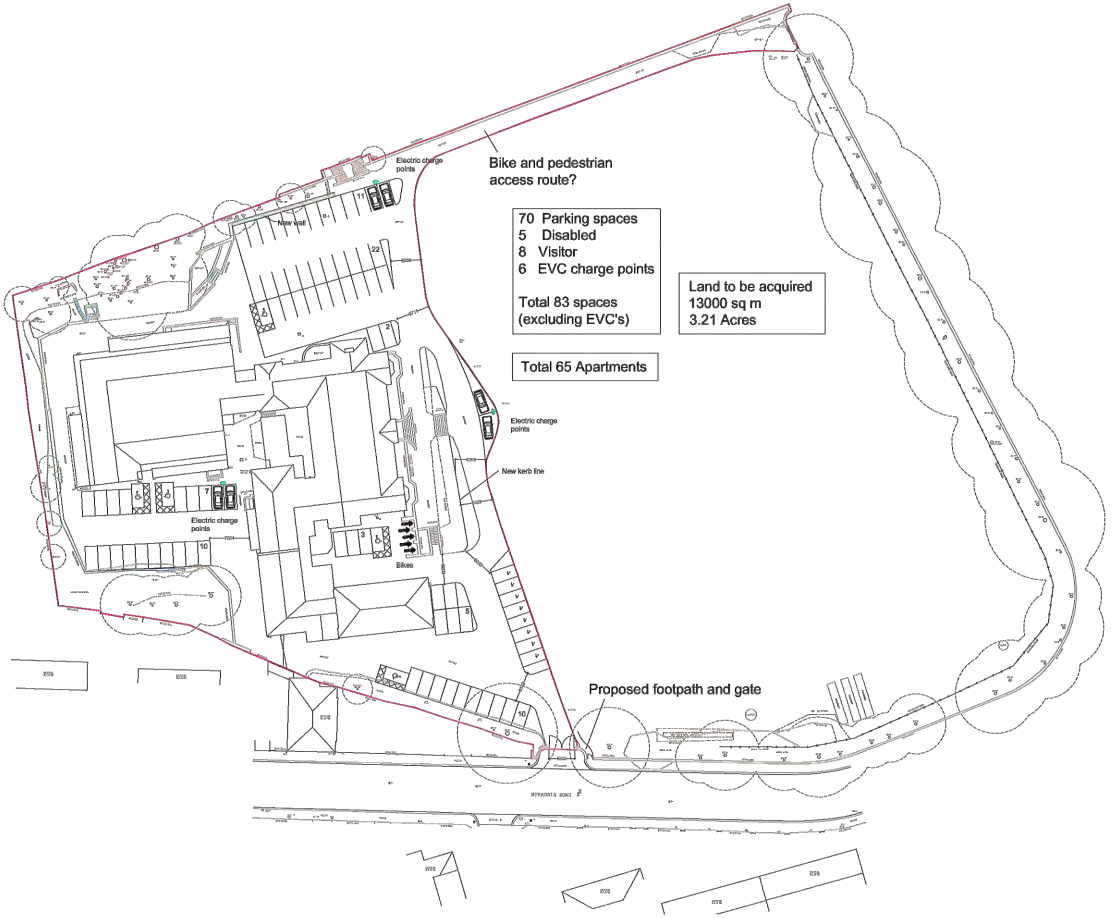
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Phase 1 Habitat Survey Plan
Wheelwright Centre
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.03
CHECKED BY: JS	REVISION: 1	FIGURE NO: 2
DATE: 24 Mayl 2019		

Figure 3 – Proposed Development Plan



NOTES:

Do not scale from this drawing, use figured dimensions only.
It is the Contractors responsibility to check all dimensions on site.
It is the Contractors responsibility to ensure compliance with the Building Regulations.
This drawing is to be read in conjunction with all Structural Engineers drawings.
This drawing is to be read in conjunction with all BDA's relevant drawings and schedules

REVISIONS:

KEY:-

Site Boundary

Rev F 14/06/2019
6no Electric charge points added. Bike and pedestrian route added. RP

Rev E 09/05/2019
Cycles store relocated, parking no's increased. RP

Rev D 07/05/2019
60s Building demolished to provide parking numbers. RP

Rev C 02/05/2019
General update to suit P–01 RP

Rev B 25/04/2019
Parking updated following for planners comments. RP

Rev A 16/04/2019
Parking updated following meeting with Chris Yarrow. RP

CLIENT:	PROJECT:
MMR Construction Ltd.	Residential Conversion
LOCATION:	DRAWING TITLE:
Wheelwright Center, Birkdale Road, Dewsbury WF13 4HG	Site Location Plan

SCALE: 1:1250 @ A4	DRAWN: CB/ RP
DATE: April 2018	CHECKED: AL
DRAWING N°: 321/MMR- P-00f	
A B C D E F	

BECKWITH DESIGN ASSOCIATES LTD
CHARTERED ARCHITECTURAL DESIGN CONSULTANTS
THE STUDIO
53 LEEDS ROAD
BRADFORD
BD1 5AF
Tel: 01274 728683
Fax: 01274 724754
E-mail: admin@beckwithdesign.co.uk
Website: www.beckwithdesign.co.uk

