

# HAFOD HOUSING ASSOCIATION

## COWBRIDGE SCHOOL, ABERTHIN ROAD, VALE OF GLAMORGAN

### SUMMER SURVEY - ADDENDUM REPORT

06 OCTOBER 2020



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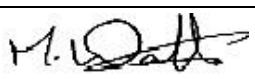
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COWBRIDGE SCHOOL, ABERTHIN ROAD, VOG

SUMMER SURVEY - ADDENDUM REPORT

DOCUMENT REF: E1884501/Doc 03. 06 OCTOBER 2020

Issue	Revision	Stage	Date	Prepared by	Approved by	Signed
1	-	DRAFT	06/10/2020	Danielle Fry (Senior Ecologist)	Dr Matthew Watts (Director)	

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## 1.0 INTRODUCTION

- 1.1 The former Cowbridge School (the site) is located along Aberthin Road, Cowbridge. The scale of the proposal involves the demolition of the former school building, including the loss of the immediately surrounding habitat, and design of up to 48no. residential units at the site.
- 1.2 Previous surveys have been undertaken at this site and this report should be read in conjunction with the following reports:
- Soltys Brewster Ecology (2018). *Extended Phase 1 & Bat Survey Report, Former Cowbridge School.*
  - Soltys Brewster Ecology (2019). *Hibernation Survey – Addendum Report*
- 1.3 The 2018 report concluded that the building is used for day roosting by small numbers of Common Pipistrelle, Soprano Pipistrelle *Pipistrellus pipistrellus/P. pygmaeus*, *Myotis*, Lesser horseshoe *Rhinolophus hipposideros* and Brown-long-eared *Plecotus auritus* bats. The building was thought to have some potential to be used over the winter by hibernating bats so further survey was recommended.
- 1.4 Winter bat hibernation surveys were subsequently undertaken at the site over the 2018-2019 winter period. Small numbers of Lesser horseshoe and *Myotis* bats were discovered to be present in the building over the winter. It was thought likely that small numbers of pipistrelle could also use the building during the winter.
- 1.5 Following a meeting held with NRW on 27<sup>th</sup> March 2020 it was agreed that additional survey would be conducted in June-July to attempt to clarify the breeding status of bats at the site and to further inform the proposed mitigation strategy. The current report presents the findings of this survey and should be read in conjunction with the 2018 and 2019 reports to provide a thorough appraisal of the site conditions and status of the identified bat roost.

## 2.0 METHODOLOGY

### *Building inspection*

- 2.1 A walk over was conducted of the building on 23<sup>rd</sup> June 2020 by a licensed bat surveyor<sup>1</sup> to see if any major changes has occurred since last visited. The accessible loft spaces were investigated thoroughly for any sign of bats such as live bats, droppings, staining, scratch marks, noise, etc.

### *Activity Survey*

- 2.2 Two dusk emergence surveys were undertaken at the site on 16<sup>th</sup> June 2020 and 9<sup>th</sup> July 2020. Three suitably experienced and qualified surveyors (including a bat licence holder) were present on each occasion. Surveyor locations are shown in Appendix I. Two surveyors on both survey dates were located at either end of the western boundary to observe activity along this vegetated corridor (locations 1 and 2). The third surveyor was intended to observe activity inside the building, but it was not possible to gain entry for the survey in June. Instead the surveyor observed the rear elevations of the main building (location 3). In July the building accessed, and the third surveyor was therefore stationed on the first floor of the main building (location 4).
- 2.3 All calls were recorded on either an Anabat SD2 or ipod Eco Meter Touch 2 and identified on computer-based sonogram analysis software (Kaleidoscope Pro 5 and Anabat Insight). Counts of passes for each species were made and a paired t-test undertaken in Excel to determine if there was a statistical difference between the activity levels in the two locations along the western site boundary.

### *Static Survey*

- 2.4 Two Anabat Express static detectors were deployed from the 16<sup>th</sup> - 23<sup>rd</sup> June and again on 9<sup>th</sup> - 13<sup>th</sup> July. A third detector was deployed during the July session within the building. Detector locations are shown in Appendix II. All recorded data was analysed using Anabat Insight. Counts of passes for each species were extracted from Anabat Insight and a paired T-test undertaken in Excel to determine if there was a statistical difference between the activity levels in the two outside locations.

