

Circular No : URA/PB/2023/06-CUDG  
Our Ref : DC/ADMIN/CIRCULAR/PB\_23  
Date : 04 SEP 2023

## CIRCULAR TO PROFESSIONAL INSTITUTES

### Who Should Know

Developers, building owners, architects, and lighting designers

### Effective Date

With effect from 4<sup>th</sup> September 2023

## REVISION TO THE NIGHT LIGHTING GUIDELINES FOR DEVELOPMENTS IN THE CENTRAL BUSINESS DISTRICT (CBD), CIVIC DISTRICT, MARINA BAY AND MARINA CENTRE

This circular supersedes Circular No: [URA/PB/2009/08-CUDG](#) dated 29 April 2009 on “Night Lighting Master Plan Of Developments In The Central Business District (CBD), Marina Centre And Marina Bay” and Circular No: [URA/PB/2013/13-CUDG](#) dated 20 Nov 2013 on “Revision To The Night Lighting Guidelines For The Civic District And Bras Basah.Bugis (BBB)”.

1. This circular is to inform the industry of the updated night lighting guidelines for developments in the CBD, Civic District, Marina Bay and Marina Centre.
2. Over the years, URA has introduced Night Lighting Master Plans and Guidelines for developments in these areas as well as in Bras Basah.Bugis (BBB).<sup>1</sup> These guidelines, implemented in close partnership with building owners and lighting professionals, and under the guidance of the Lighting Design Advisory Panel (LDAP, comprising lighting experts from the industry), have been instrumental in shaping a well-coordinated nightscape in the Central Area.
3. Given that these guidelines have been in place for some time, URA, in consultation with the LDAP, has reviewed and updated the guidelines to ensure they remain relevant and user-friendly. Key revisions to the guidelines are summarised as follows:
  - a. **Reduced number of areas where night lighting proposals are required to be submitted for evaluation and approval.** With greater awareness and appreciation of the value of night lighting, many developments already incorporate night lighting in their design. As such, the areas where night lighting is required according to stipulated guidelines have been reduced to those shown in [Appendix 1](#).

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<sup>1</sup> The Civic District Lighting Plan Guidebook, published in 1995, was the first to map out lighting strategies for developments in the Central Area, starting with the key historic Civic District. Subsequently, the Night Lighting Master Plan for the CBD, Marina Centre and Marina Bay was introduced in 2009, which was instrumental in formulating the signature night skyline we see today around Marina Bay. This was followed by the implementation of the Night Lighting Master Plan for BBB precinct in 2010. Night lighting guidelines for the Civic District and BBB were subsequently revised in 2013.

Developments in the Bras Basah Bugis precinct are no longer subject to night lighting guidelines to allow more flexibility for creative application in view of the more diverse and eclectic character of the precinct.

- b. **Consolidated night lighting guidelines.** The night lighting guidelines for the various precincts, i.e. CBD, Civic District, Marina Bay and Marina Centre have been consolidated into a single document for ease of reference (See [Appendix 2](#)); and
  - c. **Simplified night lighting submission requirements.** To simplify the submission process, a **self-declaration** approach has been adopted where a lighting professional or Qualified Person (QP) would complete a declaration checklist to indicate the compliance with the various night lighting requirements (See [Appendix 3](#) and [4](#)).
  - d. **Consolidated good practices in night lighting.** To further raise awareness of the importance of night lighting, good night lighting practices as well as potential areas of concerns are shared as part of revised guidelines to help building owners and/or lighting professionals formulate appropriate lighting design strategies (See [Appendix 5](#)). This replaces the Night Lighting webpage previously introduced to provide supplementary information on good night lighting practices.
4. There is a growing concern about the excessive use of lights to illuminate the cityscape. Any night lighting, including those in non-mandatory areas should thus be executed sensitively to avoid glare, light trespass (lighting spilling beyond the subject development/boundaries) and light pollution. Excessive use of lights which causes disamenities, and disruption to natural circadian patterns should be avoided.

