PHASE II BAT SURVEYS

PROPOSED ARTIFICIAL PITCH
HAYDON SCHOOL
WILTSHIRE LANE
PINNER
LONDON

A report to:

Surfacing Standards Limited
Office 2 - Empingham House
Uppingham Gate
Ayston Road
Uppingham
Rutland
LE15 9NY

By:

B J Collins – Protected Species Surveyors Ltd
Elvina Cottage
Wilson's Lane
Morton
Southwell
Nottinghamshire
NG25 0UF
www.bjcollins.co.uk

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Report to:	Surfacing Standards Limited
Report Title:	Phase II Bat Surveys - Proposed Artificial Pitch

Survey Site/Job:	Haydon School, Wiltshire Lane, Pinner. HA5 2LX
OS Grid Reference:	TQ 1011 8952

Survey Date(s):	25th of April and 7th of May 2025
Surveyed by:	Barry J Collins MSc MCIEEM

Architect/Agent:	Surfacing Standards Limited
Planning Reference:	N/A

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Final Version	16/12/2025	B J Collins MSc MCIEEM	B J Collins MSc MCIEEM

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RELIANCE - The report describes the conditions and ecological features on the site (and possibly its environs) at the time of survey and that this may (is likely to) change over time. Reliance upon the findings of this report should be determined in accordance with the Chartered Institute of Ecology and Environmental Management guidance on the longevity of ecological surveys, see Advice Note (April 2019) On the Lifespan of Ecological Reports and Surveys CIEEM.

Contents

SUMMARY

This report describes the results of phase II bat surveys with regards to bats and the proposal to construct an artificial turf pitch, along with an associated sports turf floodlighting scheme, on the playing fields of Haydon School in Pinner.

The survey was undertaken to identify the bat fauna in the local area and to assess the effect of the proposal on this. The study was in the form of a 13-night static monitoring survey in the spring monitoring period of 2025, supported by a night-time bat walkover in May 2025.

The surveys identified that the school grounds support a low population of foraging and commuting bats. The species predominant on the site are almost entirely pipistrelle bats, but with low numbers of this typically urban and light tolerant group of bats. In contrast, bat species which are adversely affected by artificial lighting were effectively absent.

Following the detailed site survey the bat population on the site was assessed using the framework provided by Wray *et al*.. This determined that the playing field is on the boundary between a site of 'local or district value' for bat species to one categorised as being 'not important'. The results of the static monitoring was then compared to other similar studies in the region using the Ecobat analysis package. This concurred with the Wray analysis.

In order to comply with best practice the ecological mitigation hierarchy should be implemented upon all development. There are four steps to the mitigation hierarchy. The first step is to avoid any environmental impact and that is not possible and provide a sports surface which is viable and functional. Therefore the second step of the hierarchy has been implemented, with a modern controlled sports turf floodlighting scheme and a lighting curfew, to good effect.

Summarised Conclusions

The conclusions of this report with regards to foraging and commuting bats are therefore as follows:

- The surveys found that the proposed location for the artificial pitch, in the centre of the building/playing field complex, is used almost entirely by low numbers of commuting and foraging pipistrelle bats.
- There is no regular use of the playing field by any of the bat species that are sensitive to artificial lighting.
- The analysis of the bat population on site using the Wray et al metric, identified that the species and numbers present are indicative of a site falling just into the category of 'local or district value', from a site categorised as being 'not important'. The Ecobat assessment of bat activity found that the extent of activity by bats fell into the lower end of the lowest percentile for bat activity within the region.
- In all instances, the proposed sports turf floodlighting scheme is a modern mitigated design that will result in controlled light spillage, keeping the tree-lined or residential garden boundaries of the school sports ground in darkness.
- The impact of artificial lighting on the playing field is further mitigated by a floodlight curfew of 22:00 hours, meaning for the largest part of the night the entire playing field is in darkness.
- With a domination of the playing field by typically urban bat species, tolerant of artificial lighting, and doing so in such limited numbers, there will be no detrimental impact upon the favourable conservation status of the bat fauna in the local area from any adverse effect of the proposed sports turf floodlight scheme.

Considering the above bullet points, the conclusion is that the proposed artificial pitch, and in particular the mitigated floodlight scheme, when combined with the floodlight curfew of 22:00 hours will have a negligible impact upon bat activity in the immediate vicinity of the development footprint.

1. INTRODUCTION

This report has been prepared by B J Collins – Protected Species Surveyors Limited for Surfacing Standards Limited. It provides the results of phase II bat surveys undertaken in April/May 2025.

The survey was carried out to inform the potential ecological impact upon bat species from the proposal to install a new artificial grass sports pitch, with an associated floodlighting scheme, on the playing field of Haydon School in Pinner. The playing fields are located off Wiltshire Lane in Pinner, North London at post code HA5 2LX. The proposed pitch is to be placed upon the 8 figure Ordnance Survey grid reference of TQ 1011 8952.

The aim of the survey was to document the bat species which currently use the proposed location for the artificial pitch as well as the boundaries of the affected area of playing field, to allow an assessment of any impact from the new pitch and its proposed artificial sportsturf floodlighting, and to develop a mitigation strategy to result in a reduction in any ecological impact from the proposal.

The legislation with regards to the target species relevant to the survey is listed below.

1.1 Legislation applicable to bats

All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

The legislation makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat. It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

Under Section C Regulation 55(9) of the Regulations licences can only be issued if Natural England is satisfied that:

- There is no satisfactory alternative to the work specification and
- The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural England aim to process EPS licence applications within 35 working days of receipt and Low Impact Class licenses are typically registered within 14 working days of receipt.

Lighting in the vicinity of a bat roost, which may cause disturbance and even a potential abandonment of the roost, may be classed as an offence both to a population and/or individuals.

2. SITE DESCRIPTION

2.1 Location of the proposed Artificial Turf Pitch

Figure 1: The survey area (outlined yellow), courtesy of Google Earth.

The area for the proposed artificial pitch sits within an area of school playing field comprising of modified grassland, used for football pitches. To the immediate north of the school playing fields is an area of residential development, to the west is residential development with Ruislip Common SSSI and NNR and associated woodlands some 400m beyond, to the east is residential development with agricultural fields and further development beyond, to the south is residential development.

Photograph 1: view looking south with the footprint for the proposed pitch over the existing grass football pitch in view. The two trees in the foreground will be retained, with the two trees in the background, to the right, lost.

Photograph 2: showing the wider playing field area from the north-east, the proposed artificial pitch being in the distance.

3. SURVEY METHODOLOGY

3.1 Desktop Study

An ecological records search was commissioned from the Green Space Information for Greater London CIC (GiGL) on the 4th of December 2025. This comprised a request for records of wildlife species for a 1km circumference from the centre of the proposed sports pitch. Key elements of these with regards to bat species have been extracted and described within this report.

3.2 Night-time bat walkover (NBW/VPS)

To allow the physical observation of bat activity, and to assess bat activity over the peak foraging period, a single night-time bat walkover (NBW) and combined vantage point survey (VPS) was undertaken. The NBW/VPS route was specifically designed to assess the importance of the boundaries of the playing field for bat species. The survey was designed and implemented by Mr B J Collins MSc MCIEEM, a licensed bat ecologist with over two decades of experience assessing habitat use by bats.