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<sup>1</sup> NRW bat licence no: SO88408-1  
Hafod Housing Association  
**Cowbridge School, Aberthin Road**  
[Ecology Addendum Report](#)  
E1884501/Doc 03

### 3.0 RESULTS

#### *Building Inspection*

3.1 The building seemed to have deteriorated more since the last visit. A greater number of pigeons were present throughout the buildings on this occasion. Previous numbers observed were always less than 10 individuals but, on this occasion, there were approx. 30 birds. No live bats were seen and the amount of dropping present was hard to judge as they have been obscured by bird faeces and falling debris. There was no new large collection of bat droppings in evidence.

#### *Activity Surveys*

3.2 The conditions and detail of the activity surveys undertaken on 16<sup>th</sup> June and 9<sup>th</sup> of July 2020 are detailed in Table 1 below.

**Table 1 - Conditions during activity surveys**

	<i>June 16<sup>th</sup> 2020</i>	<i>July 9<sup>th</sup> 2020</i>
<i>Sunset</i>	21:33	21:29
<i>Survey start – end time</i>	21:15 – 23:00	21:19 – 22:59
<i>Temperature</i>	23°C	19°C
<i>Cloud cover</i>	10%	90%
<i>Rain</i>	0	10%
<i>Wind</i>	0	0

3.3 Activity started early on both dates, but particularly so on the July session. The earliest timings were all from the July session with the first bat heard, a Noctule at 1minute before sunset. The first Common pipistrelle was 1minute, Soprano pipistrelle 10mins and first Myotis recorded at 17minutes after sunset. All species were later arriving in June, but the same species were observed. The early timings observed in July suggest that all the species roost nearby and during the June session, several pipistrelles and a Myotis were observed exiting from the Main building. The raw numbers of passes recorded at the two locations along the vegetated western boundary are presented in Table 2 below.

**Table 2 – Total number of passes recorded (June and July combined)**

<i>Species</i>	<i>Position 1 -South</i>	<i>Position 2 - North</i>
<i>Ppip</i>	39	80
<i>Ppyg</i>	8	29
<i>Pip</i>	1	0
<i>Myotis</i>	16	1
<i>Noctule</i>	66	60

3.4 Activity was observed to occur all the way along the western site boundary and beyond in both directions towards both the settlement of Cowbridge to the south and the open space to the north. At the northern end where the mature trees are present bats were generally flying at height, up in the canopy and were harder for the detectors to pick up at times particularly pipistrelle. There is no statistical difference in activity levels between the north and south end of the site (paired t-test  $p=0.1438$ ).

3.5 Inside the building (Appendix I - location 4) in July, a single LHS was seen and recorded on the first floor at 21:55. It was shortly followed by a Brown long-eared bat seen and heard flying from the end room down the corridor on the first floor.

*Static Surveys*

3.6 There was no statistical difference between the activity levels recorded in the two locations (Table 3).

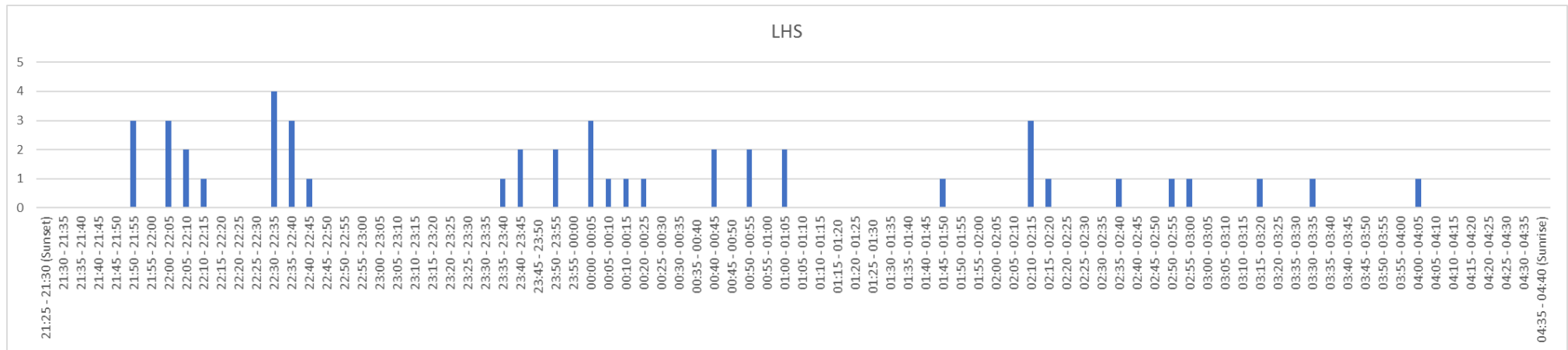
**Table3 – Total passes at the two locations**

