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ECOLOGICAL IMPACT ASSESSMENT

FORMER YMCA IN MERTHYR TYDFIL

MERTHYR TYDFIL COUNTY BOROUGH COUNCIL

DOCUMENT REF: WWE19143 BAS REV C | 18/03/2021

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B	Final	07/01/2021	Peter Hacker Ecologist	Alex Pollard MCIEEM Principal Ecologist	Alex Pollard MCIEEM Principal Ecologist
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The evidence which we have prepared and provided is true and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

SUMMARY

Purpose	• Wildwood Ecology was commissioned by Merthyr Tydfil County Borough Council (the client) to undertake a series of bat activity surveys of Former YMCA in Merthyr Tydfil. • The site is the subject of a planning application for the renovation and conversion of the building into a series of commercial units.
Work Undertaken	• A Preliminary Roost Assessment was undertaken by Wildwood Ecology in January 2016 to survey the building for bats and nesting birds. This survey found the grade II listed building to be in a poor condition with a temporary roof, fire damage, an abundance of crevices present within the internal shell of the building, and within external cracks. The building was considered to have moderate bat roost suitability. Further bat activity surveys (x2) were therefore recommended. • Therefore, on the 18th May 2016 and the 15th June 2016, dusk emergence surveys were undertaken at the site. No bats were recorded roosting within the building during the 2016 surveys. This report should be read in conjunction with the Wildwood Ecology Ltd report dated July 2016. • Additionally, on the 2nd of August 2019, a dawn bat survey was undertaken, and an internal assessment of the building was completed on the 22nd August 2019 with a static bat detector located within the building between the 22nd and 29th August 2019. • All works were undertaken following best practice in line with the Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn (Collins 2016).
Key issues	• The surveys determined that the building is a day roost for small numbers of brown long-eared, lesser horseshoe and common pipistrelle bats and also a night roost/feeding perch for lesser horseshoe bats. The building is likely to be used as an occasional roost during the summer and a transitional roost. The building also supports suitable features within the structure to be used during hibernation. • Jackdaws and woodpigeons were observed nesting within the structure.

Recommendations	• A European Protected Species licence for bats must be obtained in order for the works to be legally undertaken. This will require the implementation of mitigation (timing of works, maintenance of roosts, supervision of high risk works by an ecologist) and compensation (provision of further roosting features within the building and maintenance of dark flight lines) measures. • A lighting plan demonstrating consideration for roosting, commuting and foraging bats is required prior to planning determination. The lighting will conform to (2018) Guidance Note 08/18. Bats and artificial lighting in the UK. Bats and the Built Environment series. Bat Conservation Trust and Institute of Lighting Professionals - https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/ as set out in Para 5.16 of the EclA. This will be necessary for licensing of the works. • The mitigation to be recommended within the licence includes an above and below ground structure located at the rear of the building, this will be constructed before any works commence on the main building. The roost will be approximately 48.73m³ in size. The structure will incorporate a chimney/chute feature allowing bats to gain access to both upper and lower floors. The bat access will be located on the north eastern aspect of the site where the lesser horseshoe bat was observed entering the building. The access will be 200mm x 400mm inside. Three Kent-style bat boxes will be installed within the structure to support crevice dwelling bats and proprietary windbreak netting will be attached along the top of each floor of the structure to allow areas for brown long-eared and lesser horseshoe bats to roost. The method statement will recommend that the building is lit both internally and externally during construction to minimise the risk of bats entering the building. Bat access via ridge tiles will also be included to the roof. • No demolition works or bat sensitive works (e.g. roof strip) are to be undertaken in the core winter period of mid-November and mid-February, and also not within any sustained period of time (5 days) where the night-time temperature is below 5°C. • All works are to be undertaken outside of nesting bird season (generally from 1st March until 31st August) if possible. If not, a breeding bird survey will be required by a suitability qualified ecologist to ensure that nesting birds are not present. If a nest is present, it will be left until the chicks have fledged, which must be confirmed by an ecologist. • To compensate for the loss of bird nesting opportunities as a result of the proposed development, two nesting boxes should be installed on site, with an additional two boxes added for site enhancement. Three boxes should be installed on the building, and one on a tree.
Conclusions	• Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site. • This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until February 2021.

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1 INTRODUCTION

- 1.1 Wildwood Ecology was commissioned by Merthyr Tydfil County Borough Council (the client) to undertake bat activity surveys at the Former YMCA in Merthyr Tydfil (the site) centred at grid reference SO 05009 06590.
- 1.2 A preliminary roost assessment was undertaken by Wildwood Ecology in January 2016 to survey the building for bats and nesting birds. The 2016 survey found the Grade II listed building to be in a poor condition with a temporary roof, fire damage, an abundance of crevices present within the internal shell of the building, and within external cracks. The building was considered to have moderate bat roost suitability. Further bat activity surveys (x2) were therefore recommended and were conducted on 18th May 2016 and the 15th June 2016. No bats were recorded roosting within the building during the 2016 surveys. This report should be read in conjunction with the Wildwood Ecology Ltd report dated July 2016.
- 1.3 Due to the time lapse between the previous surveys in 2016 a top up roost assessment and bat activity surveys were required in 2019. On the 2nd August 2019, a dawn bat survey was completed, and an internal assessment of the building was undertaken on the 22nd August 2019 with a static bat detector located within the building between the 22nd and 29th August 2019. The internal assessment determined that the building was still in a state of disrepair with numerous access/entry locations for bats and birds and an abundance of crevices for roosting bats.

