



SENSITIVE LIGHTING STRATEGY

CONSTRUCTION OF AN INDUSTRIAL BUILDING (USE CLASS B2)

AMMAN VALLEY WELDERS , PARK HOWARD ROAD, CWMGORS, SA18 1PA

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LOCAL AUTHORITY REF: 2022/0926

OUR REF: 22/884

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1.0 INTRODUCTION

1.1 Background

This Sensitive Lighting Strategy document (SLS) has been prepared for the proposed development of a new light industrial building within the Amman Valley Welders existing site and compound located on Park Howard Road, Cwmgors, SA18 1PA. The development was granted planning approval under planning approvals reference: P2022/0926 on 29th August 2023 for the:

‘Construction of an Industrial Building (Use Class B2)’

A ‘light mitigation strategy’ Condition was added to the planning approval at Condition 5, which indicated:

5 Prior to the erection of any lighting, a light mitigation strategy, including measures to reduce light spillage shall be submitted to and approved in writing by the Local Planning Authority. The light mitigation strategy shall be implemented and retained in accordance with the approved details.

Reason:

To ensure that animal and plant species and habitats listed under the Conservation of Habitats and Species Regulations 2010 are adequately protected; and to ensure compliance with Policies SP15 and EN6 of the Neath Port Talbot Local Development Plan.

1.2 Site Location

The application site is located within the existing and established light industrial area of Park Howard Road, known as the 'Cwmgors Industrial Estate'.

The site is accessed directly off Park Howard Road, which links the site with the main feeder road of Heol-y-Goes (A474), which runs between Lower Brynamman and Brynamman in the east to Cwmgors in the west.

Park Howard Road is an established access road with existing dwellings located just off its junction with Heol-y-Gors leading to a number of existing and established business/industrial units within the Industrial Estate, including the subject site.

Park Howard Road continues on to the west, past the site, serving a number of rural dwellings and farmsteads in the countryside beyond.

Pedestrian access to the site can be achieved via Park Howard Road with pedestrian links from the site to the main road of Heol-y-Gors and the public transport/local distributor highway network.

The area is generally characterised as being light industrial in nature surrounded to the west and north by open countryside.

Copies of the approved site Location Plans and site layout plans are attached at Appendix A and B.

1.3 Lighting Zone

The site is assessed as being in between two lighting zones; Zone E2 (Rural – Low District Brightness) and E3 (Medium District Brightness) as indicated by the ‘Environmental Zones’ published by the Institute of Lighting Professionals (ILP), 2012 as it lies behind the main village thoroughfare of Cwmgors on the edge of a rural area.

Several streetlights are present nearby within Park Howard which generate extensive artificial lighting to the associated highway areas somewhat decreasing the quality of foraging and commuting bat habitat.

The site will therefore be assessed as being within the most ‘rigorous zone’ of the two zones as advised by the ILP

1.4 Scope of this Report

The scope of this report is to provide an SLS that will reduce the impacts of artificial light spill resulting from the proposed development and subsequently limit impacts of artificial light spill on local bat populations.

This report aims to provide specific light installation prescriptions in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: *Guidance Note 08/18: Bats and Artificial lighting in the UK* (BCT & ILP 2018) and ILP Guidance Note 01/21 – The Reduction of Obtrusive Light.

Given this, this report aims to provide sufficient information to support of the discharge of planning condition 5.

2.0 Ecological Baseline Conditions Relevant to This Report

The baseline ecological conditions of relevance to this report have not been determined through a preliminary bat roost assessment or survey for nesting birds as this was not a requirement of the planning application nor the subsequent planning approval.

However, the new building location is within an existing and established light industrial compound on an existing and established light industrial estate and as such, it is not considered that bat and bird nesting activity on the immediate site would be extensive nor is there a high likelihood of roosts or hibernation opportunities.

The lighting proposed for the subsequent building will take account of the possibility of foraging bats in the vicinity of the site and limit/mitigate light spill and pollution as much as possible.

Any artificial lighting used during either the construction or operational phase of the development from both external lighting sources and light spill via windows has the potential to have a detrimental effect on bats foraging and commuting through the area if the light spill is not controlled.

2.1 Lighting for Bats

The lighting design for the site will be of a 'bat-friendly' specification, comply with the Institute for Lighting Professional's and Bat Conservation Trust's guidance (2018) and kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by foraging bats such as nearby trees, hedgerows etc. will be avoided.

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible.

Lighting will not be located in the vicinity of, or shine towards, potential bat access points or possible/actual commuting routes and flight lines, thus maintaining a 'dark corridor' and avoiding/minimising disturbance to roosting bats.

Any security lights used will operate off a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source, or use LED bulbs. They will be low intensity and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have a significant effect on bats will be avoided.

An example of a suitable light for the elevations is provided at Appendix C.

3.0 Policy context

3.1 National Planning Policy

The National Development Framework: Future Wales - the National Plan 2040.

Future Wales sets out the Welsh Government's land use priorities and provides a national land use framework for SDPs and LDPs. Future Wales concentrates on development and land use issues of national significance, indicating areas of major opportunities and change, highlighting areas that need protecting and enhancing and helping to co-ordinate the delivery of Welsh Government policies to maximise positive outcomes.

Policy 1 - Where Wales Will Grow

Policy 2 - Shaping Urban Growth and Regeneration - Strategic Placemaking

Policy 9 - Resilient Ecological Networks and Green Infrastructure

Government guidance is to be found in Planning Policy Wales (PPW), first issued in March 2002 and currently at Edition 12, (February 2024), together with the accompanying Technical Advice Notes (TAN's).

Paragraph 3.3 indicates;

'3.3 Good design is fundamental to creating sustainable places where people want to live, work and socialise. Design is not just about the architecture of a building but the relationship between all elements of the natural and built environment and between people and places. To achieve sustainable development, design must go beyond aesthetics and include the social, economic, environmental, cultural aspects of the development, including how space is used, how buildings and the public realm support this use, as well as its construction, operation, management, and its relationship with the surrounding area.'

Paragraph 3.55 in respect of previously developed land, indicates;

‘Previously developed (also referred to as brownfield) land should, wherever possible, be used in preference to greenfield sites where it is suitable for development.’

And;

‘3.56 Planning authorities should work with landowners to ensure that suitably located previously developed sites are brought forward for development and to secure a coherent approach to their development. To incentivise the appropriate re use of previously developed land, planning authorities should take a lead by considering and identifying the specific interventions from the public and/or private sector necessary to assist in its delivery. This will normally support regeneration initiatives and land allocations in development plans and will include the need to raise awareness of risks as part of an effective de risking strategy. This approach will inform the development of appropriate risk assessments and remediation strategies at the application level intended to safeguard new developments from the health and environmental risks arising from past land uses, such as contamination, old mine workings or former landfill sites.’

According to PPW, the definition of Previously Developed Land includes:

‘Previously developed (also known as brownfield) land is that which is or was occupied by a permanent structure (excluding agricultural or forestry buildings) and associated fixed surface infrastructure. The curtilage of the development is included, as are defence buildings and land used for mineral extraction and waste disposal where provision for restoration has not been made through development management procedures.