The survey route ran anti-clockwise around the boundary of the playing fields covering a period of up to approximately 90 minutes. The NBW route is shown in figure 6, chapter 4. The NBW was undertaken on the 8th of May 2025. The survey began 15 minutes after sunset (triggered by bat activity). It was undertaken by one surveyor, who was equipped with a Full Spectrum detector, continuously recording bat echolocation calls throughout the surveys. All bat activity/passes were counted and attributed to species (where possible) during the transect, with species identification confirmed by sonogram analysis using the BTO Pipeline.

3.3 Static/automated bat survey

A period of remote monitoring was undertaken over 13 nights in the spring season from 25 April to 7 May 2025. Two Anabat Express Full Spectrum detectors were placed out; the units were set to switch on 30 minutes before sunset and run continually until 30 minutes after sunrise.

The first was positioned on one of the trees to the north-west corner of the proposed pitch. This was set to record bat activity in the exact location that the impact will occur. The second detector was then placed onto the perceived optimum habitat, the eastern boundary with the residential properties. The units were set to operate for a total of 13 nights, however the detector on the eastern boundary stopped recording after six nights.

On completion, the units were collected, and the recorded sonograms analysed.

The detectors recorded for a total of approximately 9 hours each night on each detector. This amounted to a 117 hours of monitoring by the proposed pitch location.

Night (y-m-d)	Sunset (h:m)	Sunrise (h:m)	Night Length (hours)
2025-04-25	20:15	05:43	9.5
2025-04-26	20:17	05:42	9.4
2025-04-27	20:18	05:40	9.4
2025-04-28	20:20	05:38	9.3
2025-04-29	20:22	05:36	9.2
2025-04-30	20:23	05:34	9.2
2025-05-01	20:25	05:32	9.1
2025-05-02	20:27	05:30	9.1
2025-05-03	20:28	05:28	9.0
2025-05-06	20:33	05:23	8.8
2025-05-07	20:35	05:21	8.8

Table 1 - sunrise and sunset at the proposed pitch location

3.4 Survey effort

The survey effort was designed to assess bat activity up to 13 nights in the spring activity season from late April to early May. Best practice guidance provides an indication of the survey effort required for the level of risk to bat populations affected by development. The 13-night monitoring period over the spring was comparable to best practice guidance of a minimum of 5 nights in the spring, summer and autumn. A summer and autumn monitoring period was not undertaken.

However, the positioning of the pitch isolated from linear landscape features, the low number of bat passes at both the pitch and the perceived optimum habitat and the lack of bats which are sensitive to artificial lighting, the extent of monitoring undertaken on the site proportionately addresses the requirement of a bat survey to inform the proposed impact from the artificial pitch, as described by Clause 4.1.2 of BS42020 and section 2.2.17 and 8.2.47 of best practice guidelines (reference 3) as below:

When planning surveys it is important to take a proportionate approach. The number and arrangement of manual and automated/classic surveys undertaken should be determined in consideration of the following factors: likelihood of bats being present, likely species concerned, type and diversity of habitats affected, levels of activity/relative abundance, predicted impact of the proposed development on bats, type and scale/size of the proposed development.

This is in that the survey identified the presence of a low population of light tolerant bat species. Furthermore, considering the impact from the sports turf floodlighting will occur only part of the night, to the 22:00 hour curfew.

3.5 Weather conditions

The weather for the night-time bat walkover was as follows:

Survey	Temperature	Cloud cover	Wind speed
8 May 2025 – SS 20:35	13.4°c	0%	B2/3

Table 2 – climate conditions at the beginning of the night-time bat walkover, (B = Beaufort scale)

3.6 Personnel

The static monitoring and the NBW/VPS were both designed and carried out by B J Collins – Protected Species Surveyors Limited. The surveys were carried out by Mr Barry J Collins MSc MCIEEM, Bat Licence: 2015-13152-CLS-CLS and Registered Consultant RC110 and B32RC002. BJ Collins is an experienced bat ecologist, qualified to hold two class licenses from Natural England that are only issued to individuals that can demonstrate sufficient experience and competency, and with regards to CL32, for bat roosts of regional and national significance. He is also an experienced trainer having carried out training on behalf of Natural England, The Bat Conservation Trust and CIEEM in bat survey methodologies. The remote monitoring units were set up and deployed by Mr B J Collins, the sonograms collected were analysed using Kaleidoscope pro software, manually verified and then specific species calls verified using the BTO pipeline.

3.7 Ecobat analysis

Ecobat is a measure of relative bat activity obtained using the secure online tool Ecobat (http://www.mammal.org.uk/science-research/ecostat/) (reference 10), initially designed by the University of Exeter and now hosted and developed by the Mammal Society and the University of Sussex (Lintott et al., 2018). The tool compares data entered by the user with bat survey information collected from similar areas at the same time of year and in comparable weather conditions.

Ecobat is a free online tool that gives context to acoustic data recorded from bat surveys. Users

upload their data and receive a report which gives a wide range of tables and graphs to explain more about the data they have collected compared to bat records already held in the Ecobat database.

The data from the western boundary by the proposed pitch area was selected for analysis. This data was chosen being the detector closest to the proposed artificial pitch and the one with the greatest extent of activity. This was then used to provide regional context in the abundance of bats on the site.

3.8 Categorisation of bat species to light tolerance

In the analyses throughout this report bats are grouped together depending upon the impact upon individual species from artificial lighting, as described by research and technical publications from 2 sources (references 7 and 8), and also as displayed in Guidance Note 08/23: Bats and Artificial Lighting at Night (reference 5), see overleaf:

Table 1: Summary of the effect of ALAN on UK bat species.

Species	Roost	Flight Corridor	Foraging Area	Drinking Site	Migration	Landscape Level	Habitat Type
Greater Horseshoe *Rhinolophus ferrumequinum*		na	na	na	na	na	clutter
Lesser Horseshoe *Rhinolophus hipposideros*			na	na	na		clutter
Brown Long-eared *Plecotus auritus*					na		clutter
Grey Long-eared *Plecotus austriacus*	na	na	na	na	na	na	clutter
Bechstein's *Myotis bechsteinii*	na	na	na	na	na	na	clutter
Natterer's *Myotis nattereri*		na	na		na	na	clutter
Daubenton's *Myotis daubentonii*	na			na	na		edge
Whiskered *Myotis mystacinus*	na	na	na	na	na	na	edge
Brandt's *Myotis brandtii*	na	na	na	na	na	na	edge
Alcathoe *Myotis brandtii alcathoe*	na	na	na	na	na	na	edge
Western Barbastelle *Barbastella barbastellus*					na		edge
Common Pipistrelle *Pipistrellus pipistrellus*	na				na		edge
Soprano Pipistrelle *Pipistrellus pygmaeus*				na			edge
Nathusius' Pipistrelle *Pipistrellus nathusii*	na	na	na	na			edge
Common Noctule *Nyctalus noctula*	na			na	na		open
Lesser Noctule *Nyctalus leisleri*	na	na	na		na		open
Serotine *Eptesicus serotinus*	na	na	na	na	na		open

Positive effect
No effect
Negative effect
na **No data available**

Data in table is indicative only, is drawn predominantly from European studies (where data available) and shows numerous data gaps due to lack of research data, therefore bat behaviour within the UK may vary and needs assessing on a site by site basis.

