



Projex Building Solutions

Broad Street Mall, Reading

BAT SURVEYS

August 2017

FPCR Environment and Design Ltd

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1.0 INTRODUCTION

- 1.1 This bat survey report has been prepared by FPCR Environment and Design Ltd on behalf of Projex Building Solutions. The report provides the results from an initial assessment of the potential presence of bat roosts at a Shopping Mall site located on Broad Street, Reading, Berkshire (referred to herein as ‘the site’) followed by details of further nocturnal surveys undertaken as a result of the findings of the initial daytime bat survey.

Site Context

- 1.2 The survey site comprised a multi-storey shopping mall, with associated ground-level walkways and a small number of pitched roof buildings that are currently let out to private companies located in Reading City Centre (*Figure 1*; Central Ordnance Survey Grid Ref: SU 7123 7336). The site was surrounded by urban areas of Reading city centre, which included some scattered areas of open space and also the River Kennet to the south.

Development Proposals

- 1.3 The survey was commissioned in order to identify any potential ecological constraints relating to the proposed redevelopment of the existing building to residential and new commercial use. The footprint of the main existing building (Area A, *Figure 2*) will remain largely unchanged, with the current building being developed vertically in order to provide new residential dwellings. The complex of smaller buildings in the south-eastern corner of the site will be demolished to provide land to develop a new entertainment complex (Area B, *Figure 2*).
- 1.4 This report provides the findings of initial survey and makes recommendations, mitigation, compensation and enhancement as appropriate.

2.0 METHODOLOGY

Desk Study

- 2.1 In order to compile existing baseline information, Thames Valley Environmental Records Centre was consulted for existing records of bats within 1km of the development area boundary
- 2.2 The search area for biodiversity information was related to the significance of the site, species and potential zones of influence, as follows;
- 5km around the survey site for sites of international importance (e.g. Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site);
 - 2km around the survey site for sites of National or Regional importance (e.g. Sites of Special Scientific Interest (SSSI); and
 - 1km around the survey site for sites of County or Local importance (e.g. Local Nature Reserves (LNR) and Local Wildlife Sites (LWS)).
- 2.3 Further inspection, using the 1:25,000 Ordnance Survey base maps and aerial photographs was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

Field Survey

Bats

Building Assessment

- 2.4 The building on site was visually assessed for potential access points and evidence of bat activity according to the Bat Conservation Trust's Good Practice Guidelines¹ on 21st February 2017 by a licensed bat ecologist and an assistant. Suitable access points/roost sites could include small gaps in barge/soffit/fascia boards, expansion joints, raised or missing tiles and gaps at gable ends. Evidence that potential access points/roost sites were actively used includes staining within gaps and bat droppings or urine staining under gaps. Indicators that potential access points/roost sites were likely to be inactive included the presence of cobwebs and general detritus within the access.
- 2.5 The interior of the building, including roof voids where present, were also visually assessed for evidence of bat activity and/or for the potential to be used by bats. Evidence of a roost was determined as the presence of a dead or live bat, concentrated piles or scattered droppings, food remains such as insect wing fragments as well as scratch marks and/or staining.
- 2.6 The internal/external surveys were undertaken by a Natural England Class Licence level III holder (Reference Number: 2015-14965-CLS-CLS).

Constraints

- 2.7 Due to the roof void of the Army recruitment centre being inaccessible at the time of survey, it was not possible to fully discount the presence of roosting bats from the internal and external survey alone.

¹ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Nocturnal Surveys

- 2.8 Two nocturnal bat surveys were undertaken by suitably experienced ecologists including a licensed bat worker (Natural England Licence number CLS03450). Two of the nocturnal surveys were undertaken within the optimal bat season (May to August)¹ on buildings within the site. During the survey, the surveyors were positioned in strategic locations (*Figure 3*), to cover every aspect of the roof with bat access points present. Surveys took place from at least 15 minutes prior to and up to two hours following sunset (dusk survey), or at least 1.5 - 2 hours prior to and 15 minutes after sunrise (dawn survey) according to current guidance. This methodology takes into account the statutory guidance from Natural England² and further guidelines introduced by the Bat Conservation Trust¹.
- 2.9 The survey was undertaken when weather conditions were suitable i.e. when the ambient air temperature exceeded 10°C and when there was little/no wind or rain. Wildlife Acoustic Inc. Echo Meter Touch bat detectors were used in conjunction with Echo Meter Touch app and Apple Inc. iPad during the surveys, to provide back-up information and enable identification of bat encounters during and after survey.
- 2.10 *Table 1* below provides details of weather conditions for each nocturnal survey occasion.