Excluded from the definition are:

- land and buildings currently in use for agricultural or forestry purposes;
- land which has not been developed previously, for example parks, recreation grounds, golf courses and allotments, even though these areas may contain certain urban features such as paths, pavilions and other buildings;
- land where the remains of any structure or activity have blended into the landscape over time so that they can reasonably be considered part of the natural surroundings;
- land which is species rich and biodiverse and may qualify as section 7 habitat' or be identified as having nature conservation value; fn Environment Act; and
- previously developed land subsequently put to an amenity use.'

Chapter 5 of PPW details the principle objectives for creating productive and enterprising places. Chapter 5.4 deals with economic development and paragraphs 5.4.3 and 5.4.4 indicate:

'5.4.3 Planning authorities should support the provision of sufficient land to meet the needs of the employment market at both a strategic and local level. Development plans should identify employment land requirements, allocate an appropriate mix of sites to meet need and provide a framework for the protection of existing employment sites of strategic and local importance.

5.4.4 Wherever possible, planning authorities should encourage and support developments which generate economic prosperity and regeneration. Sites identified for employment use in a development plan should be protected from inappropriate development.'

Section 38 of the Planning and Compulsory Purchase Act 2004, requires that, in determining a planning application, the determination must be in accordance with the Development Plan unless material considerations indicated otherwise.

Sections of Planning Policy Wales have been updated with Ministerial Interim Planning Policy Statements (MIPPS), including issues on Sustainability, Housing and Planning for Good Design.

Technical Advice Notes (TANs) should be taken into account by Local Planning Authorities and should be read along with PPW. They provide more detailed planning policy guidance on technical disciplines that are broadly covered within PPW.

Technical Advice Note - TAN 5: Nature Conservation and Planning (2009); sets out how the planning system should contribute to protecting and enhancing biodiversity and geological conservation.

Technical Advice Note - TAN 6: Planning for Sustainable Rural Communities (2010); sets out guidance on how the planning system can support sustainable rural communities and provides advice on: sustainable rural communities, sustainable rural economies, rural affordable housing, rural enterprise dwellings, one planet developments, sustainable rural services and sustainable agriculture.

Technical Advice Note - TAN 12: Design (2014); provides more detail on the design aspects set out in PPW as well as providing detail on five key aspects of good design that should be integrated into proposed developments. TAN 12 now also incorporates key aspects of TAN 22.

The key aspects of TAN 12 are:

- Access Objective: Ensuring ease of access for all.
- Character Objectives: Sustaining or enhancing local character; Promoting legible development; Promoting a successful relationship between public and private space; Promoting quality, choice and variety; and Promoting innovative design.
- Community Safety Objectives: Ensuring attractive, safe public space; and Security through natural surveillance.
- Environmental Sustainability Objectives: Achieving efficient use and protection of natural resources; Enhancing biodiversity; and Designing for change.
- Movement Objective: Promoting sustainable means of travel

Technical Advice Note – TAN 15: Development, flooding and coastal erosion (2021); reflects the core principles of the National Strategy for Flood and Coastal Erosion Risk Management in Wales, to adopt a risk-based approach in respect of new development in areas at risk of flooding and coastal erosion.

Technical Advice Note - TAN 18: Transport (2007); continues the theme established in PPW of minimising the need to travel, especially by the private car, and to seek to encourage the increased use of sustainable modes of travel, including public transport, walking and cycling. These Initiatives will help to reduce road traffic growth, which is causing increased local air pollution, green house gas emission contributing to climate change and global warming and, In some areas, congestion, which can affect economic competitiveness.

Technical Advice Note - TAN22: Sustainable Buildings (2010); recognises that the planning system can play an important role in improving the sustainability of new developments and that it has a role in encouraging and facilitating homes and buildings that meet higher sustainable standards, and continues what PPW advocates in terms of national minimum sustainable building standards.

Manual For Streets 2007, paragraph 8.3.6 indicates that; ‘Provision below demand can work successfully when adequate on-street parking controls are present and where it is possible for residents to reach day-to-day destinations such as jobs, schools and shops without the use of a car. This will normally be in town and city centres where there will be good public transport and places that can be accessed easily on foot and by cycle. For residents who choose not to have a car, living in such an area may be an attractive proposition.’

3.2 Development Plan Policy

The current adopted Development Plan covering the area is the Neath Port Talbot County Borough Council Local Development Plan (LDP), adopted January 2016.

It should be noted that the councils 'Replacement Local Development Plan (RLDP) 2023-2038' is currently under preparation and is yet to be placed on Deposit with Adoption anticipated for mid-2027.

Policies of note within the current LDP that the site falls within under the councils LDP adopted 'Proposals Map' are:

Policy SC 1 - Settlement Limits

Development within settlement limits that is proportionate in scale and form to the role and function of the settlement as set out in the Settlement Hierarchy will be acceptable in principle.

Outside settlement limits, development will only be permitted under the following circumstances:

1. It constitutes a sustainable small scale employment use adjacent to a settlement limit; or
2. It constitutes live-work unit(s) immediately adjacent to a settlement limit in the Valleys Strategy Area only; or
3. It constitutes the small-scale expansion of an existing business or the suitable conversion of an existing building; or
4. It constitutes the appropriate replacement of an existing dwelling; or
5. It is an affordable housing exception site; or
6. It is an appropriate rural enterprise dwelling; or
7. It is an appropriate 'One Planet Development'; or
8. It is a sustainable tourism or farm diversification proposal that is suitable in a countryside location; or
9. It is associated with the provision of public utilities, infrastructure and waste management facilities that cannot reasonably be located elsewhere; or
10. It is associated with either agriculture, forestry, minerals or energy generation; or
11. It relates to the appropriate provision of accommodation for Gypsies / Travellers; or

12. It constitutes the provision of open space and small-scale ancillary facilities adjoining the settlement limit.

Where development is permitted outside settlement limits, any new buildings must be located adjacent to existing buildings or settlements wherever possible and be of an appropriate scale and form.

Policy SP 1 - Climate Change

The causes and consequences of climate change will be addressed by implementing the following measures.

In relation to the causes of climate change:

1. The efficiency and sustainability of the County Borough's settlements will be enhanced through developing more cohesive and efficient settlements and settlement patterns, and consequently more sustainable travel patterns;
2. Greenhouse gas emissions from transport will be minimised through encouraging freight / commercial transport by alternatives to road (e.g. rail or sea);
3. Dependence on the private car and the need to travel in general will be reduced through promoting alternative means of transport and more efficient use of existing facilities, co-location and joint use of facilities;
4. Provision will be made for the County Borough's appropriate contribution to renewable and low carbon energy generation.

In relation to the consequences of climate change:

1. Likely increased flood risk will be taken into account and addressed by ensuring that there is greater resilience by avoiding development on land that is at risk from flooding in the first instance in accordance with the sequential approach set out in national guidance or in locations that could increase the risk of flooding elsewhere;
2. The fragmentation of habitats will be minimised and opportunities made for habitat and species change and migration where possible.

Policy SP 3 - Sustainable Communities

The delivery of sustainable, healthy and cohesive communities and the conservation of the countryside will be promoted by:

1. Defining sustainable communities and locations for development by the identification of a settlement hierarchy that reflects the role and function of settlements;
2. Defining settlement limits within which development which accords with the settlement hierarchy will be permitted in principle;
3. Resisting inappropriate development outside settlement limits.