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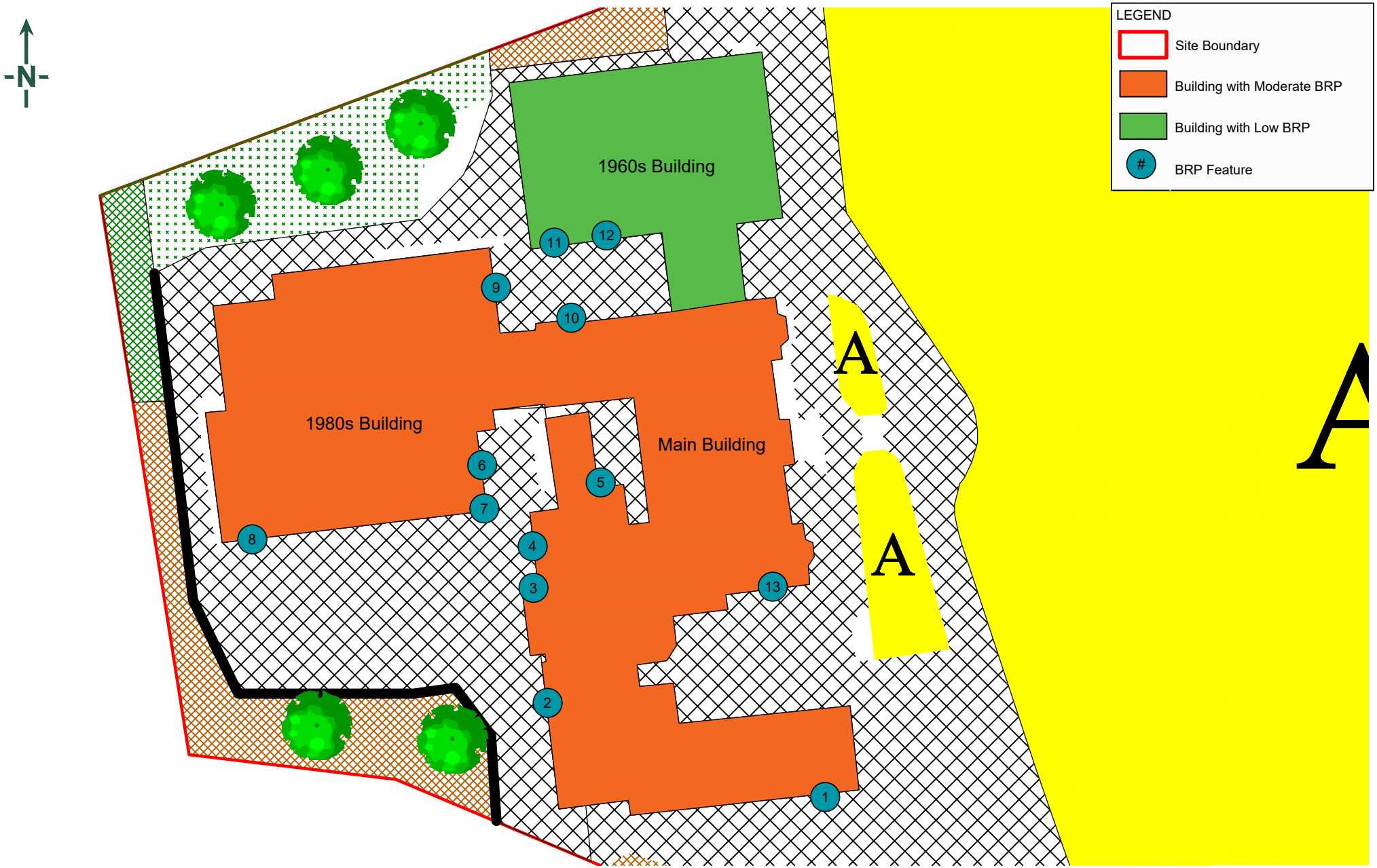
Environment - Health & Safety - Sustainability

TITLE:
Proposed Development Plan
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05	
CHECKED BY: JS	REVISION: 1	FIGURE NO: 3	
DATE: 24 May 2019			

Figure 4 – Bat Roost Potential Assessment



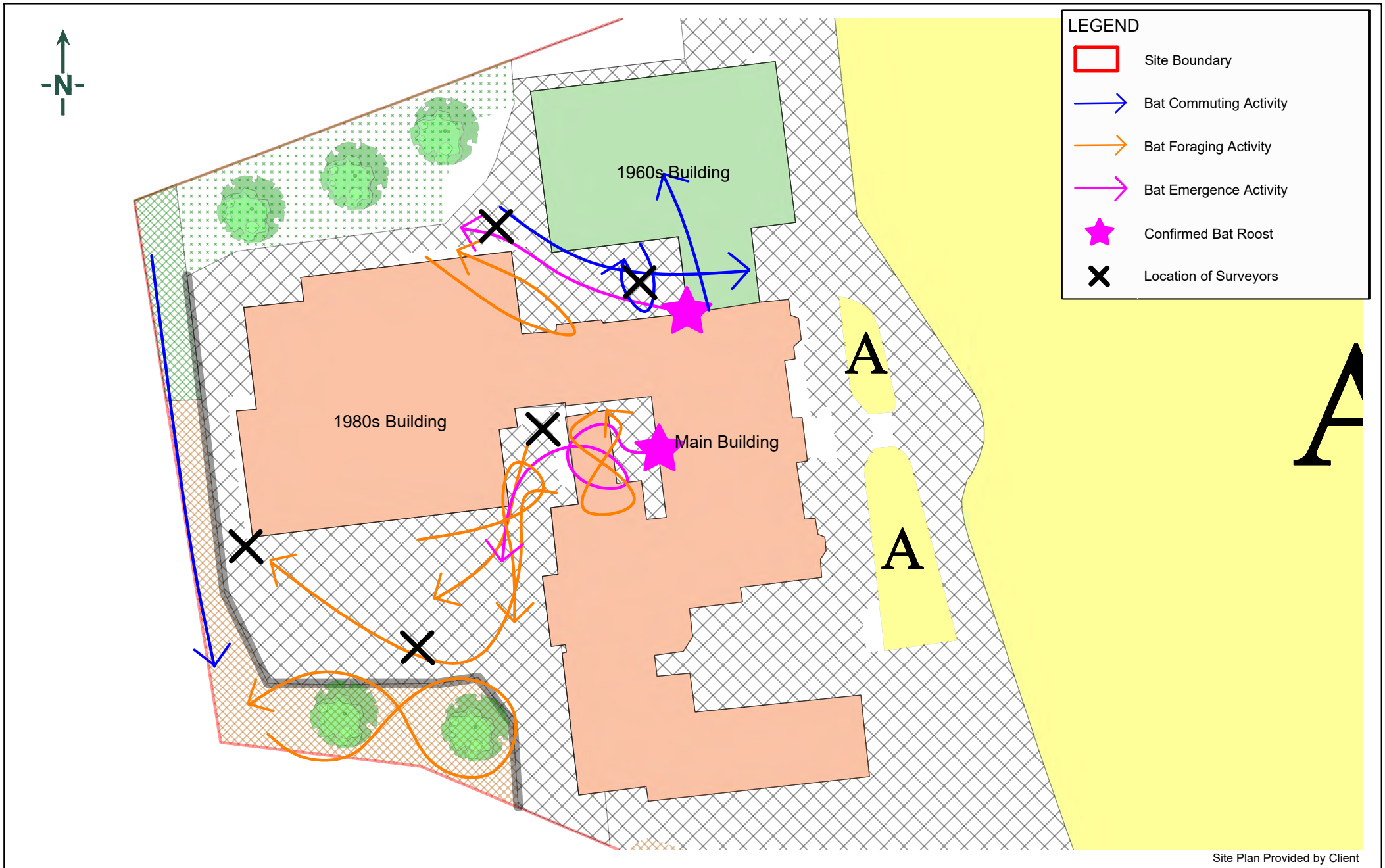
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Results of BRP
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05	
CHECKED BY: JS	REVISION: 1	FIGURE NO: 4	
DATE: 24 May 2019			

