



# BJ Collins

PROTECTED SPECIES SURVEYORS

LANDSCAPE USE ASSESSMENT FOR BATS  
PROPOSED ARTIFICIAL GRASS PITCH

LANGTON GREEN RECREATION GROUND

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  
Tel: (01636) 830058  
[www.bjcollins.co.uk](http://www.bjcollins.co.uk)

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OS Grid Reference:	TQ 5417 3970

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Surveyed by:	Mr B J Collins MSc MCIEEM (Natural England Class License: 2015-13152-CLS) and registered Low-Impact Class License Holder (RC110)

Architect/Agent:	Surfacing Standards Limited
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## CONTENTS

SUMMARY .....	4
1 INTRODUCTION .....	6
1.1 Legislation applicable to bats .....	6
1.2 Other relevant wildlife legislation .....	6
2 SITE DESCRIPTION .....	7
2.1 Location of the Survey Site .....	7
2.2 Description of the proposed development area .....	8
3 SURVEY METHODOLOGY .....	11
3.1 Desktop Study.....	11
3.2 Transect Route Design .....	11
3.3 Static/automated bat survey .....	12
3.4 Weather conditions.....	13
3.5 Personnel .....	14
4 SURVEY RESULTS .....	15
4.1 Bat Survey Results .....	15
4.1.1. Desktop Study Results – Bats .....	15
4.1.2. Static/automated bat survey .....	16
4.1.3. Western Boundary by the proposed artificial pitch .....	16
4.1.4. Eastern boundary of the proposed artificial pitch.....	17
4.1.5. Walking Transect Surveys .....	19
4.2 Preliminary Ecological Appraisal Results.....	21
4.2.1. Designated and Non-designated Nature Conservation Sites .....	21
4.2.2. Habitats .....	22
4.2.3 Fauna .....	24
4.2.4 Target notes.....	30
5 DISCUSSION – BATS AND LIGHTING .....	32
5.1 Species composition and abundance .....	32
6 MITIGATION ACTIONS.....	34
6.1 Bat Mitigation Action .....	34
6.2 Other Ecological Mitigation .....	35
6.3 Great crested newt .....	36
7 CONCLUSIONS .....	37
7.1 Bat Commuting and Foraging Activity.....	37
7.1.1. Proposed artificial sports pitch and associated floodlighting scheme .....	37
7.2 Other ecological considerations .....	38
7.2.1. Habitats and Species .....	38
8 REFERENCES .....	39
APPENDIX 1 - RELEVANT WILDLIFE LEGISLATION.....	40
APPENDIX 2 - SAMPLE SONOGRAMS .....	41
APPENDIX 3 - FLOODLIGHT DESIGN .....	43

## SUMMARY

The attached report provides the results of a landscape use assessment for bats of the area of sports field where a new artificial sports pitch has been proposed. The new pitch will be located on the grounds of the Langton Green Recreation Ground in Turnbridge Wells, Kent.

### Landscape Use Assessment

The predicted impact upon foraging and commuting bat species from the artificial lighting associated with the proposed new artificial sports pitch at the Langton Green Recreation Ground is summarised in the bullet points below:

- The surveys identified that the site is utilised predominantly by bat species which are known to be tolerant of artificial lighting in their commuting and foraging activity, if not exploiting it for foraging purposes.
- 'Light sensitive' bats were extremely rare with only 1 bat pass every 25 hours of night-time monitoring.
- Despite the area of sports ground being encapsulated to all sides, bar the eastern boundary, by an area of deciduous woodland categorised as of Local Wildlife Site status, there were no scarce bats recorded. In this type of habitat in south-east England often supports the scarce Barbastelle bat. There was a single *Myotis* sonogram that the BTO pipeline cautiously identifies as Bechstein's bat (*Myotis bechsteini*), and this rare bat is also a possible constituent of the adjacent local wildlife site. In all circumstances, there was no regular activity by any rare bats on the boundaries of the sportsground.

In all instances with regards to the installation of artificial lighting in the countryside, a fully mitigated design for the sports turf floodlighting is required and has been prepared and is described within chapter 6.

- The design for the sports turf floodlights, reference LANO-CLS030, 15.11.2023, has been developed with reference to the mitigation hierarchy, steps 1 to 4 of the best practice guidance (2023). This level of light spillage should be secured through a suitable planning condition.
- A single cycle of follow-up survey is required to demonstrate the effectiveness of the prescribed mitigation, as specified by the revised artificial lighting best practice guidelines.

The design of this survey and the mitigation designed with the lighting engineers report was prepared in line with Guidance Note GN08/23 Bats and Artificial Lighting At Night and the chapter Bats, lighting and the mitigation hierarchy, steps 1 to 4 of the best practice guidance (ILP and BCT, 2023).

### Other ecological considerations

The preliminary ecological appraisal identified the following habitats and conclusions:

- The habitat directly affected by the development proposal is amenity grassland, which is of low conservation value. No further mitigation is recommended.
- The habitat that immediate surrounds the playing field comprises of immature and semimature tree lines alongside a stock fence and was of marginal value to wildlife, especially considering the more valuable woodland beyond.
- Habitats present on site that are of value to biodiversity are those associated with the boundaries beyond and protected by the immature and semimature tree lines surrounding the pitch. Specifically this includes a range of mature, approaching veteran or veteran deciduous trees. Mitigation relating to avoiding impacts upon these is provided within floodlighting design.
- Terrestrial mammals - the works have some limited potential to impact upon terrestrial mammals i.e. hedgehog and other terrestrial mammals, encountering excavations. Precautionary actions are included within section 6.2 of this report.
- Breeding birds - the installation of the artificial sports pitch should have no impact upon breeding birds. The current design shows the removal of limited trees and shrubs on the north and south boundary, this work should be completed outside of the breeding bird season, between March and September. If works are required within this season then precautionary actions must be implemented as described.
- Amphibians and Reptiles – The habitat affected is intensively mown grassland in regular use as a sports facility. The potential for common amphibians or reptiles to utilise this habitat, when considering the ideal habitats surrounding, is negligible. There is a proportionate mitigation strategy provided for amphibians and

reptiles within section 6.2 of this report.

- Specially protected amphibians - the study has identified the potential for great crested newt to be a constituent of the woodland habitat surrounding the playing field. It is recommended that the site is registered under The Great Crested Newt District Level Licence for Kent

Section 6.2 of this report must be extracted from this document and issued to the construction contractors via a toolbox talk. It should be retained within the contractor site office to allow reaction should any of the species below be encountered and to ensure compliance with the mitigation actions included.

# 1 INTRODUCTION

This report has been prepared by BJ Collins – Protected Species Surveyors Limited for Surfacing Standards Limited on behalf of the Langton Green Recreation Ground, 4 Winstone Scott Ave, Langton Green, Tunbridge Wells, TN3 0JJ.

The report provides the results of a landscape use assessment for bats, along with preliminary ecological appraisal, to inform the installation of a new artificial sports pitch, with associated floodlighting. The new sports pitch is to be centred upon the eight figure Ordnance Survey grid reference of TQ 5417 3970.

The aim of the survey was twofold: 1. To carry out a preliminary ecological appraisal to identify any constraints to the construction of the pitch from protected sites and wildlife. 2. To inform the potential impact upon bat species from the proposed floodlighting of the sports facility, in accordance with National Best Practice Guidelines (BCT 2023 and ILP 2023).

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.

## 1.2 Other relevant wildlife legislation

Legislation with regards to other species which may be affected by the construction is included within Appendix 1 of this report.

## 2 SITE DESCRIPTION

### 2.1 Location of the Survey Site



Figure 1 – showing the survey area (yellow) and the approximate location of the proposed sports pitch (the red outline) in relation to the surrounding habitats courtesy of GridReferenceFinder.com.

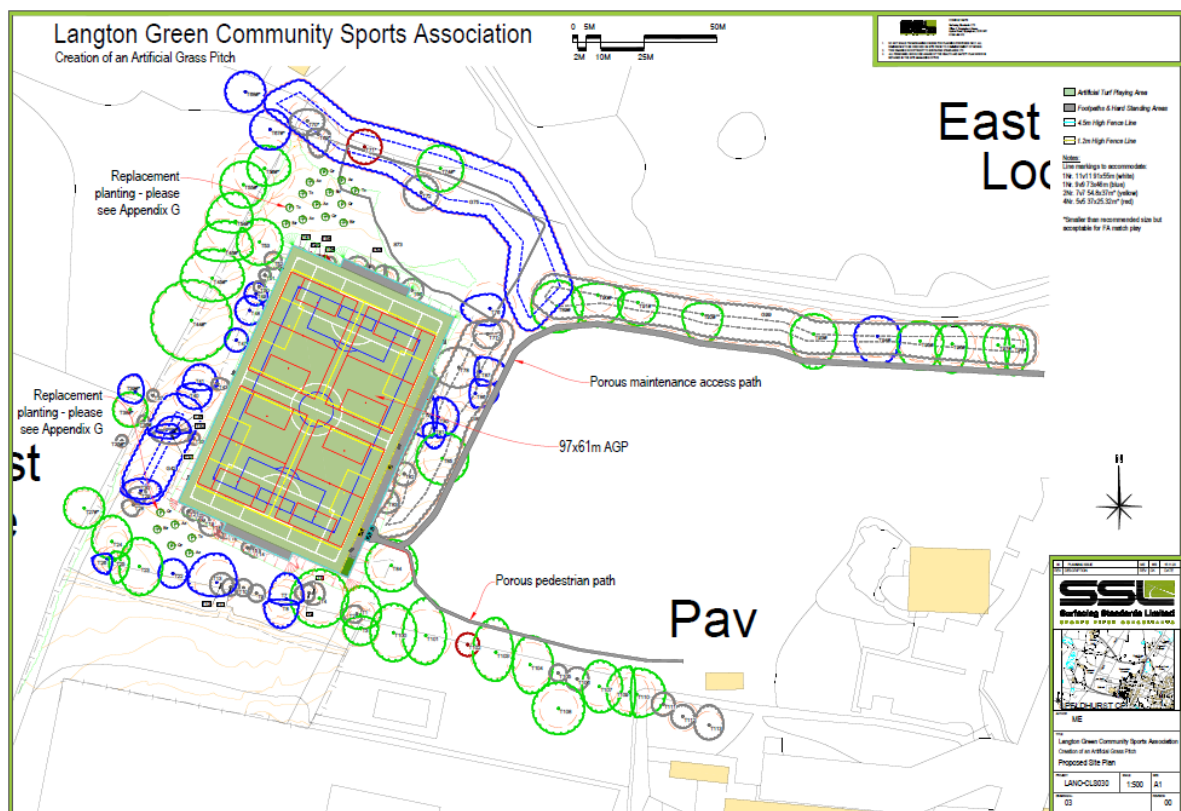


Figure 2 - showing the proposed site plan

The survey site comprises the Langton Green Recreation Ground, located north-west of Langton Green residential area, where there is a proposal for a new artificial sports pitch installation. The area surveyed comprised the area enclosed within the yellow outline within Figure 1 above.

The development area (red line) is characterised by intensively managed amenity grassland (modified grassland) surrounded by a 1 m tall stock fence and defunct hedgerow/tree lines with immature to semimature trees to the south-west and north. The eastern boundary comprises an area of mixed woodland dominated by a non-native tree species. This boundary provides some maturity.

This hexagonal area of sports ground and boundaries is then further surrounded by a range of mature and approaching veteran deciduous trees, segregated from the site by the boundary features.

The landscape immediately south comprises eroded grassland, as a result of dog walkers, the landscape immediately north comprises of unmanaged grassland which is developing into bramble scrub, including a large stand of bramble scrub.

The landscape in the wider area is dominated by habitats of value to commuting, foraging and roosting bats. Including established deciduous woodland and extensive linear tree lines dominated by mature deciduous species.

The initial assessment of the local area via aerial imagery was that it is one that could support all of the bat species which occur within this part of Kent.