Policy SP 11 - Employment Growth

Existing employment uses will be supported and safeguarded and new and expanding employment developments will be encouraged through the following measures:

1. 96 hectares of land for employment and business purposes will be allocated for development within the Plan period in the Coastal Corridor Strategy Area to meet economic development and employment needs;
2. Additional employment provision will be made within the Strategic Regeneration Areas as part of mixed use, sustainable development in these locations;
3. Existing employment areas will be safeguarded for employment uses;
4. Premises in existing appropriate lawful employment use will be safeguarded for employment purposes;
5. Employment uses will be encouraged in principle within settlement limits;
6. In the Valleys Strategy Area, a flexible approach will be taken to employment proposals and 'live-work' units within or immediately adjacent to settlement limits.

Policy SP 14 - The Countryside and the Undeveloped Coast

The countryside and undeveloped coast, including landscapes, seascapes and agricultural land, will be protected and where feasible enhanced through the following measures:

1. The protection of the open countryside through the control of inappropriate development outside settlement limits;
2. The protection of the undeveloped coast through the control of inappropriate development;
3. The designation and protection of Special Landscape Areas;
4. The designation and protection of Green Wedges.

Policy BE 1 - Design

All development proposals will be expected to demonstrate high quality design which fully takes into account the natural, historic and built environmental context and contributes to the creation of attractive, sustainable places.

Proposals will only be permitted where all of the following criteria, where relevant, are satisfied:

1. It complements and enhances the character and appearance of the site, building or area in terms of siting, appearance, scale, height, massing and elevation treatment;
2. It respects the context of the site and its place within the local landscape, including its impact on the important arterial gateways into the County Borough, its effects on townscape and the local historic and cultural heritage and it takes account of the site topography and prominent skylines or ridges;
3. It utilises materials appropriate to its surroundings and incorporates hard and soft landscaping and screening where appropriate;
4. It would not have a significant adverse impact on highway safety, the amenity of occupiers of adjacent land or the community;

5. Important local features (including buildings, amenity areas, green spaces and green infrastructure, biodiversity and ecological connectivity) are retained and enhanced as far as possible;
6. It achieves and creates attractive, safe places and public spaces, taking account of 'Secured by Design' principles (including where appropriate natural surveillance, visibility, well-lit environments and areas of public movement);
7. It plays a full role in achieving and enhancing an integrated transport and communications network promoting the interests of pedestrians, cyclists and public transport and ensures linkages with the existing surrounding community;
8. It uses resources, including land and energy, as efficiently as possible through:
 - (a) Making the best and most efficient use of the land available through being of appropriate density taking into account the character and appearance of the area, normally a minimum of 35 dwellings per hectare in the Coastal Corridor Strategy Area or a minimum of 30 dwellings per hectare in the Valleys Strategy Area;
 - (b) The layout and form of the development does not preclude the reasonable use of other adjacent land;
 - (c) Developing brownfield land in preference to greenfield land where possible;
 - (d) Minimising building exposure while maximising solar gain.
9. Its drainage systems are designed to limit surface water run-off and flood risk and prevent pollution;
10. The layout and design of the development achieves inclusive design by ensuring barrier free environments, allowing access by all and making full provision for people with disabilities.

Policy EC 2 - Existing Employment Areas

In order to protect the employment function of the County Borough's employment areas, uses on the following sites will be restricted in accordance with Policy EC3:

EC2/14* Cwmgors Workshops and Industrial Estate, Amman Valley

Policy EC 3 - Employment Area Uses

Within allocated and existing employment areas, unless otherwise specified and where appropriate, uses will be restricted as follows:

- Uses within classes B1, B2 and B8;
- Ancillary facilities or services which support and complement the wider role and function of the primary employment use;
- Commercial services unrelated to class B.

Developments will be required to demonstrate that proposals do not cause any adverse impacts on the overall function of the employment area and neighbouring commercial and residential properties, the proposal can be sustainably justified in this location and is appropriate in scale and form to the role and function of the employment area.

Policy EC 4 - Protection of Existing Employment Uses

Proposals which would result in the loss of existing land or buildings in employment use as defined in Policy EC3 and/or within the existing employment areas identified in Policy EC2, will only be permitted where the following criteria are satisfied:

1. It is demonstrated that employment uses are no longer viable or appropriate in this location; or
2. Continued use for employment purposes would have unacceptable impacts on the environment, local amenity or adjacent uses; or
3. The existing space can be redeveloped for employment uses that achieve an increased level of employment combined with other appropriate uses.

Policy SP 15 - Biodiversity and Geodiversity

Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures:

1. The identification of the following Internationally and Nationally designated sites within the County Borough to enable their protection:

- (a) Special Areas of Conservation (SACs) and Ramsar Sites;
- (b) Sites of Special Scientific Interest (SSSIs);
- (c) National Nature Reserves (NNRs).

2. The identification and protection of sites of regional and local importance;

3. The protection of important natural heritage features.

Policy SP 16 - Environmental Protection

Air, water and ground quality and the environment generally will be protected and where feasible improved through the following measures:

- 1. Ensuring that proposals have no significant adverse effects on water, ground or air quality and do not significantly increase pollution levels;
- 2. Giving preference to the development of brownfield sites over greenfield sites where appropriate and deliverable;
- 3. Ensuring that developments do not increase the number of people exposed to significant levels of pollution.

3.3 Relevant Wildlife Legislation

All British bat species and any place used for shelter or protection, or a breeding site or resting place (their roosts), are fully protected under the amended Wildlife and Countryside Act 1981 through inclusion in Schedule 5. The roosts are protected irrespective of whether bats are present at the time. All bats are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019. These pieces of legislation make it illegal to deliberately or recklessly:

- kill, injure or capture bats;
- disturb bats;
- damage, destroy, or obstruct access to bat roosts (including sites that are currently unoccupied);
- possess or transport a bat or any part of a bat unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

Disturbance is defined as that which is likely to impair bats ability:

- to survive, to breed or reproduce, or to rear or nurture their young;
- to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

Relevant Legislation which applies to the development in respect of protected species includes:

- Wildlife and Countryside Act 1981 (as amended)
- Conservation of Habitats and Species Regulations 2017 (as amended)
- The Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019.

- Institute for Lighting Professional's and Bat Conservation Trust's guidance (2018)

4.0 Wildlife Sensitive Lighting Strategy

The purpose of this Sensitive Lighting Strategy (SLS) is to outline the operation and maintenance procedures for the control of artificial light emissions associated with the construction and operation of the proposed development, to enable safe working whilst addressing relevant planning and environmental considerations.

The purpose of this report is to ensure that the external lighting provided on the construction and operational site provides safe lighting for the construction staff on-site and is functional to allow the safe construction and operation. It will ensure that it is also both energy efficient and designed as far as reasonably practicable to minimise its impact on the surrounding environment and ecology. It should be noted that internal lighting of buildings does not form part of this document.

5.0 Construction Phase

5.1 Construction lighting Management plan

5.1.1 Lighting Objectives

The primary objective of lighting during the construction phase is to provide illumination for construction activities providing a safe working environment in the absence of natural light, allowing workers and site traffic to safely undertake various construction-related tasks and to provide security lighting.

As discussed earlier, the site is considered to be located within an E3 Environmental Zone. The required lighting therefore needs to be designed to minimise impact on the surrounding environment.