Figure 5 – Location of Surveyors and Results of the Dusk Emergence Survey (08/07/2019)



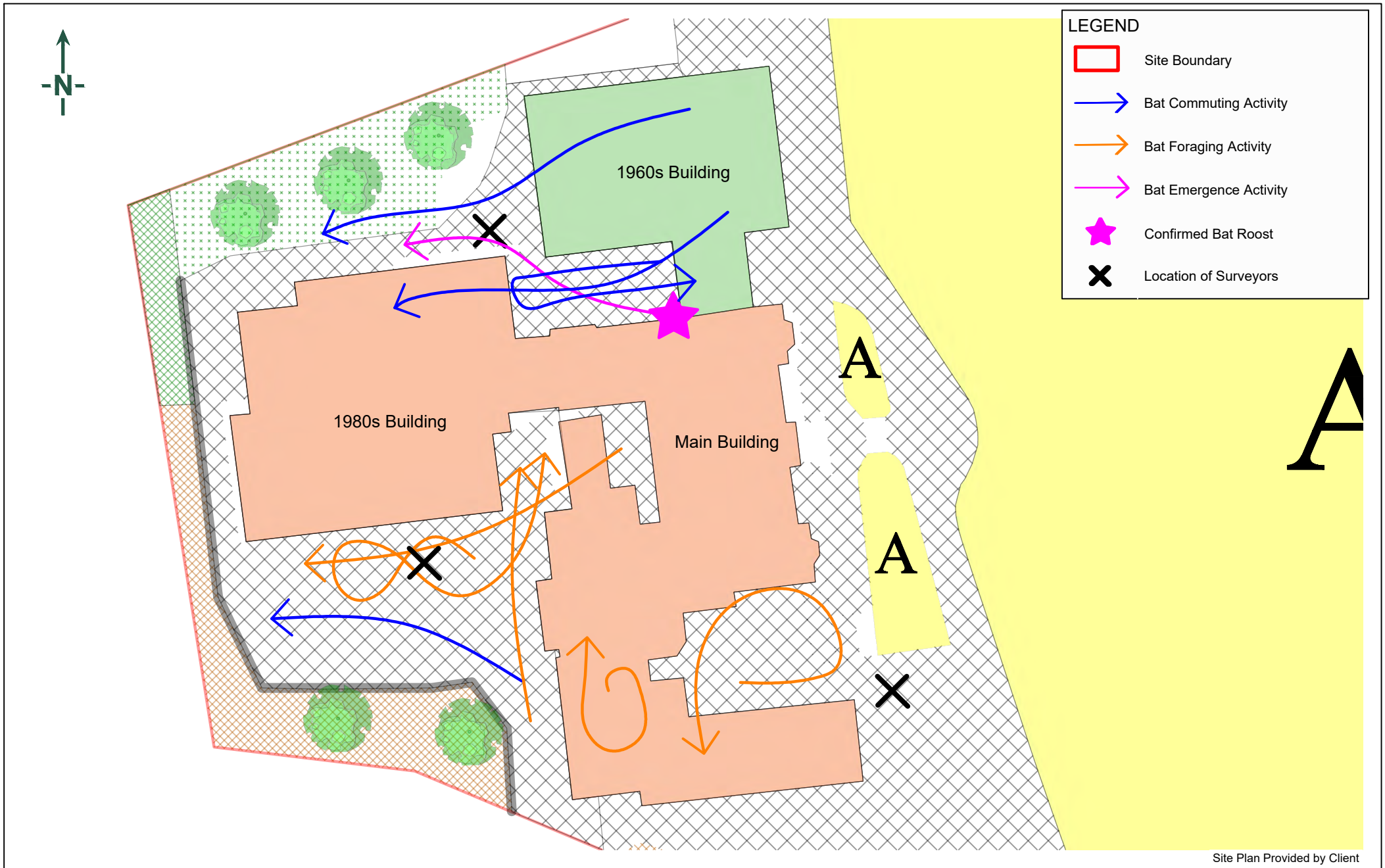
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of Dusk Emergence Survey (08/07/2019)
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05	
CHECKED BY: JS	REVISION: 1	FIGURE NO: 5	
DATE: 24 July 2019			