## Implementation

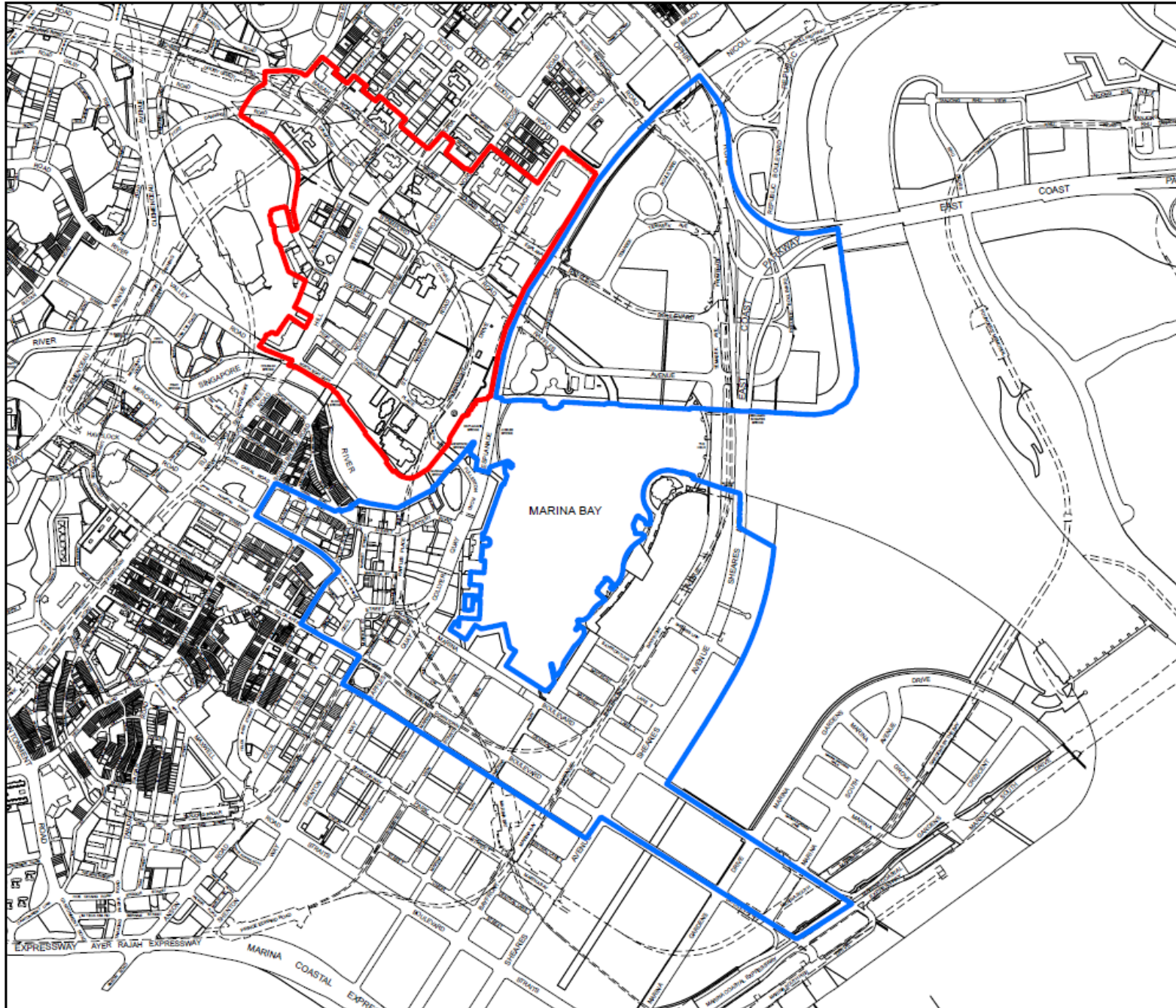
5. The guidelines will apply to relevant development applications submitted to URA on or after 4<sup>th</sup> September 2023. Where necessary, URA will consult the LDAP on the submitted lighting proposals. URA may also require the adoption of the night lighting guidelines for selected site(s) outside the mandatory lighting areas. In such scenarios, URA will inform owners of such sites early, to facilitate upfront design planning. The guidelines and submission requirements will follow those set out in this Circular.
6. I would appreciate it if you could convey the contents of this circular to the relevant members of your respective organisations. You are advised to refer to the [Development Control Handbooks](#) and URA's website for updated guidelines instead of referring to past circulars.