The objectives of this section of the SLS are, as far as reasonably practicable, to achieve the following:

- provide a safe working environment, meeting statutory requirements and standards;
- provide site security lighting; and
- mitigate the impact of artificial lighting on the surrounding environment

The appointed contractors will restrict the hours of work for all construction activities which are audible at the site boundary to the following:

- Monday to Friday : 08:00 hours to 18:00 hours
- Saturday : 08:00 hours to 13:00 hours

- No work which is audible at the site boundary will take place on Sundays, Public Holidays, and Bank Holidays, unless written consent is given by the local authority.

This will ensure that there will be limited need for artificial lighting for the majority of the working day, particularly during summer months and only a limited number of hours during winter months. This will limit the impact on local ecology, particularly bats and their use of the immediate local area.

5.1.2 Required Lighting Levels

Due to the dynamic nature of a construction site, there will be the need for different levels of illumination needed for certain tasks or stages in the construction process in order to provide a safe working environment. Some areas will require suitable task lighting while other areas will require a level of ambient lighting.

The two main sources of guidance for lighting in the workplace are the Society for Light and Lighting's Code for lighting (published by the Chartered Institution of Building Services Engineers) and the Health and Safety Executive's Lighting at work (HG38). While the former covers all aspects of lighting, HG38 is probably the most relevant for construction sites.

According to HG38, lighting should:

- Allow people to notice hazards and assess risks
- Provide enough light for the working environment and the task
- Enable people to see properly and discriminate between colours (particularly important with safety warnings)
- Not cause glare, flicker or stroboscopic effects
- Not create big differences in light within an area or between adjacent areas

- Meet any special needs of individuals
- Not pose a health and safety risk itself
- Be positioned to allow safe maintenance, replacement and disposal
- Include, when necessary, suitable and safe emergency lighting.
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Chart of example lux levels for reference			
Lighting conditions	Lux level	Lighting conditions	Lux level
British summer sunshine	50,000	Typical side road lighting	5
Overcast sky	5,000	Minimum security lighting	2
Well-lit office	500	Twilight	1
Minimum for easy reading	300	Clear full moon	0.25 to <1
Passageway or outside working area	50	Typical moonlight/cloudy sky	0.1
Good main road lighting	5-20	Typical starlight	0.001
Sunset	10	Poor starlight	0.0001

Source: IPCCTV specialists use-IP Ltd

Plate 1 – Example of general lux levels

5.1.3 Task lighting –

Task lighting will typically be provided for construction activities and the required levels will vary depending upon the type of activity being undertaken.

While the HSE does not give lighting guidance for specific construction tasks, it does make recommendations for movement of people, machines and vehicles outside and “rough work not requiring any perception of detail e.g. construction site clearance, excavation and soil work”.

HG38 recommends that for these tasks, lighting should provide a minimum of 20lx and an average of 50lx.

However, many construction tasks do require ‘perception of detail’ and, while these are covered in HG38, by a general recommendation of a minimum of 100lx and an average of 200lx for work areas, no specific construction tasks are mentioned.

Construction industry knowledge website, designingbuildings.co.uk (which is supported by a range of UK industry bodies), does provide more specific guidance, however, recommending 50lx for concreting; 100lx for carpentry, joinery, bricklaying and plastering; and 200lx for decorating and site offices. Site clearance, excavation and loading typically requires an average of 20 lux.

The most appropriate standard shall be used. Task lighting will also be required at security check points to allow the inspection of vehicles entering and exiting the site. It shall be the responsibility of the appropriate Contractor to undertake the design of any required task lighting making sure it meets with the required standards and the recommendations/restrictions set out within this SLS.

5.1.4 Ambient lighting –

Ambient lighting will be constant and typically be provided to aid the safe navigation for areas such as access roads, footpaths, car parks contractors' compounds and accommodation areas during working hours.

Typical levels will be an average of 5 to 30 lux, depending on the area to be lit. The most appropriate standard shall be used. Where ambient lighting is identified as 'required', it will be implemented whenever natural light levels are insufficient.

5.1.5 Areas to be lit and Associated Activities

For the construction phase, the area of the building and area immediately surrounding the building, together with the contractors working compound (location to be determined) will need to be illuminated in hours of darkness during the stated operating times.

Outside of these times, low-level security lighting (not more than 2.4 metres high) will be used on dusk to dawn PIR sensors for the benefit of site security and protection of the building, construction works, plant and materials.

In general terms, the majority of the work will take place within the ground footprint of the proposed building, which will minimise the need for external task lighting other than for external works operations.

5.2 General Construction Phase Mitigation Measures

A range of mitigation measure are available to address the potential impact from the construction phase lighting. These range from equipment choice, restricted working hours in winter months, use of site topography and competent design and site management.

The following mitigation measures shall be adopted for both fixed and temporary lighting:

- adopt the lowest safe lighting levels possible for task being undertaken;
- Specifying working hours, use of lighting, location of temporary floodlights in the construction compound and agreeing these with the local council.
- Lighting to be switched off when not required specifically for construction activities or required health and safety or security.
- use a luminaire with good optical control;
- use the lowest possible mounting for the luminaire based on the required level of illumination needed for the task being undertaken;
- direct luminaires into the area to be lit (light from the boundary inwards);
- ensure the luminaire is mounted at zero degrees to the horizontal and avoid any tilt;
- if required, make use of manufacturers' supplied custom louvres; and
- provide local control for the lighting so it may be switched off when not required.
- Adhere to best practice measures as recommended by the Institution of Lighting Professionals (ILP), Health & Safety Executive (HSE) and CIE (International Commission on Illumination) guidance. Lighting solutions will be selected to reduce light pollution.
- Restrict lighting to the task area using horizontal cut-off optics and zero tilts.
- Operate curfew and minimise the duration of any lighting (switch off or part-night dimming).

In addition to the physical equipment, lighting should be placed such that it makes use of the existing and proposed topography.

- Keep mounting heights lower than fences and bunding, where practicable.
- Position equipment so it is not visible to sensitive receptors by using natural screening and/or suitable temporary site fencing/hoardings as required to provide security and site privacy.

All temporary lighting installations during the construction phase should be designed by a competent lighting professional that ideally meets the ILP competency requirements, and who is at least a member of the ILP and is accredited to the Engineering Council as I.Eng or greater.

Prior to first use of any lighting on-site during the construction phase, the lighting shall be inspected and verified by a competent lighting professional to ensure it has been installed as per the design and the specified equipment and optics are installed.

The lighting installation shall be periodically inspected during the site operations to ensure the correct aiming directions are maintained throughout the life of the installation. If any equipment is found to be incorrectly aligned, modifications shall be made to ensure it is restored to 'as designed' and, if required, re-inspected. This monitoring procedure shall ensure that, during the time the site is occupied, the levels of lighting are maintained in accordance with current best practice and standards whilst ensuring the potential impact associated with the introduction of temporary lighting on identified receptors is controlled and minimised as far as practicably possible.

5.3 Sensitive Areas

5.3.1 Bat sensitive areas

The area surrounding the building, which is currently in hardstanding and concrete, will provide minimal if any quality foraging and commuting habitat for bats.

The land immediately surrounding the site comprises scrubland with a few scattered trees where bats could potentially forage providing moderate foraging opportunities..