<i>Species</i>	<i>Position 1 -South</i>	<i>Position 2 - North</i>
<i>LHS</i>	3	13
<i>Myotis</i>	113	82
<i>Noctule</i>	47	653
<i>Pip</i>	3	2
<i>Ppip</i>	367	1765
<i>Ppyg</i>	26	311
<i>Serotine</i>	1	0
<i>social</i>	4	60
	Pvalue =	<b>0.142953</b>

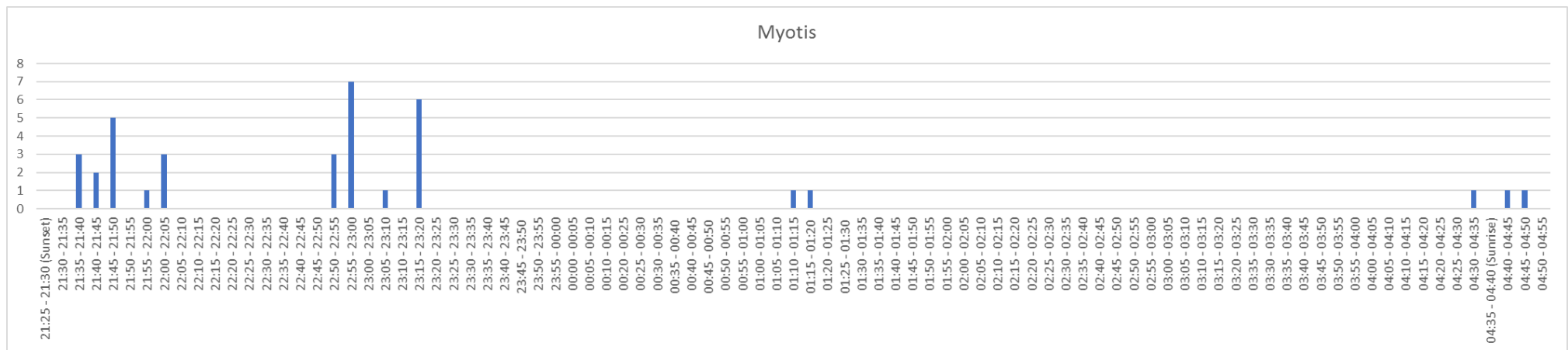
3.7 Inside the building the static detector recorded Lesser Horseshoe (LHS), Soprano pipistrelle, Myotis and Noctule. As in previous reports Noctule is considered to be outside the building and is therefore not included in the analysis for bats present within the building. Over the 5 nights an average of 9.2 calls per night were recorded for LHS, and an average of 2.2 calls per night for Soprano pipistrelles and 7.2 for Myotis. The Figures 1-3 below illustrate the times during the night when these calls were recorded. Please note that the graphs show the totals over the 5 nights rather than an average.



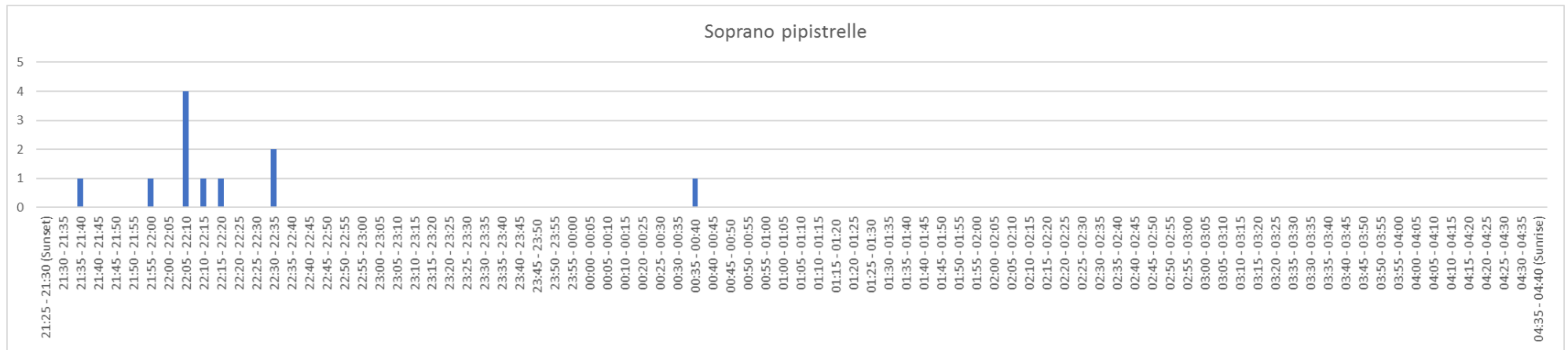
**Figure 1 – Total calls for Lesser horseshoe bat recorded over five nights**