7. For other information on the master plan, urban design guidelines, private property use and approval, car park locations and availability, private residential property transactions, and conservation areas and buildings, use [URA SPACE](#) (Service Portal and Community e-Services). This is an online portal packed with useful data and visualisation to help building professionals, business operators and the general public in their decision-making. It consolidates detailed information on land use and private property into a one-stop platform presented on geospatial maps. For feedback or enquiries, please [email](#) us.

Thank you.

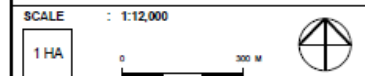
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CHIEF URBAN DESIGNER  
for CHIEF EXECUTIVE OFFICER  
URBAN REDEVELOPMENT AUTHORITY

# Appendix 1



- LEGEND**
- ▭ Boundary within CBD, Marina Bay and Marina Centre where Night Lighting is required
  - ▭ Boundary within Civic District where Night Lighting is required

DRAWING TITLE :  
**Night Lighting Master Plan  
 Boundary**



DRWG NO : DT/2023/037  
 DATE : JUNE 2023  
 GROUP : CUDG D / ELIZA CHOO  
 PREPARED BY : EA / KRISTEN TAN  
 CHECKED BY : D / ELIZA CHOO

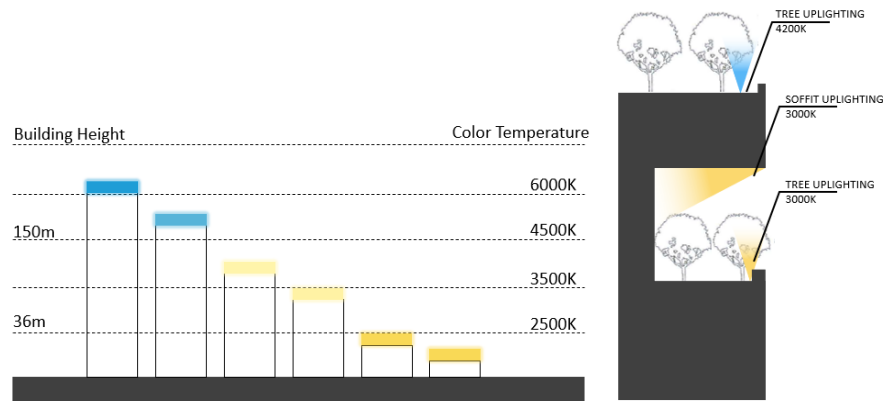
## Appendix 2: Night Lighting Guidelines

Good night lighting can help to transform the image of a city by enhancing the appearance of the city at night and extending the vibrancy of the city after sundown. Lighting should be considered upfront as part of the overall building design. Good night lighting gives legibility to the building form without overpowering it. It should be elegant, tasteful and sensitive to the architecture of the building and well-coordinated with the overall night-time city streetscape.