Table 1: Survey Conditions

Date	Sunrise/ Sunset	Start Time	End Time	Start/End Temp (°C)	Wind	Rain	Cloud (% cover)
25/05/2017	21:03	20:48	23:03	25/17	Slight breeze occasionally	None	5
04/07/2017	04:53	02:53	05:08	16/13	None	None	30

² Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. [online]. Peterborough: English Nature. Available at: <http://publications.naturalengland.org.uk/publication/69046> [Accessed 13/07/2017]

3.0 RESULTS

Desk Study

- 3.1 Following consultation, no records of protected species were returned from within the site boundary. The records returned were a mixture of observation types from three common genera (*Pipistrellus*, *Myotis* and *Nyctalus*). A number of records of *Myotis* bat species *Myotis* sp., Daubenton's bat *Myotis daubentonii* noctule bat *Nyctalus noctula*, unidentified pipistrelle bat species *Pipistrellus* sp., common pipistrelle bat *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* were returned from within the 1km search area. These consisted of a mixture of visual field observations, grounded bat records and roost emergence records.
- 3.2 The most recent record of these was from 2005 (common and soprano pipistrelle bats heard on a bat detector) and the closest records were a *Myotis* bat species, a noctule bat, a common pipistrelle and a soprano pipistrelle record all from 2015; these were located approximately 50 meters due west of the site boundary. There were also two common pipistrelle records from 2009 approximately 110 meters to the east; all within the urban area Reading City Centre
- 3.3 Three LWS's were identified within 1km of the site boundary. These included Holy Brook, River Kennet-Kennet and Avon Canal and Cow Lane Depot. None of these sites were designated for their importance to bats, and the closest of these was Holy Brook which lay to the south of the site approximately 400 meters away.).
- 3.4 There were no SSSIs, SPA, SAC or Ramsar sites within the search area.

Field Survey

- 3.5 The location of all buildings are illustrated in *Figure 2* and representative photographs and building descriptions are provided in *Appendix 1 & 2*.

Mall, Offices & Car Park (Area A, Figure 2)

- 3.6 The building was predominantly multi-storey with varying level zones consisting of commercial use.

Main Shopping Mall

- 3.7 The main shopping centre and associated multi-storey car park (Area A, Figure 2) was constructed from concrete with flat roof areas (Photographs 1-6). Externally, the concrete walls of the main complex were in excellent condition, with an absence of any cracks or cervices that might be considered suitable access points or roosting features for bats. There were areas of the car park wall with holes designed in the concrete which went through to the multi-storey car parking area as an artistic feature. These features represented potential points of access for bats into the 24-hour illuminated car parking area, but did not allow access into any cavity wall area or other features that may be considered suitable for roosting.
- 3.8 The other external walls of the main complex were in excellent condition with a number of surfaces (in particular the northern and eastern aspects) embodied with shop-front cladding. Where present the cladding was all in excellent condition and well-sealed, with no suitable access points or roosting spaces. There were small areas with gaps present on the southern aspect of the mall where the main complex joined the nightclub building and small gaps were present in the brickwork at the eaves.

- 3.9 Internally the main complex consisted of a multi-storey car park which was constructed of concrete and did not contain any suitable areas to support roosting bats. This area was illuminated 24-hours a day and was a noisy environment with various plant equipment present. The main shopping mall had no suitable areas to support roosting bats, as roof voids were absent.