Figure 6 – Location of Surveyors and Results of the Dusk Emergence Survey (25/07/2019)



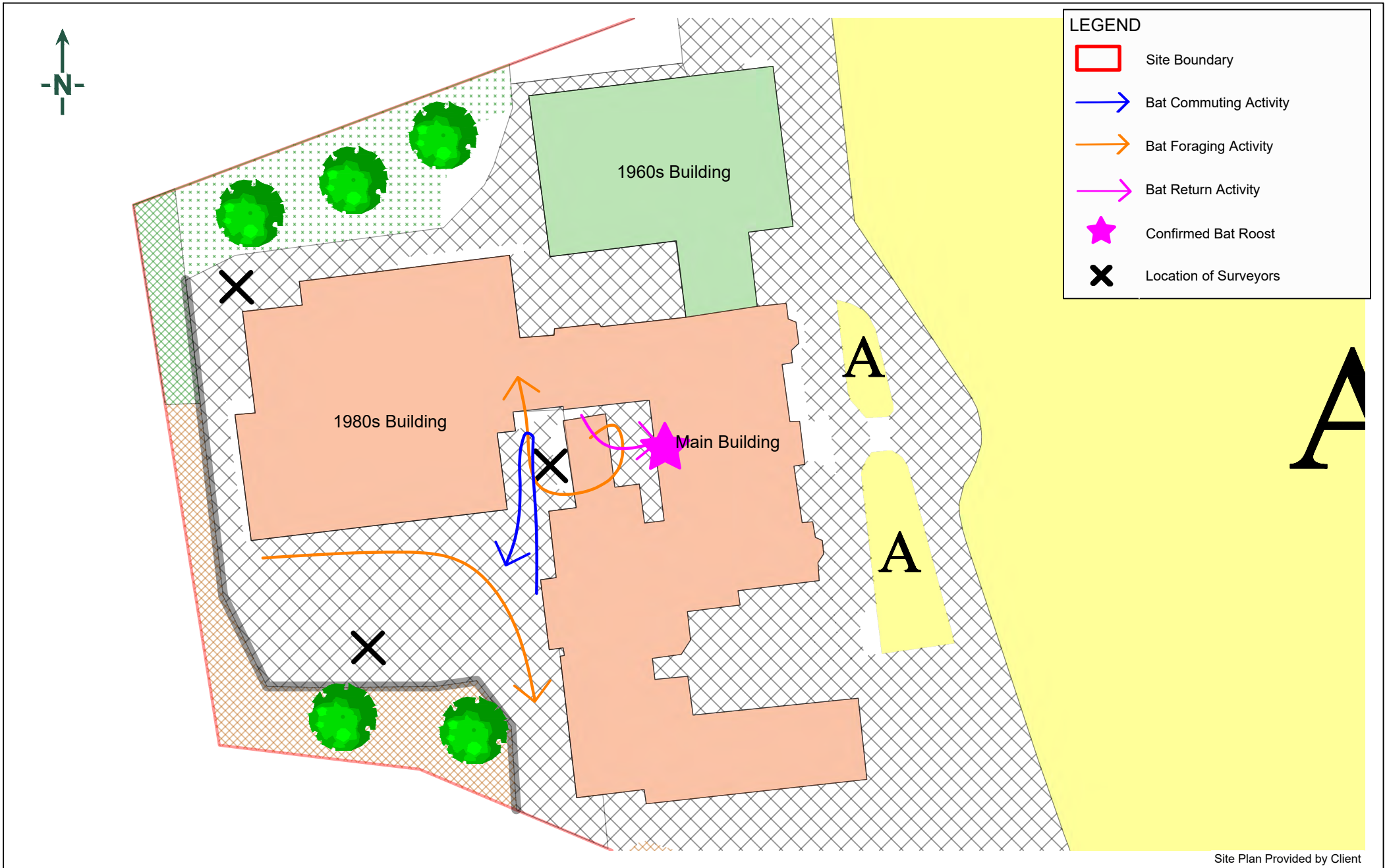
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of Dusk Emergence Survey (25/07/2019)
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05
CHECKED BY: JS	REVISION: 1	FIGURE NO: 6
DATE: 15 August 2019		

Figure 7 – Location of Surveyors and Results of the Dawn Return Survey (26/07/2019)