## 2.2 Description of the proposed development area

The proposed new artificial sports pitch is to be installed within the area of sports ground as shown on figure 1 and 2, and the photographs below.

The new artificial sports pitch will be located entirely upon an area of regularly mown amenity grassland (modified grassland) currently used as a football pitch. The sward of this area is dominated by the typical species of Annual meadow grass (*Poa annua*), Perennial ryegrass (*Lolium perenne*) and Common bent (*Agrostis capillaris*).

The boundary of the proposed new artificial sports pitch is bounded to the north and south by immature and semi-mature trees, amongst a growth of bramble scrub and remnant defunct hawthorn hedge bounded by a low stock fence to the south, west and north. The eastern boundary comprises a line of mature trees which include at least one specimen Oak along with several False acacia trees, both mature and immature and developing.

The following photographs show the range of habitats which will be directly affected by the proposed new artificial sports pitch installation.





**Photograph 1 - showing the sward associated with the proposal, looking northerly from the southern boundary, the mature oak tree on the eastern boundary visible to the right.**



**Photograph 2 - showing the southern boundary treeline, taken from the southeast corner, and showing the line of mature deciduous trees behind the boundary.**



**Photograph 3 - showing the northern boundary treeline, taken from the north-west corner, with the area of unmanaged grassland behind and the developing bramble scrub.**

## 3 SURVEY METHODOLOGY

### 3.1 Desktop Study

A desktop study for designated and non-designated sites and wildlife records was undertaken for a 2km circumference of the survey area using the following resources:

- [www.magic.gov.uk](http://www.magic.gov.uk) (the Multi-Agency Geographic Information website for maps of statutory designated nature conservation sites).
- A desktop search by Kent & Medway Biological Records Centre and Kent Bat Group. The data search was provided on the 25<sup>th</sup> of July 2023. This provided records of non-designated wildlife sites and species for a 2km circumference from the centre of the proposed new artificial sports pitch.

### 3.2 Transect Route Design

A transect route was established using two data sources. Firstly, after carrying out a daylight walkover of the site and secondly by examination of aerial photography.

With this information the transect route was designed to sample the edge habitats which were considered to have value to foraging and commuting bats on the wider playing field area and compare those with the boundaries affected by the proposed sports pitch and its associated floodlighting.

The result was a walked transect which covered the entire peak survey period as specified by national guidelines.

The transect survey was designed by Mr B J Collins MSc MCIEEM, a licensed bat ecologist with two decades of experience assessing habitat use by bats. B J Collins was the lead ecologist on the project.

A single transect survey was carried out in the peak activity season, ensuring all habitats considered to offer potential commuting and foraging opportunities for bat species were assessed and information about the range of species that utilise the recreation ground collected.

The methodology for sampling bat activity followed the methodologies designed by the Bat Conservation Trust NBMP Field Survey and those recommended within national best practice guidelines (Collins, 2016). This involved recording bat activity via a combination of static point counts and counts between. The surveyor was static for a three-minute period at each of the designated stop points (point count) but then continued to record bat passes for the two-minute walking period between. All bat activity over the entire walked transect was recorded for subsequent analysis as necessary.

The transect route was also designed to sample within the peak activity period for bats, namely a period of approximately 90 minutes following sunset. This was achieved by dividing the transect route into eight separate point counts.

The transect route is shown in figure 3 overleaf.

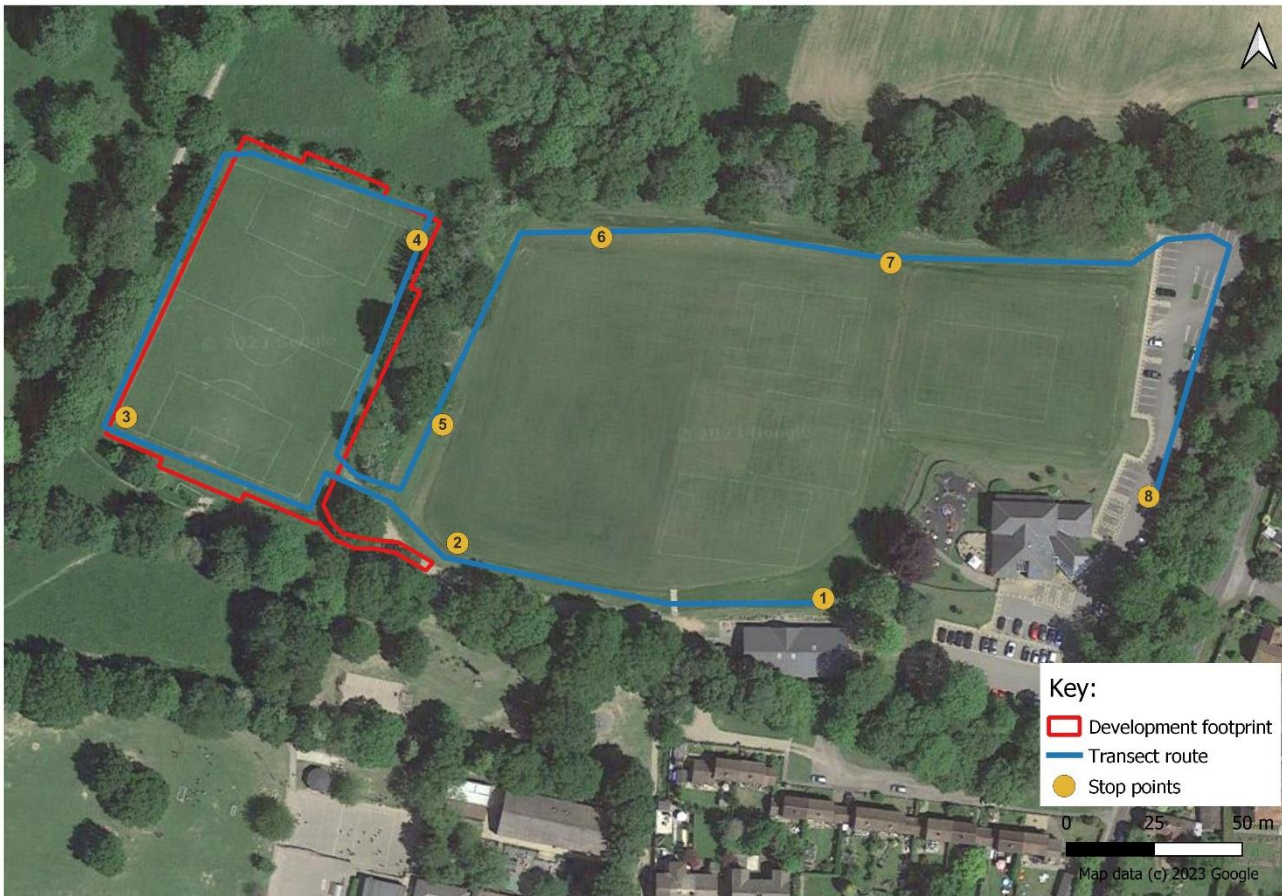


Figure 3 – the designed transect route and stop points used during the survey.

The transect was carried out on the 29<sup>th</sup> of August 2023. The survey began 15 minutes after sunset.

The transect was undertaken by one surveyor, who was equipped with an Anabat Scout Full Spectrum detector, continuously recording bat echolocation calls throughout the survey. All bat activity/passes were counted and attributed to species (where possible) during the transect, with species identification confirmed by sonogram analysis using Anabat Insight software.

### 3.3 Static/automated bat survey

A period of remote monitoring was undertaken with the objective of establishing the species affected by the proposed artificial sports pitch, the extent and duration of bat activity in that location, and to establish the peak foraging and commuting times, to allow comparison with the operational times of the proposed new floodlights.

To facilitate this, two Wildlife Acoustics Song Meter Mini Bat detectors were placed firstly onto the eastern treeline boundary. The second unit was placed onto a tree on the west boundary. This allowed an assessment of bat activity directly alongside the new artificial sports pitch.

To operate the units were set to switch on 30 minutes before sunset and run continually until 30 minutes after sunrise. On completion, the units were collected, and sonograms analysed.

The detectors were set to monitor over a 23-night period from 24<sup>th</sup> July to 16<sup>th</sup> August 2023. This comprised a total of 9.5 hours per night and therefore a total of a 218 hours of night-time study per detector and a combined total of night-time monitoring over July/August on the sportsground of over 436 hours.



Figure 4 – location of the static recording units.

Whilst research generally identifies that the impacts of artificial illumination on biodiversity are detrimental and that artificial illumination has negative impacts on all bat species in their roosting, drinking and hibernation habitat, there are a group of bats that research has identified are tolerant of artificial lighting in their commuting and foraging activity, often exploiting insects attracted to artificial lights (opportunistic). Research has categorised UK bat species into those which are tolerant of artificial lighting and those which are significantly adversely affected in their foraging and commuting activities. These species are set out within table 2.1 from EUROBATs, Guidelines for consideration of bats in lighting projects (Voigt *et al.* (2018)).

Genera	Daytime Roosts	Commuting	Foraging	Drinking	Hibernacula
<i>Rhinolophus</i>	Averse	Averse	Averse	Averse	Averse
<i>Barbastella</i>	Averse	Averse	Averse	Averse	Averse
<i>Eptesicus</i>	Averse	Averse	Opportunistic	Averse	Averse
<i>Pipistrellus</i>	Averse	Neutral/ opportunistic	Opportunistic	Averse	Averse
<i>Myotis</i>	Averse	Averse	Averse	Averse	Averse
<i>Plecotus</i>	Averse	Averse	Averse	Averse	Averse
<i>Nyctalus</i>	Averse	DD	n.a./opportunistic	Averse	Averse

Table 2.1. The likely taxon-specific response of bats to artificial lighting impacts in relation to specific situations. The table is based on available literature and personal observations of the authors. N.a. = not applicable, DD = data deficient. Averse, neutral and opportunistic are defined in the text (Voigt *et al.* 2018).

Within the results and discussion sections of this document these bat species are categorised as being 'light tolerant' and 'light averse' as per the above table and that described by UK-based research.

### 3.4 Weather conditions

The weather for the transect on the 29<sup>th</sup> of August 2023 was dry with a 100% cloud cover. Ambient temperature at the beginning of the survey was 16°C and 15°C at the close. Wind speed was 11km/hr

at the start of the survey which decreased to 6km/hr at the close. Sunset was at 19:52 hours and the transect ran from 20:07 to 21:23 hours.

### **3.5 Personnel**

The walkover survey was carried out by Mr B J Collins MSc MCIEEM (Natural England Class Licence: 2015-13152-CLS), registered Low-Impact Class Licence Holder (RC110).

The walking transects was designed out by experienced bat ecologist Mr B J Collins MSc MCIEEM. The transect was carried out by Mr A Williamson MSc qCIEEM (Natural England Class 2 Bat Licence Holder 2022-10773-CL17-BAT).

The remote monitoring units were set up and placed out by Mr B J Collins MSc MCIEEM.

Sonogram analysis of static detectors was carried out by Mr B J Collins.

## 4 SURVEY RESULTS

### 4.1 Bat Survey Results

#### 4.1.1. Desktop Study Results – Bats

There were three EPS licenses for bats within 2 km of the survey area (Magic website) – these comprised of derogation licences for Common pipistrelle and Soprano pipistrelle resting places, all located at least 1.5km from the site.

There are 511 records of bats from eight species within the 5km search area surrounding the site from the Kent Biological Records Centre, comprising Serotine (*Eptesicus serotinus*), Leisler's bat (*Nyctalus leisleri*), Noctule bat (*Nyctalus noctula*), Common pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), and the 'light averse' species Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), and Brown long-eared bat (*Plecotus auritus*).

198 of the records are associated with roosts, of maternity roosts and unidentified roosts. The closest record of a roost is that for Brown long-eared bats and located 0.4km north-east of the site.