Fountain House and Quadrant House

- 3.10 There were two commercial office blocks present on the roof of the main complex; the western one (*Fountain House, Photograph 4, Figure 2*) was a large multi-storey office block and the eastern one (*Quadrant House, Photographs 5 and 7, Figure 2*) was a combined one and two storey concrete structure with central tower. Fountain House will remain unaffected by the development proposals whilst Quadrant House will be redeveloped as part of the masterplan. Externally, the roof surfaces were in excellent condition with minimal gaps observed at edges of roof coverings on Quadrant House, however on closer inspection with an endoscope these did not extend beyond a few millimetres into the structure and provided no suitable roosting for bats.
- 3.11 No roof voids were present in the Fountain House or Quadrant House office blocks and no suitable areas for roosting bats were present internally.

Pitched Roof Complexes

- 3.12 To the south of the complex were a number of additional buildings within the redline boundary of the development (*Area B, Figure 2*). These included a two-storey brick-built structure being used as a nightclub and two outhouses used by the Army recruitment centre on St Mary's Butts (*Photographs 7-12, Figure 2*).

Nightclub

- 3.13 The nightclub building was a brick-built two-storey structure with a pitched corrugated metal roof. The northern end of the ridge had a gap underneath that had the potential to permit bat access under the roof. Externally the brickwork of the nightclub was in excellent condition with the exception of the small area mentioned above where the northern aspect of the building joined the main mall complex, and a small gap was present between the two structures. A strip of lead flashing was present along the pitched roof at this point and at the ridge there was a small area of lifted flashing that had the potential to permit bat access underneath, but did not appear to extend very far thereafter.
- 3.14 Internally the nightclub roof void had been converted into part of the venue and so no roof void was present. A basement area was present but this was used on a daily basis as a store and refrigeration room for the bar area on the ground floor. No evidence of bats was present and no gaps suitable for bats to enter the area were present.

Army Recruitment Centre

- 3.15 The outbuildings of the army recruitment centre adjacent to the nightclub consisted of two pitched roofed outbuildings; one was a two-storey and the other was a single storey structure.
- 3.16 The two storey structure was attached on the eastern aspect to the nightclub and on the northern aspect to the shopping mall. It was a brick built structure with areas of wooden cladding on the eastern and southern aspects; however this wooden cladding was in good condition and well-sealed with no obvious cracks or crevices. This building had a pitched roof with pan tiles and there were a

number of slipped and missing tiles in association with this roof which provided potential bat access points and roosting locations. There was a glass window in the roof void on the upper part of the southern gable end which allowed light into the roof space, making the internal space of the void less suitable for roosting bats due to the increased light levels. This gable end had hanging slates present with a number of gaps present in association with these which provided potentially suitable bat access points. Below this was a small roof pitch facing south with a pan-tile covering that met with the balcony area of the nightclub courtyard area. This feature also had a small number of slipped and missing tiles present which allowed bat access beneath the tiles.

- 3.17 The small single-storey structure was brick-built and was attached on the western aspect to the two-storey building. It had a small single pitched slate roof and area of flat roof with bituminous felt both of which were in good condition. No suitable features for bats was observed in association with this single storey outbuilding.
- 3.18 Internally the two-storey outbuilding of the army recruitment centre had two large open rooms, with a staircase leading to the upper floor, which not accessible at the time of survey, and therefore the roof void could not be inspected for evidence of bats.

Nocturnal Surveys

- 3.19 In order to confirm presence/absence of bats using potentially suitable bat roosting features, nocturnal surveys were undertaken. The details and weather conditions per survey occasion are provided in *Table 1*. The results for each survey occasion are summarised below.
- 3.20 Throughout both surveys the roofs were illuminated with artificial light, in particular the southern and eastern aspects. Furthermore, roost suitability was also lowered, due to the high volume music from Eva's nightclub, played throughout the dusk survey.