Site description

- 1.4 The aerial image of the site (Figure 1) shows the site to consist of a grade II listed building located within an urban setting in Merthyr Tydfil, with some scattered mature trees to the north. The building is vacant and in a state of disrepair, the building was made safe in 2014 when a temporary roof was installed to try and keep the building watertight until works on the building could commence.



Figure 1 – Aerial image of the site (red line shows the site boundary). Image used under licence (©2019 Google). Imagery date 25/06/2018.

Proposed development

- 1.5 The site is the subject of a planning application for the renovation and conversion of the building into a series of commercial units.

Purpose of this report

- 1.6 This report aims where possible to provide sufficient information for the local planning authority to fully assess the potential ecological impacts of the proposed development, or alternatively, to identify what further information is required to fully inform the scheme.
- 1.7 The results of the bat activity survey have been used to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed development.

2 METHODOLOGY

Internal Assessment

- 2.1 A preliminary roost assessment was undertaken in January 2016 and on 22nd August 2019.
- 2.2 An assessment of the onsite building was undertaken in accordance with the latest published best practice guidance (Collins, 2016).
- 2.3 The building was externally and internally inspected for bats and their signs with the aid of high-powered lamps and close-focussing binoculars.
- 2.4 The suitability of the building to accommodate bats was assessed, along with a systematic search for signs of bats (e.g. droppings, moth wings, scratch marks, staining, etc.) or actual bats that were present. Particular attention was paid to the roof areas, with searches for any crevices or gaps in walls, gaps between beams and joists, droppings stuck to the walls, floors or other surfaces, or feeding remains below beams, in addition to a number of other factors and signs indicative of a bat roost.

Bat activity survey (pre-dawn re-entry)

- 2.5 Two bat activity surveys (dusk emergence) were undertaken at the onsite building on 18th May and 15th June 2016.
- 2.6 A single bat activity survey update (pre-dawn re-entry survey) was undertaken at the onsite building on the 2nd August 2019.
- 2.7 The dusk emergence surveys commenced approximately 15 minutes before the time of local sunset (source www.sunrisesunsetmap.com) and continued for approximately 1.5 hours after sunset.
- 2.8 The pre-dawn re-entry survey(s) commenced approximately 1.5 hours before the time of local sunrise (source www.sunrisesunsetmap.com) and continued for 15 minutes after.
- 2.9 Surveyors were equipped with broadband bat detectors (Elekon BatScanner Stereo and Elekon Batloggers).
- 2.10 Note was made of all bat activity recorded including (where appropriate) roost access points, species, time of re-entry, direction of flight, behaviour (foraging or commuting) and use of landscape features. Minimal lighting was used during the surveys as this can alter the behaviour of the bats emerging from or entering a roost or foraging or commuting over a site.
- 2.11 In addition, a static bat detector (SM2+) was deployed on the fourth floor of the building and collected data for a total of seven consecutive nights (22/08/2019 until 29/08/2019).

Surveyor information

- 2.12 The bat activity surveys undertaken in 2016 were led by Bob Firmin, Richard Crompton and Matt Davies, assisted by Amy Schwartz, Emma Douglas, Ros Howell and Chris Rischmiller. See Table 1 for further information.
- 2.13 The preliminary roost assessment and bat activity surveys undertaken in 2019 were led by Julie Player, assisted by Jody Webb and Marie Pugh. See Table 2 for further information.

Table 1 - Surveyor information for 2016 surveys

Surveyor	Bat licence	Ecological experience
Bob Firmin B.Sc. (Hons.), MCIEEM Senior Ecologist	Y - NRW	Involved with bat work and research since 2004, and agent on numerous Habitats Regulations development licences. Designed and undertaken bat surveys for a wide range of small and large sites. Experienced at sound analysis including teaching of others on workshops.
Matt Davies Ph.D., B.Sc. (Hons), ACIEEM Ecologist	Y - NRW	Holds a Ph.D. in scent marking in otters and has an extensive knowledge of otter and mustelid ecology in general. Experience of dusk and dawn bat activity surveys and the use of broadband bat detector systems.
Richard Crompton B.Sc. (Hons), CEnv, MCIEEM, FLS	Y - NRW	A Chartered Environmentalist specialising in bat conservation and training and has been undertaking professional ecological surveys since 1998. He started studying bats over twenty years ago and is also an active licence trainer, co-tutor of the bat licence training course – the only commercial bat licence training programme in the UK - and former trustee of the Bat Conservation Trust. He has held development licences to work on all bat species known to breed in Wales including large roosts of horseshoe bats.
Amy Schwartz Emma Douglas Ros Howell Chris Rischmiller	N	Assistant bat surveyors with 1-3yrs field experience. Competent and confident at using bat detectors to observe bats in flight and conduct an emergence/re-entry survey.

Table 2 – Surveyor information for 2019 surveys

Surveyor	Licences	Ecological experience
Julie Player B.Sc. (Hons) MCIEEM Senior Ecologist	Bat Dormouse GCN	Holds a first-class honours degree in International Wildlife Biology. Experience in working for ecological consultancies since 2012. Experienced in undertaking bat, dormouse, reptile, and great crested newt surveys. Is a licensed bat, dormouse and great crested newt surveyor in England and Wales.
Survey assistants Jody Webb Marie Pugh	-	All survey assistants received training in use of bat detectors and survey methodologies. Deemed competent and confident to use bat detectors to observe bats in flight and conduct an emergence/re-entry survey in conjunction with a licenced ecologist. Assistants backed up by experienced surveyors and/or recording detectors where possible.