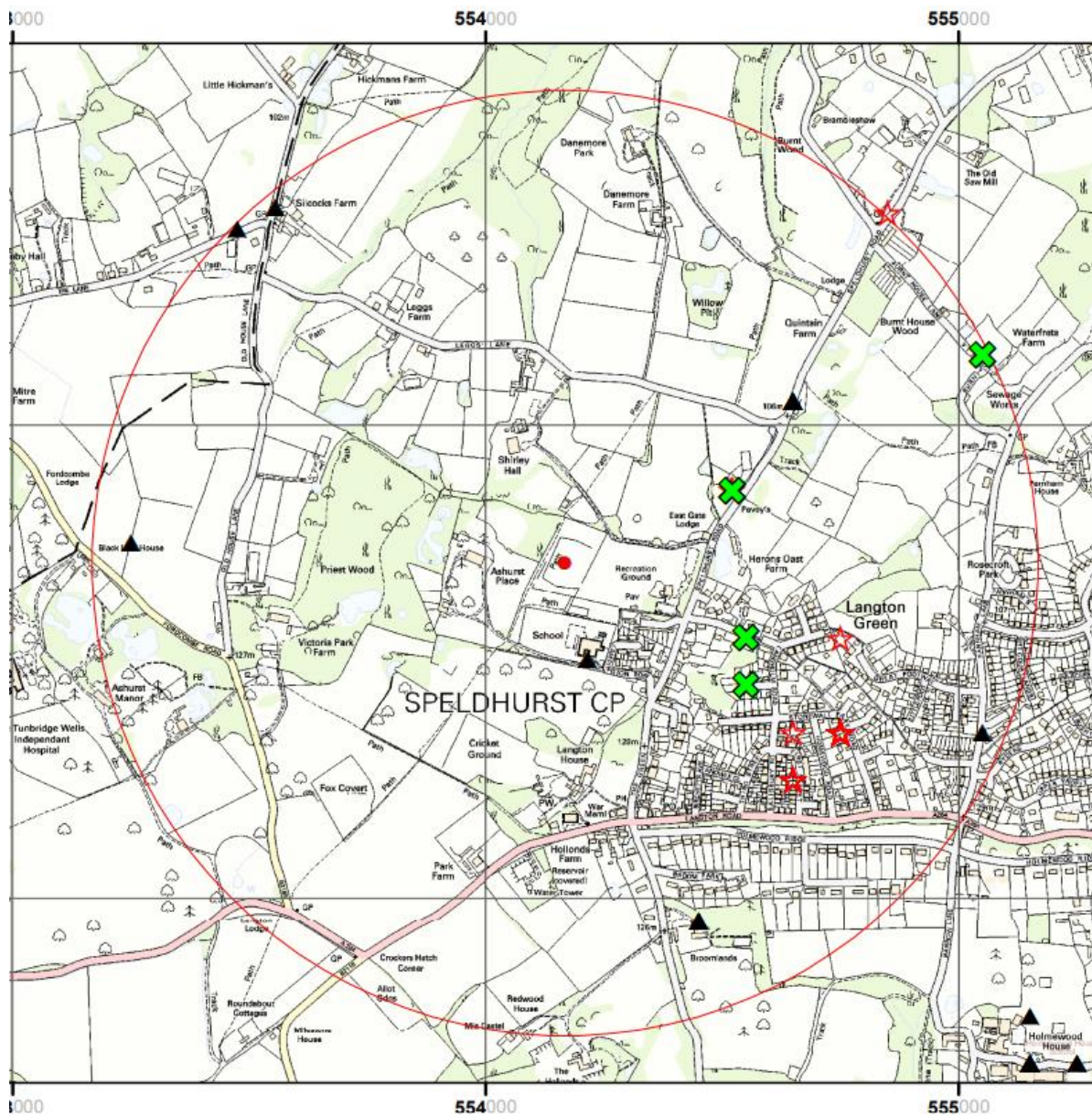


Figure 5 - Location of records of bat roosts from the desktop study. Stars are maternity roosts; crosses are unknown roosts and triangles are bats recorded in flight.

#### 4.1.2. 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 different parts of the sports ground and the time that activity occurs, a period of remote monitoring was undertaken utilising full spectrum bat detectors.

As previously described, these were positioned in two locations.

Firstly, a unit was placed onto the mature tree line on the east of the playing field, and a second detector was then placed on the western boundary, fixed to a semi-mature tree.

Analysis of the 23-night monitoring identified the species of bat present around the boundaries of the proposed sports pitch and the abundance of each species using the area. As the impact of lighting has varying effects on bat species this allows an assessment of the impact on a site basis from the proposed floodlighting of the new sports facility.

#### 4.1.3. Western Boundary by the proposed artificial pitch

The static detector which was positioned on the western boundary recorded activity by Pipistrelle bat species, principally comprising of Common and Soprano pipistrelle, along with a smaller amount of Noctule, all species categorised as being 'light tolerant' and very low levels of the Brown long-eared bat, the only species of 'light averse' bats recorded from this boundary.



**Photograph 4 - the location for the bat detector positioned on the western boundary of the playing field**

Activity recorded from this location from light tolerant bats amounted to a total of 6,954 sonograms over the 23-night period. 6,864 were from Common and Soprano pipistrelle and 79 passes by Noctule bat.

In contrast there were only 11 passes by the Brown long-eared bat.

There were no records of any Myotis bats or any scarce bat species, such as the Barbastelle bat, which was considered unusual given the landscape setting.



The peak activity recorded from bats was relatively evenly dispersed between the hours of 21:00 and 04:00, but with the highest activity levels between 23:00 and 02:00.

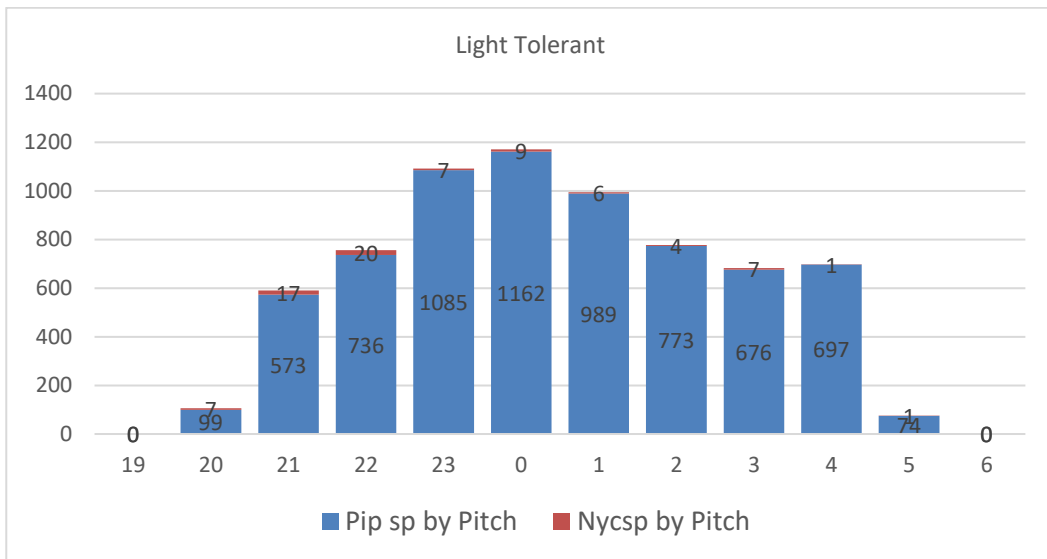


Figure 6 –the total number of passes per hour by light tolerant bat species, comprising of Pipistrellus and Nyctalus on the tree line adjacent to the western boundary of the proposed new artificial pitch.

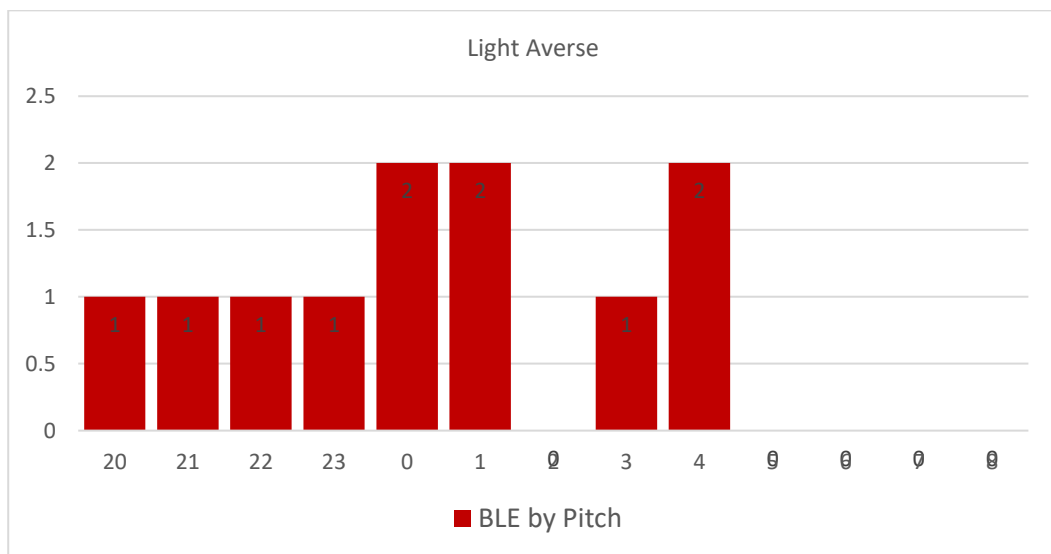


Figure 7 –the total number of passes per hour by ‘light averse’ bat species, comprising Brown long-eared bat on the tree line adjacent to the western boundary of the proposed new artificial pitch.

The extent of activity identified in figure 7 comprises at most 2 sonograms in any one hour of the night and compared to a peak of 1162 sonograms by Pipistrelle species (combined).

#### 4.1.4. Eastern boundary of the proposed artificial pitch

There was a significant difference in the occurrence of activity recorded by the detector on the eastern boundary to that which occurred alongside the western boundary. This matched a similar trend for extent of activity recorded during the transect surveys, with lower levels of bat activity on the tree line on the eastern boundary of the playing field.



**Photograph 5 - showing the placement of the detector on the eastern boundary fixed to 1 of the mature False Acacia trees.**

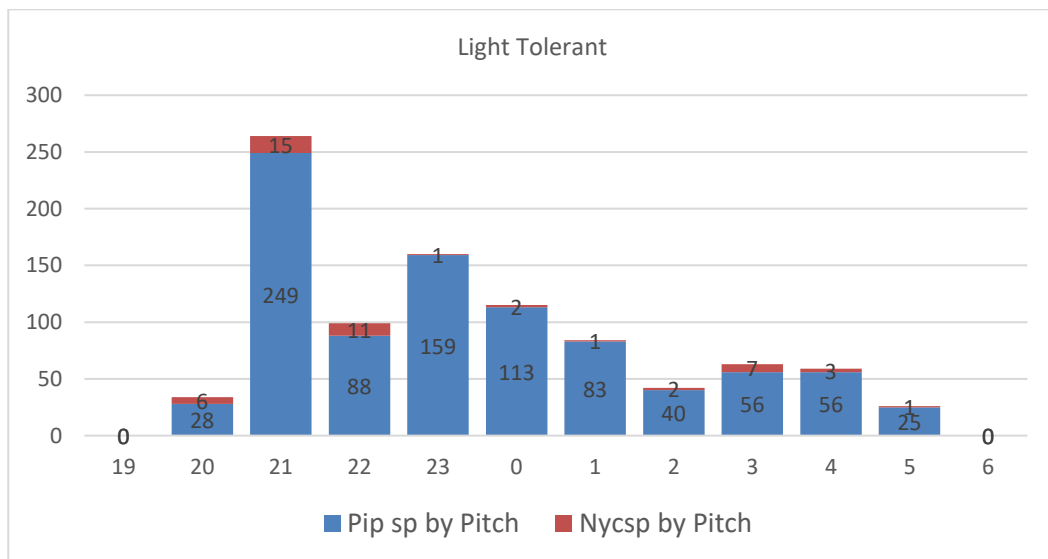
On the eastern boundary there was only 952 bat sonograms recorded over the 23 night survey period, compared to 6,954 on the western boundary.