Dusk Emergence Survey – 25th May 2017, 20:48 – 23:03

- 3.21 During the survey, no bats were seen emerging from the building.
- 3.22 The first bat recorded was a commuting common pipistrelle *Pipistrellus pipistrellus* at 21:37, flying around the western aspect of the roof. Bat activity was limited to a few bat passes throughout the survey, comprised of common pipistrelles and a single noctule *Nyctalus noctula* commuting over the roof at 22:06.
- 3.23 The eastern aspect (*Figure 3 -Surveyor 3*) of the building recorded a greater frequency of bat registrations, as well as a wider species diversity including common pipistrelle, soprano pipistrelle, noctule, serotine, *Myotis* sp., *Nyctalus* sp. and *Plecotus* sp. This is likely to be due to the surrounding trees and a patch of established semi-improved grassland south-east from the building, supporting insect populations, providing foraging opportunities grounds for these bat species (Photographs 13 & 14, Appendix 1).

Dawn Re-entry Survey – 4th July 2017, 02:53 – 05:08

- 3.24 During the survey, no bats were seen re-entering from the building.
- 3.25 The first bat recorded was a noctule at 02:54, commuting over the roofs. Additional bat activity was restricted to a single common pipistrelle pass at 02:56 on the eastern aspect of the building. No other bat activity was recorded during the survey

4.0 DISCUSSION AND RECOMMENDATIONS

- 4.1 All species of bats are listed on the Conservation of Habitats and Species Regulations 2010 (as amended) making it illegal to deliberately disturb any such animal or damage/destroy a breeding site or resting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or protection or disturb any animal whilst they are occupying such a place of shelter or protection.
- 4.2 Information from the consultation exercise returned a number of common bat species in the area, although no records were from within the site boundary. The records returned were a mixture of observation types from three common genera (*Pipistrellus*, *Myotis* and *Nyctalus*). Given the city centre location together with the nature of the development, it is considered highly unlikely that the development will have any impact on the local bat populations.
- 4.3 During the internal and external surveys of the buildings, no evidence of any bat roost type was found. The main shopping mall structure (Area A) was considered to have negligible potential to support roosting bats due to the lack of suitable roosting opportunities and access points. The office blocks on the roof of the mall (Fountain House and Quadrant House) were in good condition with no suitable bat roosting opportunities. Given the rest of the building areas are considered to have negligible potential to support roosting bats, no further surveys or mitigation are considered necessary on the remainder of Area A.
- 4.4 The buildings located within Area B contained a small number of potential bat roosting opportunities, these included
- The connecting wall area between the nightclub roof and the wall of the shopping mall;
 - The ridges of the nightclub roof; and
 - The pitched roof areas of the two-storey army recruitment building.
- 4.5 Given the number of available access points and potential roosting locations, the building complex within Area B was considered to have moderate potential to support roosting bats.
- 4.6 Nocturnal surveys were undertaken on the buildings within Area B, as these were identified as having moderate roosting opportunities, during which no bats were recorded emerging or re-entering any of the structures, indicating no roosts were present.
- 4.7 The loud music, continuous lighting, which includes some strobe lighting, reduces the suitability of the features for roosting bats.
- 4.8 The increased frequency and diversity of bats was recorded on the dusk survey on the eastern aspect of the building (*Figure 3 - Surveyor 3*), is likely to be a result of the more natural habitats consisting of trees and established semi-improved grassland. This area was notably darker and quieter than around the buildings themselves, providing foraging opportunities.
- 4.9 The absence of any roosting bats would conclude that the demolition works can take place, with bats posing no statutory constraints. In the event that bats are found during the demolition works of the pitched roof complexes (Area B), all works must stop and an ecologist should be contacted immediately. Further demolition works would be completed under supervision by a suitably experienced ecologist under a Natural England Licence.

- 4.10 If demolition works have not commenced by Spring 2019, further surveys will be required to confirm the continued absence of roosting bats.
- 4.11 It is recommended that consideration should be given where possible to the provision of additional bat roosting opportunities as an enhancement to the completed development. This could include some additional roosting opportunities as part of the fabric of the built development.