**Figure 2 – Total calls for Myotis bat recorded over five nights**



**Figure 3 – Total calls for Soprano pipistrelle recorded over five nights**



## 4.0 CONCLUSIONS AND RECOMMENDATIONS

- 4.1 There is no evidence to suggest the building is a maternity site for any of the bats identified as present. The low numbers of bats seen and recorded within and leaving the building are not consistent with those of a maternity site. It is concluded that the building acts as a day roost for individual LHS, Common and Soprano pipistrelle, Myotis and Brown Long-eared bats. This conclusion is supported by the results of previous surveys undertaken in 2017 (DCE 2017) and 2018 (SBE 2018). It is considered that, given the deteriorating state of the building, it is becoming less and less suitable for use by roosting bats and is currently unsuitable as a maternity site.
- 4.2 Brown-long eared bats often exhibit a high fidelity for their roosts (Entwhistle *et.al.*, 1997) and are often the last species found remaining in buildings such as this. It is therefore considered likely that small numbers of Brown long-eared bat use the building as a day roost. The average number of bats visible in maternity roosts for this species is 15 – 20 individuals although the actual number of a maternity colony averages 30 – 50 individuals (Entwhistle *et al*, 2000).
- 4.3 Similarly, based on the number of Lesser horseshoe droppings observed, the presence of a maternity roost for this species is unlikely – the size of recorded maternity colonies ranges from 30 – 500 animals (Schofield, 1997). It is considered that this site previously, i.e. when in use and in a better state of repair, would have supported greater numbers of bats. In its current state it supports what are likely to be remnants of previously larger colonies. If left to deteriorate further, it will become increasingly less suitable for use by bats and numbers will dwindle further.
- 4.4 It is considered highly unlikely that pipistrelles use the structure for maternity purposes being generally found in newer buildings and typically in features, such as between tiles and felt or cavity walls, which are lacking at this site. Although maternity colonies are variable for these species (BCT 2016) they are generally greater than 10. No more than 5 have ever been seen to exit the building and they appear to be exiting from different areas. This would suggest individual bats rather than a group of females clustering together as they would in a maternity colony.
- 4.5 The winter surveys (SBE 2019) identified one of the larger loft spaces within the Main School Building as a winter roost for Lesser horseshoe bats. It is also likely that Myotis bats are present in the structure during the winter period but it was not possible to identify exactly where. The building provides plenty of suitable crevices of all orientations and it is considered possible that small numbers of pipistrelles hibernate in the structure.

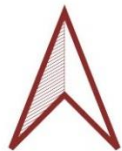
- 4.6 The proposal will result in the loss of a day roost for small number (<5) of LHS, Common and Soprano pipistrelle, Myotis and Brown Long-eared bats and a winter hibernation site for small numbers (<5) of LHS, Common and Soprano pipistrelle and Myotis bat.
- 4.7 A derogation licence must be obtained prior to any works taking place on site. A detailed method statement will be required as part of the licence application and will be subject to approval by NRW during the licencing process. The main elements of the mitigation strategy are outlined in the SBE 2018 report and remain unchanged in light of the new data gathered and reported in this current document.
- 4.8 The proposed bat house (available in SBE 2019 at Appendix VII) has been designed to provide suitable conditions for the range of species and roost types identified at the site. The location of the bat house within the site has been carefully considered in conjunction with a range of constraints that apply to the site including significant root protection zones and the flyover easement zone which must be kept clear for maintenance. These constraints are illustrated in the SBE 2019 report at Appendix VIII.
- 4.9 Connectivity from the bat house to the wider landscape has been carefully incorporated into the site design maintaining a vegetated corridor (SBE 2019 at Appendix IX) along the western boundary and a sensitive lighting plan (SBE 2019 at Appendix X). Additional lighting illustration is provided in Appendix III of the current report. The external lights are all fixed in a downward direction and fitted with motion sensors and set to remain on for a maximum of one minute. The bollards at the western edge of the carpark are floor mounted and allow the vegetative corridor along this boundary to achieve a less than 0.5 lux (SBE 2019 at Appendix X) which is considered acceptable for continued use by the sensitive species present on this site.