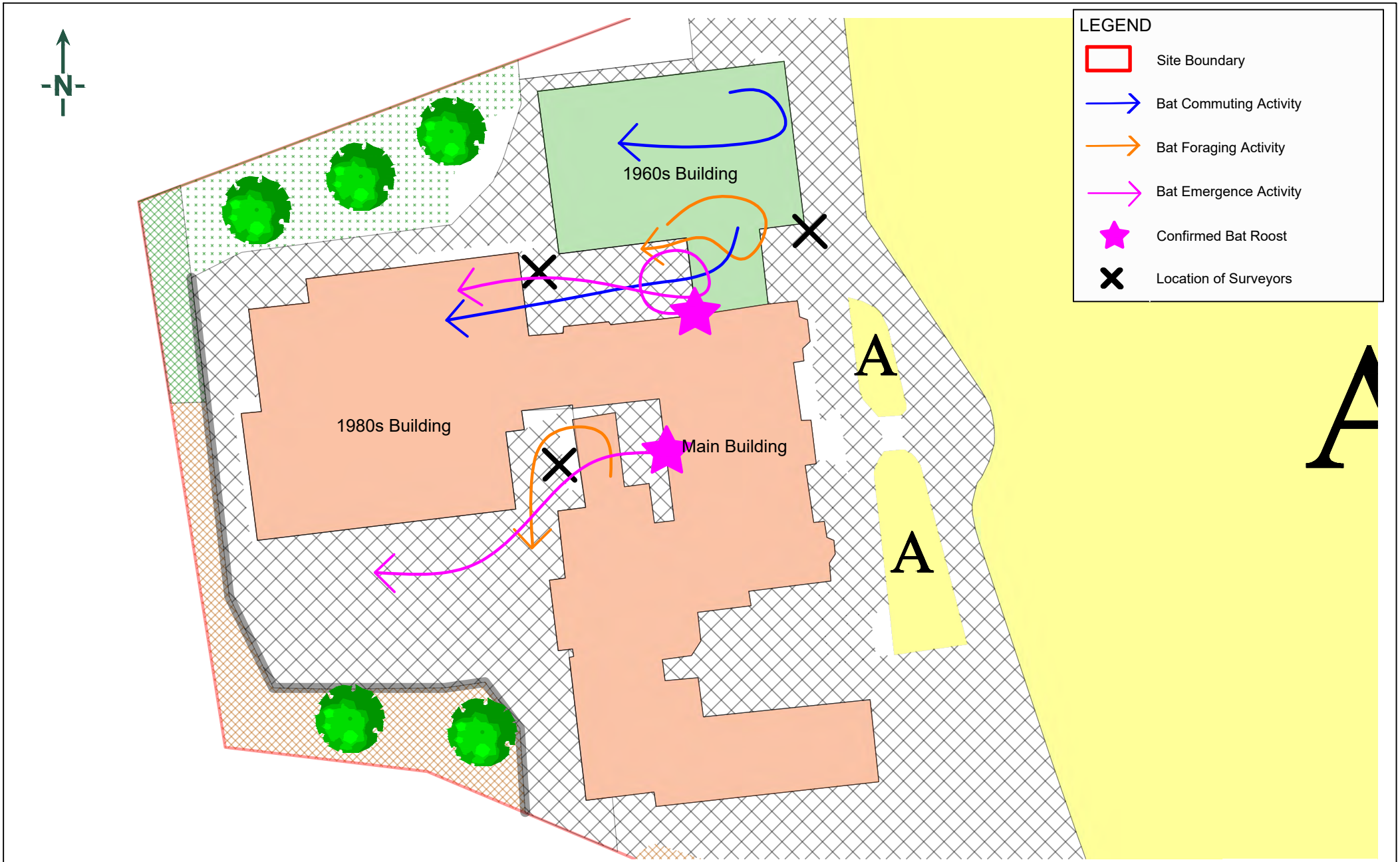
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of Dawn Return Survey (26/07/2019)
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05
CHECKED BY: JS	REVISION: 1	FIGURE NO: 7
DATE: 15 August 2019		

Figure 8 – Location of Surveyors and Results of the Dusk Emergence Survey (15/08/2019)



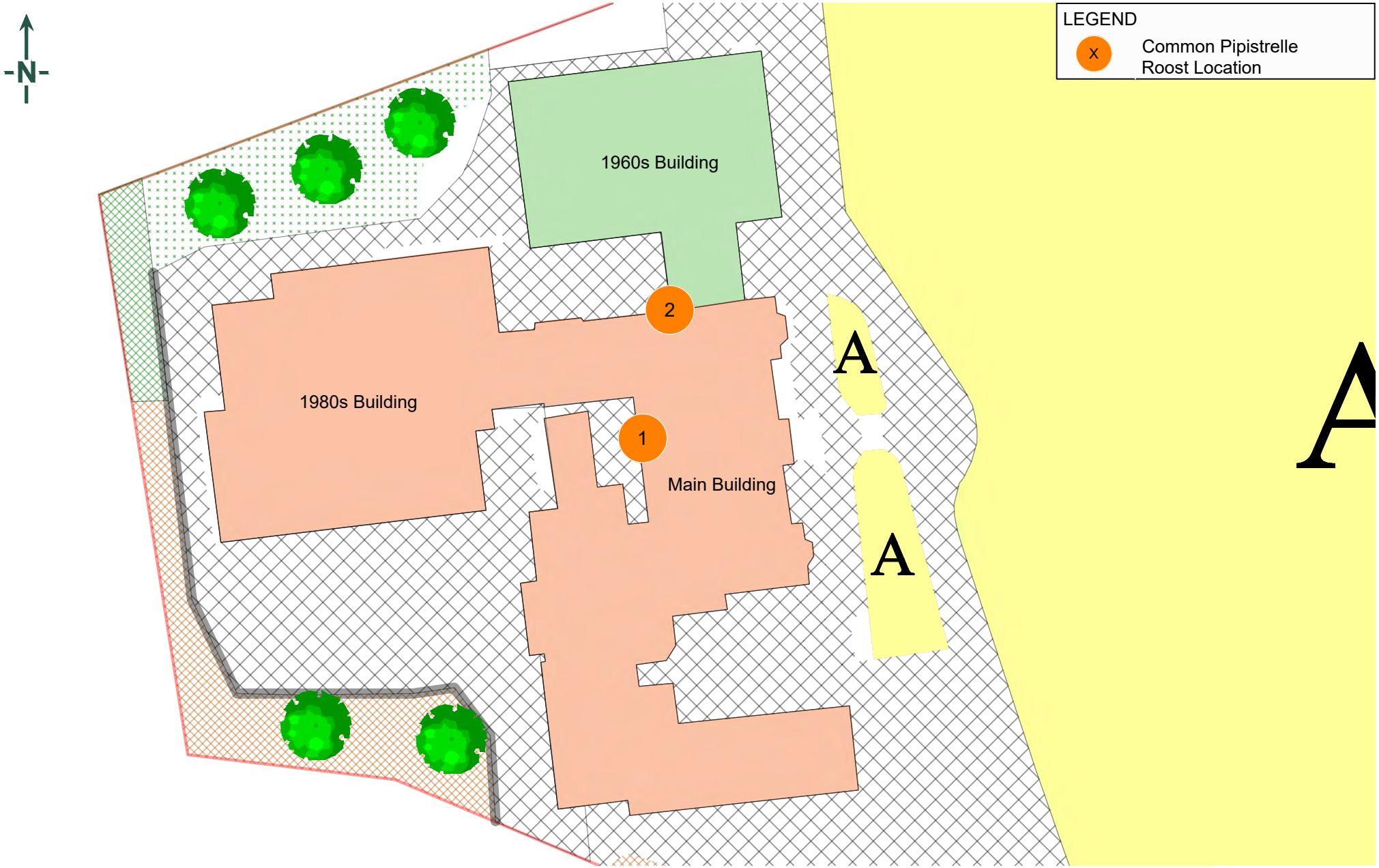
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of Dusk Emergence Survey (15/08/2019)
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale	PROJECT NO: 19-0651.05
CHECKED BY: JS	REVISION: 1	FIGURE NO: 8
DATE: 16 August 2019		