Appendix 1 – Photographs



Above: Photographs 1 and 2 showing the southern aspects of the Mall and multi-storey car park



Above: Photographs 3 and 4 looking towards Fountain House on the rooftop car park



Above: Photographs 5 and 6 looking towards Quadrant House across the multi-storey car park



Above: Photographs 7 and 8 showing the two pitches of the Army recruitment 2-storey outhouse



Above: Photographs 9 and 10 showing the two pitches of the Army recruitment 2-storey outhouse and the single-storey outhouse with flat roof section



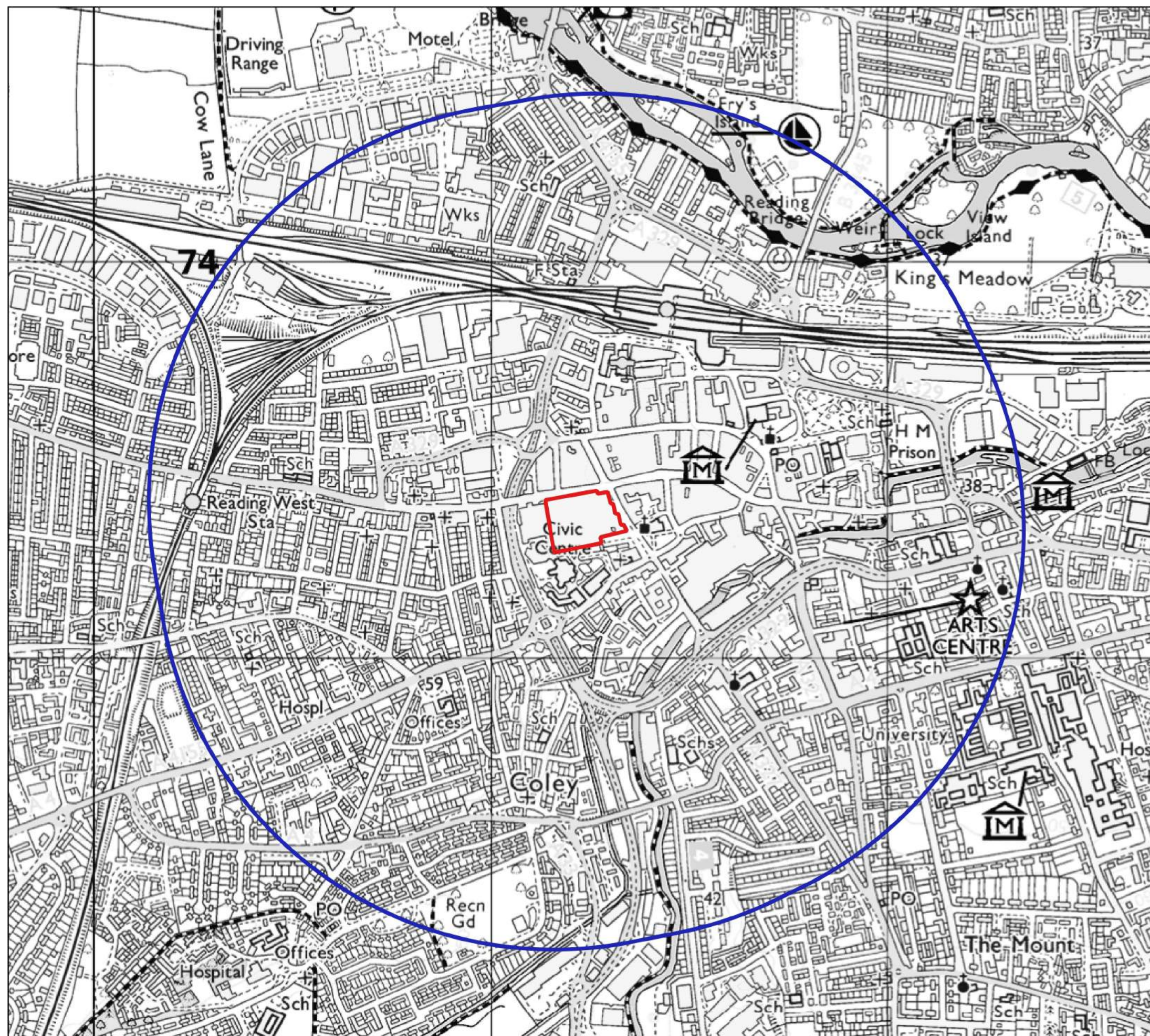
Above: Photographs 11 and 12 showing the two roofs of the nightclub buildings including the join to the shopping mall.