Of these, 897 passes were by Pipistrelle species, in contrast to the static recorder at the western boundary where there was over 7 times the extent of activity recorded from this group of bats.

There were 49 sonograms generated by Noctule, compared to 79 on the west boundary.

Once again, the occurrence of 'light-averse' bats remained extremely low with only 6 sonograms generated by the Brown long-eared bat, and again none from Myotis bats.

The activity recorded from bats on the eastern boundary was dispersed throughout the night but with a distinct peak between 21:00 and 22:00.



**Figure 8 –the total number of passes per hour by light tolerant bat species, comprising of Pipistrellus and Nyctalus on the tree line adjacent to the eastern boundary of the proposed new artificial pitch.**

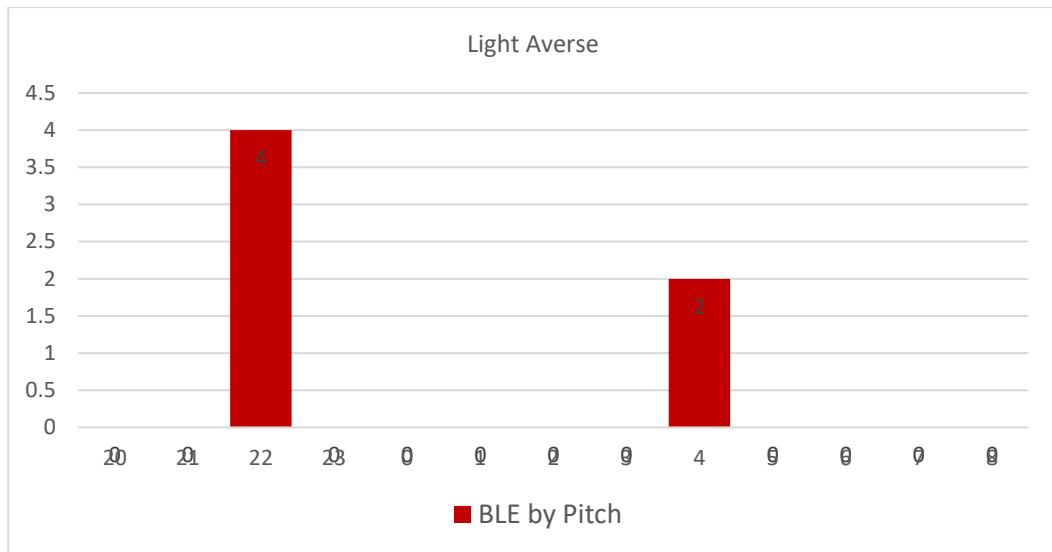


Figure 9 –the total number of passes per hour by ‘light averse’ bat species, comprising Brown long-eared bat on the tree line adjacent to the eastern boundary of the proposed new artificial pitch.

#### 4.1.5. Walking Transect Survey

The results from the transect survey are shown below in Figure 10 and Table 1 below. The figure contains a cumulative total of the number of passes recorded at the relevant stop point and the subsequent walking section following it.



Figure 10 - showing the transect point count locations and alongside each the total number of bat passes encountered at the point count and the walked section before summed. The number includes the total for ‘light tolerant’ species over, the ‘light averse’ bat totals.

**Table 1** Number of individual bat calls recorded at stop point and the walked section following.

Stop point	'Light tolerant' bats	'Light averse' bats
1	1	0
2	19	0
3	36	0
4	5	0
5	6	0
6	2	0
7	4	0
8	12	0

The bat species categorised under the methodology of this assessment as being 'light averse' species, was represented by *Plecotus* bats only from the static monitoring survey and were absent from the transect survey results. Myotis bats comprised of a single sonogram with some attributes of this genus, and identified cautiously by BTO pipeline as being from Bechstein's bat. This bat was not heard by the surveyor carrying out the transect survey but picked up following a review of sonograms generated.

In comparison the bats categorised as being 'light tolerant' species, were present in the greatest numbers on the western boundary of the playing fields, this trend reflecting that identified by the static monitoring units.

The majority of bat passes was attributed to a small number of bats, of both Common and Soprano pipistrelle, which were constantly foraging along the western and southern boundary where a total of approximately five bats were constantly foraging. There were also two bat calls of Leisler's bat (*Nyctalus leisleri*) and one call of Serotine (*Eptesicus serotinus*) recorded during the walked transect.

There were very few passes on the northern boundary and central tree line, which is alongside the proposed artificial sports pitch. There was also limited activity recorded on the areas outside of the new proposed sports field, which were being monitored to allow comparison of bat activity where development is proposed with that away from proposed new pitch.

## 4.2 Preliminary Ecological Appraisal Results

### 4.2.1. Designated and Non-designated Nature Conservation Sites

Examination of the MAGIC website identified one designated site; High Weald Area of Outstanding Natural Beauty (AONB). The closest Site of Special Scientific Interest (SSSI) is High Rocks SSSI located 2.2km south-west of the site.

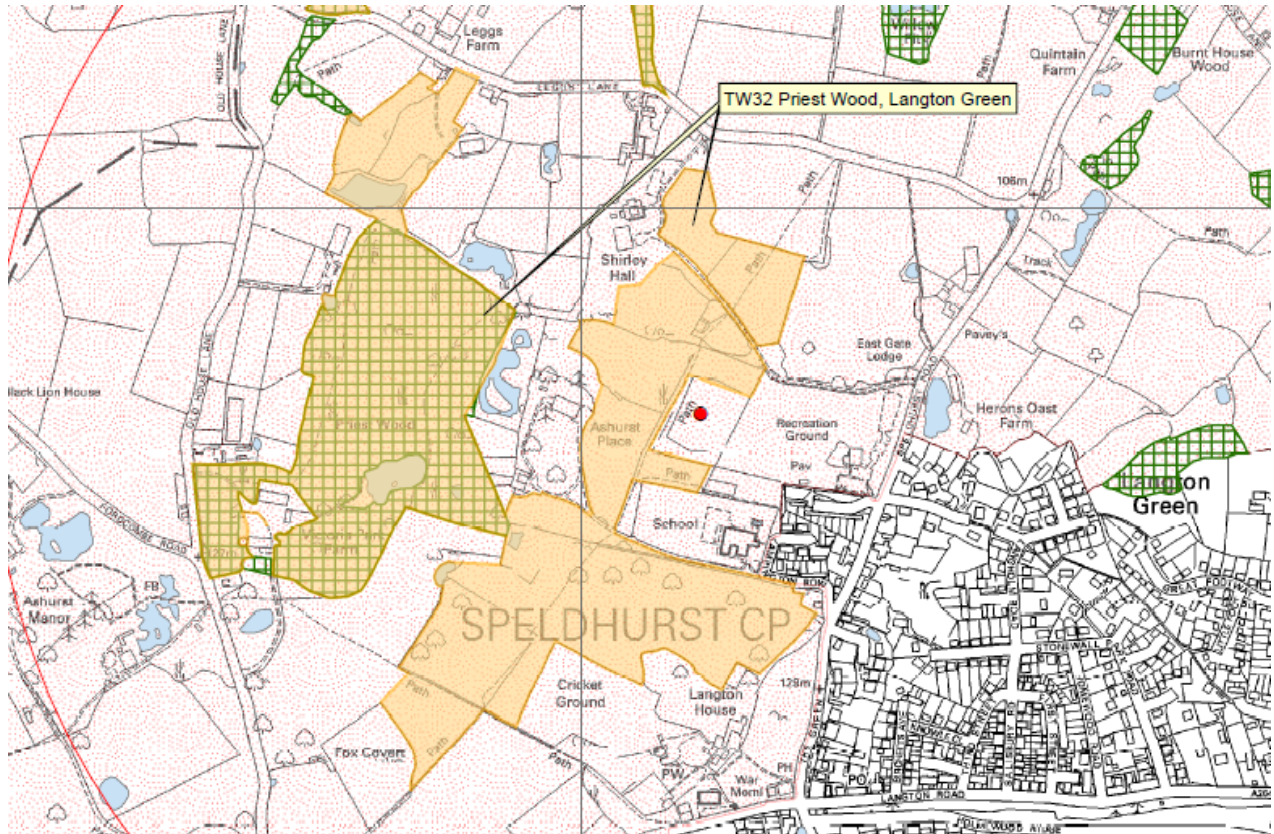
There are two Local Wildlife Sites (LWS) and one Roadside Nature Reserve within 1 kilometre of the survey area. Details of these are in Table 2 below. LWS Priest Wood encompasses the site from south, west and north.

**Table 2 Wildlife Sites located within 1km of the proposed sports pitch.**

Wildlife Site	Located from the sport pitches
LWS Priest Wood, Langton Green	Adjacent, N,W & S
LWS Avery's Wood, Bullingstone	0.4km N
Roadside Nature Reserve Ashurst Road at Hatch Corner	0.9km SE

The proposed new artificial sports pitch sits on an area of modified grassland which is already used as a football pitch and intensively managed. The development may have indirect impact on LWS Priest Wood due to lighting. This is addressed in further report in Bat and Mitigation sections.

Further, there are several blocks of Ancient woodland, which is a Habitat of Priority Importance. The closest one is Priest Wood located 0.4km west of the site. The development will not have any impact on any ancient woodlands.



**Figure 11 - extract from the site plan provided with the data search from the local biological record centre, the location of the proposal is identified by the red dot.**

#### 4.2.2. Habitats

The following UKHab habitats were recorded from the survey site (the proposed footprint and boundary of the new pitch):

- Modified grassland - UKHab Code g4
- Line of trees - UKHab Code w1g6
- Neutral grassland – UKHab Code g3c5
- Artificial unvegetated, unsealed surface – UKHab Code u1c

##### *Modified grassland - UKHab Code g4*

The location for the proposed new artificial sports pitch is entirely located upon a footprint of modified grassland. This is typical of a sward which is mown on a regular basis. It is dominated by Annual meadow grass (*Poa annua*), Perennial ryegrass (*Lolium perenne*), Common bent (*Agrostis capillaris*). Herbs included Pineapple weed (*Matricaria discoidea*), Cleavers (*Galium aparine*), Smooth sow-thistle (*Sonchus oleraceus*), Dandelion (*Taraxacum sp.*), Hoary plantain (*Plantago media*), White clover (*Trifolium repens*), Common cat's ear (*Hypochaeris radicata*), and Daisy (*Bellis perennis*).



**Photograph 6 – The habitat which will be immediately affected by the proposed new artificial sports pitch**

##### *Line of trees - UKHab Code w1g6*

There is a line of semi-mature trees planted along the edges of the playing field (TN1). They are located to the north and south of the proposal within an area of stock fence and defunct native hawthorn hedgerow, largely missing. The fence line is covered with occasional dense growths of bramble (*Rubus fruticosus* agg). The trees appear to be established by natural regeneration from the

more mature trees within the wider boundary. The species present consisted of overgrown Hawthorn (*Crataegus monogyna*), Oak (*Quercus robur*), Ash (*Fraxinus excelsior*), Elder (*Sambuca nigra*) and Sycamore (*Acer pseudoplatanus*).

There is also a line of mature trees encompassing the site from east and west. The species include False acacia (*Robinia pseudoacacia*), Oak, and Sycamore. Some of these trees are further described within section Fauna - Bats below. These trees are outside of the development footprint.



Photograph 7 - The tree line on the southern boundary of the area of sports turf



Photograph 8 - The semi-mature tree line on the western boundary of the proposed pitch

### *Neutral grassland – UKHab Code g3c5*

A small field of neutral grassland sites to the north of the proposed sports pitch. This is a sward of Perennial rye grass (*Lolium perenne*) with abundant herbs including Black knapweed (*Centaurea nigra*), Ribwort plantain (*Plantago lanceolata*), Buttercup (*Ranunculus sp.*), Red clover (*Trifolium pratense*) and Dandelion (*Taraxacum officinalis agg.*).

This area will be entirely unaffected by the artificial pitch installation.