Table 3 - the summary table on the effects of artificial lighting on bats species from best practice guidance (reference 5).

4. SURVEY RESULTS

4.1 Desktop Study Results – Bats

Bats

The search of the MAGIC mapping software recorded a single EPS licence for bats within 1 km of the site. This was located to the south and comprised of an EPS licence for day roosting Brown long-eared bat, Common pipistrelle and Soprano pipistrelle (licence reference 2014-2993-EPS-MIT).

Apart from this there is a paucity of records of bats from a kilometre circumference of the pitch. This included for a total of seven records from two confirmed species , see table 4 below.

Taxon Name	Common Name	Total number of records	Recorded breeding?	Distance (m) of nearest record	Bearing of nearest record	Date of most recent record
Pipistrellus	Pipistrelle Bat species	1	No	741	E	26/06/1996
Pipistrellus pipistrellus	Common Pipistrelle	3	No	818	SW	21/08/2014
Plecotus	Long-eared Bat species	1	No	1042	SE	Jul 2013
Plecotus auritus	Brown Long-eared Bat	1	No	840	S	2005
Vespertilionidae	Bats	2	No	772	S	18/10/2004

Table 4 - showing the abundance and orientation of bat records within 2 km of the proposal.

Only one record was from a bat categorised as being sensitive or averse to artificial lighting. This was a record of a Brown long-eared bat (*Plecotus auritus*) in a building to the south of the sportsground, and dating from 2014.

4.2 Species verification

To investigate sonograms potentially incorrectly attributed by the Kaleidoscope auto ID function, dubious calls were extracted and sent to the BTO pipeline. Further, sonograms requiring confirmation to species were also submitted. This method confirmed the potential presence of Leisler's bat, but ruled out the potential for Nathusius pipistrelle. The Myotis bat calls, from the side of the pitch, amounting to two number on a single night and close together and faint, were provided with some confidence level. The findings are therefore used in the following chapters.

SCIENTIFIC NAME	ENGLISH NAME	PROBABIL	WARNINGS
Myotis daubentonii	Daubenton's Bat	0.64	
Myotis daubentonii	Daubenton's Bat	0.71	
Nyctalus leisleri	Leisler's Bat	0.97	
Nyctalus leisleri	Leisler's Bat	0.7	
Nyctalus leisleri	Leisler's Bat	0.92	
Nyctalus leisleri	Leisler's Bat	0.82	
Nyctalus noctula	Noctule	0.91	
Pipistrellus pipistrellus	Common Pipistrelle	0.85	
Pipistrellus pipistrellus	Common Pipistrelle	0.44	Low confidence
Pipistrellus pipistrellus	Common Pipistrelle	0.84	
Pipistrellus pygmaeus	Soprano Pipistrelle	0.71	

Table 4 – highlighted results of the BTO pipeline analysis

4.3 Static/automated bat survey

To provide detailed information with regards to the bat species which are present in the local area, the bat species which utilise the affected landscape of the playing field and the time that the activity occurs, a period of remote monitoring was undertaken utilising full spectrum bat detectors.

As previously described, the full spectrum detectors were positioned in two locations, principally detector placed onto a tree at the north-west corner of the proposed pitch. A second detector was positioned to assess bat activity at the proposed pitch compared to the linear feature of the eastern boundary.

Figure 2 – position of the static detectors

4.3.1. Detector monitoring the north-west corner of the proposed pitch

This detector was located approximately 2.5m above ground level on one of three specimen landscape trees. As a result, the detector gave an accurate indication of the bat species which are likely to be foraging adjacent to the proposed sports turf floodlights.

The detector was set and left for a period of 13 nights, between the 25 April and 8 May 2025.

Over this monitoring period, and at this detector location, there was a limited amount of bat activity per night, compared to other studies in the region.

The limited activity that was present was dominated by Pipistrelle bats. Over the monitoring period there was a grand total of 257 sonograms (amounting to approximately 19 sonograms per night) generated of which 152 were from Common pipistrelle (*Pipistrellus pipistrellus*) and 100 to Soprano pipistrelle(*P. pygmaeus*). There were then a total of 3 sonograms generated by Nyctalus bats with two of those from Leisler's bat (*Nyctalus leisleri*) and one from Noctule bat (*Nyctalus noctula*).

Amongst this extensive amount of activity by bat species, which are all tolerant of artificial lighting, and also the most abundant urban species, there were two faint sonograms recorded at 00:09 hours on the 29 April by a Myotis species, these were sufficiently faint as to be missed by Kaleidoscope pro analysis but picked up by the double check of the bat ecologist. The BTO pipeline provided a

71% confidence in the single bat being a Daubenton's bat (*Myotis daubentonii*). There were no other bat categorised as being light tolerant recorded from either of the detectors on the playing field.