Limitations and assumptions

- 2.14 Some areas of the building were deemed unsafe to enter (e.g. lift shafts, scaffolded areas holding up temporary roof structure), therefore a full internal inspection of the building was not possible, therefore a static bat detector was placed inside the building for seven consecutive nights to record any bat activity present inside.
- 2.15 Many species of bat in the UK are crevice dwelling, and bats or signs of bats can be difficult to find within a building.

3 RESULTS

Protected species

3.1 Table 3 summarises the priority and protected species records found within the local area within the last 10 years.

Table 3 - Protected and priority species data

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Bats	Brown long eared	0	0	3	Closest record 524m from site
	Chiroptera	0	3	17	Closest roost 149m from site
	Common Pipistrelle	1	7	41	Closest roost 82m from site
	Daubenton's Bat	0	0	13	Closest roost 1785m from site
	Lesser Horseshoe Bat	0	0	4	Closest roost 2067m from site
	Long-eared species	0	1	0	Closest roost 279m from site
	Myotis species	0	0	9	Closest roost 1581m from site
	Natterer's Bat	0	0	9	Closest record 1581m from site
	Noctule	1	1	0	Closest record is located onsite (for in flight record)
	Pipistrelle Species	0	3	8	Closest roost 279m from site
	Serotine	0	0	1	Closest record 1307m from site
	Soprano Pipistrelle	1	6	21	Closest roost 415m from site. Closest record located onsite for in flight record
	<i>TOTALS</i>	<i>3 (3)</i>	<i>21 (6)</i>	<i>126 (11)</i>	
Birds (Schedule 1)		0	0	5 (3)	Schedule 1 species: hobby, red kite and redwing The closest record is 513m from site
Birds (non-Schedule 1)		0	1 (1)	26 (10)	Closest record is 201m from site for goldcrest

Preliminary roost assessment

3.2 A description of the building inspected during the PRA can be seen in Table 4.

Table 4: Onsite building information

Building	Building type	Development plans
Former YMCA	Brick and stone five storey grade II listed building. Gaps between bricks and stones. Temporary corrugated roof structure.	Major renovation works

3.3 The results of the PRA can be seen in Table 5.

Table 5 – PRA Results

Building	Use by bats	Use by birds	Bat signs and internal and external Potential Roost Features (PRFs) & access points
Former Merthyr YMCA	Y	Y	- Large gaps/access for bats and birds at the location of the temporary roof and some un-boarded/broken windows all features allowing access into all floors of the building. Fireplaces were located in most of the rooms within the property suitable locations for bats to roost. - A large accumulation of bird droppings, bird eggs and dead birds were recorded within the building. - Wood pigeons and jackdaw were seen nesting on/within the main roof. - One dead butterfly was identified on the 2nd floor of the building near a window. The butterfly was intact and likely to have died in the building and not believed to be bat feeding remains. - No evidence of bats was identified within the building, however as outlined in the limitations the building is in a state of disrepair and some areas of the building could not be fully inspected. - The building was cold with a draft/airflow through the building on most floors due to broken windows etc, however there were many gaps/access points (e.g fireplaces) that were sheltered and dark. The building has the suitability to support hibernating bats, a day and night roost and a transitional roost. Due to the temperature and varied conditions within the building it is unlikely to support a maternity roost.

Links to surrounding habitat

3.4 The site is predominately surrounded by residential and commercial dwellings with scattered vegetation and trees within the surrounding area. A line of scattered trees located north west of the site is linked to areas of parkland and woodland habitat and a large pond located within the grounds of the Cyfartha Castle.

Bat activity surveys (pre-dawn re-entry)

Timing and conditions

3.5 The survey timings and weather conditions during the activity survey can be seen in Table 6.

Table 6 - Summary of survey timing and conditions during activity surveys.

Date	Type	Survey Timing			Conditions			
		Start	End	Sunset / Sunrise	Temp [°C]	Cloud Cover [Oktas]	Wind Speed [Beaufort]	Rain
18/05/2016	Dusk	20:50	22:35	21:05	Start: 11 End: 10	Start: 2 End: 3	Start: 1 End: 1	Nil
15/06/2016	Dusk	21:17	23:02	21:32	Start: 18 End: 17	Start: 3 End: 6	Start: 1 End: 1	Nil
22/08/2019	PRA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
02/08/2019	Pre-dawn re-entry	04.07	05.52	05.37	Start: 16 End: 15	Start: 0 End: 1	Start: 0 End: 1	Nil

3.6 The results of the bat activity survey (pre-dawn re-entry) are summarised in Table 7.

Table 7 - Bat activity survey results. SR±xx refers to the time in minutes before/after sunrise.

Survey type and date	Roosts / points of particular interest	General observations
18/05/2016	Non present	Common pipistrelles active from SS+11 from the east, foraging to the rear of the building
15/06/2016	Non present	- Unidentified bat in flight from SS+13 to the south-west - Foraging common and soprano pipistrelles to eastern side from SS+15 to SS+45 - Traffic noise and streetlights along southern boundary
Pre-dawn re-entry 02/08/2019	- First bat heard at SR-82 Soprano Pipistrelle (heard not seen) - Lesser horseshoe bat (x1) heard and seen at rear of building (to the north) entered the un-boarded window SR-53	Soprano and common pipistrelle bats were recorded commuting and foraging along the eastern aspect of the building (dark corridor) and around the trees and streetlight to the front of the building.