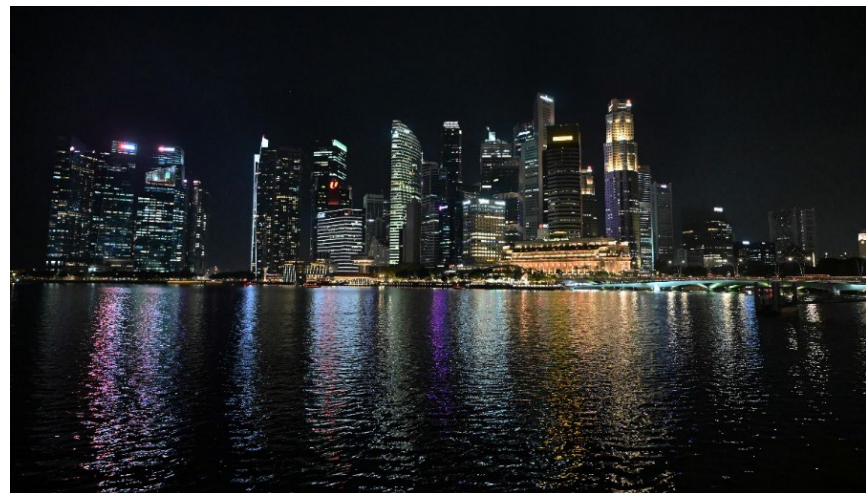
Developments that are required to provide night lighting must comply with the guidelines outlined in the table below.

	PARAMETERS	DETAILS
1	Definition of Night Lighting Design	<p>Under the guidelines, night lighting refers to the lighting up of the <u>exterior</u> of the building using permanent lighting fixtures to highlight the design of the building. In particular, the roof or crown, facades, main architectural features, covered walkways, sky gardens and open spaces are to be illuminated.</p> <p>The lighting philosophy is that of elegance, subtleness and harmony. As such, coloured and animated night lighting sequences for nightly lighting up of the buildings in mandated night lighting areas are generally not allowed. Night lighting proposals for the building should also be cognisant of the surrounding lighting schemes.</p>
2	Locations where Guidelines Apply <a href="#">(Appendix 1)</a>	<p><u>Mandatory Night Lighting Areas – parts of CBD, Civic District, Marina Bay and Marina Centre</u></p> <p>The locations where developments are subject to the mandatory night lighting guidelines can be found in Appendix 1. These areas form part of the signature skyline around the waterfront at Marina Bay or are part of the Civic District historic precinct.</p> <p>Developments outside these mandatory night lighting areas opting to adopt night lighting schemes could use this set of guidelines as reference.</p>
3	Lighting Specifications <a href="#">(Appendix 2)</a>	<p>The proposed night lighting scheme shall comply with the Lighting Specifications as shown in Appendix 2.</p> <p><u>Colour Temperature</u></p> <p>Colour temperatures can help to create a unique, three-dimensional skyline. In general, the proposed night lighting should adopt white or warm white light. The prescription of lower (warmer) colour temperatures for the building crowns of low and mid-rise structures, and higher (cooler) colour temperature for high-rise structures, creates a colour graduation effect for the skyline (see diagram and photo below).</p>

The colour temperatures are specified in bands so that there is flexibility within each band for lighting consultants to specify the desired value, to achieve the intended lighting concept for their respective developments.




The banding specification also enables different developments in the vicinity to coordinate night lighting on their various architectural elements to form a cohesive urban nightscape.



4 Light Trespass and Pollution

The proposed night lighting should be executed sensitively to avoid excessive use of lights causing glare, light trespass (lighting spilling beyond the subject development/boundaries) and light pollution (excessive lighting that causes disamenities and disruption to natural circadian patterns). Except for covered walkways and public spaces where minimum lux levels are stipulated, lighting professionals will have to take into consideration the ambient lighting levels, design intent and fields of vision of pedestrians, residents, and tenants, in pegging appropriate illuminance levels. The lighting intensity should be moderated to prevent light spillage and to enable the lighting to be energy efficient.