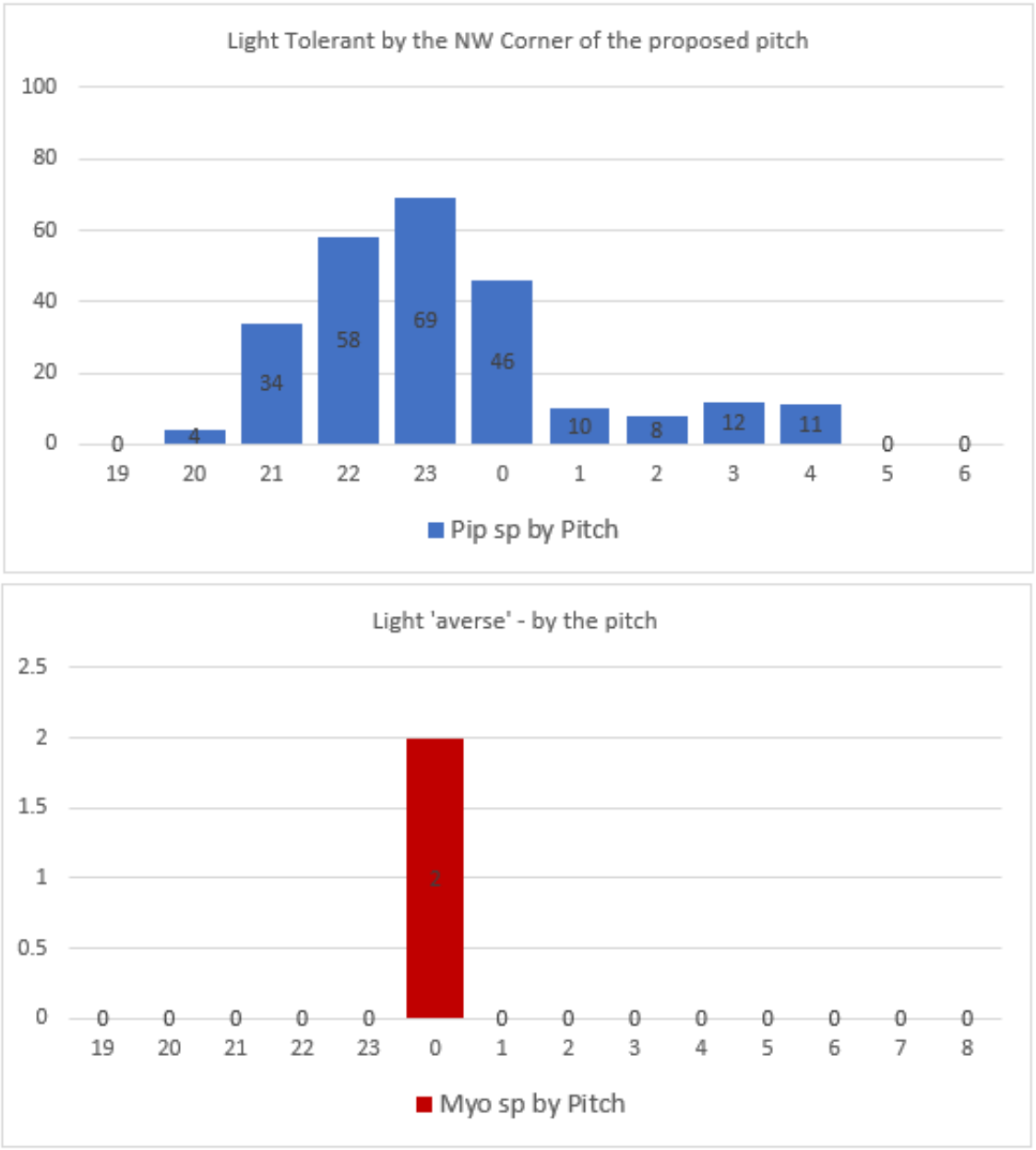

Figure 3 - the distribution of sonograms recorded from bat species categorised as 'light tolerant' above, and those categorised as 'light-averse' on the tree to the north-west corner of the proposal.

4.3.2. Detector monitoring the eastern boundary

The second detector was positioned alongside the eastern boundary. In this location it recorded double the extent of bat activity over the six night period combined. This is demonstrated by the amount of sonograms per hour on the eastern boundary (blue) and the amount of sonograms per hour on the north-west corner of the pitch (red) on figure 4 overleaf.

This was still a very low extent of activity, compared to other studies by this consultancy and also recorded within the Ecobat project. Over the entire six nights there was a total of 525 sonograms generated. 459 of those were from common pipistrelle and 66 from soprano pipistrelle. Further to that there were 2 sonograms generated by Nyctalus bats.

There were no light sensitive bats recorded on this boundary.

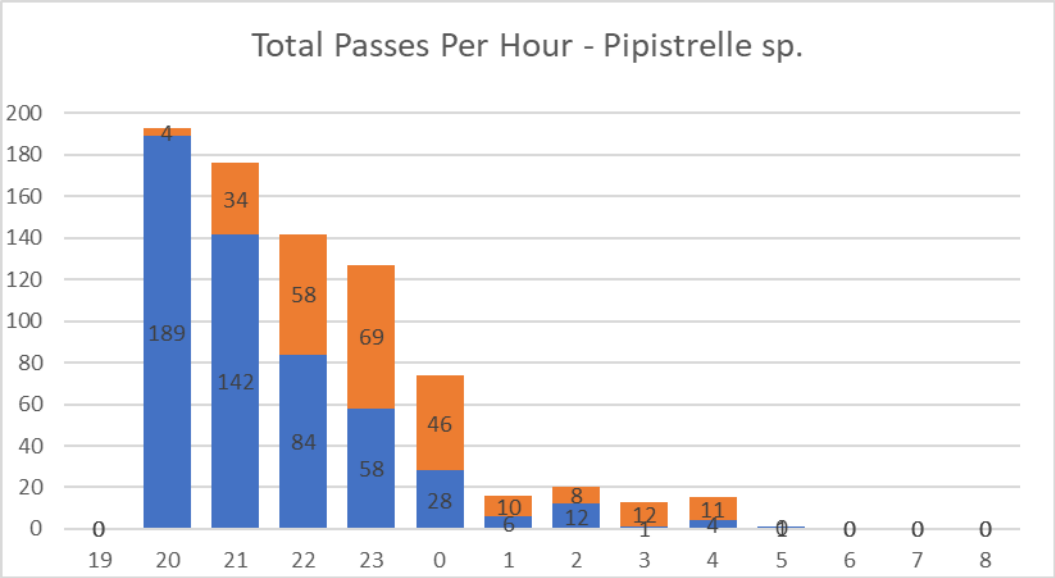

Figure 4 - comparing the number of sonograms on the eastern boundary (blue) to the number of sonograms generated at the north-west corner of the proposed pitch (red), over the first six nights of monitoring.

The sonograms generated from the eastern boundary are then displayed overleaf with the number of sonograms from 'light tolerant' and 'light averse' bats per hour over the entire six night monitoring period.