Appendix 2 – Tabulated survey notes

Building number	Building Description. (Number of storeys/nature of construction i.e brick/stone built? And type of roof i.e pitched/hipped/flat, tiled/felted?)	Structural Features Present						Other Structural Features of Note (What would be of use for bats, chimneys/boarded windows?)	Potential Bat Access Points	Internal Features (Sarking/felted/suspended ceiling, height, type of beams, i. e. traditional or modern trusses)	Bat Potential and evidence recorded. (none/ some low /good potential? And dropping numbers and age) Nocturnal required: Y or N? (mark as necessary)	
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void					
Main Complex – Area A	Multi-storey car parking and commercial shopping mall. Concrete construction with flat roof used for rooftop car parking. Commercial office space also present on rooftop.	No	No	No	No	No	No	Shop cladding front	Open access artistic holes in side of car parking	Commercial shopping area with businesses present inside. Car parking typical concrete construction, 24-hour illumination, no suitable roosting areas	Negligible potential.	No
Fountain House – Area A	On top of main shopping mall/car parking building. High-rise modern multi-storey office block. Flat roof, no potential to support roosting bats	No	No	No	No	No	No	N/a	N/a	Commercial office block not being affected by proposals	Negligible potential	No

Building number	Building Description. (Number of storeys/nature of construction i.e brick/stone built? And type of roof i.e pitched/hipped/flat, tiled/felted?)	Structural Features Present						Other Structural Features of Note (What would be of use for bats, chimneys/boarded windows?)	Potential Bat Access Points	Internal Features (Sarking/felted/suspended ceiling, height, type of beams, i. e. traditional or modern trusses)	Bat Potential and evidence recorded. (none/ some low /good potential? And dropping numbers and age) Nocturnal required: Y or N? (mark as necessary)	
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void					
Quadrant House – Area A	On top of main shopping mall/car parking building. Multi-storey office block. Flat roof, no potential to support roosting bats.	No	No	No	No	No	No	N/a	N/a	Commercial office block not being affected by proposals	Negligible potential	No
Nightclub – Area B	Two-storey brick built with metal corrugated roof. Pitched. Excellent condition. Rear of building joined main shopping mall complex.	Y	No	No	No	Y	No	Gap present at rear of building between nightclub and main shopping mall.	Lead flashing, northern end of ridge gap present	Basement but well sealed and in use. No roof void.	Moderate potential.	Y

Building number	Building Description. (Number of storeys/nature of construction i.e brick/stone built? And type of roof i.e pitched/hipped/flat, tiled/felted?)	Structural Features Present						Other Structural Features of Note (What would be of use for bats, chimneys/boarded windows?)	Potential Bat Access Points	Internal Features (Sarking/felted/suspend ed ceiling, height, type of beams, i. e. traditional or modern trusses)	Bat	
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				Potential and evidence recorded. (none/ some low /good potential? And dropping numbers and age) Nocturnal required: Y or N? (mark as necessary)	
Army Recruitment Outbuildings – Area B	Two storey brick built structure with wooden cladding	Y	N	N	Y	Y	Y	Slipped tiles, slipped hanging tiles, wooden cladding on the eastern and southern aspects	Slipped and missing tiles, gaps under ridge tiles	Roof void – un- inspected – contains window in southern gable end	Moderate potential	Y



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Key

- Site Boundary
- 1km Buffer

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client
Projex Solutions Ltd
project
Broad Street Mall,
Reading
drawing title
SITE LOCATION PLAN