Photograph 9 – Neutral grassland to the north of the proposed pitch.

### *Artificial unvegetated, unsealed surface – UKHab Code u1c*

A small area of artificial surface leads to the site from south-east. The surface is unsealed and unvegetated. It is shown on the habitat map.

## 4.2.3 Fauna

The following faunal groups were considered as part of the preliminary ecological appraisal:



### **Bats**

Detailed analysis of desktop study of bat records within the search zone is provided within the section 4.1.1 of this report.

Trees within the development boundary were too immature to support bat roosting features (TN1). However, some of the mature trees around the wider site boundary showed features suitable for roosting bats. These are described in table below and marked on the map as TN2. These trees are outside of the development footprint and will be left in place.



**Table 3 Mature trees that show bat roosting features. The trees are outside of the development footprint.**

Tree description and rooting feature	Photo
<p>1. Oak to the south-east of the proposed development. Features offering bat roosting potential are crevices under peeling bark, split branches and rot holes in the trunk.</p>	
<p>2. Another oak to the south-east of the proposed development in an open field. The features offering bat roosting potential are rot holes in trunk.</p>	

3. Dead oak, also located to the south-east of the proposed development. The features offering bat roosting potential are splits in the trunk and rot holes.



4. Oak tree to the north-west of the development footprint. Features offering bat roosting potential are gaps under peeling bark and rot holes.



5. Another oak tree to the north-west of the development footprint. Split branch offers bat roosting potential.



6. Dead oak tree located to the north-east of the development footprint. The features showing bat roosting potential are rot holes and split branches.



The boundary trees have potential to support commuting and foraging bats in the area. They offer excellent connectivity to wider habitats. Results of the bat activity surveys conducted on site in active season 2023 are provided within this report in section 4.1.



Figure 12 - showing the location of trees identified with bat roost potential described in table 3 above.

### **Badger**

There are 12 records of this species within the search zone of 2km. None of these is associated with the site. The closest report is location 0.4km from the site.

No signs of this species was recorded during the survey. There is the potential for this species to utilise the wider wooded site boundary – a copse to the north-east is suitable habitat for badgers (TN3). Precautionary mitigation is included within this report.

### **Reptiles and Amphibians**

Four derogation licences were granted within 2km of the site. One of these was for damage and destruction of resting places for the Great crested newt and located 160 metres south of the site, associated with Langton Green Primary School.

This record is absent of the data search records. On the data search report, there are 26 records of five amphibian species within the search area. These include ten records of Great crested newt (*Triturus cristatus*) out of which five are historical, one historical record of Common toad (*Bufo bufo*), and current multiple records of Common frog (*Rana temporaria*), Palmate newt (*Lissotriton helveticus*), and Smooth newt (*Lissotriton vulgaris*).

None of the great crested newt records is associated with the site and the closest record is located 640 metres south of the site.

There are nine records of three reptile species within 2km of the site. These comprise Slow-worm (*Anguis fragilis*), Adder (*Vipera berus*) and Grass snake (*Natrix helvetica*). None of these were

associated with the site. The closest record was of Grass snake located 0.3km south-east of the site.

There are ten water bodies within 500m of the site. The site boundaries could support commuting and foraging habitat for amphibians and reptiles.

Referring to the relevant Kent Reptile and Amphibian Group advisory note identifies that two of the triggers requiring further survey, or registration for district licence, are met with regards to this development site. Specifically records of the species and ponds within the vicinity.

The potential for great crested newt and the requirement for licensing is discussed later in this report.

### **Breeding birds**

Kent Biological Record Centre returned no records of birds within the search zone.

The trees and shrub on the east and west boundaries of the site have potential to support nesting bird species. The use of the site will remain as existing but with increased levels of disturbance associated with artificial turf pitch. It is considered that most common garden bird species will adapt readily to this level of disturbance in the denser areas of the boundaries, as they do in the residential gardens.

The semi-mature trees along the northern and southern pitch boundaries offer very limited breeding bird habitat, due to the open nature and exposed canopies, (TN4), but in all instances precautionary actions are required.

There are plans to remove part of the immature tree line and shrubs on the north and south boundaries (see photos 2 and 3), this should be undertaken outside the breeding bird season, which runs from March to September inclusive on an annual basis. If this cannot be delivered then in advance of clearance the areas should be searched for breeding birds by a suitably qualified ecologist.

### **Hazel dormouse**

There is one record of Hazel dormouse (*Muscardinus avellanarius*) within the search zone. This record was provided with two-digit grid reference only, therefore its distance from the site is unknown.

The immediate boundary of the site does not provide suitable habitat for hazel dormice, although the species may occur in the wider landscape area.

The sports pitch proposal is unlikely to have any impact upon hazel dormice.

### **Hedgehog**

There were no records of hedgehog returned by the Kent Biological Records Centre. Hedgehogs are however known to occur within the village Langton Green ([bighedgehogmap.org](http://bighedgehogmap.org)) and there is the potential for the playing field to be used as a foraging resource by hedgehog and that the boundary features could be used for refuge. Therefore, precautionary actions are provided within the report.

### **Invertebrates**

There are 31 records of invertebrate species, comprising butterflies, moths and beetles, recorded within the search zone. None of these records was associated with the site.

The vegetation on the development footprint does not support specialist herbs, therefore this habitat is highly unlikely to support any invertebrate species of conservation concern. The boundary vegetation in the wider area, and specifically the mature or approaching veteran oaks could support invertebrates like Stag beetles (*Lucanus cervus*).

The boundary vegetation outside of that above the stock fence will be retained in place as part of the development.

### **Plants**

There were numerous records of plants recorded within the search zone. They included species such as Common cow-wheat (*Melampyrum pratense*), Bog orchid (*Hammarbya paludosa*) and Sanicle (*Sanicula europaea*). None of these records were associated with the site.

No protected or scarce species of plants were recorded on site during the survey. Only common and widespread plants were recorded within the development footprint and wider site boundary.

### ***Invasive species***

No records of invasive species were returned by Kent Biological Records Centre.

Extensive areas of False acacia (*Robinia pseudoacacia*) are present and dominate the eastern boundary of the site. This includes for mature trees as well as saplings and offshoots (TN5).

#### **4.2.4 Target notes**

The following wildlife issues and target notes are identified on the extended phase 1 habitat plan overleaf.

**Target note 1 – Semi-mature tree line**

**Target note 2 – Mature trees with bat roosting potential**

**Target note 3 – Habitat suitable for badger**

**Target note 4 – Habitat for breeding birds**

**Target note 5 – Non-native False acacia**

The habitat map is included overleaf:



Figure 13 – map of the habitats on site.

## 5 DISCUSSION – BATS AND LIGHTING

### 5.1 Species composition and abundance

The combination of the transect survey and the static monitoring survey identified that a minimum of four species of bat were sufficiently active to be identified by the survey effort. The results were totally dominated by similar levels of activity by Common pipistrelle and Soprano pipistrelle, with only few records from Leisler's bat and Serotine bat.

There were remarkably low levels of sonograms from bat species categorised as being particularly averse to artificial illumination. Research to date has identified light levels which have a detrimental impact upon bat species which are categorised as being 'light averse'. These species are typically found commuting and foraging on hedgerows with levels of light, at or around 0.45 lux. Furthermore, the level in which 'light averse' species are significantly affected by artificial lighting has been demonstrated as low as 3.6 lux (Stone et al, 2013).

The remote monitoring period and transects combined recorded no more than 18 sonograms from bats which are categorised as being "light averse", this included principally the Brown long-eared bat, amounting to no more than 17 recordings, and a single sonogram of a Myotis bat from the transect that was not recorded audibly by the surveyor at the time, but picked up during the verification of sonograms. This may be as these species, typically gleaning bat species, would be foraging around the canopies of the veteran and approaching veteran oaks which are located set some metres behind the semimature and immature woodland boundaries surrounding the pitch, and therefore out of range of the static detectors. The mitigation design therefore considers this possibility.

There were no records of any scarce bat species from the desktop study, the transect walks or the static monitoring. Despite this, it is considered likely that species such as Barbastelle bat are probably present within this part of the landscape, but in this study were absent from the landscape surrounding Langton Green community sports pitches. This study was carried out in the peak survey season of July and August and there is potential for Barbastelles dispersing from maternity colonies and migrating to encounter the boundaries of this proposal in low numbers.

The abundance of bat activity on the western boundary was significantly greater than that recorded on the eastern boundary. There is no obvious explanation for this variation given the close proximity of the two boundaries, and both static detectors were positioned giving an equal opening in the vegetation to record open flight space.

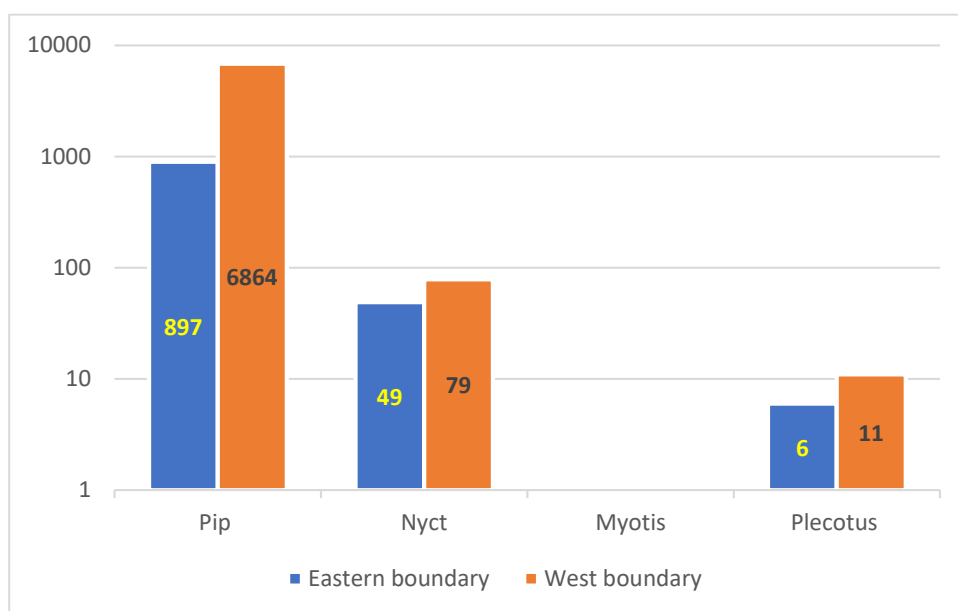


Figure 14 - comparison of bat activity on the western boundary compared to the eastern boundary, plotted on a logarithmic scale.



## 5.2 Potential impact upon bats from the lighting curfew

The potential impact upon bats from the proposed lighting curfew of at most 22:00 hours also requires consideration, as largely impacts from artificial lighting in the countryside are associated with street and footpath lighting which remains on all night, throughout the period of darkness.

