Building Services Engineering
Sustainability Consultants
Low Carbon Design

FLATT

FOR:

RALION PROPERTY II LIMITED

TONY WILSON PLACE, MANCHESTER

TERRACE EXTERNAL LIGHTING STRATEGY

Engineering Sustainability

Revision

Version No	Version Date	Status	Summary of Changes
1	22/04/2026	FOR SUBMISSION	
2	22/04/2026	FOR SUBMISSION	

Author

Name	Title
Mark Rumsey	Director

Distribution

Name	Organisation
Victor Boys	JLL
Yvette Black	JLL
Sean Kirkbride	JMA
Anthoula Kyriakidi	JMA

Document Control

Authorisation			
Originator	MJR	Date	16/04/2026
Approved	PN	Date	22/04/2026

The content and associated design information within this document is the intellectual property of Flatt Consulting Ltd. It shall not be reproduced or used by any third party without the express permission of Flatt Consulting Ltd.

Flatt Consulting, Hillside House, 204b Godstone Road, Caterham, Surrey CR3 6RD
t +44 (0)1883 331630 e info@flattconsulting.com w flattconsulting.com
Registered in England No. 4752263

CONTENTS **PAGE NO.**

1.0. INTRODUCTION **2**
Appointment and Brief 2
Site Location 2
Aim of This Document 3

2.0. IMPACT OF ARTIFICIAL LIGHTING **4**
Potential Negative Effects 4
Statutory Requirements & Policies 5
Implementation of Guidance 6
General Lighting Principles 6

3.0 DESIGN CONSIDERATIONS **7**
Tony Wilson Place Assessment 7
Design Criteria 9
Luminaires and Control 9

4.0 LIGHTING DESIGN PRINCIPLES **11**
Mitigating Sky Glow 11
Light Intrusion and Luminaire Intensity 12
Ecology 13
Design Criteria 14

5.0 CONCLUSION **16**

1.0. INTRODUCTION

1.1. The planning application is submitted on behalf of RALION PROPERTY II LIMITED to Manchester City Council ("MCC") for the new Terrace facility at Tony Wilson Place.

1.2. The application includes for the addition of a roof terrace to the existing office building situated in the First Street complex between First Street, Tony Wilson Place and James Grigor Square.

1.3. To support this application, a Lighting Strategy has been prepared to set out the requirement for and scope for new external lighting associated with the proposed new terrace.

Appointment and Brief

1.4. This Lighting Strategy has been prepared by FLATT Consulting Ltd on behalf of RALION PROPERTY II LIMITED for the Terrace extension works at Tony Wilson Place, Manchester.

Site Location

1.5. The Application Site is situated in the First Street complex between First Street, Tony Wilson Place and James Grigor Square. The Ordnance Survey (OS) grid reference for the site is approximately centered on X (Eastings) 383707 and Y (Northings) 397387, and the nearest Post Code M15 4GU.



Figure 1-1 – Location of Tony Wilson Place

Aim of This Document

1.6. This document aims to identify those important considerations that will need careful attention when it comes to assessing external lighting requirements for the new Terrace. This document sets out the design principles that must be followed during the design process to ensure that the external lighting proposals are given the appropriate level of attention for the areas that they are to be implemented.

1.7. This document does not provide any calculations or assessments, however the guidance provided within will ensure that the design of the external lighting is sensitivity addressed as part of each design stage.

2.0. IMPACT OF ARTIFICIAL LIGHTING

Potential Negative Effects

2.1. A well-considered lighting design has the ability to create a safe, effective and aesthetically pleasing environment after sunset.

2.2 There is a typical relationship between the intricacy of a task, or how hazardous that task is, and the level of illumination that is required to safely carry out that task. Typically, within more complicated and hazardous environments, a greater level of illumination, generally in accordance with industry standards and guidance, is required.

2.3. It is important that when determining the correct level of lighting that excessive light is avoided and only the optimum level is selected. Incorrect levels can cause the lighting solution to be inefficient, with over lit spaces or tasks causing light pollution outside of the target illumination area, creating a negative impact to the surrounding environment and ecology. Typical causes are determined to be light spill from buildings in the form of poor control of the light sources impacting those areas surrounding the subject or task being lit.