3.7 Bat flight lines in and around the site can be seen in Appendix I.

Static monitoring survey results

3.8 The static monitoring survey recorded a small number of brown long-eared, common pipistrelle and lesser horseshoe bats during the seven nights that the static detector was deployed within the building. The bats were recorded just before dusk and dawn (brown long-eared, common pipistrelle and lesser horseshoe) and also between dusk and dawn (lesser horseshoe bat only).

3.9 Bat roosts were identified during the surveys and are summarised in Table 8.

Table 8 - Details of bat roosts identified.

Date	Species (number)	Roost type (number)	Roost location	Access points
02/08/2019	Lesser Horseshoe Bat	Night/feeding perch – transitional roost	Unknown	Through un-boarded window on the north eastern corner of the building (rear of building)
22/08/2019 – 29/08/2019	Lesser Horseshoe Bat	Day Roost	Unknown	Unknown – detected on static bat detector

22/08/2019 – 29/08/2019	Brown Long- Eared Bat	Day Roost	Unknown	Unknown – detected on static bat detector
22/08/2019 – 29/08/2019	Common Pipistrelle Bat	Day Roost	Unknown	Unknown – detected at dusk and dawn on static bat detector

4 INTERPRETATION AND ASSESSMENT

- 4.1 The following interpretation and assessment is provided to ensure full compliance with both UK and European legislation and both local and national planning policy (see Appendix IV).

Bat activity and static monitoring surveys (pre-dawn re-entry and static monitoring survey)

- 4.2 The bat activity surveys undertaken in 2016 found no bat roosts within the building, however, later surveys in 2019 identified bat roosts for small numbers of brown long-eared, common pipistrelle and lesser horseshoe bats.
- 4.3 The results of both the activity and static monitoring surveys in 2019 suggest that the building is used by a small number of brown long-eared, common pipistrelle and lesser horseshoe bats as a day roost, and is also used by a small number of lesser horseshoe bats as a night roost/feeding perch as they were recorded within the structure on the static detector between dusk and dawn.
- 4.4 No evidence was found demonstrating significant numbers of lesser horseshoe within the building, with no collections of droppings identified. Furthermore, as the building is in disrepair the internal space of the building is open to the elements resulting in an unstable thermal regime with frequent draughty airflows. Furthermore, temperatures within the building were noted to be much colder than the surrounding environment, sometimes close to freezing.
- 4.5 The fireplaces within the building, although suitable for use as potential roost features for lesser horseshoe, are subject to low, unstable temperatures and due to the disrepair of the building do not offer shelter from external conditions. It is therefore considered highly unlikely that these features would see use as maternity roosts for lesser horseshoe.
- 4.6 Major renovations and roofing works are required which will destroy the bat access into the current roosts. In the absence of mitigation, there will be a negative impact on bat species as a result of the proposed development of the site.
- 4.7 An assessment was made of the value of all bat roosts identified onsite (plus the value of the site for commuting and foraging) using the framework suggested by Wray et al (2010) – see Table 9.

Table 9 - Value of the site for bats (from Wray et al 2010)

Site location	Wales					
Type & complexity of linear features	Absent					
Foraging habitat characteristics	Industrial / site without established vegetation					
Species on site	Roost type	# of bats	Roosts/potential roosts nearby	Geographic frame of reference [score]		
				Roost	Commuting	Foraging
Common pipistrelle	Small numbers of non-breeding bats	Small	Small number	Local	Local [16]	Local [16]
Brown long-eared	Small numbers of non-breeding bats	Small	Small number	County	Local [19]	Local [19]
Lesser horseshoe	Feeding perch	Small	Small number	County	Local [19]	Local [19]

Lesser horseshoe	Small numbers of non-breeding bats	Small	Small number	County	Local [19]	Local [19]
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Nesting birds

- 4.8 Several dead birds, broken birds' eggs and large amounts of bird droppings were recorded within the building during the PRA.
- 4.9 Pigeons and jackdaw were recorded nesting within the building during the PRA and the bat activity survey.
- 4.10 In the absence of mitigation, there will be a negative impact on bird species as a result of the proposed development of the site.

5 CONCLUSIONS AND RECOMMENDATIONS

- 5.1 Wildwood Ecology was commissioned by Merthyr Tydfil County Borough Council (the client) to undertake a preliminary roost assessment, bat activity and static monitoring survey (pre-dawn re-entry) for bats and birds at the Former YMCA in Merthyr Tydfil.
- 5.2 The site is the subject of a planning application for the renovation and conversion of the building into a series of commercial units.