Where foraging routes and flight paths interconnect beyond the temporary construction area and where reasonably practicable, these connecting areas shall be left dark. Where lighting in these areas has been deemed necessary the lighting shall be switched off when not required.

5.3.2 Lighting mitigation measures to be adopted in proximity to bat roosts & commuting routes / flightpaths

Where lighting in proximity to a bat roost or commuting route/flight path is unavoidable, in addition to the points made in the Mitigation Measures section, the following additional mitigation measures shall be adopted for both fixed and temporary lighting:

- use a light source that has a narrow spectrum with no UV content;
- use a warm colour temperature (2700K and below); and
- use a tuneable LED luminaire.

6.0 Operational Phase

6.1 General Operational Phase Mitigation Measures

The lighting design for the site post construction/operational phase of the building will be of a 'bat-friendly' specification, comply with the Institute for Lighting Professional's and Bat Conservation Trust's guidance (2018) and kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by foraging bats such as nearby trees, hedgerows etc. will be avoided.

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt).

Fully shielded lights with front and side hoods/shields or equivalently shielded LED plate lights will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible.

Lighting will not be located in the vicinity of, or shine towards bat access points or possible/actual commuting routes and flight lines, thus maintaining a 'dark corridor' and avoiding/minimising disturbance to roosting bats.

Any security lights used will operate off a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source, or use LED bulbs. They will be low intensity and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available).

White, blue and green lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have a significant effect on bats will be avoided.

External lighting will be limited to low lux level lighting fixtures with no upwards illuminance only. External lighting is only proposed on the entrance 'side' (north-eastern_ elevation) of the building, to illuminate the entrance doorway area and front apron to the building.

There is no other reason to light the perimeter of the building as access is not required to any area other than the main entrance to the building.

High powered security lights will not be installed to any building aspect on site post construction.

As a result, the installation of lighting in line with current guidance (BCT & ILP 2018) on these building aspects is not assessed to significantly increase artificial light levels currently present. Proposed locations for external lighting installation are shown on plan number 23/927/12 'Proposed Lighting Plan'.

The external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: *Guidance Note 08/18: Bats and Artificial lighting in the UK* (BCT & ILP 2018). The below strategy utilises light prescriptions detailed within this guidance to limit impacts of artificial lighting on bats.

Specifically, artificial light spill will be limited over the following features:

- Identified sensitive areas of the site (as identified by the project ecologist); and
- Any newly installed ecological enhancements including bat and bird boxes, where required.

The following lighting design prescriptions are considered suitable for the type and scale of the proposed development to minimise the impacts of artificial lighting on site on bats. Lighting design prescriptions required to comply with current guidance (BCT & ILP 2018) are as follows:

Reducing the operating time of lighting and levels of illuminance provided via:

- Part-night operation – turning off lights between certain hours, e.g. midnight and 06:00. Installing all lights on switches so they can be turned permanently off during night-time hours; the use of motion sensors will be avoided to prevent unnecessary light spill during the night.
- Avoiding light spill via:
- The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero; and
- Light type:
 - Use of lamps that minimise UV emissions or use UV filters to reduce the attractiveness of the lamp to invertebrates;
 - Use high-pressure sodium or LED lamps, ideally warm white as this has a low relative attractiveness to invertebrates;

The detailed lighting design will be designed to use current best practice and technology. The impacts of external lighting will be minimised by the installation of lighting to the minimum specification required to provide a safe night-time environment for residents, therefore lighting will be designed to comply with the minimum illuminance levels given within the appropriate guidance. The detailed lighting design will be in keeping with the ecology report in order to maintain the integrity of habitats for wildlife around the site.

Designing out and minimising the need for lighting to be installed is always the best method of reducing light pollution. However, where this is not possible, the careful choice of illuminance and luminance criteria is key to successfully limiting the impact that light may have on its surrounding environment.

Care should be taken to minimise glare from all luminaires installed, by ensuring the correct luminaires are selected and installed correctly, in line with the recommendations within the ILP Guidance Notes for the Reduction of Obtrusive Light.

6.2 Sensitive Areas

6.2.1 Bat sensitive areas

The area surrounding the site may provide moderate-quality foraging and commuting habitat for bats.

Lighting will not be located in the vicinity of, or shine towards, the bat access points or possible/actual commuting routes and flight lines, thus avoiding/minimising disturbance to roosting bats.

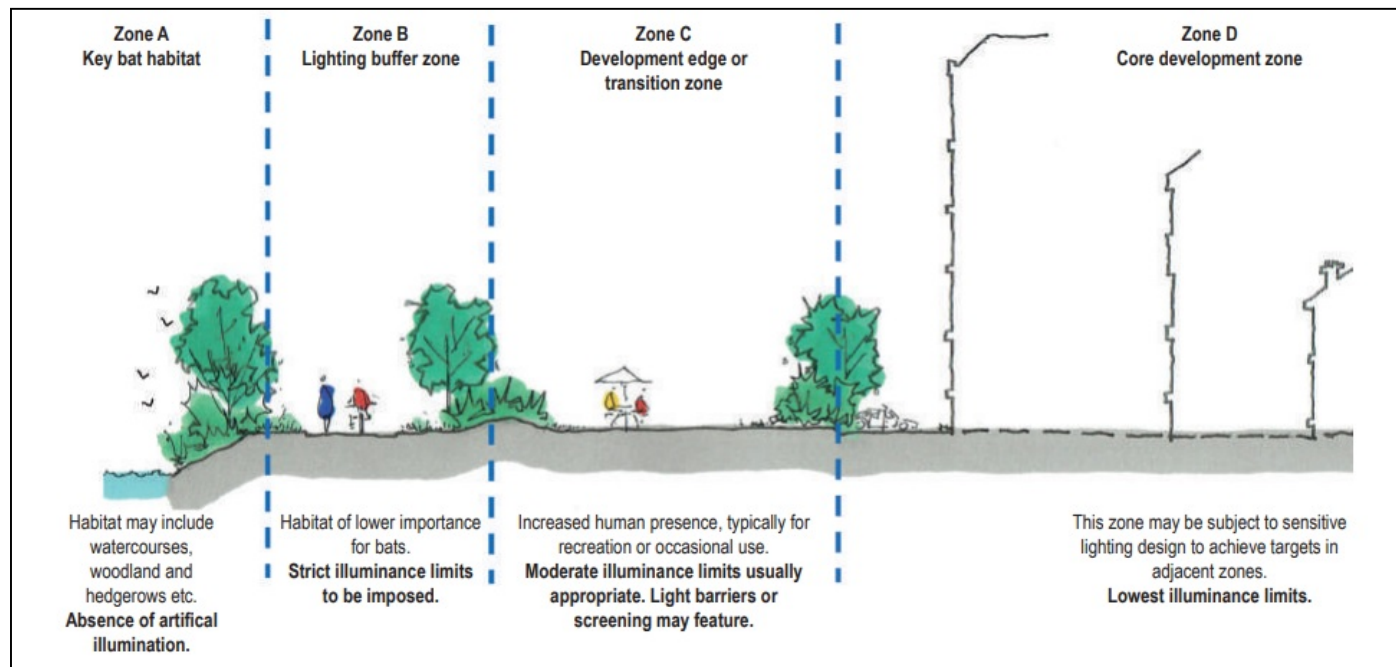


Plate 2 – Example of illuminance limit zonation

6.2.2 Lighting mitigation measures to be adopted in proximity to bat roosts & commuting routes / flightpaths

Where lighting in proximity to a bat roost or commuting route/flight path is unavoidable, in addition to the points made in the Mitigation Measures section, the following additional mitigation measures shall be adopted for both fixed and temporary lighting:

- use a light source that has a narrow spectrum with no UV content;
- use a warm colour temperature (2700K and below); and
- use a tuneable LED

7.0 Conclusion

The Lighting Strategy outlines the criteria for both the proposed construction and operational phases lighting within the site, and mitigation measures proposed to reduce the impacts in terms of ecological receptors.