2.4. A key effect from poor or excessive lighting is obtrusive light, whether that includes light intrusion into nearby buildings or effecting other nearby ecology and habitats. Another result is termed 'Sky Glow' where the obtrusive light contributes to the upward lighting of the night sky, causing nuisance, adversely effecting local environments and distraction or impediment of normal vision through glare of the source lighting.

2.5. A graphical representation of types of light nuisance is provided in Figure 2-1.

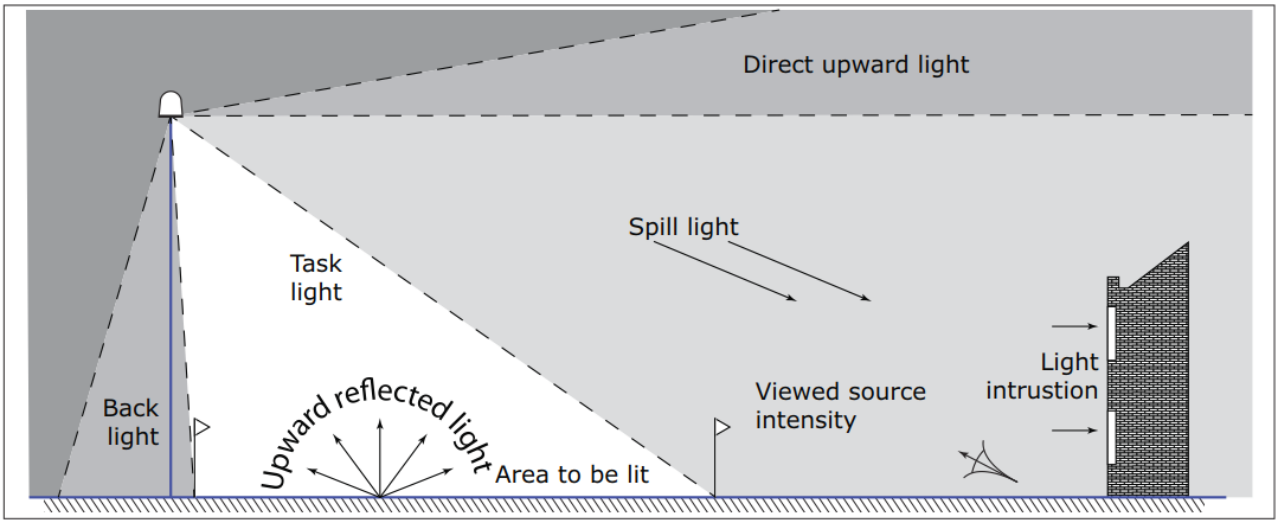


Figure 2-1 - Types of light nuisance

Guidance Note 01/20 – Guidance note for the reduction of obtrusive light (ILP, 2020)

Statutory Requirements & Policies

2.6 The following statutory requirements are considered relevant for most external lighting schemes.

LEGISLATION

2.7 The Clean Neighbourhoods and Environment Act 2005 (CNEA) allows local authorities with the power to deal with artificial lighting by classifying artificial light emitted from defined premises as a statutory nuisance. The CNEA 2005 amended Section 79 of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include light nuisance, referred to as, 'artificial light emitted from premises so as to be prejudicial to health or a nuisance.'

2.8. Guidance produced on Sections 101 to 103 of the CNEA by the Department of Environment, Food and Rural Affairs (DEFRA) extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances, including situations where a nuisance arises from the use of artificial lighting.

NATIONAL POLICIES

2.9. The Ministry of Housing, Communities and Local Government, National Planning Policy Framework (NPPF) 2021 states that, "limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation." (NPPF, Paragraph 185, 2021).

2.10. The Ministry of Housing, Communities and Local Government provides guidance on light pollution on the gov.uk website (https://www.gov.uk/guidance/light-pollution) and details the following guidance:

- What light pollution consideration does planning need to address?
- What factors can be considered when assessing whether a proposal might have implications for light pollution?
- What factors are relevant when considering where light shines?
- What factors are relevant when considering when light shines?
- What factors are relevant when considering how much the light shines?
- What factors are relevant when considering possible ecological impacts of lighting?
- What other information is available that could inform approaches to lighting and help reduce light pollution?