PRA, bat activity and static monitoring surveys

- 5.3 Bat roosts for small numbers of brown long-eared, common pipistrelle and lesser horseshoe bats were confirmed within the onsite building.
- 5.4 The building is likely to be used by a small number of individual bats as an occasional day roost, transitional roost, and a night roost/feeding perch (lesser horseshoe bat).
- 5.5 In the absence of mitigation, there will be a negative impact on bat species as a result of the proposed development of the site.
- 5.6 A European Protected Species licence (EPSL) for all species of bats roosting onsite will be obtained in order for the works to the building(s) to be legally undertaken. The EPSL will require a detailed mitigation and compensation strategy to be devised in the form of a method statement. This will aim to ensure that the maintenance of the roosts and local bat populations are maintained at a favourable conservation status.
- 5.7 The method statement will include mitigation recommendations as follows:
- Existing openings to be infilled with a 200mmx400mm gap left for bats to access the roost internally. See GA 700.4 Section A-A & GA 700.5 Section B-B for details.
 - The mitigation recommend includes an above and below ground structure located at the rear of the building. The roost will be approximately 48.73m³ in size and will be constructed of block and render.
 - Chimney structure to be made from standard building blocks for bats to access both levels internally.
 - Two bat entrances leading into the new roost will be created on the south elevation. The entrance will lead into the new structure at a c. 45° angle (to provide bat access but to deter birds). This will allow for access for all bat species known to be present at the site. The roost will be accessible via a lockable service hatch for monitoring purposes. The bat structure will be located on the north eastern aspect of the site where the lesser horseshoe bat was observed entering the existing building. The access will be 200mm x 400mm inside.
 - The structure will be completed prior to the commencement of works to the main building, to allow for roosting bats to use the structure if found during works to the main building.
 - Three Kent-style bat boxes will be installed within the structure to support crevice dwelling bats and proprietary windbreak netting will be attached along the top of each floor of the structure to allow areas for brown long-eared and lesser horseshoe bats to roost.
 - Ridge access for bats will also be provided in the form of 4x proprietary bat ridge tiles with an entrance of at least 20x100mm (see GA 355 for locations).

- 5.8 The method statement will also detail the appropriate timing for works to the buildings. This will be outside of the most vulnerable time periods for bats (hibernation season). No demolition works are to be undertaken in the core winter period of mid-November and mid-February, and also not within any sustained period of time (5 days) where the night-time temperature is below 5°C. No maternity roosts were recorded within the building.
- 5.9 The method statement will recommend that the building is only lit internally to prevent disruption to foraging and commuting bats.
- 5.10 Only BS747 Type 1F bitumen roofing felt or wooden sarking will be used to line the roof. Breathable membranes will not be used as they are detrimental to the welfare of bats and when used in bat roosts are known to lose their functionality over time.
- 5.11 If timber treatment is required, only products safe to be used around bats will be used. A list of these products as specified by Natural England and DEFRA can be found at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>. The bat licensed ecologist will advise the contractors about safe treatments that may be used in or near bat roosts.
- 5.12 Dry ridge systems must not be used on the ridges as they may cause harm to bats. The ridge tiles should be fixed onto the traditional hessian roofing felt instead.
- 5.13 In order to prevent an impact on local bat populations, foraging and commuting routes (eastern aspect of the building) must remain un-fragmented. Fragmentation can occur by physical removal of the woodland habitat, but also by artificial light spilling onto them.
- 5.14 All UK bats are nocturnal species and light averse (horseshoe bats particularly so). Artificial lighting of foraging and commuting routes is known to act as a barrier to bats and fragment otherwise suitable habitats, causing a negative impact on their local populations.
- 5.15 Therefore, if there is to be lighting post-development, there will need to be a lighting plan demonstrating consideration for bats with dark flight lines maintained (see Appendix I). The external works for the proposed development should be undertaken during daylight hours and a lighting plan should be produced to demonstrate that any 'exterior' lighting proposed post-development would not have a detrimental effect on bats commuting along nearby habitat.
- 5.16 Suggestions for achieving this and for mitigating the light impact on bats are outlined in Guidance Note 08/18 - 'Bats and artificial lighting in the UK; Bats and the built environment series' (The Bat Conservation Trust, BCT, and the Institution of Lighting Professionals, ILP). These include:
- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
 - LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
 - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
 - Internal luminaires can be recessed (rather than choosing a pendant fitting) where installed in proximity to windows to reduce glare and light spill.

- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by a lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

Birds

- 5.17 In the event that work have to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - <http://www.jncc.gov.uk/page-3614> is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.
- 5.18 To compensate for the loss of nesting opportunities as a result of the proposed development, two nesting boxes will be installed on the building or upon nearby trees and two additional boxes will be installed as an enhancement measure (see 5.20 for design of all recommended boxes).

Biodiversity enhancement

- 5.19 Local Authorities have a duty (known as the ‘Biodiversity and resilience of ecosystems duty’) under the Environment (Wales) Act 2016 to seek to maintain **and enhance** biodiversity in the exercise of their functions.
- 5.20 In total four bird nesting boxes will be installed on the building or on nearby trees, two are to compensate for the loss of the nesting sites and two are for ecological enhancement. Two bat roosting boxes (over and above that required for mitigation on this site) will also be incorporated within redeveloped buildings and boundary features. A range of types should be used in order to provide opportunities for a number of species. The following designs are recommended, similar designs would be accepted:
- **One** 2F Schwegler general purpose bat boxes - (<https://www.nhbs.com/2f-schwegler-bat-box-general-purpose>) (or similar)
 - **One** 1FF Schwegler bat boxes – (<https://www.nhbs.com/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel>)
 - **Two** general garden bird boxes (compensation for loss of nesting opportunities) - <https://www.nhbs.com/traditional-wooden-bird-nest-box>
 - **One** Sparrow Terrace - <https://www.greenwoodsecohabitats.co.uk/shop>

- **One** 1B Schwegler nest box (or similar design) - <https://www.nhbs.com/1b-schwegler-nest-box>

Overall conclusion

- 5.21 Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.