Figure 9 – Location of Roosts



Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Bat Roosts
Wheelwright Survey
Dewsbury

DRAWN BY: CD	SCALE: Not to Scale
CHECKED BY: JS	REVISION: 1
DATE: 16 August 2019	

PROJECT NO: 19-0651.05

FIGURE NO: 9

Appendix A – References

References

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Appendix B – Guidance on Assessing the Potential Suitability of Development Sites to Support Bats

Guidance on Assessing the Potential Suitability of Development Sites to Support Bats

(adapted from Collins, J. (ed) 2016).

Suitability	Description	
	Roosting	**Commuting and Foraging**
Negligible	An inspected structure or tree which is considered to have no features of importance for roosting bats. No further constraints apply to the method or timing of proposed works.	Negligible habitat features on-Site to support commuting or foraging bats
Low	A structure with at least one or more features suitable to support opportunistic individual bats. However, inadequate space, shelter, protection and conditions, and the low suitability of surrounding habitats means that it is unlikely to be used as a maternity or hibernation roost site. A tree of adequate age and stature to support potential roosting features, however, either no features, or only features of limited potential recorded from the ground.	Habitat with potential to support low numbers of commuting bats due to its quality and connectivity. For example, a gappy hedgerow or unvegetated stream that is isolated from the surrounding landscape. Alternatively, suitable but isolated habitats suitable to support low numbers of foraging bats such as a lone tree or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that are of adequate size, shelter and protection, with suitable conditions and surrounding habitat to support a bat roost not of high conservation status (with respect to roost type not individual species conservation status).	Linear habitat continuity connecting to the wider landscape offering potential to support commuting bats, such as rows of trees and scrub or linked back gardens. Habitat such as trees, scrub, grassland or a waterbody with connectivity to the wider landscape offering foraging opportunities for bats.
High	A structure or tree with one or more potential roost sites that are suitable for use by large numbers of bats on a regular basis and for long periods of time due to their size, shelter, protection, conditions and the surrounding habitat.	Continuous high-quality habitat with strong connectivity to the wider landscape that is likely to be used by commuting bats on a regular basis, such as flowing waterbodies, hedgerows, rows of trees and woodland edges. High quality habitat with strong connectivity to the wider landscape that is likely to be regularly used by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to, and connected to, known roost sites

Appendix C – Results of Roost Presence / Absence Surveys

Table 1: Dusk Survey 8th July 2019

Surveyor No.	Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within timeframe	Comments
1	West of Main Building	21:53	Flew west from courtyard along the 1980s Building	P45	Foraging / Commuting	1	
		21:57	Flew from courtyard, north towards 1960s Building	P45	Foraging	1	
2	North of Main Building	21:47	Flew over Main Building, heading north.	Noctule	Commuting	1	
		21:52	Heard, not seen	Noctule	Commuting	1	
		21:55	Heard, not seen	P45	Commuting	1	
		22:14	Foraging over north-east corner of 1980s Building	P45	Foraging	1	
		22:25	Flew north-west to east over 1960s Building	P45	Commuting	2	
		22:27	Heard, not seen	Noctule	Commuting	1	
		22:29	Commuted over Main Building towards 1960s Building	P45	Commuting	1	
		22:36	Commuted over Main Building towards 1960s Building	P45	Commuting	1	
3	Inside courtyard, looking towards 1980s Building	21:37	Possible emergence from Main Building, behind surveyor	P45	Emergence	1	Possibility of a roost in the main building, around windows on the western aspect within the courtyard.
		21:42 – 21:52	Constant foraging behaviour, above courtyard	P45	Foraging	1	
		21:57	Foraging along western aspect of Main Building	P45	Foraging	1	
		22:00	Constant foraging behaviour, above courtyard	P45	Foraging	1	
		22:24	Heard, not seen	P45	Foraging	1	
		22:34	Heard, not seen	P45	Foraging	1	
		22:44	Heard, not seen	P45	Foraging	1	
		22:58	Heard, not seen	P45	Foraging	1	
4	Southern aspect of 1980s building	21:37	Flew west out of the courtyard from the Main Building.	P45	Commuting	1	
		21:42	Foraging along tree line	P45	Foraging	1	
		21:46	Heard, not seen	Noctule	Commuting	1	
		21:49	Heard, not seen	Noctule & P45	Commuting	1	
		21:51	Commuting along tree line, heading south	Noctule	Commuting	1	
		21:52	Commuting along tree line, heading south	Noctule	Commuting	1	
		21:53	Flew from buildings toward the trees	P45	Foraging	1	
		21:54	Heard, not seen	Noctule	Commuting	1	
		21:56	Heard, not seen	P45	Commuting	1	
		21:57	Foraging along tree line	P45	Foraging	1	