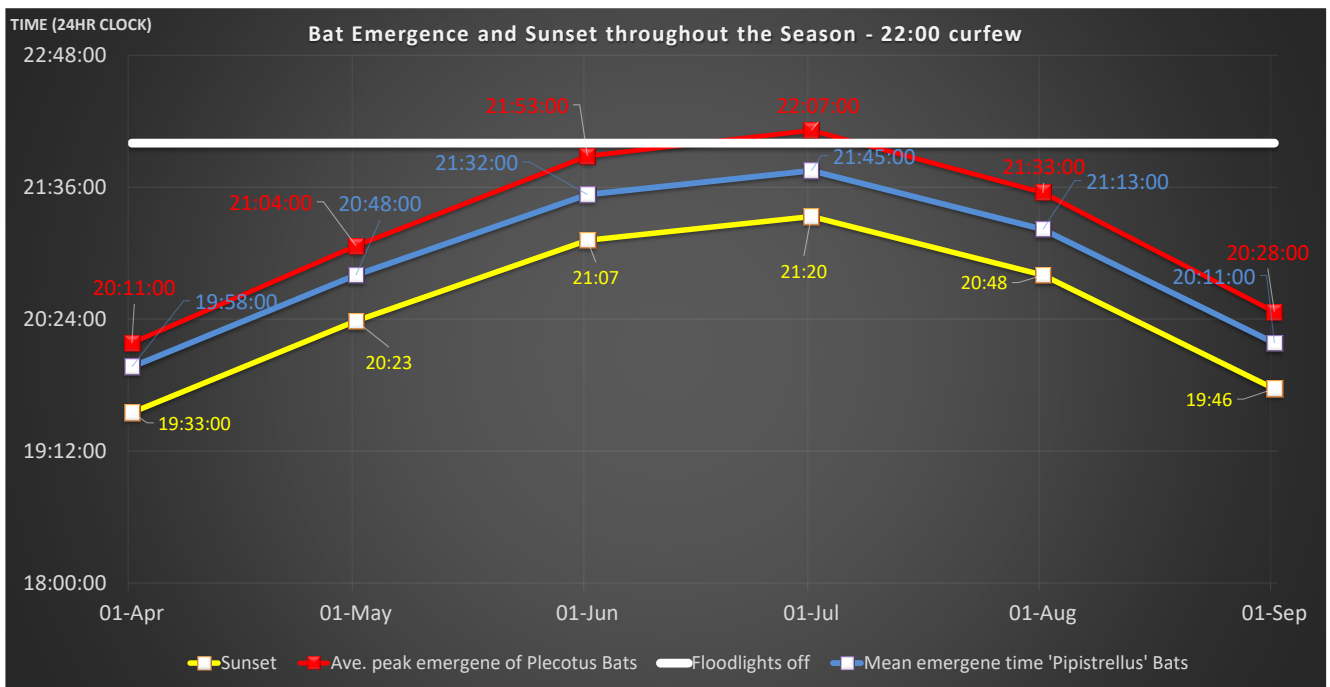
To allow consideration of the limited time period within which light spillage will occur the following analysis is provided. This refers to the typical bat emergence times across the active season as described by Andrews and Pearson (2022).

Here the sunset times throughout the year of 2023 are compared against the average or mean bat emergence time for Pipistrelle bats (as light tolerant species) and Brown long-eared bats (as light sensitive species) and the proposed sports turf floodlight curfew, which at most is 22:00 hours.

The results of this comparison are demonstrated below.

The graph shows a solid white line denoting the 22:00 hour curfew when the floodlights will be extinguished. This is then shown alongside the trends for the varying sunset time across the year, yellow line, from 1st April to 1st October 2023, for this part of the UK.

The blue line above then demonstrates the mean emergence times for *Pipistrellus* species and the red for Brown long-eared bats.



**Figure 15 – showing the comparison of sunset times, against bat emergence times and the proposal to extend the lighting schedule to 21:00.**

The mean emergence time for Pipistrelle bats is some 24.8 minutes after sunset and the Brown long-eared bat 59 minutes, as described by Andrews and Pearson (2022).

This graph identifies the following trends and occurrences across the bat activity year:

1. For the period of the year between 1 June and 10 July 2023 the Brown long eared bats would have only just left their roost at the times when the floodlights were extinguished.
2. For the period of the year 1 April to 1 September, any bats choosing to forage on the trees alongside the immediate boundary of the proposed artificial pitch will be impacted for a period of up to 1 hour and 49 mins in any given night before the lights are extinguished. On 1 April, sunset was at 19:31 and sunrise at 06:36, a period of 11 hours.

## 6 MITIGATION ACTIONS

### 6.1 Bat Mitigation Action

The static monitoring was undertaken over a 23 night period, which compares to the minimum survey period of 5 nights within best practice. The static monitoring and a single transect survey was carried out in July and August 2023, the peak of the active season. Therefore, with over 430 hours of night-time monitoring the occurrence of 17 sonograms from 'light averse' species suggests the general absence of these bats from the boundaries of the sportsground, despite a known roost for Brown long-eared bats in the locality and the proposal sitting within the core sustenance zone for this species.

Therefore, a modern mitigated lighting scheme is required. To ensure there is no significant impact upon foraging and commuting bats on the boundaries of the sportsground, and in particular onto the lines of mature trees beyond the immature and semi-mature species on the south, west and north boundaries, a mitigated lighting scheme has been prepared by a suitably qualified lighting engineer.

Mitigation has been applied as per the 4 steps of the 2023 guidance and the final scheme is provided below; this results in no greater than 2 lux of light spillage onto the canopies of the mature specimen trees in the wider area, largely no greater than 1 lux.

The final lighting design is entitled LANO-CLS030 and dated 15/11/2023 (see also appendix 3). This level of light spillage should be secured through a suitable planning condition.

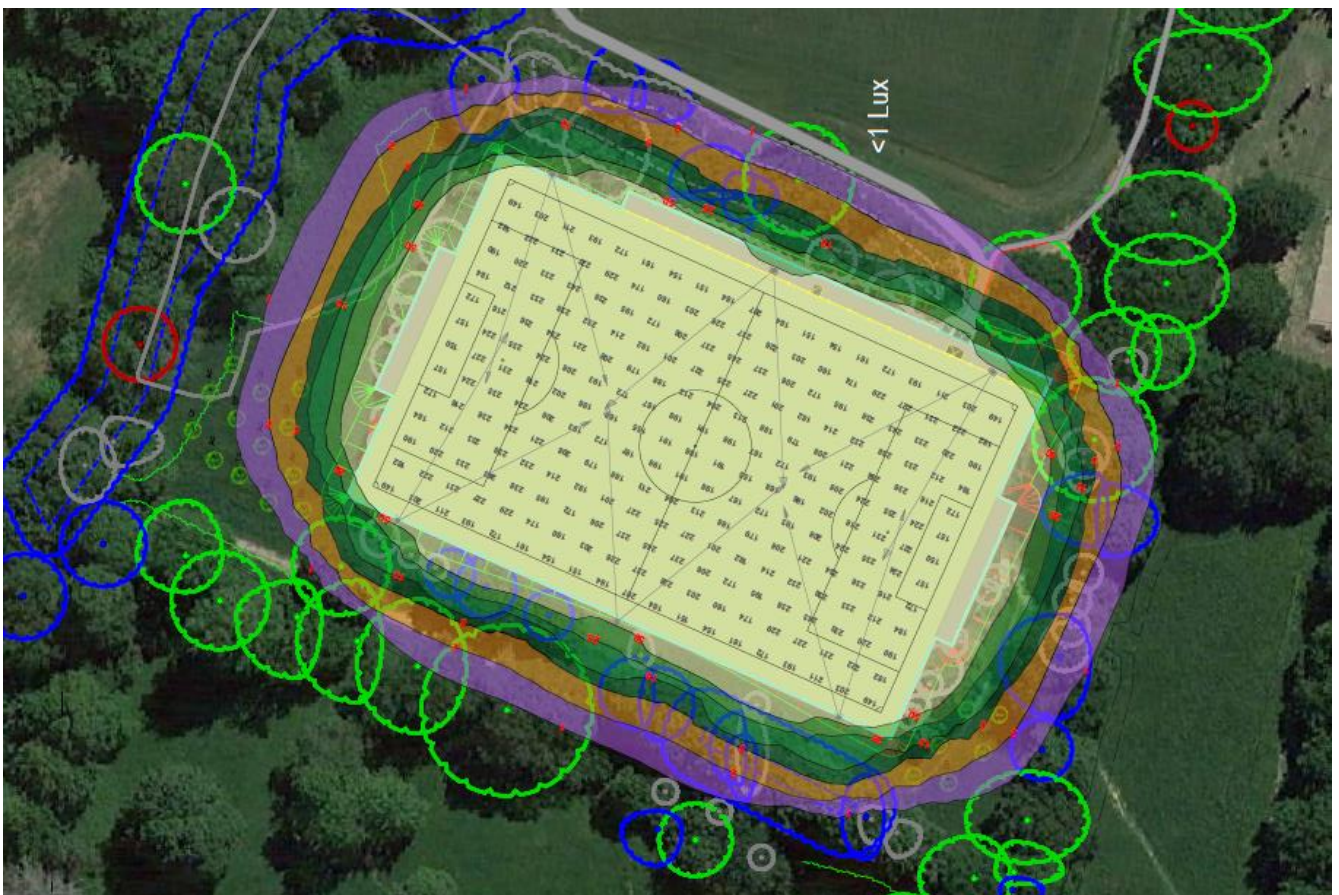


Figure 15 – extract from LANO-CLS030 overlain on Google Earth to demonstrate the extent of light spillage onto the mature trees on the south, west and north boundaries.

## 6.2 Other Ecological Mitigation

With regards to other species groups, there is a range of mitigation identified by the preliminary ecological appraisal and desktop study.

In order to provide sufficient protection and avoidance actions the following mitigation actions are provided. To deliver this level of mitigation and avoidance, Section 6.2 of this report has been designed to be extracted from this document and issued to the construction contractors via a toolbox talk. It should be retained within the contractor site office to allow reaction should any of the species below be encountered and to ensure compliance with the mitigation actions included.

### *Terrestrial Mammals – Hedgehog and Badger (Best Practice)*

With regard to all mammals, specifically hedgehog and badger, if any trenches that are dug during works activities are to be left open overnight, then they must be left with a sloping end or ramp (such as a scaffold plank) to allow any hedgehog, or indeed other animal that may fall in, a route to escape. Also, any pipes over 100mm in diameter should be capped off at night to prevent animals entering.

Of particular significance, any trenches or excavations left open overnight should be checked to ensure there are no hedgehogs present prior to the commencement of work at the beginning of each day, if a hedgehog is encountered it should be placed with a gloved hand into a clean receptacle, such as a bucket, and transferred to the densest section of hedgerow closest to the excavation, ideally on the southern boundary of the playing field.

### *Nesting Birds (Mitigation)*

The installation of the proposed artificial sports pitch and its associated floodlighting should have no impact upon habitats of value to nesting birds.

However, should there be any requirement to remove or to cut back any of the hedgerows or trees on the boundaries then this should be timed to avoid the bird breeding season, which runs from March to September (inclusive). This is to avoid adverse impacts to any active nests present.

If it is necessary to carry out any pruning or vegetation removal during the bird breeding season, then a breeding bird survey must firstly be carried out by a qualified ecologist. Compensation and enhancements for the loss of bird nesting habitat may then be required. The discovery of a bird's nest would lead to a delay in works until the eggs have hatched and the young have fledged and left the nest.

### *Amphibians and Reptiles (Precautionary measures)*

Common reptiles and amphibians may occur within the wider habitat and may be found close to the area of impact. The risk of these animals encroaching over the area of amenity grassland is considered to be negligible, especially considering the dispersal ecology of the species.

The contractors should be advised of basic good practice with regards to amphibians and reptiles as follows:

- If contractors encounter any reptiles, specifically snakes, then they should not attempt to handle or move them. The area where the snake was seeking refuge should be left undisturbed and the ecologist contacted for further advice. A buffer zone of 5 metres around the reptile should be established, excluding all works and disturbance and should be maintained until further advice is received.
- Avoiding creating potential refuges. Amphibians and common reptiles will utilise stacked materials such as grass cuttings, wood, stone, boards or metal sheets as refuges. The contractors must be instructed to keep the site tidy and to store materials away from the southern boundary of the site. Stored items should be placed onto the north and north-west side of the proposed working area and avoid all areas close to tall vegetation on the boundaries.

- If this cannot be achieved then ALL materials stored alongside the site boundaries must be placed off of the ground – for example on pallets.
- All contractors should be made aware of the potential presence of amphibians and reptiles on site.
- Any trenches or excavation should be checked at the beginning of each working day for the potential presence of an amphibian or reptile.
- If any amphibian is found, then in the first instance the contractor should photograph the animal and send that without delay to the ecologist for further advice. If approval is provided by the ecologist then the animal should be carefully extracted by hand to an area away from the works, specifically into the banking surrounding the site. Gloves must be worn and the animals should be transferred utilising a clean bucket or similar receptacle. If any snake is located; bullet point 1 above must be implemented.