This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until February 2021. Further surveys may be required to update the site information if planning is not obtained or works do not commence within that time period.

6 REFERENCES

- Bat Conservation Trust and the Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK; *Bats and the Built Environment* series (Guidance Note 08/18), The Bat Conservation Trust, London.
- Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.
- Mitchell-Jones, A.J, & McLeish, A.P. Ed., (2004) 3rd Edition Bat Workers' Manual. Joint Nature Conservation Committee, Peterborough.
- Mitchell-Jones, A.J. (2004) Bat Mitigation Guidelines. Natural England, Peterborough.
- Rowse E.G., Lewanzik D., Stone E.L., Harris S., Jones G. (2016) Dark Matters: The Effects of Artificial Lighting on Bats. In: Voigt C., Kingston T. (eds) Bats in the Anthropocene: Conservation of Bats in a Changing World. Springer, Cham.
- Wildwood Ecology Ltd. (2016) Protected Species Survey (Bats), The YMCA Building Merthyr Tydfil.
- Wray, S., Wells, D., Long, E. & Mitchell-Jones, T. (2010) Valuing bats in ecological impact assessment. In Practice, No 70, Institute of Ecology and Environmental Management.

APPENDIX I: BAT ACTIVITY SURVEY RESULTS

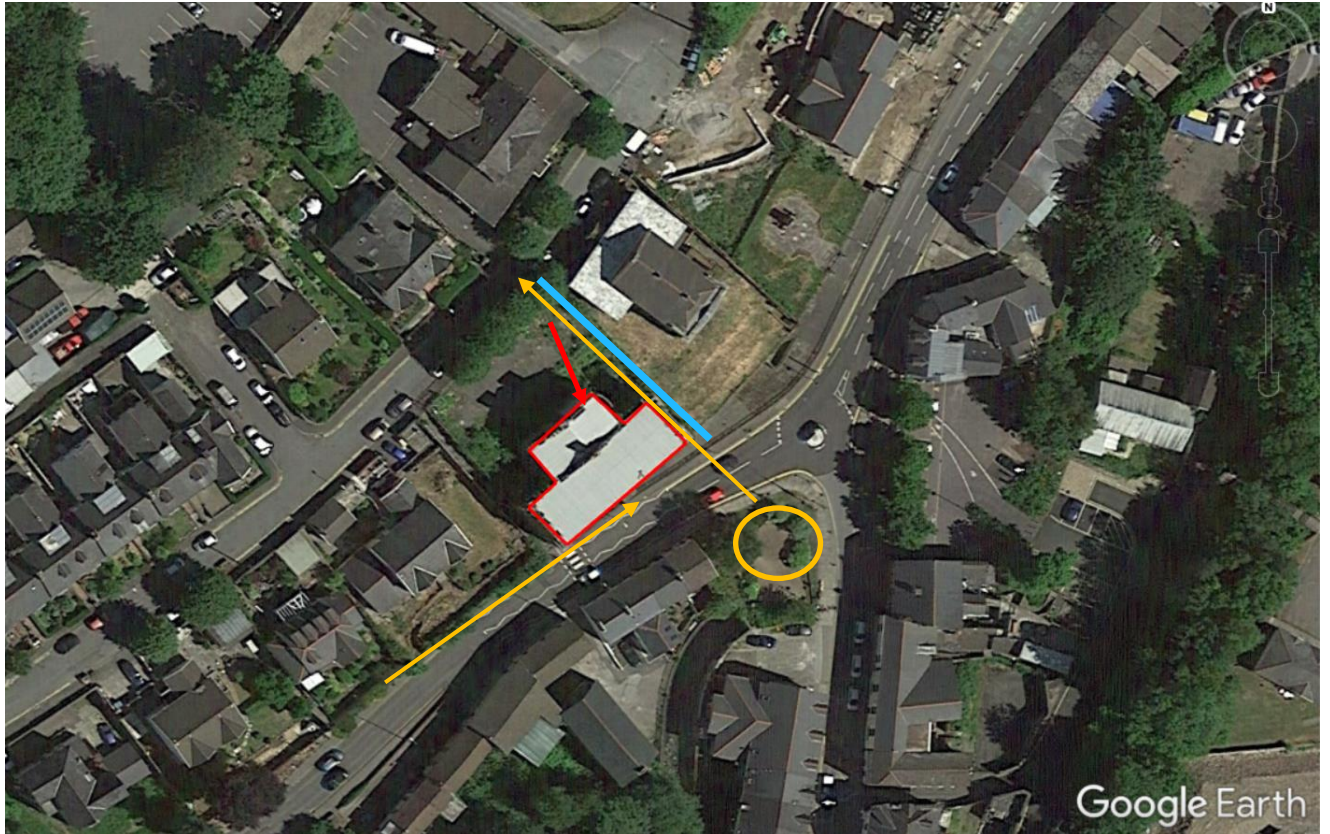


Figure 2 - Results of bat activity survey (red arrow = location that lesser horseshoe bat was recorded entering building, yellow arrows and circle = soprano pipistrelle foraging and commuting locations/directions, blue line = important dark corridor for bats)