		21:59	Foraging along tree line	P45	Foraging	1	
		21:59	Flew towards Main Building	P45	Commuting	1	
		22:14	Flew from the west towards Main Building	P45	Foraging	1	
		22:14	Flew from the west towards Main Building	P45	Foraging	1	
		22:17	Heard, not seen	P45	Foraging	1	
		22:20	Heard, not seen	Noctule	Commuting	1	
		22:22	Heard, not seen	Noctule	Commuting	1	
		22:23	Heard, not seen	P45	Foraging	1	
		22:30	Heard, not seen	P45	Foraging	1	
		22:31	Heading north along tree line	P45	Foraging	1	
		22:32	Heard, not seen	P45	Foraging	1	
		22:34	Heard, not seen	Noctule	Commuting	1	
		22:35 – 22:54	Heard, not seen	P45	Foraging	6	
5	1960s Building, within courtyard	21:47	Emergence from northern aspect of the Main Building	P45	Emergence	1	Security lighting obscured roost location

Table 2: Dawn Survey 9th July 2019

Surveyor No.	Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within timeframe	Comments
1	Inside courtyard, focusing on eastern aspect of 1980s Building	04:16	Heard, not seen	P45	Commuting	1	
2	Southern aspect of Main Building	03:51	Heard, not seen	P45	-	1	
		04:23	Heard, not seen	Noctule	-	1	
		04:34	Heard, not seen	Noctule	-	1	
		04:43	Heard, not seen	Noctule	-	1	
3	Southern aspect of 1960s building, with back to Main Building	-	-	-	-	-	-
4	Eastern aspect of 1960s building, including Main Buildings northern aspect.	04:23	Heard, not seen	Noctule	-	1	

Table 3: Dusk Survey 25th July 2019

Surveyor No.	Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within timeframe	Comments
1	Western aspect of Main Building, excluding courtyard	21:46	Heard, not seen	Noctule	Commuting	1	
		21:47	Flew over Main Building	P45	Commuting	1	
		21:48	Flew into courtyard	P45	Foraging	1	
		21:50	Foraging over carpark	P45	Foraging	1	
		21:54	Foraging over carpark, then flew south	P45	Foraging	2	
		21:57	Flew out of courtyard	P45	Foraging	1	
		22:04 – 22:06	Heard, not seen.	P45	Foraging	6	
		22:08	Flew along western aspect of Main Building	P45	Commuting	1	
		22:10	Flew along western aspect of Main Building	P45	Commuting	1	
		22:12 – 22:15	Socialising over carpark	P45	Socialising	3 bats	
		22:15	Flew into courtyard	P45	Foraging	1	
		22:17	Heard, not seen	P45	Foraging	1	
		22:18	Heard, not seen	P45	Foraging	3	
		22:21 – 22:22	Heard, not seen	P45	Foraging	5	
		22:23	Heard, not seen	P45	Socialising	2	
		22:25 – 22:30	Heard, not seen	P45	Foraging	15	
		22:32	Heard, not seen	P45	Foraging	1	
		22:34	Heard, not seen	P45	Foraging	1	
		22:42 – 22:45	Heard, not seen	P45	Foraging	14	
2	Eastern aspect of Main Building	21:34	Heard, not seen	Noctule	Commuting	1	
		21:38	Heard, not seen	Noctule	Foraging	1	
		22:03	Heard, not seen	P45	Commuting	1	
		22:10	Heard, not seen	P45	Foraging	2	
		22:13	Heard, not seen	P45	Foraging	1	
		22:17	Heard, not seen	P45	Foraging	3	
		22:26	Heard, not seen	P45	Foraging	1	
		22:29 – 22:39	Heard, not seen, continuous	P45	Foraging	1	

		22:37	Heard, not seen	Noctule	Foraging	1	
3	West of 1960s Building	21:31	Over the 1960s Building, heading west along tree line	Noctule	Commuting	1	
		21:36	Emerged from the Main Building	P45	Emergence	1	
		21:38	Heard, not seen	Noctule	Commuting	1	
		21:47	Heard, not seen	Noctule	Commuting	1	
		21:51	Heard, not seen	P45	Foraging	1	
		22:04	Heard, not seen	Noctule	Commuting	1	
		22:08	Flew between buildings	P45	Commuting	1	
		22:09	Flew between buildings	P45	Commuting	1	
		22:13	Heard, not seen	P45	Foraging	1	
		22:14	Heard, not seen	P45	Foraging	1	
		22:14	In trees, west of 1960s extension	P45	Foraging	1	
		22:20	Heard, not seen. Continuous	P45	Foraging	1	
		22:27	Flying low in courtyard	P45	Foraging	1	
4						1	