LOCAL POLICIES

2.11. The local planning authority, Manchester City Council (MCC) has limited specific requirements with regards to external lighting.

2.12. MCC stipulates with the Manchester Core Strategy document 2012-2027, that a development should have regard to the effect on amenity including light, effects on biodiversity and safety and crime prevention (pg 216–217).

2.13. Generally, all provided guidance identifies light pollution as having the potential to cause disturbance and annoyance and recognises the importance of carefully designed lighting which minimises light spillage and glare.

Implementation of Guidance

2.14. Appropriate guidance for lighting professionals on the subject of obtrusive light is predominantly covered by the following international documents:

- CIE 150:2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations (International Commission on Illumination, 2017).
- CIE 126:1997 Guidelines for Minimizing Sky Glow (International Commission on Illumination, 1997).

2.15. National guidance is produced by the Institution of Lighting Professionals (ILP) in the following documents:

- Professional Lighting Guide 04, Guidance on Undertaking Environmental Lighting Impact Assessments (PLG04) (ILP, 2013)
- Guidance Note 01/20 Guidance Notes for the Reduction of Obtrusive Light (GN01) (ILP, 2020)
- Bat Guidance Note 08/18 Bats and artificial lighting in the UK (ILP, 2018)

General Lighting Principles

2.16. The following is considered to be best practice principles and should be followed to ensure good lighting that reduces light pollution and its impact on dark skies:

- New lighting should not adversely degrade the sky quality beyond the immediate area to be lit.
- Angle luminaire downward – no unnecessary light above or near the horizontal.
- Lamps above 500 lumens should not be installed in dark skies friendly fixtures that prevent unnecessary upward light.
- Point where the light is needed not in a direction that causes a nuisance to tenants or wildlife.
- Light to the appropriate illuminance – do not over light needlessly.
- Switch off when not needed. Use proximity sensors and timers, whilst avoiding dusk till dawn sensors.

2.17. The above design principals are to be followed during the detailed design of the terrace.

3.0 DESIGN CONSIDERATIONS

3.1. The immediate surrounding area is not considered to be a specific Dark Skies Reserve Area.

3.2. The extract below (source: www.lightpollutionmap.info) shows that the area surrounding the site is not considered to be a Dark Skies Reservation Area. On the contrary, the site is considered to have a surface brightness typical of a significant urban environment.

3.3. Notwithstanding this, and the points raised within national policy, the drive to reduce light pollution and light spill is an important consideration in terms of both biodiversity and reducing energy.