APPENDIX II: PRELIMINARY ROOST ASSESSMENT RESULTS

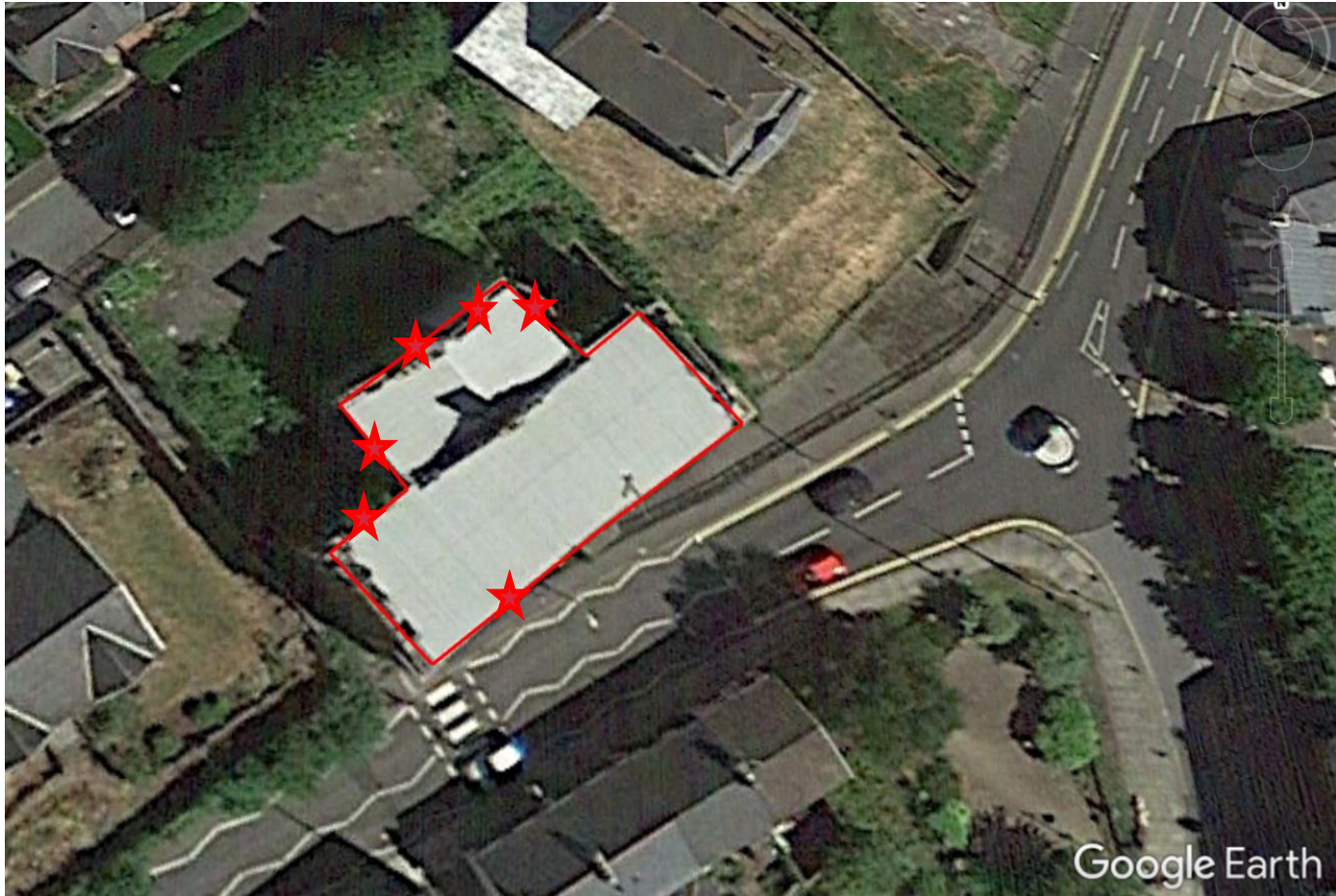


Figure 3 – Location of suitable bat access/potential roosting features

APPENDIX III: SURVEY IMAGES



Figure 4 - Un-boarded window that lesser horseshoe bat accessed the building at the rear of the property (red arrow), suitable bat access feature (orange arrow)



Figure 5 - Western aspect of the building. Arrows highlight suitable bat access and nesting bird features



Figure 6 - North eastern corner of the building (Internal), location of where lesser horseshoe bat entered the building, blocking off human access into lift shaft.



Figure 7 - Top floor at the rear of the building (internal image) - suitable bat access feature into the building



Figure 8 - Upper floor at the rear of the building (internal image)



Figure 9 - Broken birds' egg within the building

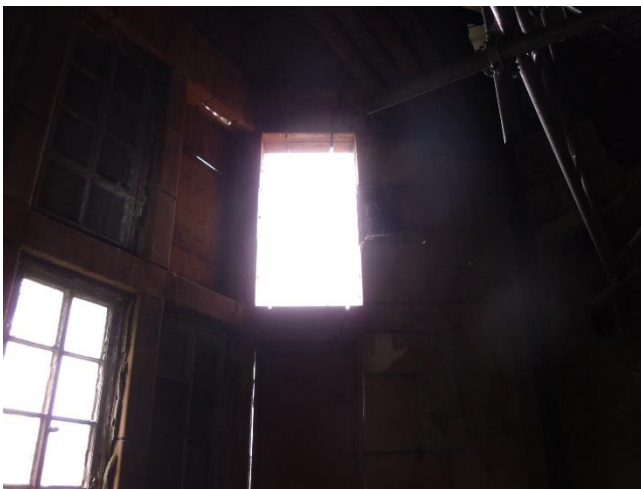


Figure 10: Broken window on top floor of building allow bird and bat access



Figure 11 - Temporary roof to the rear of the building



Figure 12 - Second floor of building



Figure 13 - Flue inside one of the many fireplaces within the building, suitable to support roosting bats