The site has been assessed as Environmental Zone E3, with the lighting strategy outlining a scheme and parameters that will comply with the limiting criteria for that zone, in order to limit obtrusive light and light pollution to an acceptable level. The intention is to fully comply with the recommendations for an E3 zone, particularly in relation to removing any upward light spill to further reduce the ecological impacts from the scheme.

The external lighting proposed for the development will be designed in accordance with industry standards, guidance and recommendations in order to provide an adequate level of illuminance for security, safety and amenity throughout the site, whilst limiting obtrusive light, over-lighting, energy consumption and impacts on the environment and ecological receptors.

The proposed lighting scheme is intended to be as minimalistic and sensitive as possible whilst achieving these aims, and to be in keeping with the proposed residential use, whilst mitigating ecological impacts from lighting as far as possible.

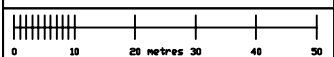
Luminaries utilised throughout the scheme will be downward directional with LED light sources, with warm white colour temperatures to minimise the impacts on general ecology, bats and ecological receptors.

Post installation monitoring and checks to verify that the light levels and parameters are in accordance with the Lighting Strategy outlined, are also anticipated.

8.0 Appendices

7.1 Appendix A – Site Location Plan

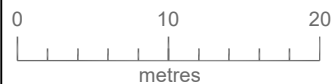
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SITE GRID REFERENCE: SN703111
EASTING: 270300 / NORTHING: 211173



Rev.	Description	Date	Initial
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Project PARK HOWARD ROAD, CWMGORS, GWAEN CAE GURWEN			
Title LOCATION PLAN			
Drawn MIS		Date MAR. 2022	
Scale(s) 1:1250			
Drawing No. 22/884/01		Revision	
Disk Ref. Park_Howard_Rd_OS.dwg			
 SgM Structural Town planning			
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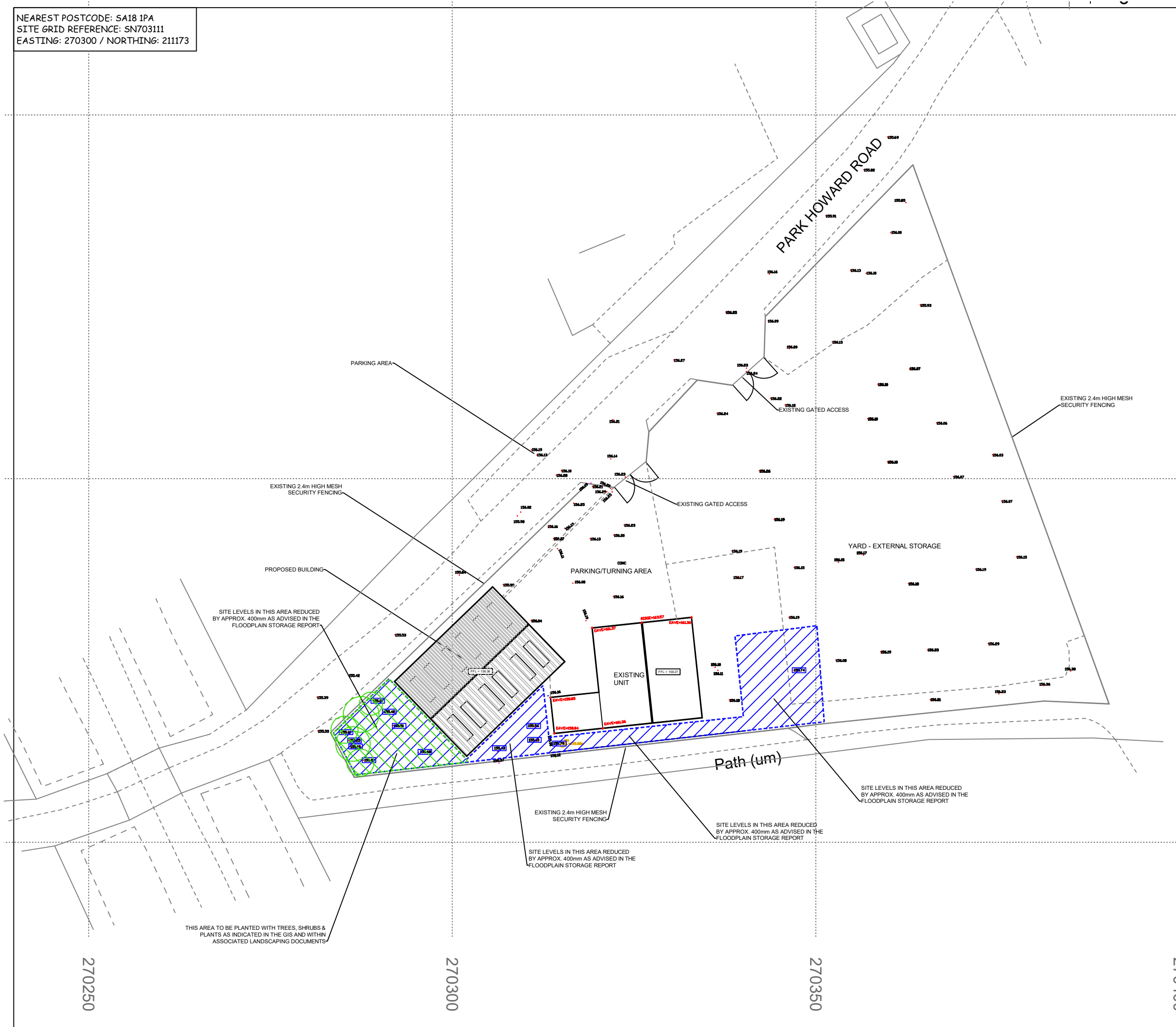
7.2 Appendix B – Approved Site Layout Plan

NEAREST POSTCODE: SA18 1PA
SITE GRID REFERENCE: SN703111
EASTING: 270300 / NORTHING: 211173



211250

211200



C	Additional details added	06/25	MIS
B	Recommendations of Flood report added	03/23	MIS
A	As surveyed site levels added	10/22	MIS

Rev	Description	Date	Initial
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Project: PROPOSED LIGHT INDUSTRIAL UNIT AT
PARK HOWARD ROAD, CWMGORS,
GWAEN-CAE-GURWEN

Title: PROPOSED SITE LAYOUT

Date: APRIL 2022 Drawn: MIS

Scales(s): 1:500 @ A3 Issue:

Dwg No: 22/884/03 Revision: C

Disk: Park_Howard_Rd_SITE.dwg



69 Walter Road, Swansea. SA1 4QA - Tel: 01792 648380

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A3

C

270250

270300

270350

270400

7.3 Appendix C – External Wall Lights

Galaxy EC022 100-320W Bat Safe Floodlights

Product Datasheet



Datasheet

Overview

Technical Data

Imagery

Contact us

The Galaxy EC022 lights are a range of warm orange colour temperature LED floodlights specifically designed for bat sensitive locations. Available with a choice of unique beam optics for precise light control and low glare. High quality components combined with excellent thermal management, make the Galaxy range a class leading product in this sector

Features:

- 2200K
- IP66
- Philips LEDs
- Unique choice of beam angles
- High Specification components
- Corrosion Proof Coating (marine grade option available)

5 year warranty

The Galaxy EC022 Floodlight is the latest generation LED floodlight, designed for a world where humans commit to live in harmony with nature.