Table 4: Dawn Survey 26th July 2019

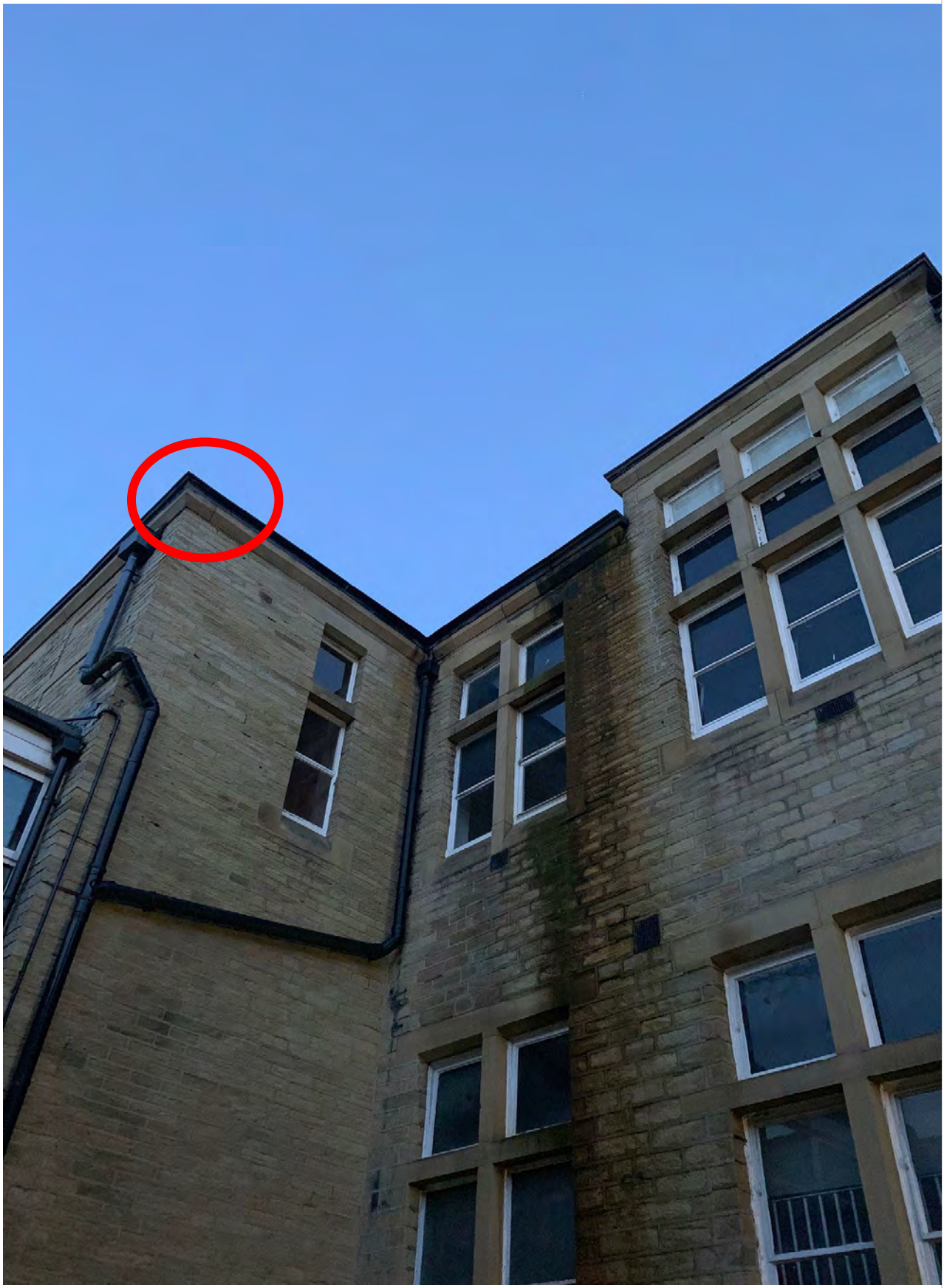
Surveyor No.	Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within timeframe	Comments
1	Western aspect of Main Building, within courtyard	03:41 – 03:42	Heard, not seen	P45	Foraging	5	
		03:50 – 03:59	Heard, not seen	P45	Foraging	7	
		04:07	Heard, not seen	P45	Foraging	1	
		04:14	Foraging in courtyard	P45	Foraging	1	
		04:24	Foraging in courtyard, and then south.	P45	Commuting	1	
		04:26 – 04:28	Foraging in courtyard, and then south.	P45	Commuting	3	
		04:30	Foraging in courtyard, and then north.	P45	Commuting	2	
		04:30	Heard, not seen	Noctule	Commuting	1	
		04:30	Foraging in courtyard, and then north.	P45	Commuting	1	
		04:37	False returns within courtyard, around bottom of roof above windows.	P45	False Returns	4	
		04:48	Roost return to gable on western aspect, under barge board.	P45	Return to Roost	1	
2	Western aspect of Main Building, in carpark	03:41	Heard, not seen	P45	Foraging	1	
		04:14	Heard, not seen	P45	Foraging	1	
		04:28	Circling above carpark	P45	Foraging	2	
3	North-west corner of the 1980s Building	03:45	Heard, not seen	P45	-	1	
		03:50	Heard, not seen	P45	-	1	
		03:55	Heard, not seen	P45	-	1	
		03:56	Heard, not seen	P45	-	1	
		03:59	Heard, not seen	P45	-	1	
		04:04	Heard, not seen	P55	-	1	
		04:34	Heard, not seen	P45	-	1	

Table 5: Dusk Survey 15th August 2019

Surveyor No.	Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within timeframe	Comments
1	Northern aspect of Main Building	21:01	Emerged from western face of northern aspect, several gaps along a 3 m stretch of coping stone. Flew off west	P45	Emergence	1	
		21:07	Flew through courtyard, to the north-west	P45	Commuting	1	
		21:10	Heard, not seen	P45	Foraging	1	
		21:15	Heard, not seen	P45	Foraging	1	
		21:22	Heard, not seen	P45	Foraging	1	
		21:32	Heard, not seen	P45	Commuting	1	
		21:39	Heard, not seen	P40	Commuting	1	
		21:52	Heard, not seen	P45	Commuting	1	
2	Western aspect of Main Building	21:01	Seen, not heard over courtyard, possible emergence	P45	Emergence	1	
		21:10	Foraging in courtyard	P45	Foraging	1	
		21:15	Commuting west to east then back over 1960s Building	P45	Commuting	1	
3	Western aspect of Main Building, within courtyard	20:54	Emerged from known roost on the western gable	P45	Emergence	1	
		21:31	Circling around courtyard	P45	Foraging	1	
		21:39	Heard, not seen	P45	Socialising	1	
		21:45	Heard, not seen	P45	Foraging	1	
		21:47	Heard, not seen	P45	Foraging	1	

Appendix D – Site Photographs

Photograph 1 – Common pipistrelle roost on western aspect of Main Building



Photograph 2 – Common pipistrelle roost on northern aspect of Main Building