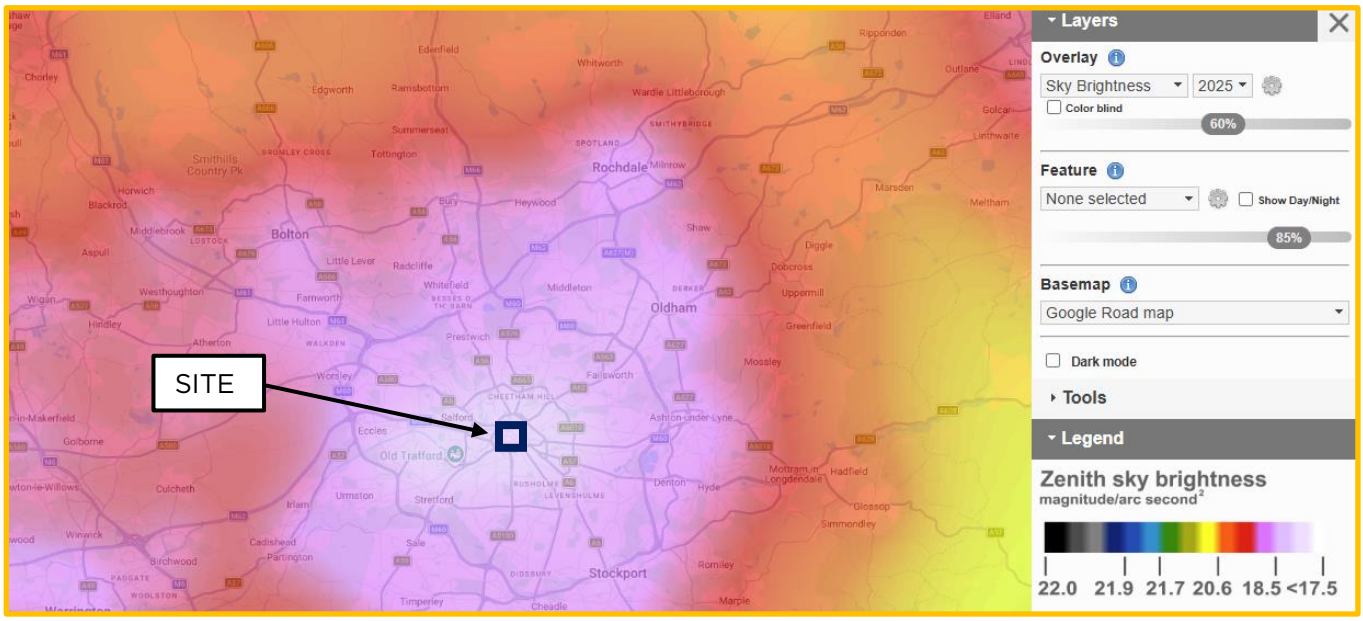


Figure 3-1 – Lighting Pollution Map

General Obtrusive Light to neighbouring properties

3.4. The impact of obstructive or excessive nuisance light has been referred to above and this is to be limited accordingly.

Tony Wilson Place Assessment

3.5. When determining the maximum lighting levels to be provided to a specific area, it is first best to identify the limit of which the proposed site should be assessed. The following table, taken from Guidance Note 01/20 – Guidance note for the reduction of obtrusive light (ILP, 2020), is to be used to consider which environmental zone that the site falls within.

Table 2: Environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Notes:

1. Where an area to be lit lies on the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone.
2. Rural zones under protected designations should use a higher standard of policy.
3. Zone E0 must always be surrounded by an E1 Zone.
4. Zoning should be agreed with the local planning authority and due to local requirements a more stringent zone classification may be applied to protect special/specific areas.
5. SQM (Sky Quality Measurements) referenced by the International Dark-Sky Association (IDA), the criteria for E0 being revised in mid 2019 but not retrospective.
6. Astronomical observable dark skies will offer clearer views of the Milky Way and of other objects such as the Andromeda galaxy and the Orion Nebula.
7. Although values of SQM 20 to 20.5 may not offer clear views of astronomical dark sky objects such as the Milky Way, these skies will have their own relative intrinsic value in the UK.

3.6. For the purposes of this desktop assessment, it has been derived that the proposed site would fall into the E4 category as “Town/City Centres with high levels of night-time activity”.

3.7. To assist with the assessment, it is good to understand a baseline for other light levels for differing tasks and environments. The following table, taken from Guidance Note 08/18 – Bats & Artificial Lighting in the UK (ILP, 2018), provides information on the lux levels of various natural and artificial light sources.

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

Design Criteria

3.8. The design criteria for the development is as follows:

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on properties.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Note:

* If the installation is for public (road) lighting then this may be up to 1 lx.

Luminaires and Control

3.9. External lighting luminaires proposed to be utilised on the terrace will take the form of downwardly directional low output linear LED light fittings. These are ideal for directing light down for the task at hand.

3.10. The luminaire styles specified shall compliment the aesthetic of the terrace. The following illustration below provides an easy visual guide on typical acceptable and unacceptable types of luminaires to minimise skyglow, glare and light trespass. Although linear LEDs are not in the illustration, the downward installation methodology proposed does relate with the principals of those acceptable types of light fittings.

3.11. These design principals will be followed as part of the detailed design of the final terrace lighting solution.



Figure 4 - Luminaire Examples

4.0 LIGHTING DESIGN PRINCIPLES

4.1. Lighting should always be designed by competent designers and in accordance with published standards and guidelines.

Mitigating Sky Glow

4.2. As referred previously, Sky glow is the illumination of the night sky by artificial lighting and the importance of limiting the upward light ratio (ULR) of an installation and the direct upward light emitted from luminaires during the design process.