100w & 150w

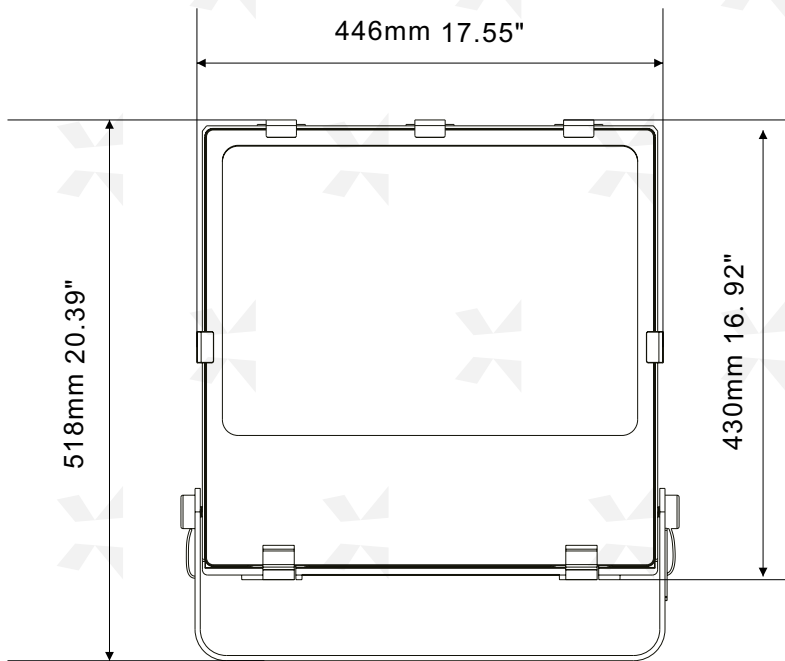
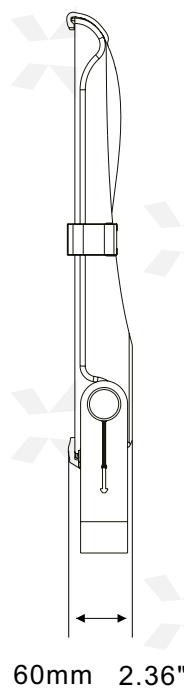
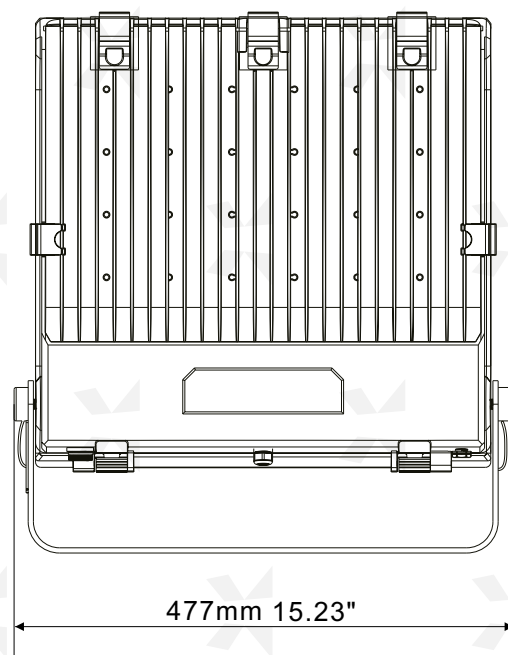
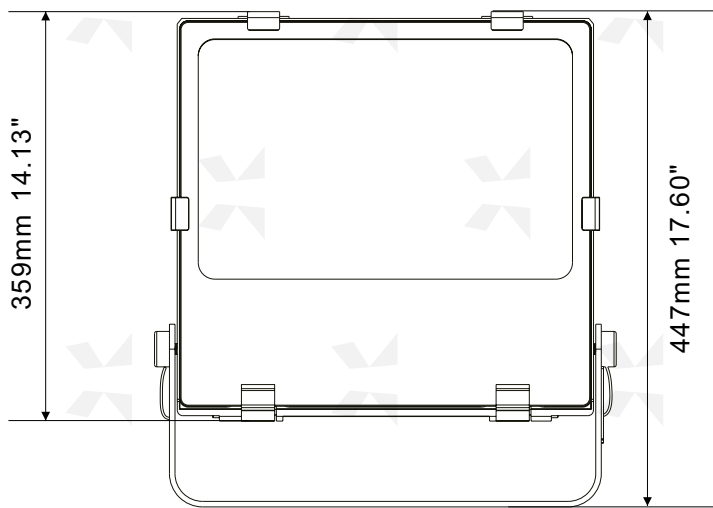
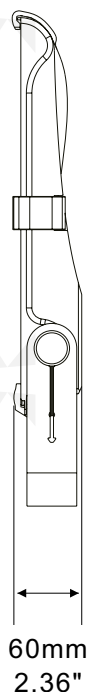
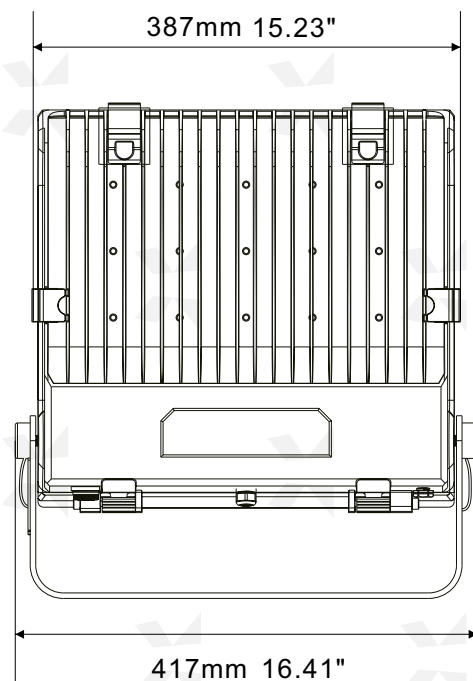
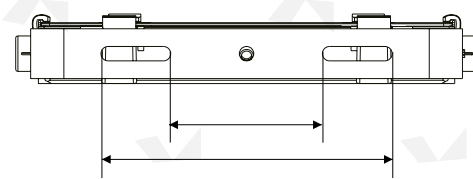
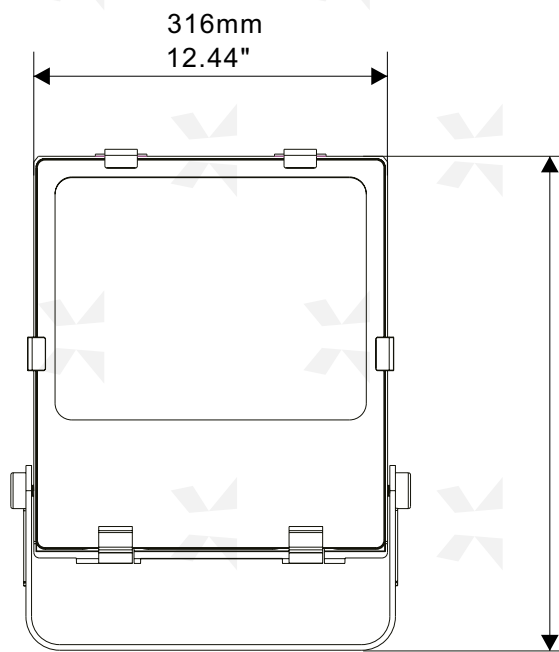
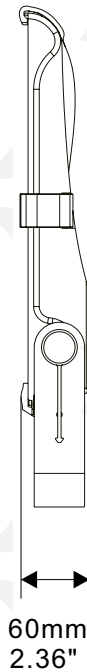
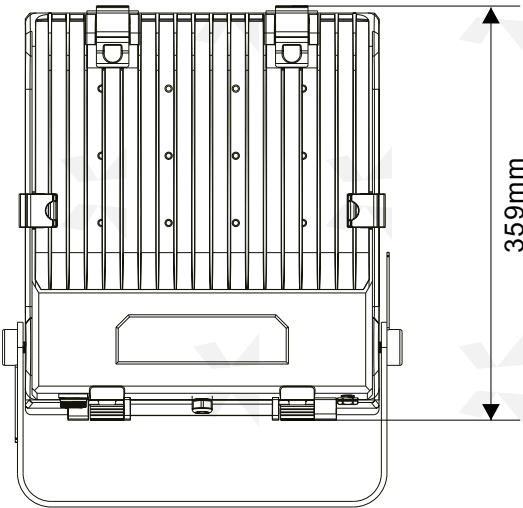
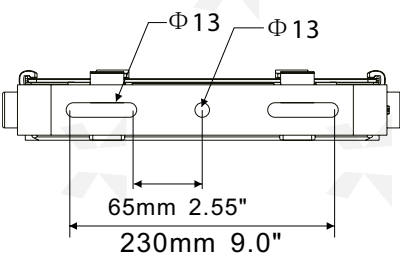