Figure 14 - Fireplace on the second floor of building



Figure 15 - Fenced off door at rear of building



Figure 16 - Eastern aspect of building



Figure 17 - Front of building

APPENDIX IV: PROPOSED DEVELOPMENT PLAN

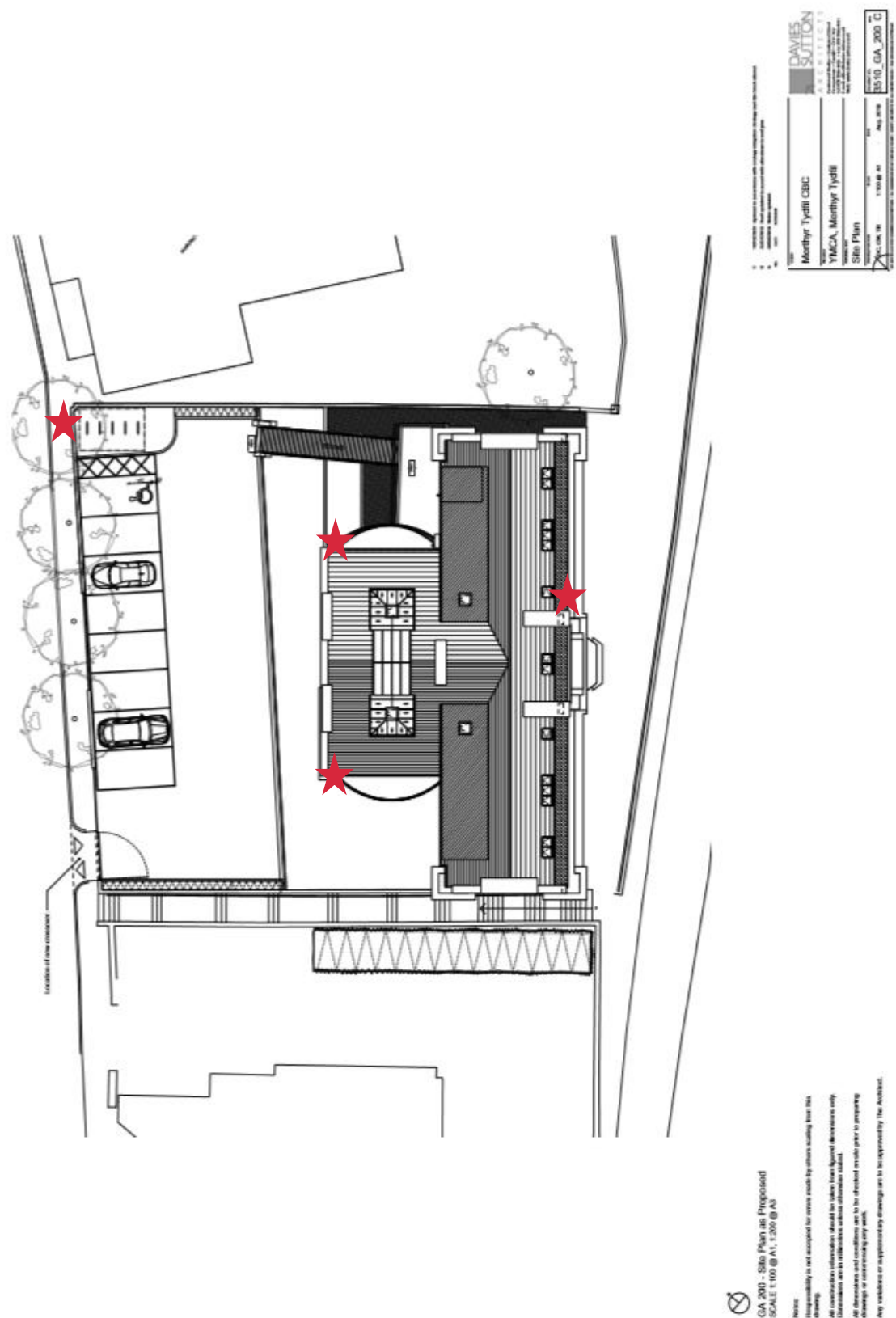


Figure 18 - Proposed site plan. Red stars donate proposed locations of bird boxes (with the 1B Schwegler nest box situated on the tree).

APPENDIX V: BAT MITIGATION PLAN

See additional supplied documents (drawings GA 355 and GA 700).

APPENDIX VI: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name: Former YMCA in Merthyr Tydfil

Provided by: Wildwood Ecology

Grid ref: SO 05009 06590

Verified by: Julie Player

Common name	Scientific Name (if known)	Number	Comment
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	2	Commuting and foraging around building
Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	1	Day roost for small number of bats and feeding perch
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>		Commuting and foraging around building and a small number using building as a day roost
Brown Long-Eared Bat	<i>Plecotus auritus</i>		Roosting in the building
Domestic pigeon	<i>Columba livia domestica</i>	4	Nesting in building
Jackdaw	<i>Corvus monedula</i>	6	Nesting in building

APPENDIX VII: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2016) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 10, December 2018) sets out the land use planning policies of the Welsh Government, integrating the Environment (Wales) Act (2016) requirements. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TANs).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects

local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2010 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include – The Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and *Rhododendron ponticum*) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonably avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example, scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended). All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.