scale
1:10,000

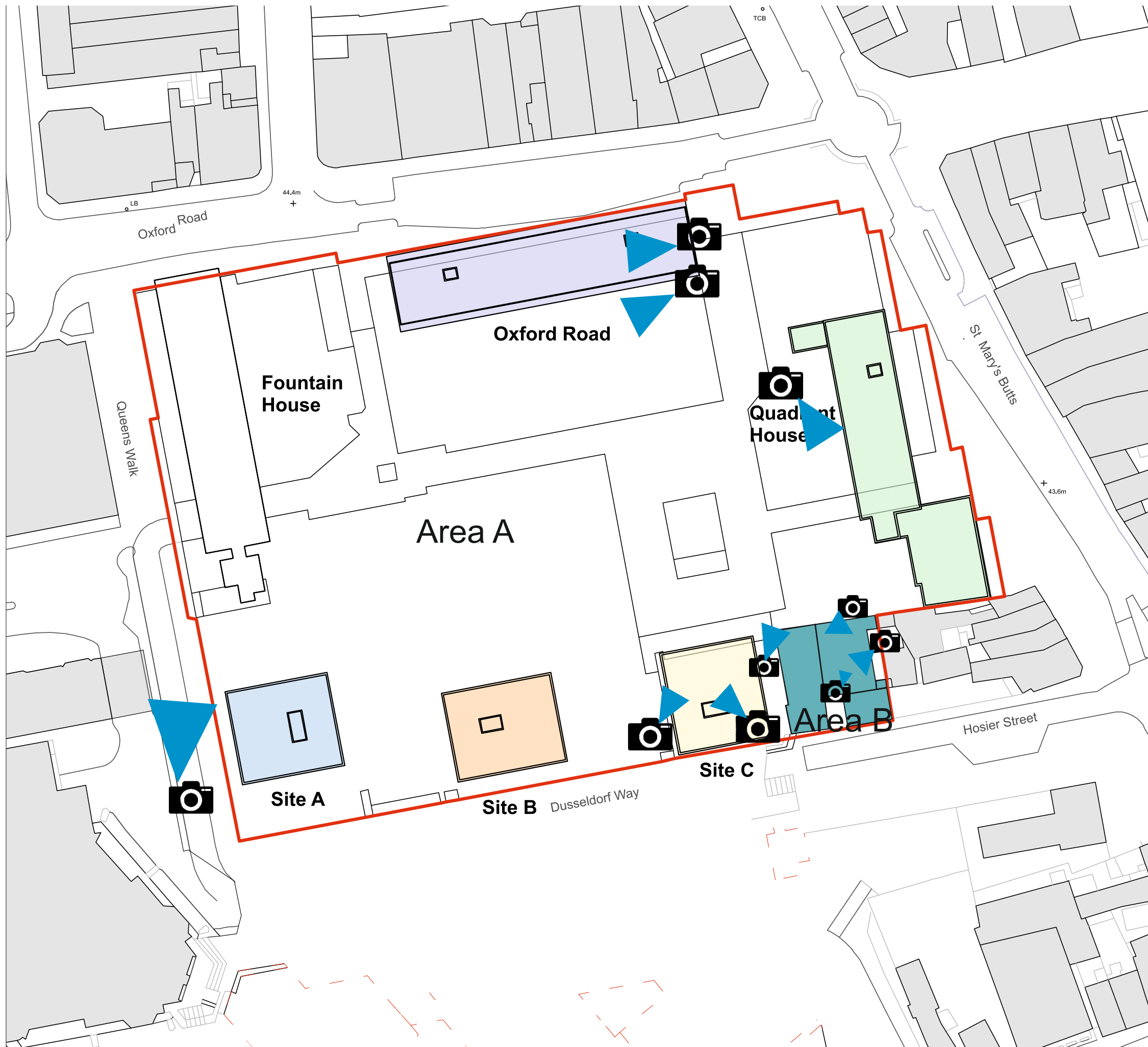
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date
3/3/2017

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Figure 1

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- Site Boundary
- Site A - does not yet exist - to be constructed
- Site B - does not yet exist - to be constructed
- Site C - does not yet exist - to be constructed
- Quadrant House
- Oxford Road - does not yet exist - to be constructed
- Night Club and Army Recruitment Outbuildings
- Photograph Locations