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## APPENDIX I SURVEYOR LOCATIONS

Survey 1 & 2 were the same on both survey sessions. On the first session in June a third surveyor was at location 3 and on the second session in July the third surveyor was within the building at location 4.

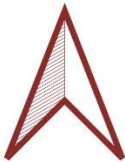
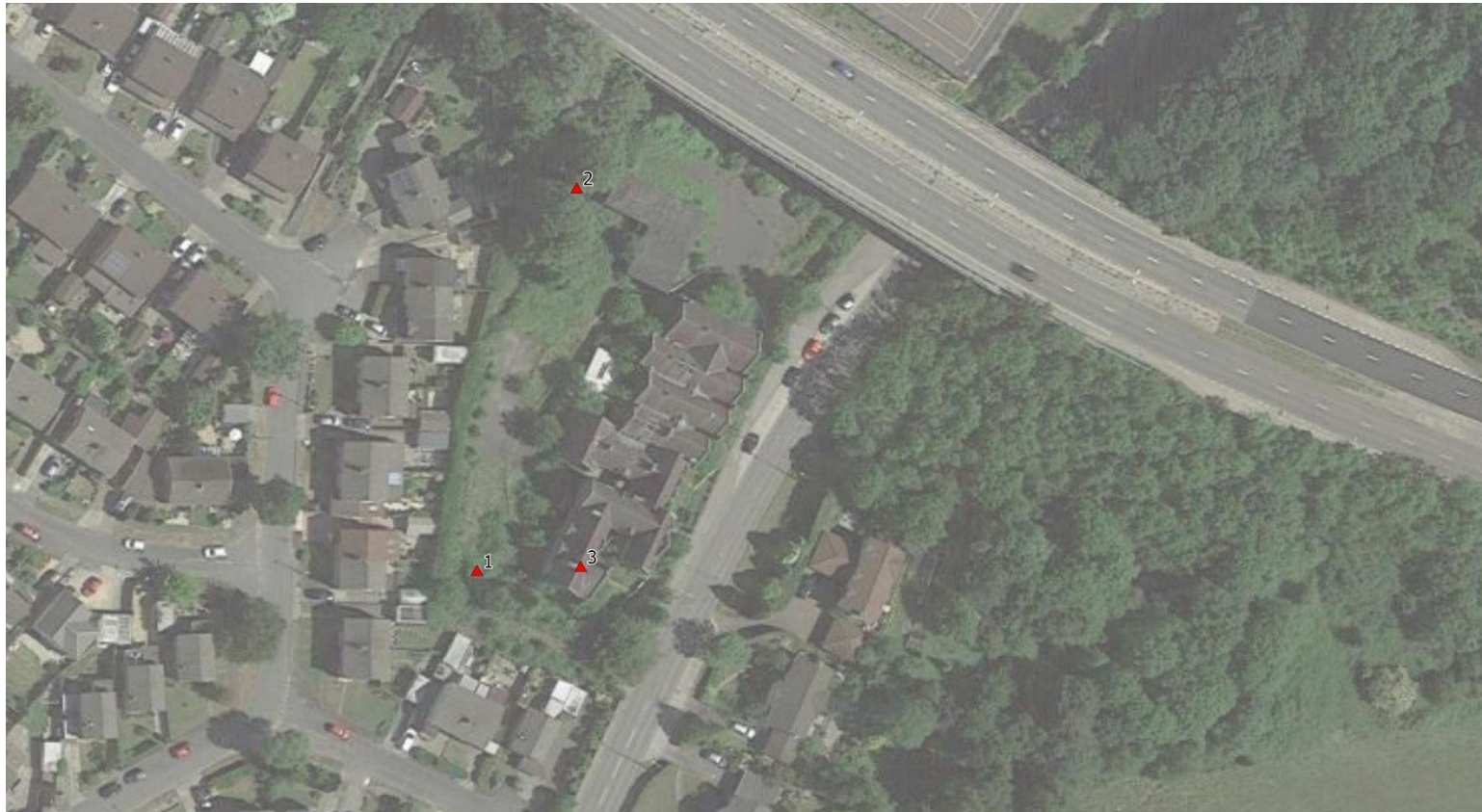


PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRUCTION
Client Hafod Housing Association <b>Project Aberthin</b>		Drawing Title Surveyor		
Project Code E1884501		Initials DF 06 October 2020		
		<small>4 Forge Lane Dorwell Road Ponarth Vale of Glamorgan CF64 2AA</small>		
		<small>Telephone: +44(0) 193 3043 8176 email: enquiry@soltysbrewster.co.uk</small>		

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**APPENDIX II STATIC DETECTOR LOCATIONS**



PRELIMINARY	PLANNING	DESIGN	INSURE	CONSTRUCTION
Client Hafod Housing Association		Drawing Title Static Bat Detector Locations		
<b>Project Aberthin</b>				
Project Code E1884501		Initials	DF	06 October 2020
				
<small>4 Slangate House Sungate Road Penarth CF64 2AA</small>		<small>Telephone: +44(0) 29 2040 8476 e-mail: enquiry@soltysbrewster.co.uk</small>		

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**APPENDIX II ADDITIONAL LIGHTING PLANS**



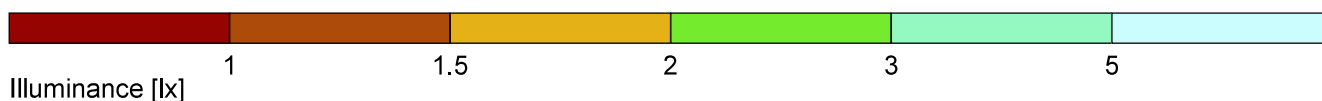
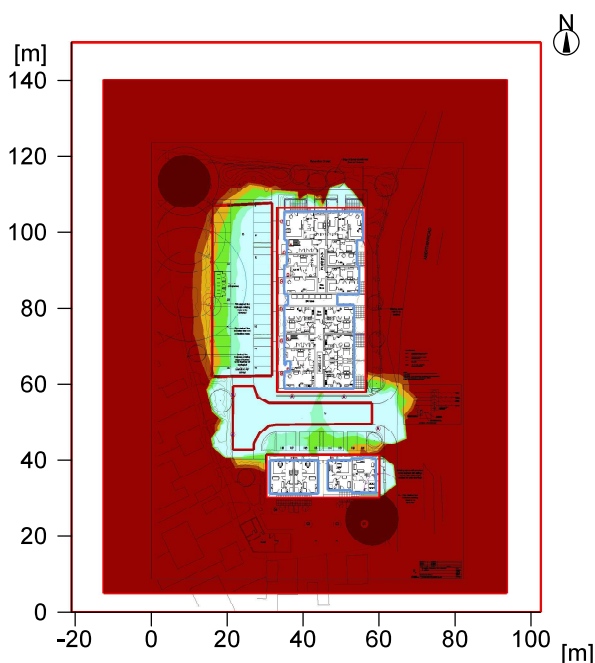


**LUX** Manufacturer of the Year 2018

## 2 Exterior 1

### 2.2 Summary, Exterior 1

#### 2.2.1 Result overview, 1.5m Area



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	1.50 m
Maintenance factor	0.80

Total luminous flux of all lamps	64600 lm
Total power	542 W
Total power per area (18525.00 m <sup>2</sup> )	0.03 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Em	2.1 lx
Minimum illuminance	Emin	0 lx
Maximum illuminance	Emax	75.3 lx
Uniformity U <sub>o</sub>	Emin/Em	1:--- (---)
Diversity U <sub>d</sub>	Emin/Emax	1:--- (---)