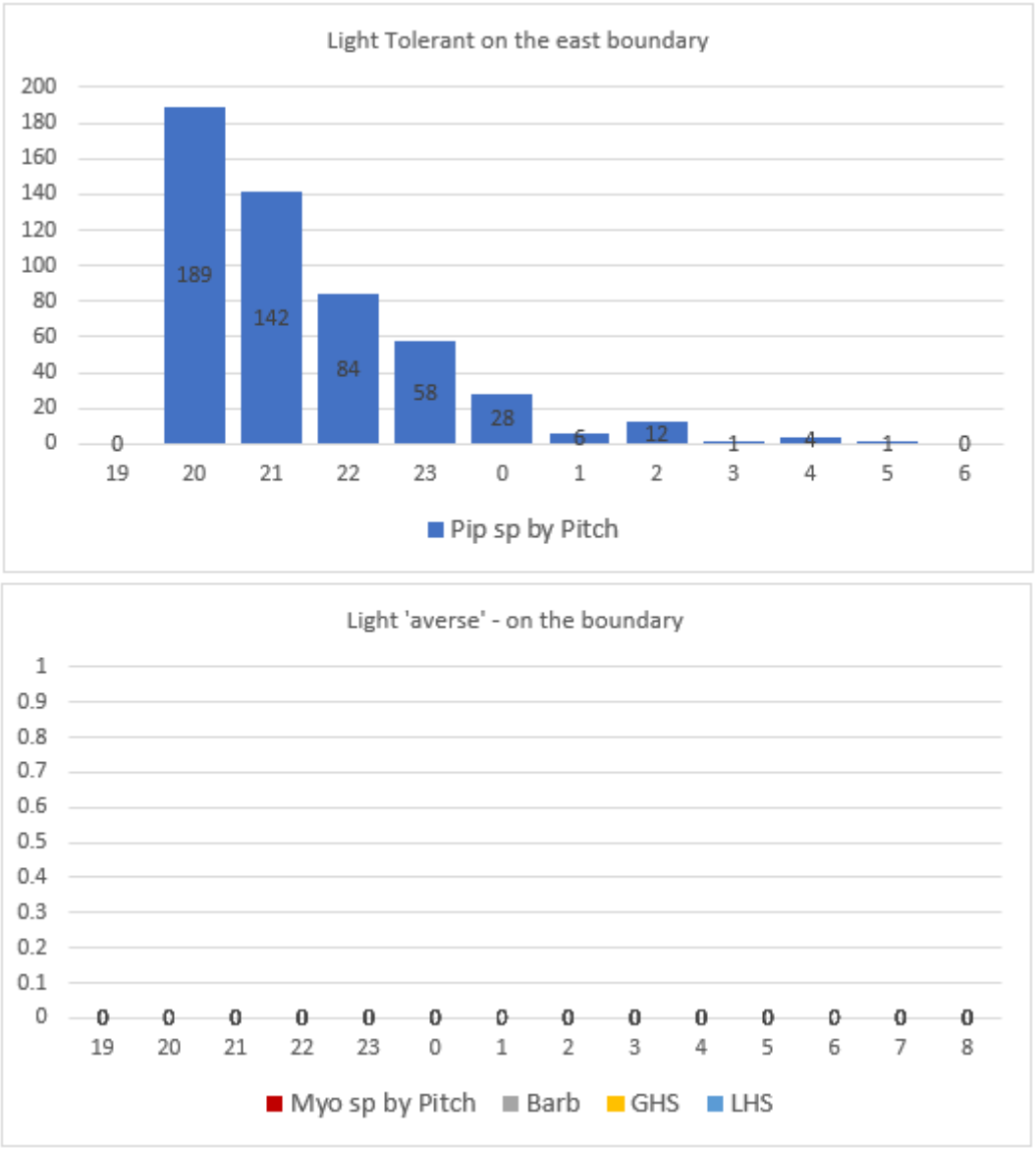

Figure 5 – showing the extent of sonograms to the hour of night by both light tolerant and light averse bats on the fence to the east of the playing field.

4.4 Night-time bat walkover (NBW/VPS)

There was a single 8 May 2025 night-time bat walkover and vantage point survey undertaken and the results are shown below. The map shows the location of the vantage point (stop point) where the surveyor recorded for a total of five minutes, alongside is the total number of sonograms generated at the stop point and the three-minute night-time bat walkover section following, combined.

There was only Common pipistrelle recorded during the survey. There was a low number of sonograms recorded, reflecting the low number of bats recorded by the static monitoring study.

The distribution of the sonograms to the stop point is provided by figure 6 overleaf.

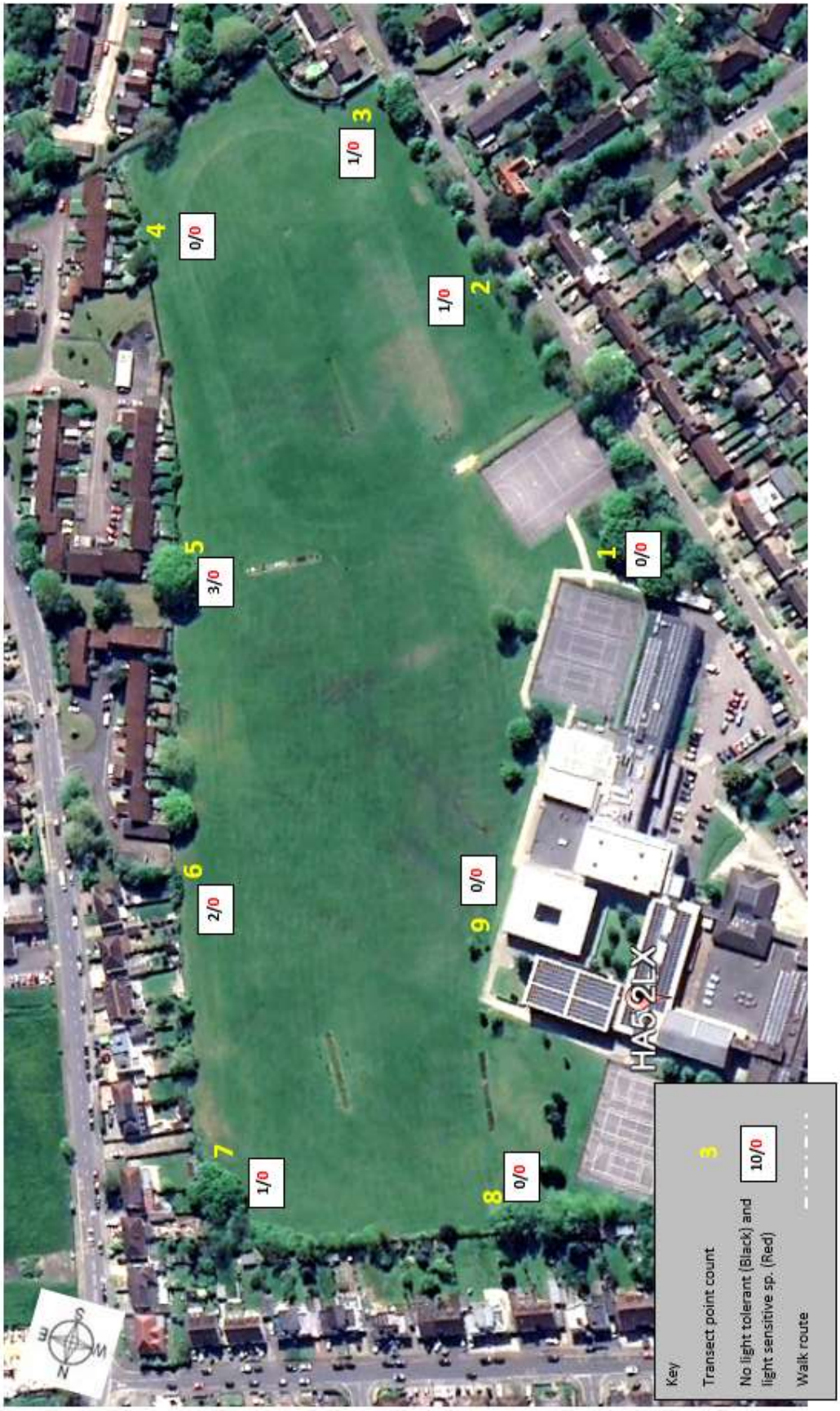

Figure 6 - the distribution of sonograms recorded from the NBW/VPS in relation to the overall playing field, there was only Common pipistrelle bat recorded. There were no light sensitive bat species identified by this survey.

5. STATUS OF THE RECORDED POPULATION

5.1 Valuing Bats in Ecological Impact Assessment

The status of the recorded bat fauna adjacent to the proposed pitch can be assessed in accordance with Wray *et al* (2010) (reference 9). The following tables are extracted from that assessment methodology:

Table 4: Valuing commuting routes

Species	Number of bats	Roosts/potential roosts nearby	Type and complexity of linear features
Common (2)	Individual bats (5)	None (1)	Absence of (other) linear features (1)
-	-	Small number (3)	Unvegetated fences and large field sizes (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Walls, gappy or flailed hedgerows, isolated well-grown hedgerows, and moderate field sizes (3)
-	-	Large number of roosts, or close to a SSSI for the species (5)	Well-grown and well-connected hedgerows, small field sizes (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Complex network of mature well-established hedgerows, small fields and rivers/streams (5)

Table 5: Valuing foraging areas

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established vegetation (1)
-	-	Small number (3)	Surburban areas or intensive arable land (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Isolated woodland patches, less intensive arable and/or small towns and villages (3)
-	-	Large number of roosts, or close to a SSSI for the species (5)	Larger or connected woodland blocks, mixed agriculture, and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)

Table 5 - extracted from Wray et al for the purposes of categorising the bat population recorded from the bat surveys.