4.3. Whilst reflected light can also contribute to levels of sky glow, it can be harder to control which is why lighting levels should be correctly specified in accordance with relevant guidance and standards and the design should aim to not exceed the specified levels.

4.4. Artificial light sources with a higher component of blue light, such as those with higher colour temperatures (Cool White 4000K) can have a greater impact to levels of sky glow than light sources with a warmer appearance (colour temperatures 3000K). The use of warmer colour temperatures has also been shown to have less of an effect to light sensitive ecology.

4.5. The operational lighting should be such that luminaires have limited upward lighting component and be specified to be installed at 0° to the horizontal so that light is restricted from emitting directly upward above the luminaire.

Table 6 (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires.

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR)/%	0	0	2.5	5	15

Note:

This does not take into account the effect of light reflected upwards from ground that also contributes to sky glow. This is the traditional method to limit sky glow and is suitable to compare different single luminaires.

4.6. Light emitting diodes (LEDs). This is the light source of choice for most local authorities. The light emitted is more directional and normally controlled by lenses or sometimes reflectors. The light is produced in a narrow beam. It is an instant light source. LED is available in a number of colour temperatures. Older installations tend to use ‘cool white’ (blueish colour) at >5700° Kelvin. More recently, 4000°K has become more commonly used. ‘Warm white’ (more yellow/orange colour) at around 3000°K and as low as 2700°K can now be used with little reduction in lumen output. LED typically features no UV component.

4.7. The colour temperature of all future specified external light sources shall be 3000K, as appropriate.

4.8 Lighting levels shall be in accordance with the relevant code of practice and industry guidance.

4.9. The proposed lighting layout should ensure that the terrace contribution to sky glow is minimal and does not adversely affect the local environmental considerations.

Light Intrusion and Luminaire Intensity

4.10. Light intrusion is light that falls beyond the boundary of the area being lit which has potential to cause nuisance to nearby properties. The luminous intensity of luminaires is the measure of how bright a luminaire appears in a given direction. Certain screening can reduce or completely block the spread or visibility of lighting thereby reducing the effects of light intrusion and luminous intensity.

4.11. The table below provides guidance on the maximum values of vertical illuminance that is measured on adjacent properties. The Environmental Zone E4 recommends a 25Lux illuminance pre-curfew and 5Lux post-curfew. The curfew hours are typically advised within local planning guidance; however, no specific times can be found in local policy. In this event a sensible time should be determined when the lighting can be dimmed, generally post 23:00hrs.

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on properties.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Note:

* If the installation is for public (road) lighting then this may be up to 1 lx.

4.12. It is assumed that external lighting calculations shall be undertaken to satisfy any planning condition required. The calculations for light intrusion and luminous intensity will demonstrate that the proposed lighting is well controlled and designed so that the limits for both pre-curfew and post-curfew limits are not exceeded.

4.13. The following principles of the design are referred to below:

- Lighting shall be designed in accordance with CIBSE Guidelines.
- LED luminaires shall be proposed which provide good optical control providing an energy efficient solution with some luminaires being fitted with integral louvres restricting levels of back light as required. With mounting arrangements for each luminaire specified to be installed at 0° to the horizontal, to ensure that no upward light component is emitted by the luminaires.

- All LED luminaires shall be specified with a colour temperature of 3000K to minimise the blue-light component of the light source to minimise the impact on wildlife populations and contribution to sky glow.
- Generally, highways, sports pitches and the employment land shall have luminaires mounted on lighting columns which shall not exceed 10m in height.

4.14. Specific and localised lighting provisions shall have a central management control system. The use of the terrace is unlikely to be required after 11pm at night, but the management system could be used to dimmed the output of the lighting to those post curfew level should the upper limits not be required for safety.

Ecology

4.15. There has been limited input from an Ecologist. The location of the building and, more importantly the vast nature of the surrounding built up environment, suggests a limited local ecology. The introduction of limited external lighting design to the new terrace is unlikely to increase the existing impact on any local ecology that might be present. i.e. will not make the existing situation any worse.

4.16. However to help mitigate any perceived impact to any local ecology the following design principles will be considered:

- Light spill outside of the terrace will be restricted.
- Warm white LED sources around 2700-3000K will be specified

4.17. Using the mitigating measures identified above when undertaken the lighting design will ensure that specific ecology considerations are met.