Projex Building Solutions

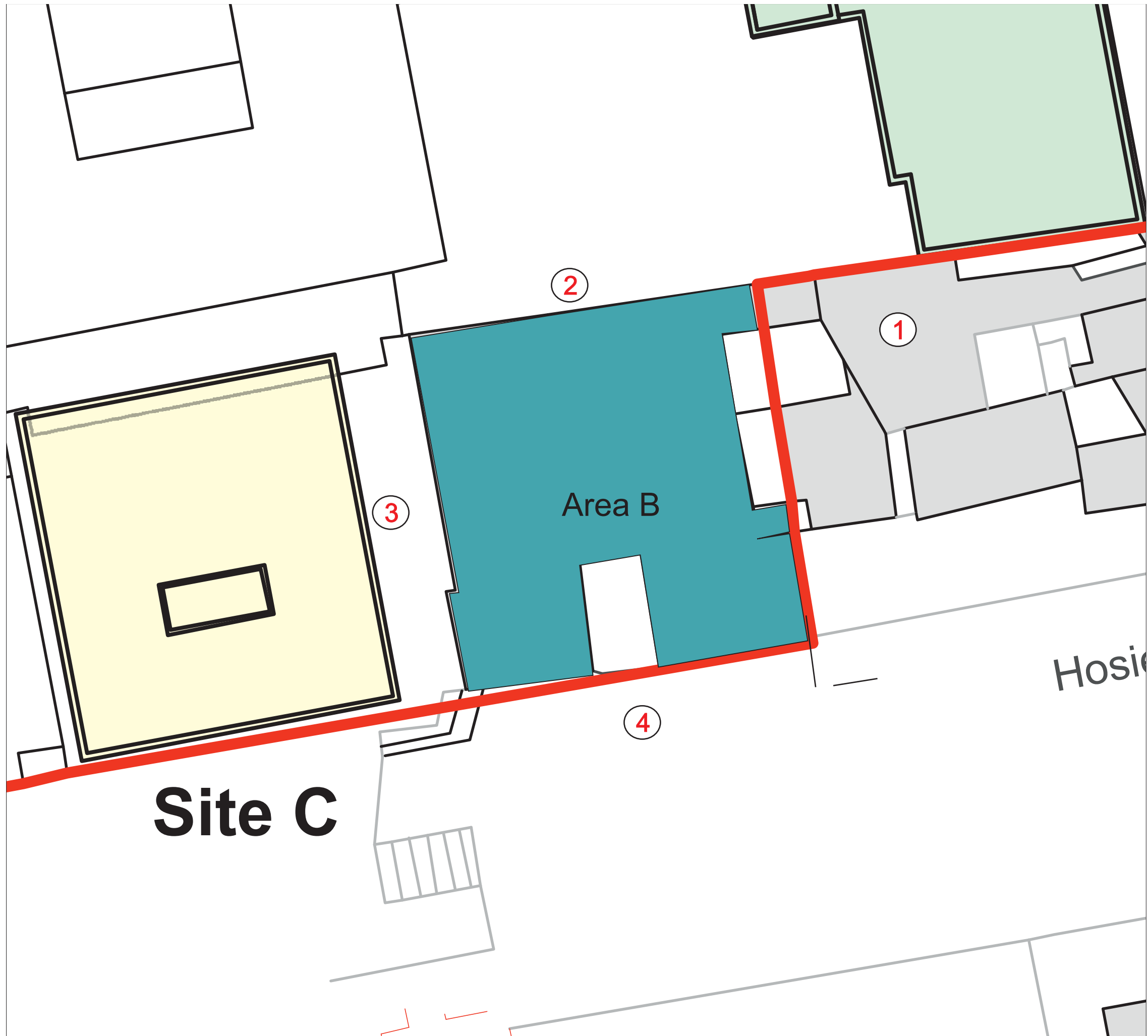
Broad Street Mall,
Reading, Berkshire

Photograph Location Plan

Not to Scale @ A3 SAR / MSWH 01.03.2017



Figure 2



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-  Site Boundary
-  Site C - does not yet exist - to be constructed
-  Night Club and Army Recruitment Outbuildings
-  Surveyor Locations

 Projex Building Solutions
Broad Street Mall,
Reading, Berkshire
Surveyor Location Plan

 Not to Scale @ A3 JNHW / DAH 23.08.2017

Figure 3