Table 3: Scoring system for valuing commuting and foraging bats

Geographic frame of reference	Score
International	>50
National	41 - 50
Regional	31 - 40
County	21 - 30
District, local or parish	11 - 20
Not important	1 - 10

Table 6 - using the above assessment to establish the importance of populations, extracted from the same reference paper.

Using the above metrics, there were only common bat species present, resulting in a species score of 2, the number of sonograms are indicative of individual bats only, scoring 5, given the type of dwellings in the vicinity there is considered to be the potential for a bat roost of typical urban bats and therefore this would score 4, the surrounding habitat is suburban and therefore this scores 2.

As a result, using the framework provided by Wray *et al,* the current data collected scores 13 for both commuting and foraging bats, valuing the boundaries of the playing field as being just within the category of a site of 'District, Local or Parish' value from the category of 'not important' for bat species.

5.2 Bat activity – 'Ecobat' analysis

In order to compare the results of the static monitoring against other static monitoring projects in the county, the data for the 13 nights from the 25 April to the 8 May 2025 was analysed through the Ecobat database system. In order to allow comparison of bat activity on a site with other monitoring studies, Ecobat advise that a reference range of over 200 sonograms is required to be confident in the relative activity level. There have been insufficient numbers of static monitoring studies submitted for the county (Greater London) to allow this comparison. As a result the data was then analysed regionally.

The following figures are extracted from that analysis report and effectively demonstrate that compared to other monitoring on a regional basis, the extent of bat activity falls at the lower end of the lowest percentile of bat activity.

The analyses throughout this document demonstrate that the individual bats (based upon the low number of sonograms) foraging adjacent to the proposed artificial pitch are dominated by bats that are tolerant of artificial lighting in their commuting and foraging activities.

Comparing the number of sonograms with the species present and the results of the regional Ecobat analysis, it is considered unlikely that there will be any detrimental impact upon the favourable conservation status of the bats in the areas surrounding Haydon School from the proposed artificial pitch installation.

Per Detector

Table 3. Summary table showing the number of nights recorded bat activity fell into each activity band for each species.

Detector ID	Species/Species Group	Nights of Exceptional Activity	Nights of High Activity	Nights of Moderate/High Activity	Nights of Moderate Activity	Nights of Low/Moderate Activity	Nights of Low Activity
NBGAS07	Myotis	0	0	0	0	0	1
NBGAS07	Nyctalus leisleri	0	0	0	0	0	2
NBGAS07	Pipistrellus pipistrellus	0	0	0	0	0	10
NBGAS07	Pipistrellus pygmaeus	0	0	0	0	0	8

Table 4. Summary table showing key metrics for each species recorded. The reference range is the number of nights for each species that your data were compared to. We recommend a Reference Range of 200+ to be confident in the relative activity level.

Detector ID	Species/Species Group	Median Percentile	95% CIs	Max Percentile	Nights Recorded	Reference Range
NBGAS07	Myotis	0	0	0	1	47345
NBGAS07	Nyctalus leisleri	2	2 - 2	3	2	6157
NBGAS07	Pipistrellus pipistrellus	0	0 - 0	0	10	587645
NBGAS07	Pipistrellus pygmaeus	4	3 - 12	12	8	76895

Table 7 - showing the number of nights when the recorded bat activity fell into the 'low activity' percentile band for bat activity surveys in the Ecobat analysis, compared to other studies in a regional context.

6. DISCUSSION

6.1 Survey effort

The basis of this monitoring report is a single survey cycle carried out over an extended period in the 'spring' survey season as described by best practice guidelines. The guidelines specify that habitats that have a "low suitability for bats" should be monitored over an entire season including spring, summer and autumn cycles. There is however a caveat that if the development impacts upon a habitat with low suitability and with relatively few features affected, that proportionality should be considered. Given the results within this document and the positioning of the artificial pitch and floodlight spillage from it, it is considered that the results of the 13-night peak summer survey (117 hours of night time monitoring) and supporting transect are sufficient to inform the limited potential ecological impact identified.

This is especially so considering the modern floodlight scheme proposed.

Table 8.3. Minimum recommended number of repeats for activity surveys.

Survey type	Low suitability habitat for bats[a]	Moderate suitability habitat for bats	High suitability habitat for bats
NBW	One survey visit[b] per season (spring – April/May, summer – June/July/August, autumn – September/October)[c]. Further surveys may be required if these visits, or the results of static detector surveys, reveal activity of interest that requires more observation on site.		
Automated/static bat detector surveys[d] The same locations should be used for each survey for comparison.	Data to be collected for a minimum of five consecutive nights per season (spring – April/May, summer – June/July/ August, autumn – September/October)[c] in appropriate (or the best available) weather conditions for bats.	Data to be collected for a minimum of five consecutive nights per month (April to October)[c] in appropriate (or the best available) weather conditions for bats.	

a If the habitat has been classified as having low suitability for bats, particularly on small sites with relatively few features, an ecologist should make a professional judgement on how to proceed based on all of the evidence available. It may or may not be appropriate for bat activity surveys to be carried out in low suitability habitats. However, caution should be exercised in fringe areas (e.g. some areas of Scotland) where 'low suitability habitat for bats' may be important to local bat populations due to the relative scarcity of better habitats. In such situations, bats are likely to also be more widely dispersed and may use a larger number of sites, therefore survey effort may actually need to be increased to detect use on the proposed site in question.

Table 8 - extract from national best practice guidelines (2023) (reference 3)

6.2 Bat activity

The most valuable element of the survey was the period of remote monitoring that was undertaken overnight over 13 nights between 25 April to 8 May 2025.

The overall survey found that there was a very low extent of activity by foraging and commuting bats on the playing field in general. As was anticipated, there was double the amount of activity on the playing field boundary to the east as there was on the proposed footprint for the artificial pitch in the centre of the playing field/building complex.

Furthermore, the activity was totally dominated by Pipistrelle bats, a species group that is highly tolerant of artificial lighting and frequently encountered in the urban environment. Therefore the bat species found on the playing field are less likely to be adversely affected by an artificial pitch floodlighting scheme.

There was a single rare occurrence of a Myotis bat over the 13 night period. This bat would be deterred by the sports turf floodlighting, if it were to venture close to the tree canopy and the

impact of the spillage from the sports turf floodlighting.

Despite the lack of activity by bats which are impacted by artificial lighting, the mitigation hierarchy should be applied to all potential ecological impacts, and as a result a mitigation section is included within this report and informed the proposed sports turf floodlight design.

7. MITIGATION

The combined seasonal static monitoring and the NBW/VPS survey results found that the species that utilise the area of sports ground affected by the proposal are bats which are tolerant of artificial lighting. It also found that bats are using the proposed footprint in very low numbers.

Comparing the bat populations against others in the region, the extent of Common and Soprano pipistrelle activity fell into the lowest recorded levels of activity. Light sensitive bats were effectively absent from the playing field bat fauna.

7.1 The mitigation hierarchy

In this instance, it is not possible to provide a viable and functional sports facility without artificial lighting and therefore it is impossible to avoid light pollution on the area of playing field from the proposed sports turf floodlighting, and therefore the first step of the hierarchy cannot be delivered.

Therefore, the second phase of the mitigation hierarchy has been implemented, in minimising the potential impact. This has been developed in consultation between the ecologist and the lighting engineer, resulting in the optimum floodlight mitigation available given the constraints of site.