The above requirements and advice should be included within the induction pack for the site and briefed to all of the construction workers via a toolbox talk in advance of commencement.

### 6.3 Great crested newt

The desktop study has identified that the habitats surrounding the playing field have the potential to support the specially protected great crested newt.

Planning guidance with regards to this species in Kent by the Kent Reptile & Amphibian Group; Kent Wildlife Trust; English Nature October, dated 2003.

This specifies a requirement for further investigations, phase II ecological studies, into the potential presence of great crested newt based upon the following criteria:

- There are existing records from within 500m of the boundary of the development site;

OR

- There is a water body within the development site, with the exception of rivers or streams with a noticeable flow.

OR

- There is any water body within 500m of the boundary of the development site, with the exception of rivers or streams with a noticeable flow.

The proposed artificial pitch at the Langton Green community sports Association site achieves bullet point 1, with the presence of species south of the sportsground and bullet point 3 with a range of ponds within 500 m of the proposed pitch.

Therefore, the proposal will have to be informed by a range of great crested newt surveys in accordance with best practice guidance, and subsequent to that a European protected species derogation licence.

Alternatively, and the recommended approach is that the project should be covered under the Great Crested Newt District level licence for Kent

## 7 CONCLUSIONS

### 7.1 Bat Commuting and Foraging Activity

#### 7.1.1. Proposed artificial sports pitch and associated floodlighting scheme

The predicted impact upon foraging and commuting bat species from the installation of the proposed artificial sports pitch is potentially negligible, so long as a lighting scheme is installed as designed to avoid no greater than 2 lux of light spillage onto the linear wooded boundary, specifically the lines of mature trees which are located to the south, west and north of the semimature and immature tree lines following the stock fence that surrounds the existing sports pitch. Insufficient bat activity was recorded on the eastern boundary to raise any significant concerns.

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

- The surveys identified that the site is utilised predominantly by bat species which are known to be tolerant of artificial lighting in their commuting and foraging activity, if not exploiting it for foraging purposes.
- 'Light sensitive' bats were extremely rare with only 1 bat pass every 25 hours of night-time monitoring.
- Despite the area of sports ground being encapsulated to all sides, bar the eastern boundary, by an area of deciduous woodland categorised as of Local Wildlife Site status, there were no scarce bats recorded. In this type of habitat in south-east England often supports the scarce Barbastelle bat. There was a single *Myotis* sonogram that the BTO pipeline cautiously identifies as Bechstein's bat (*Myotis bechsteinii*), and this rare bat is also a possible constituent of the adjacent local wildlife site. In all circumstances, there was no regular activity by any rare bats on the boundaries of the sportsground.

The conclusions from the landscape use assessment is that there are few bats active on the semi mature woodland boundaries to the proposed artificial turf pitch that are 'light averse' and therefore, when taking in to account the mitigated scheme, there will be no impact upon the favourable conservation status of any bats sensitive to artificial light in the surrounding countryside from this lighting scheme.

#### Design of the Sportsturf Floodlights

In all instances with regards to the installation of artificial lighting in the countryside, a fully mitigated design for the sportsturf floodlighting is required and has been prepared and is described within chapter 6.

- The design for the sports turf floodlights, reference LANO-CLS030, 15.11.2023, has been developed with reference to the mitigation hierarchy, steps 1 to 4 of the best practice guidance (2023). This level of light spillage should be secured through a suitable planning condition.
- A single cycle of follow-up survey is required to demonstrate the effectiveness of the prescribed mitigation, as specified by the revised artificial lighting best practice guidelines.

Considering the above bullet points, and with the negligible activity recorded from 'light averse' and rare bats on the boundaries of this section of sports ground, and in combination with the mitigated lighting scheme designed, it is disproportionate to mitigate the floodlighting scheme beyond that already implemented.

The Bat Mitigation Guidelines (reference 6) states that '*mitigation should be proportionate. The level of mitigation required depends on the size and type of impact, and the importance of the population affected.*' This report and the floodlighting scheme designed reflects the level of mitigation required to achieve this.

The design of this survey and the mitigation designed with the lighting engineers report was

prepared in line with Guidance Note GN08/23 Bats and Artificial Lighting At Night and the chapter Bats, lighting and the mitigation hierarchy, steps 1 to 4 of the best practice guidance (ILP and BCT, 2023).

## 7.2 Other ecological considerations

### 7.2.1. Habitats and Species

The preliminary ecological appraisal identified the following habitats and conclusions:

- The habitat directly affected by the development proposal is amenity grassland, which is of low conservation value. No further mitigation is recommended.
- The habitat that immediate surrounds the playing field comprises of immature and semimature tree lines alongside a stock fence and was of marginal value to wildlife, especially considering the more valuable woodland beyond.
- Habitats present on site that are of value to biodiversity are those associated with the boundaries beyond and protected by the immature and semimature tree lines surrounding the pitch. Specifically this includes a range of mature, approaching veteran or veteran deciduous trees. Mitigation relating to avoiding impacts upon these is provided within floodlighting design.
- Terrestrial mammals - the works have some limited potential to impact upon terrestrial mammals i.e. hedgehog and other terrestrial mammals, encountering excavations. Precautionary actions are included within section 6.2 of this report.
- Breeding birds - the installation of the artificial sports pitch should have no impact upon breeding birds. The current design shows the removal of limited trees and shrubs on the north and south boundary, this work should be completed outside of the breeding bird season, between March and September. If works are required within this season then precautionary actions must be implemented as described.
- Amphibians and Reptiles – The habitat affected is intensively mown grassland in regular use as a sports facility. The potential for common amphibians or reptiles to utilise this habitat, when considering the ideal habitats surrounding, is negligible. There is a proportionate mitigation strategy provided for amphibians and reptiles within section 6.2 of this report.
- Specially protected amphibians - the study has identified the potential for great crested newt to be a constituent of the woodland habitat surrounding the playing field. It is recommended that the site is registered under The Great Crested Newt District Level Licence for Kent.

Section 6.2 of this report must be extracted from this document and issued to the construction contractors via a toolbox talk. It should be retained within the contractor site office to allow reaction should any of the species below be encountered and to ensure compliance with the mitigation actions included.

## 8 REFERENCES

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## APPENDIX 1 - RELEVANT WILDLIFE LEGISLATION

### **Birds**

The bird breeding season generally lasts from early March to September for most species. All birds are protected under the Wildlife and Countryside Act (1981) (as amended) and the Countryside & Rights of Way Act 2000. This legislation makes it illegal, both intentionally and recklessly to kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while it is being built or in use; take or destroy the eggs of any wild bird; and possess or control any wild bird or egg unless obtained legally.

Birds listed under Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) (e.g. barn owl) are afforded additional protection, which additionally makes it an offence to disturb a bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

### **Common Amphibians**

Common amphibian species (i.e. common frog, common toad, smooth newt and palmate newt) are afforded partial legal protection under UK legislation, i.e. Schedule 5, Section 9 (5) of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. This legislation prohibits sale, transportation and advertising for sale.

### **European Hedgehog**

Hedgehogs are protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) which prohibits killing or taking of individuals.

The hedgehog is also listed as a Priority Species for conservation action under the UK Biodiversity Action Plan. Under the NERC Act 2006, the hedgehog is categorised as a 'Species of Principal Importance' for biodiversity. Listing as a Biodiversity Action Plan priority and 'Principal Importance' species reflects concerns that hedgehog numbers are in decline and that some protection should be afforded to hedgehog habitat through the planning system.

### **Reptiles**

Slow-worm, viviparous/common lizard, adder and grass snake are protected under Schedule 5, Section 9 (1 and 5) of the WCA 1981 (as amended) and the CROW Act 2000 against deliberate or reckless killing and injuring and sale.

### **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.

### **Badger**

Badger is a widespread and generally common species. However, they are legally protected under The Protection of Badgers Act 1992, which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so
- Possess any dead badger or any part of, or anything derived from, a dead badger
- Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it

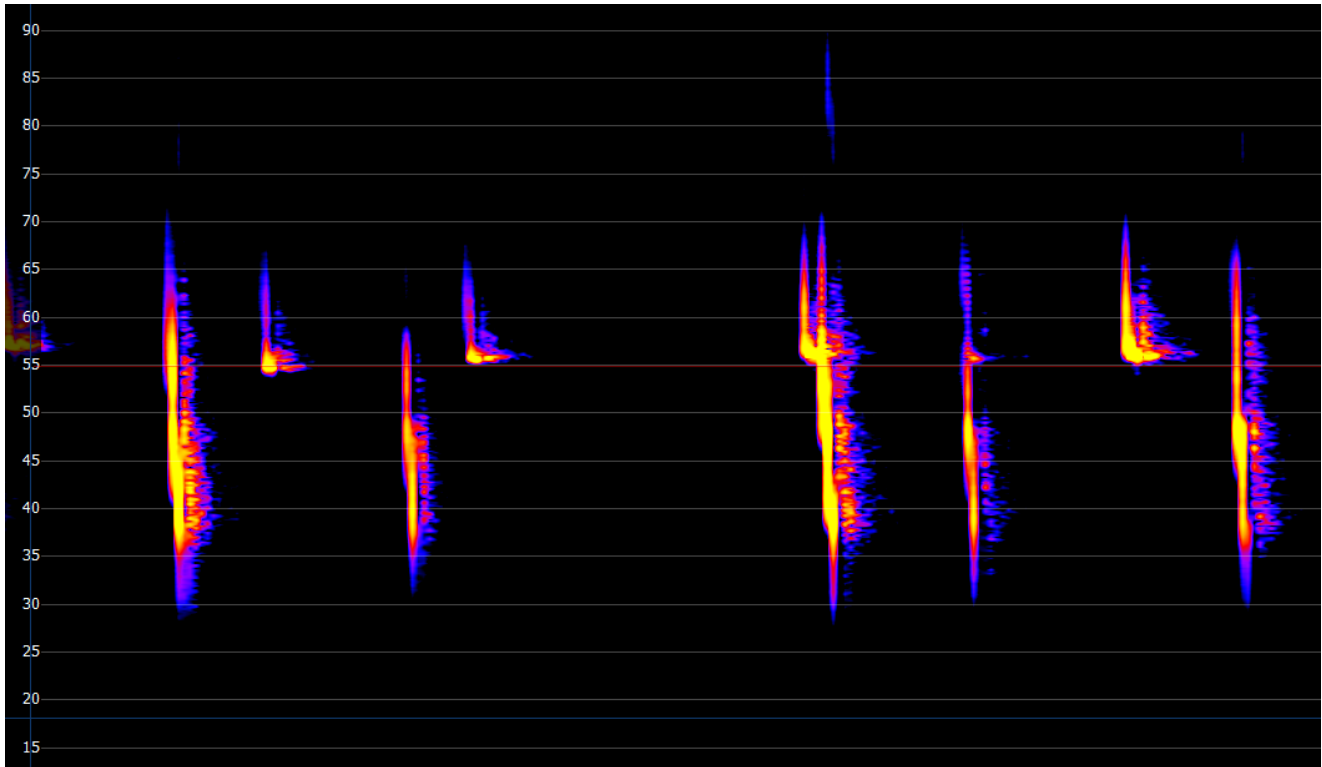
A badger sett is defined in the legislation as "any structure or place, which displays signs indicating current use by a badger".