200w & 240w



320w





100w & 150w

200w & 240w

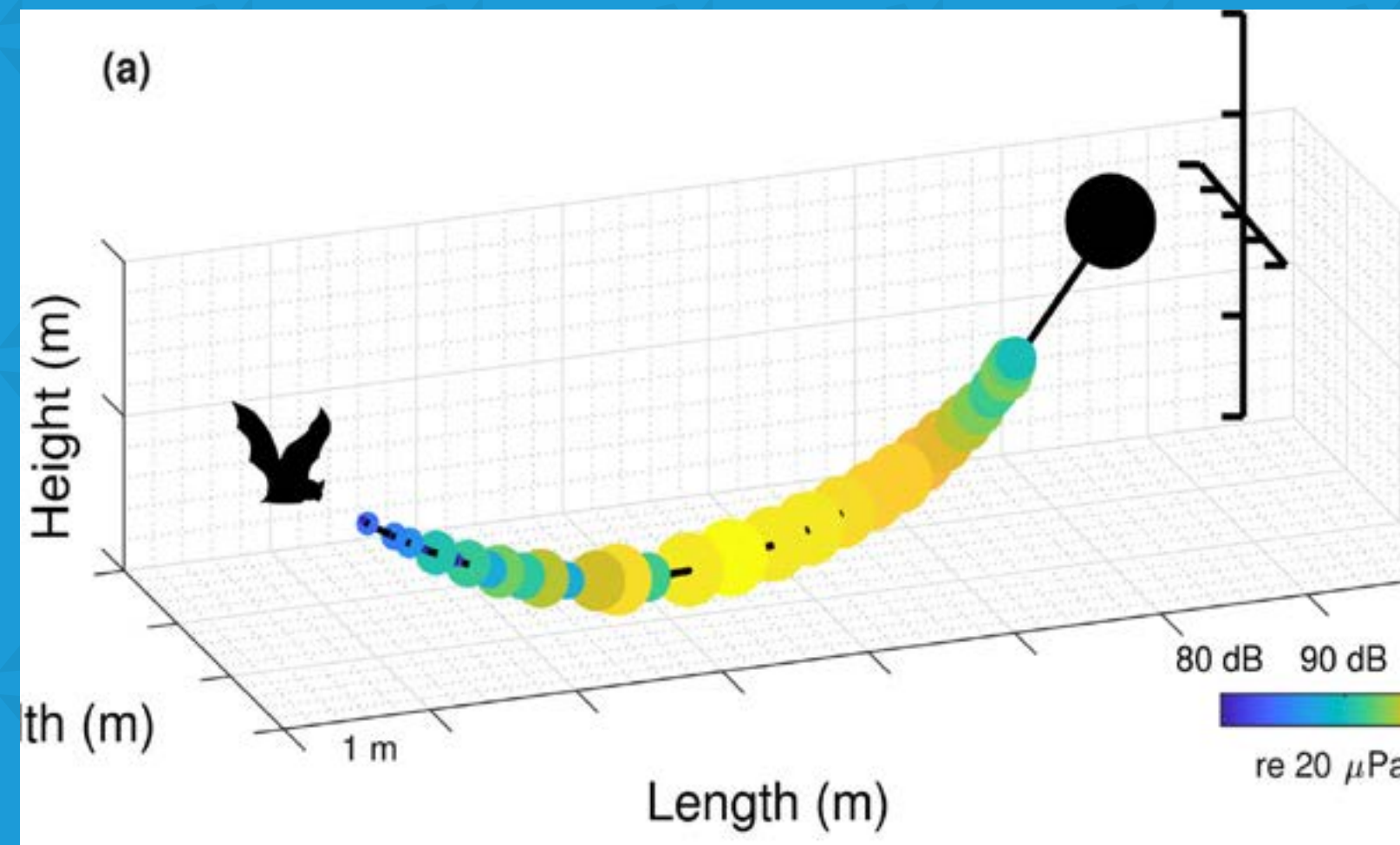
320w

Product Code	Galaxy EC022- 100	Galaxy EC022- 150	Galaxy EC022- 200	Galaxy EC022- 240	Galaxy EC022- 320
Power (Watts)	100	150	200	240	320
Lumen Output	13000	19250	25950	28600	38100
Weight (KG)	4.2	4.2	5.7	5.7	7
Input Voltage	100-277VAC or 200-240VAC				
LED Chip	Philips				
Dimmable Options	1-10v / Dali Optional				
Finish	Black				
IP Rating	IP66				
Beam Angles	20° / 60° / 90° / 120° / Type IV / P50				
CCT	2200K				
Warranty	5 Years				





We offer full lighting design services.



For more information about the product featured in this datasheet please contact the experts at Exled.

Call 01453 756 361 or email sales@exled.co.uk