The mitigation is provided overleaf and within Appendix A of this document. The deployment of extra lighting columns and spillage control design within the lighting heads is such that light spillage is constrained and retained on the area of playing field and built infrastructure in the centre of the school complex.

The end result is a scheme which avoids lighting any of the playing field boundaries.

Further mitigation is provided by the floodlight curfew of 22:00 hours. This reduces the potential impact further.

Figure 8 - showing the light spillage mitigation from the proposed artificial pitch floodlighting scheme.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Results of Bat Activity Surveys

The transect survey and remote monitoring survey identified that the bats predominant on the site are almost entirely Pipistrellus species, by far the most dominant species with over 99% of all sonograms recorded. The extent of foraging activity by these bats on the footprint of the proposed artificial pitch was insignificant.

There was double the extent of activity on the eastern boundary of the playing field, albeit still very low numbers, and this area will be entirely unaffected by the proposal.

Among the sonograms alongside the pitch was a single occurrence of a Daubenton's bat. This was identified by the bat ecologist following a review of the unidentified bat calls in Kaleidoscope and subsequently submitted to the BTO pipeline for verification. This returned a 71% confidence in the identification. The sonogram was not identified by Kaleidoscope due to the distance between the bat and the detector, with a very faint recording only. It is not considered to be a constituent of the landscape directly adjacent to and affected by the proposal.

The conclusion therefore is that the playing fields are used entirely by bat species which are tolerant of artificial lighting.

8.2 Summarised Conclusions

- The surveys found that the proposed location for the artificial pitch, in the centre of the building/playing field complex, is used almost entirely by low numbers of commuting and foraging pipistrelle bats.
- There is no regular use of the playing field by any of the bat species that are sensitive to artificial lighting.
- The analysis of the bat population on site using the Wray et al metric, identified that the species and numbers present are indicative of a site falling just into the category of 'local or district value', from a site categorised as being 'not important'. The Ecobat assessment of bat activity found that the extent of activity by bats fell into the lower end of the lowest percentile for bat activity within the region.
- In all instances, the proposed sports turf floodlighting scheme is a modern mitigated design that will result in controlled light spillage, keeping the tree-lined or residential garden boundaries of the school sports ground in darkness.
- The impact of artificial lighting on the playing field is further mitigated by a floodlight curfew of 22:00 hours, meaning for the largest part of the night the entire playing field is in darkness.
- With a domination of the playing field by typically urban bat species, tolerant of artificial lighting, and doing so in such limited numbers, there will be no detrimental impact upon the favourable conservation status of the bat fauna in the local area from any adverse effect of the proposed sports turf floodlight scheme.

Considering the above bullet points, the conclusion is that the proposed artificial pitch, and in particular the mitigated floodlight scheme, when combined with the floodlight curfew of 22:00 hours will have a negligible impact upon bat activity in the immediate vicinity of the development footprint.

9. REFERENCES AND BIBLIOGRAPHY

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Appendix A – Proposed Mitigated Floodlight Design

The lighting spillage from the designed mitigated floodlighting scheme for the artificial pitch is provided overleaf, as provided by Surfacing Standards

Haydon School

Artificial Turf Pitch

Project code:	G-214594
Date:	02-12-2025
Designer:	ME
Description:	Match play requirements: Maintained average illuminance >200 lux Uniformity Ratio (Ev.min/Ev.ave) >0.60 All luminaires have a zero upward light ratio without the use of additional accessories.

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

Surfacing Standards LTD
Office 2
Empingham House
Ayston Road
Uppingham
LE15 9NY

Table of Contents

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
E	12	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1006.0	1 * 172000

The total installed power: 12.07 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	E	
200lux Switching	12	12.07
120lux Switching	12	12.07
Spillage Switching	12	12.07

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	E	
Mast1	0	0.00
Mast2	2	2.01
Mast3	8	8.05
Mast4	2	2.01

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200lux Switching	0.95
2	120lux Switching	0.60
3	Spillage Switching	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football 200 Lux	1	Surface Illuminance	lux	209	0.64	0.49
Football 120 Lux	2	Surface Illuminance	lux	132	0.64	0.49
Ground Spillage	3	Surface Illuminance	lux	9.09	0.00	0.00
Ground Spillage Zoomed	3	Surface Illuminance	lux	9.09	0.00	0.00
Horizontal Spill @ 3.0m	3	Horizontal Illuminance	lux			
Horizontal @ 3.0m Zoomed	3	Horizontal Illuminance	lux			

Glare Rating for Grid of Observers:

Calculation	Switching Mode	Observer Grid	Reference Grid	Reflectance	GR-Max
Glare	3	Football	Football	0.25	49.0

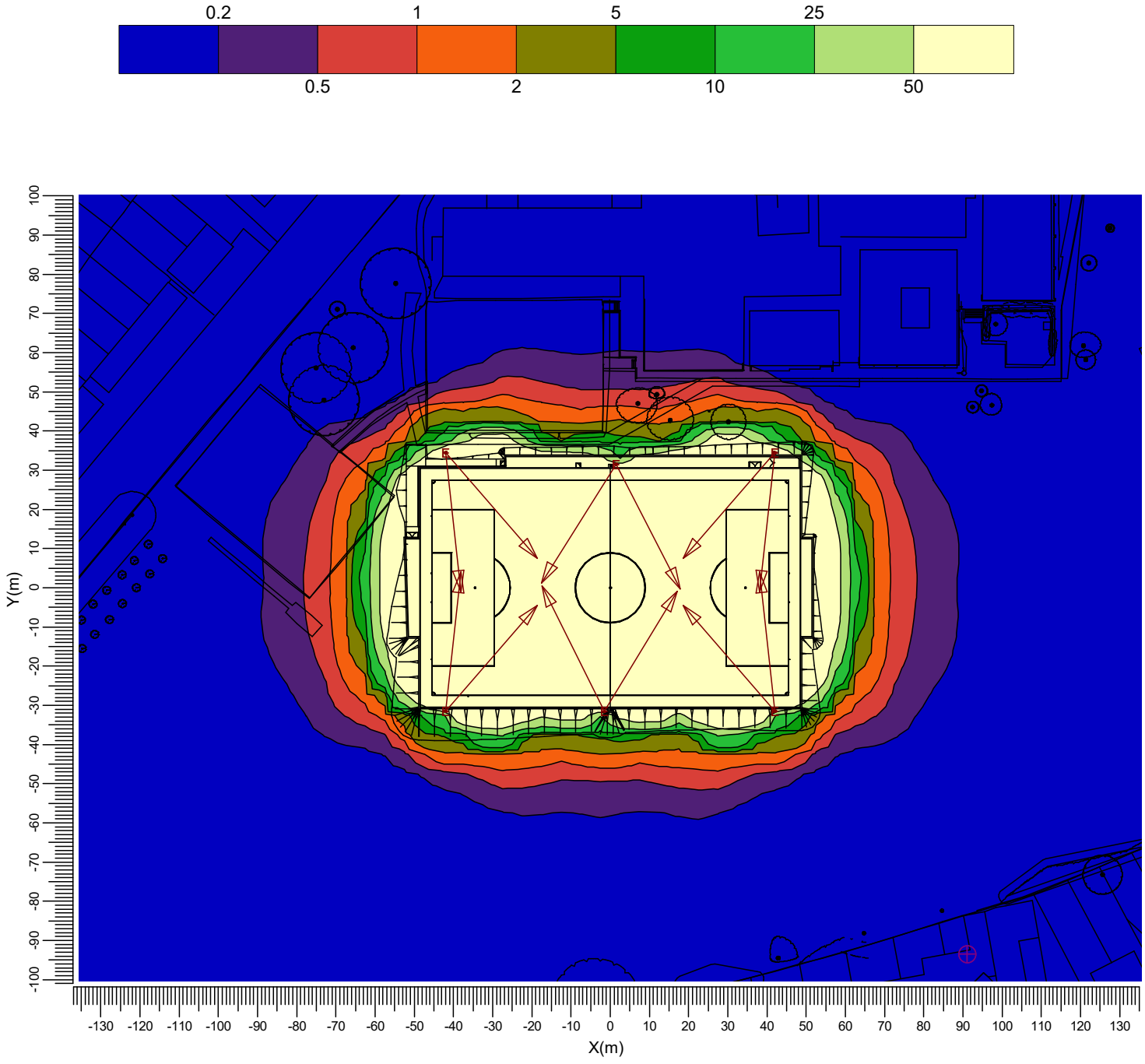
Obtrusive Light Calculations:

Switching Mode	ULR
1	0.00
2	0.00
3	0.00

3.4 Ground Spillage Zoomed: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m
Calculation : Surface Illuminance (lux)



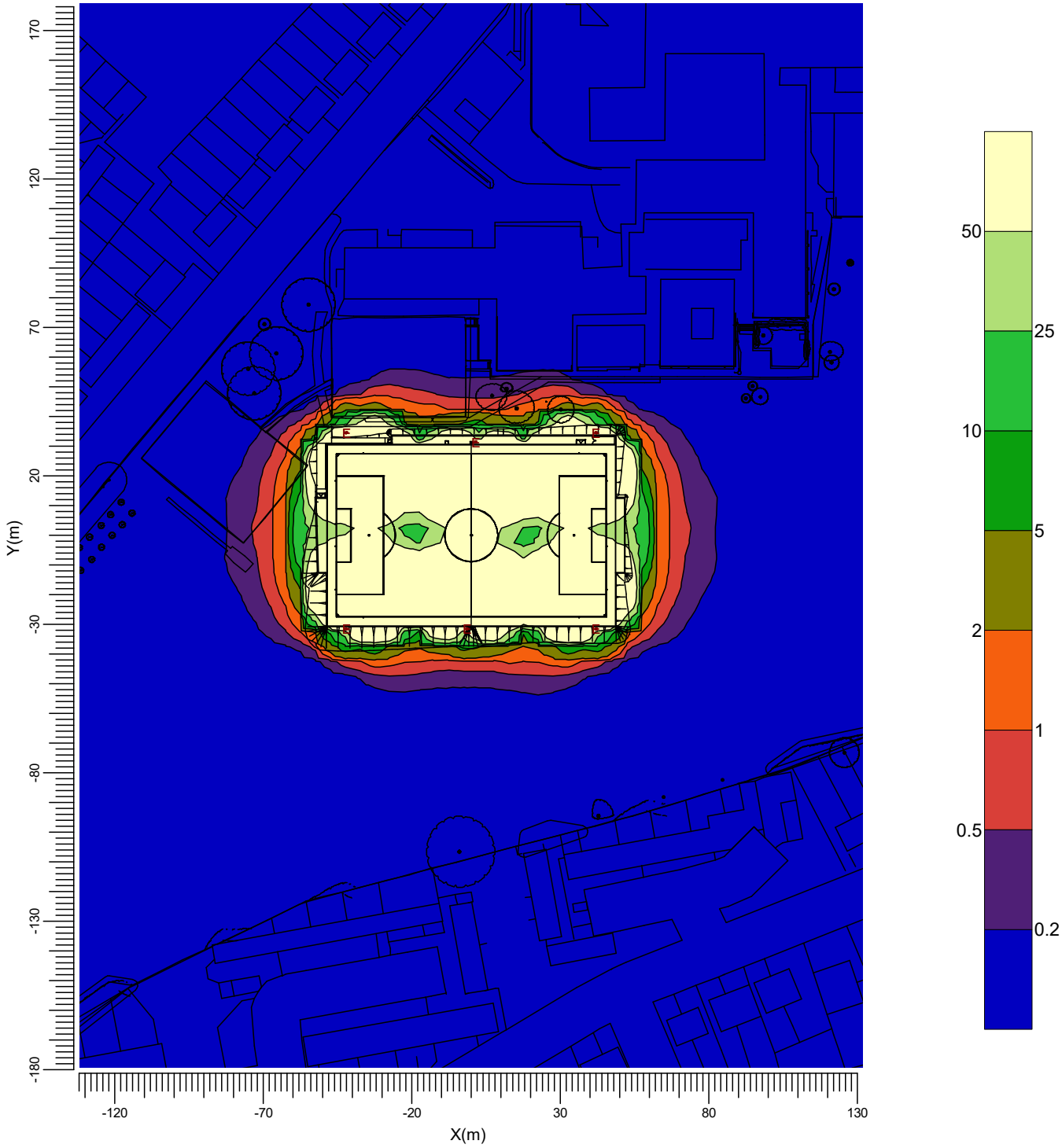
C BVP528 OUT T35 A35-NB LO
D BVP528 OUT T35 A35-NB LTM
E BVP518 OUT T35 A35-NB LTM

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
9.09	0.00	0.00	1.00	1:1500

3.6 Horizontal @ 3.0m Zoomed: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m
Calculation : Horizontal Illuminance (lux)
Height above grid : 3.00 m



C : BVP528 OUT T35 A35-NB LO
D : BVP528 OUT T35 A35-NB LTM
E : BVP518 OUT T35 A35-NB LTM

Project maintenance factor
1.00

Scale
1:2000

5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
E	12	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1 * 172000

Switching Modes:

Code	Switching Mode
1	200lux Switching
2	120lux Switching
3	Spillage Switching

5.2 Luminaire Positioning and Orientation

Qty and Code	Position			Aiming Angles			Switching Modes		
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	1	2	3
1 * E	-42.00	-31.50	13.00	83.7	70.0	-0.0	+	+	+
1 * E	-42.00	-31.50	13.00	49.1	70.0	-0.0	+	+	+
1 * E	-42.00	34.50	13.00	-83.7	70.0	0.0	+	+	+
1 * E	-42.00	34.50	13.00	-49.1	70.0	0.0	+	+	+
1 * E	-1.50	-31.50	13.00	116.3	70.0	0.0	+	+	+
1 * E	-1.50	-31.50	13.00	58.8	70.0	0.0	+	+	+
1 * E	1.50	31.50	13.00	-62.9	70.0	0.0	+	+	+
1 * E	1.50	31.50	13.00	-122.1	70.0	0.0	+	+	+
1 * E	42.00	-31.50	13.00	96.3	70.0	0.0	+	+	+
1 * E	42.00	-31.50	13.00	130.9	70.0	0.0	+	+	+
1 * E	42.00	34.50	13.00	-96.3	70.0	-0.0	+	+	+
1 * E	42.00	34.50	13.00	-130.9	70.0	-0.0	+	+	+