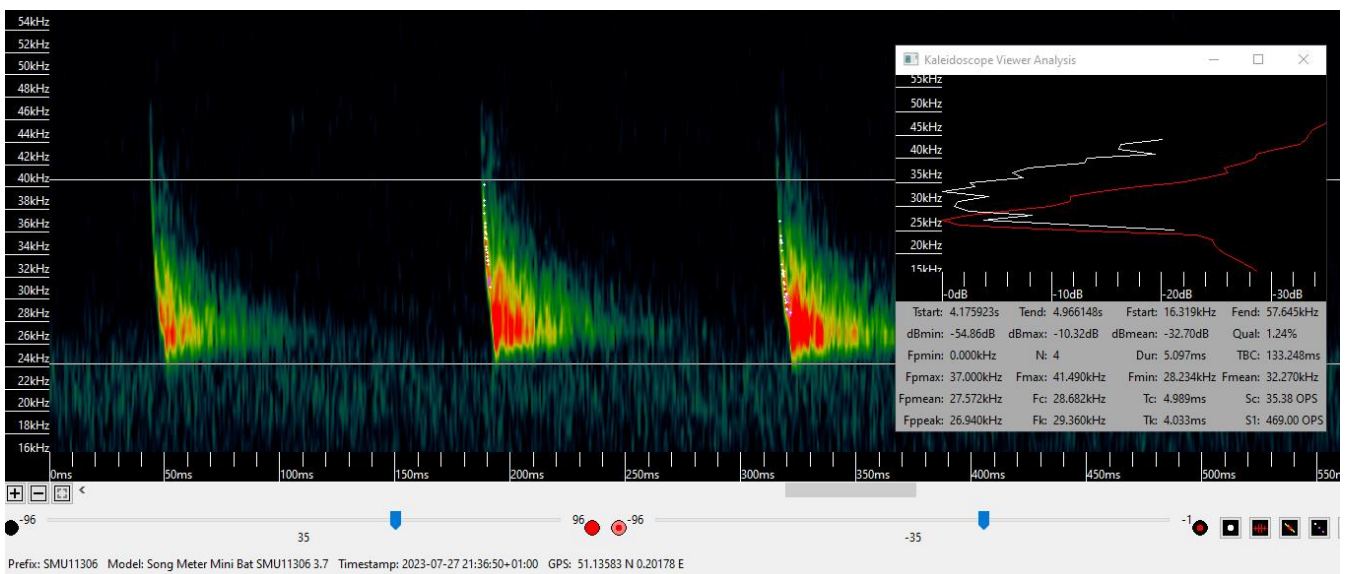
### APPENDIX 2 - SAMPLE SONOGRAMS

LATITUDE	LONGITUDE	SPECIES	SCIENTIFIC NAME	ENGLISH NAME	SPECIES G	PROBABIL	WARNINGS
51.1355	0.20218	Epteser	Eptesicus serotinus	Serotine	bat	0.54	
51.13549	0.20595	Myobec	Myotis bechsteinii	Bechstein's Bat	bat	0.9	Caution - rare or unexpected
51.13549	0.20586	Nyctalei	Nyctalus leisleri	Leisler's Bat	bat	0.76	

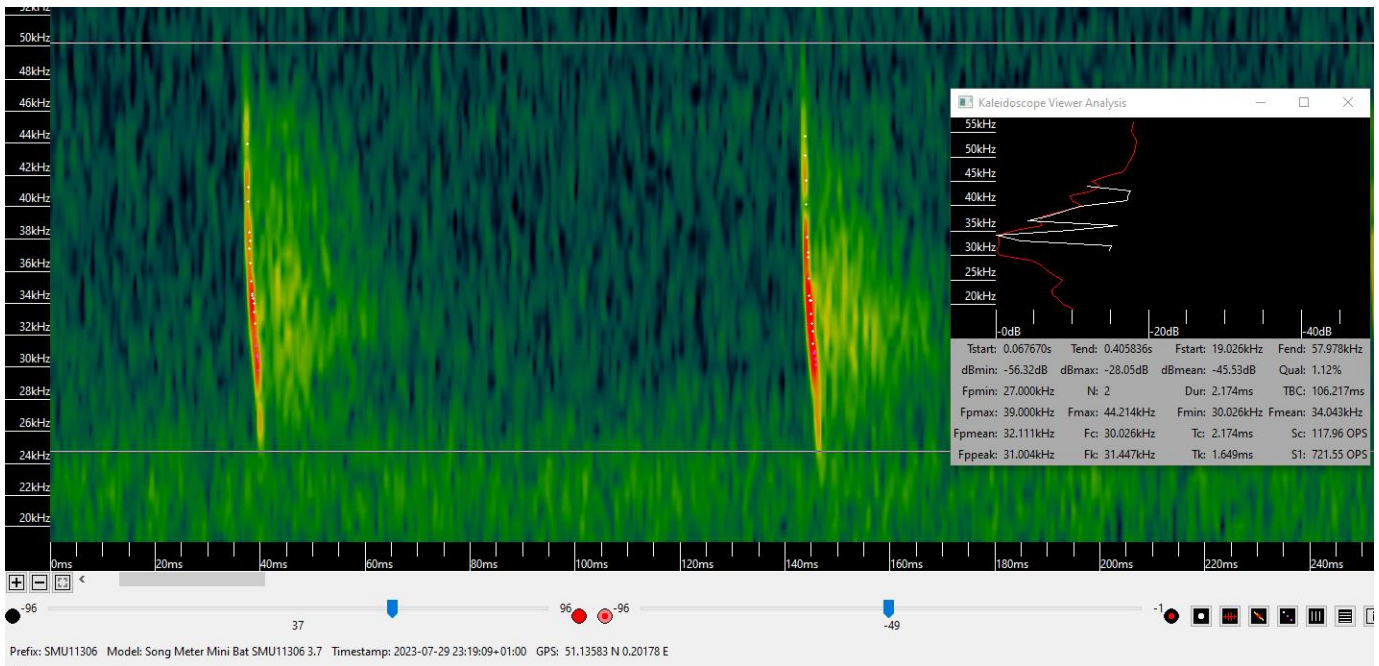
Results of the verification check using BTO pipeline on sonograms collected during the static and transect surveys.



Myotis sonogram - this sonograms generated using Anabat Scout full spectrum detector during the transect survey on 29 August. The sonogram was extracted and verified utilising the BTO pipeline software, which suggest the potential for Bechstein’s bat. The species may well occur in this area, given the landscape type.



Example of a Serotine sonogram from the study



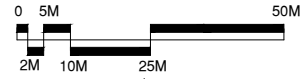
Example of 1 of the Brown long eared bat sonograms generated from the western boundary

## **APPENDIX 3 - FLOODLIGHT DESIGN**

The floodlight design is provided overleaf:

# Langton Green Community Sports Association

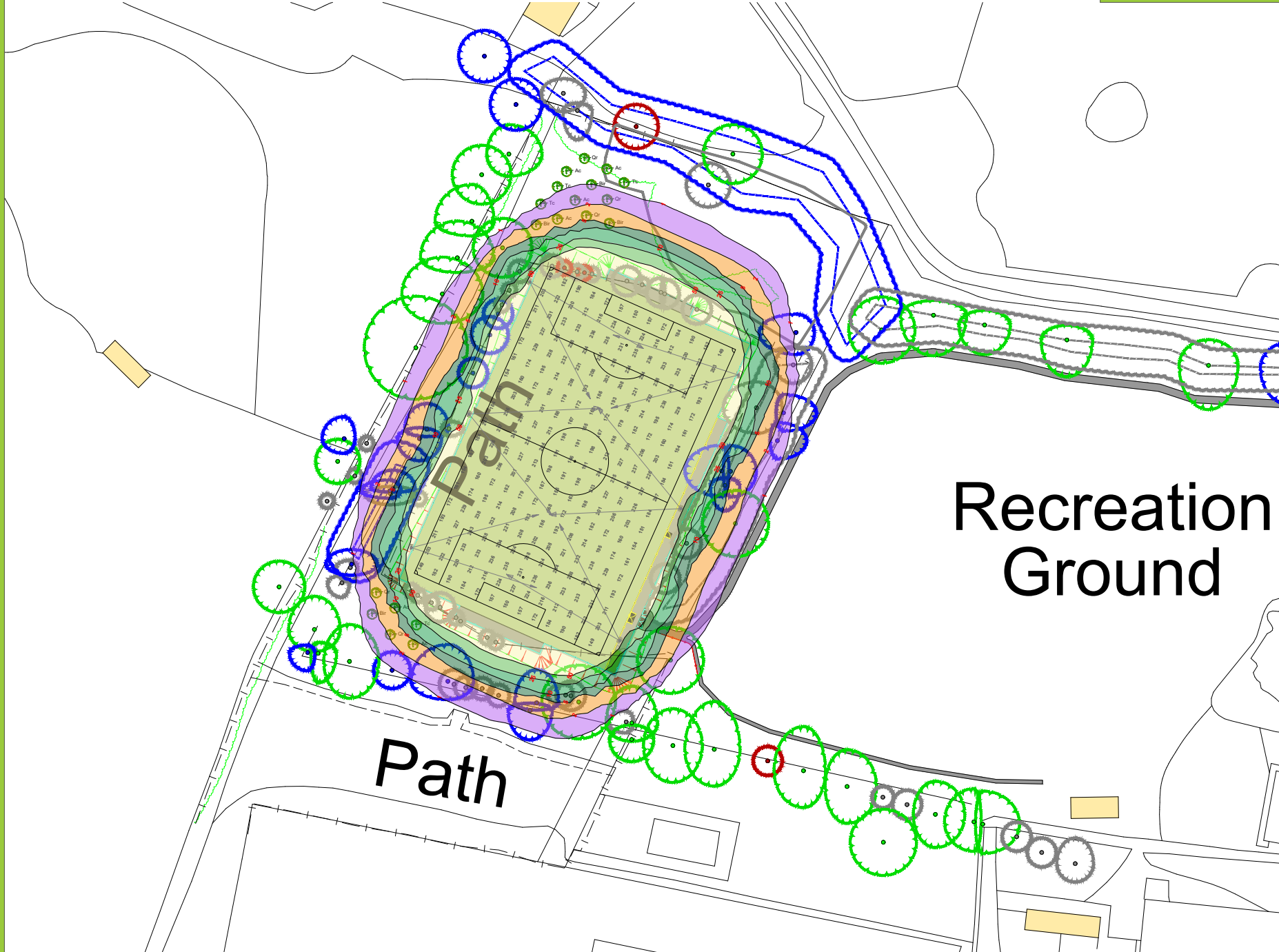
Creation of an Artificial Grass Pitch



CONSULTANTS  
 SURFACING STANDARDS LIMITED  
 SPORTS PITCH CONSULTANTS  
 1508, BELLEVUE

DO NOT SCALE FROM DRAWING UNLESS FOR PLANNING PURPOSES ONLY. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS. THIS DRAWING IS SUBJECT TO SURFACING STANDARDS LTD. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS. THIS DRAWING IS SUBJECT TO SURFACING STANDARDS LTD. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS. THIS DRAWING IS SUBJECT TO SURFACING STANDARDS LTD. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.

Lano CLS



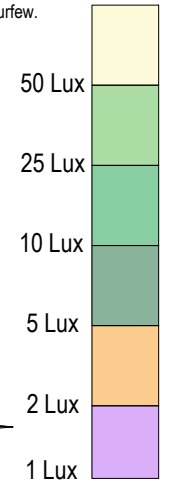
**Floodlight System**  
 6no. Columns 15m high

Lighting Design meets the requirements of the FA Guide to Floodlighting

Property	Standard	Maintained
11v11 Maintained Avg Illuminance	>200 Lux	202 Lux
11v11 Min/Avg Uniformity	>0.6	0.73

Design in accordance with ILP Guidance Note 1 (2021) For The Reduction Of Obtrusive Light and adheres to the requirements of an E3 Environmental Zone.

0% Upward Light Ratio  
 <1lux on vertical illuminance on adjacent residential Properties Pre-curfew and <0.1lux post-curfew.



## Recreation Ground

## Path

00	PLANNING ISSUE	ME	MB	15-11-23
REV	DESCRIPTION	REV	CK	DATE

**SSL**  
 Surfacing Standards Limited  
 SPORTS PITCH CONSULTANTS

SPELDHURST, KENT

ME

TITLE  
 Langton Green Community Sports Association  
 Creation of an Artificial Grass Pitch  
 Floodlighting Scheme

PROJECT	SCALE	DATE
LANO-CLS030	1:500	A1

DRAWING No	REVISION
06	01