4.18. Luminaires come in a variety of different styles, applications and specifications. The following recommendations are set within ILP Bat Guidance Note 08/18 and should be considered when choosing luminaires:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

4.19. As referred to in the previous sections, a control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

4.20. It is proposed that, as part of any external lighting planning condition, accompanying horizontal and vertical illuminance contour plans are prepared to demonstrate compliance. Luminaire specifications shall also be provided to demonstrate that the identified fitting characteristics are attained.

Design Criteria

Standards and legislation

4.21. The main relevant references (other than those already referenced) for the design of lighting are:

- BS EN 12464-2:2014/2024 (Lighting of Work Places - Outdoor): While focused on workplaces, this standard sets key criteria for illuminance levels, uniformity, and glare control for outdoor pedestrian areas, which are applicable to commercial terraces.
- CIBSE Lighting Guide 6 (LG6): The Exterior Environment: Provides comprehensive guidance on landscape lighting, amenity lighting, and façade lighting for commercial and public spaces.
- ILP Guidance Notes (The Institution of Lighting Professionals): Specifically, GN01:2020 (The Reduction of Obtrusive Light), which gives guidance on environmental zones and limiting light pollution, and GN08 (Bats and Artificial Lighting), which advises on minimizing ecological impact.

Key Design Principles & Targets

4.22. The main design principles are set out below:

- Illuminance Levels (Lux): General amenity areas typically require lower levels than indoor, often around 5-20 lux for general walking spaces, with higher levels (up to 40-50 lux) for specific tasks like bar or seating areas.
- Uniformity: Lighting should be evenly distributed to prevent sharp contrasts, which aids safety and visual comfort.
- Colour Temperature (CCT): Warm light (2700K - 3000K) is recommended for relaxing areas to create a comfortable atmosphere and reduce blue light emissions.
- Glare Reduction: Fixtures should be positioned or shielded (e.g., using cowls or furniture detailing) to prevent direct light from blinding users or causing annoyance to neighbours.

4.23. This report has previously established that LED Lamp sources are the most suitable luminaire choice owing to their high efficiency, good colour rendering and colour temperature with increase lamp life. A low colour temperate of approximately 3000K will also lessen the impact to any local ecology.

4.24. All luminaires will need to be in corrosion resistant and tamper proof housings with a minimum of IP65 water ingress rating.

Concept Design

4.25. The following image provides a conceptual image of the proposed terrace area and the extent of the external lighting proposals. The follow is of note:

- The recessed LED light strips to the underside of the roof top overhang ensures no upward light component whilst ensuring the adequate lighting across the threshold between the internal and external spaces.
- The recessed LED light strips to the underside of the perimeter external handrail/balustrade ensures no upward light component and limited glare to seated occupants whilst also limited light spill to neighbouring properties.
- The table lamps are of limited output and provide more ambiance lighting and enables individual faces to be lit in close proximity rather than any significant lighting of main surfaces.
- The recessed LED light strips to the surrounding pergolas also do not allow upward lighting limiting skyglow and light pollution impacts.
- The lighting solution provides a subtle yet effective lighting strategy for the terrace area.



5.0 CONCLUSION

Compliance with Policy:

5.1. By following the lighting design guidance for the reduction of obtrusive light, artificial lighting can be provided that considers the mitigation of intrusive light by careful luminaire selection and positioning and accurate levels of light intensity to meet with the design criteria deemed appropriate for the surrounding environment.

5.2. By using LED lamps at the 3000K range, it can be possible to reduce the impact to local ecology. The type of luminaires will have no upward light components and as such will not contribute to sky glow. The instigation of centralized lighting control systems will provide dimming to those light fittings in sensitive areas during those post curfew times.

5.3. In conjunction with the above design strategies and the illuminance limits stipulated within the ILP Guidance Note 01/20 the lighting solution will ensure that light pollution is mitigated into adjacent properties.

5.4. As part of any external lighting planning condition, accompanying horizontal and vertical illuminance contour plans will be prepared to demonstrate compliance with this lighting strategy document. Luminaire specifications shall also be provided to demonstrate that the identified fitting characteristics are attained.