#### Type No.Make

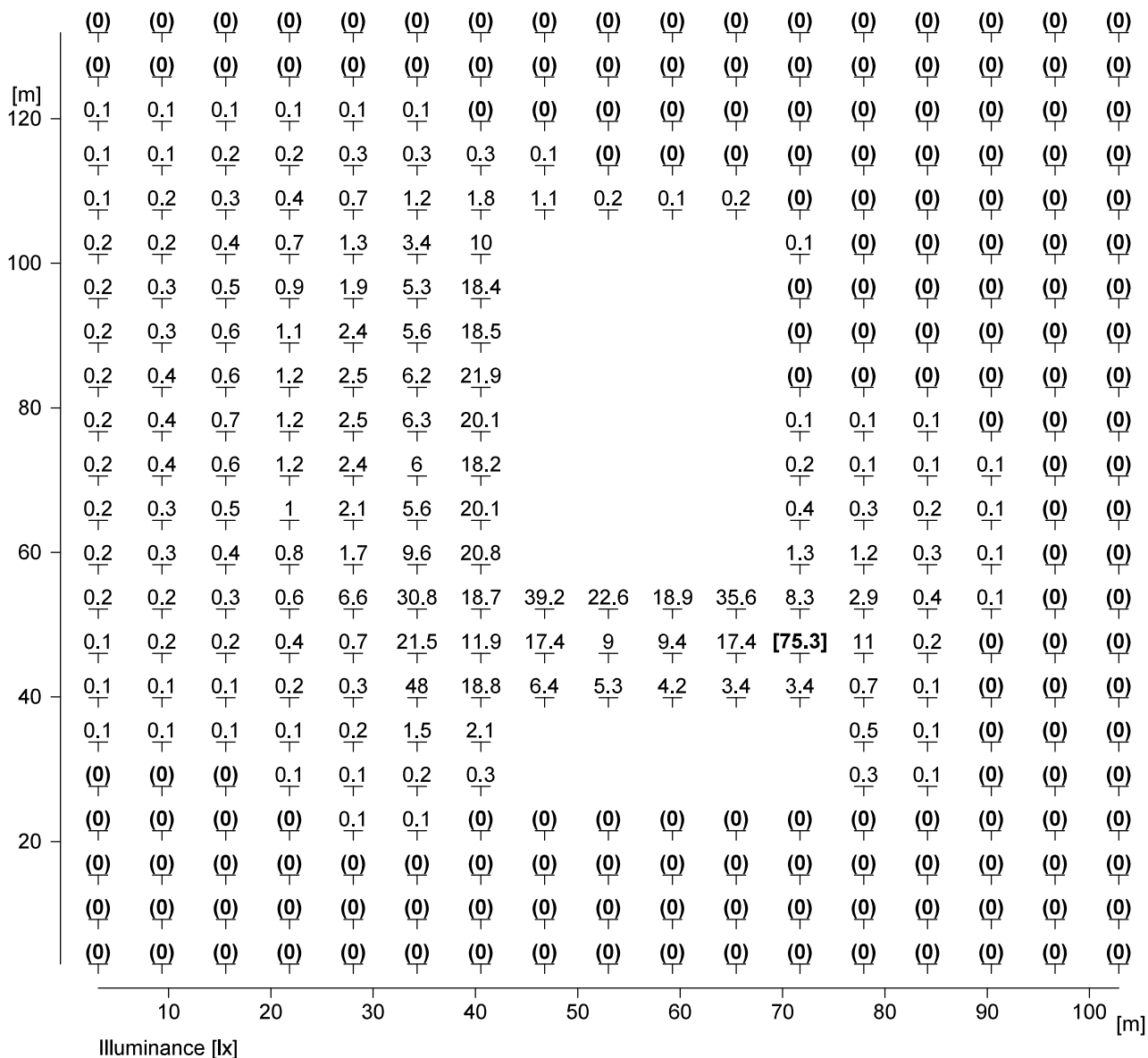
- |                         |   |                                       |
|-------------------------|---|---------------------------------------|
| <b>Tamlite Lighting</b> |   |                                       |
| 1                       | 5 | Order No. : !EXPFLA480NW + TC4M       |
|                         |   | Luminaire name : EXPLORER             |
|                         |   | Equipment : 1 x 40 W / 4800 lm        |
| 2                       | 6 | Order No. : !EXPFLA480NW + WALL MOUNT |
|                         |   | Luminaire name : EXPLORER             |
|                         |   | Equipment : 1 x 40 W / 4800 lm        |



## 2 Exterior 1

### 2.3 Calculation results, Exterior 1

#### 2.3.1 Table, 1.5m Area (E)



Height reference plane : 1.50 m  
 Average illuminance Em : 2.1 lx  
 Minimum illuminance Emin : 0 lx  
 Maximum illuminance Emax : 75.3 lx  
 Uniformity Uo Emin/Em : ---  
 Diversity Ud Emin/Emax : ---