All light fittings in mandatory night lighting areas shall be equipped with dimmers to allow the lighting level to be calibrated. Building owners at voluntary night lighting areas are also encouraged to

		<p>provide dimmers to adjust lighting level to avoid causing disamenity to neighbouring developments where needed.</p>
5	<p>Light Fittings and Mounting Details</p>	<p>Sufficient measures must be taken to ensure that night lighting fixtures and mounting details are fully integrated with the architecture (e.g. as part of the façade and/or roof detailing) and/or landscape design of the building and screened from view. The integration should also be done in such a way to facilitate easy maintenance/repair/replacement of the fixtures.</p> <p>The fixtures are to be located fully within the site boundary and are not to encroach into the adjacent Road Reserves.</p> <p>Night lighting equipment that are accessible to the public shall be protected from damage and theft, and not cause any harm to the public.</p>
7	<p>Luminous Facades</p>	<p>Luminous facades are walls or facades that are designed to emit light and when used appropriately and sensibly, are strong visual expressions of the design intent of the building.</p> <p>However, luminous facades tend to also obliterate subtle architectural features and hence will not be supported for all buildings in the Civic District as well as conserved buildings/monuments in the rest of the mandatory night lighting area.</p> <p>If proposed for non-conserved buildings/non-monuments in the mandatory night lighting areas, the ambient light levels should be considered to avoid light pollution as luminous facades tend to cover a larger area and are hence brighter. If these are still deemed suitable for use in the respective site context, the luminous facades are to be subtle and use only white lights. Coloured and/or moving lights are not allowed, in line with the intention to achieve refined, sensitive nightscape in the mandatory night lighting areas.</p>  <p><i>Examples of luminous facades in Orchard Road (Left - Orchard Central) and BBB (Right - Bugis+) where good use of luminous facades contribute positively to the respective precinct's character. These areas are not subject to mandatory lighting guidelines.</i></p>

8	Use of Colour and/or Moving Lighting (Festive Lighting)	<p>Coloured and animated night lighting sequences are generally not allowed, except for festive occasions.</p> <p><u>Festive Lighting</u> Coloured and animated lighting sequences can be considered for festive occasions or events and should complement the theme of the festival or event. Lighting fixtures for festive lighting should be planned upfront and fully integrated with the architecture and/or landscape design of the building and screened from view.</p> <p>The event organiser should submit a separate detailed festive lighting proposal to URA at <a href="mailto:marinabay_events@ura.gov.sg">marinabay_events@ura.gov.sg</a> at least 3 months before the event for URA's evaluation and approval. (If installing additional light fixtures, see details in <a href="#">Appendix 4</a> – Submission and Evaluation Process.)</p>
9	Operation Hours and Reduced Extent of Lighting Scheme outside Mandated Hours	<p>Building owners are required to minimally turn on the night lighting from 7:00pm to 11:00pm on Fridays, Saturdays, Sundays, and public holidays. Festive lighting (such as on National Day and New Year's Eve), should only be lit up according to the approved night lighting proposal.</p> <p><u>Reduced Lighting outside Mandated Hours</u> A reduced extent of night lighting outside the mandatory night lighting hours can be supported, provided the 'lite' proposals are cohesive and do not appear incomplete. Renderings of these lite proposals should be submitted to URA as part of the night lighting submission for approval.</p>
10	Testing and Commissioning	<p>The testing and commissioning of the approved night lighting proposal must be done to ensure it does not cause disamenity to the surrounding developments and does not have an adverse impact on the night-time skyline. For example, time taken to test the lighting at 100% capacity should be kept to a minimum (preferably within an hour). This is to prevent light trespass and light pollution.</p>
11	Submission Requirements  ( <a href="#">Appendix 3</a> )	<p>All night lighting proposals shall be submitted formally to URA's Development Control Group for approval as part of the Development Application process to obtain Written Permission (WP). While the night lighting proposal need not be fully worked out for grant of Provisional Permission (PP), it should nevertheless be considered upfront and designed such that it is integrated with the development.</p> <p>The night lighting proposal must be reflected in the Development Application for URA's approval. A condition will be included in the Written Permission (WP) for the development to ensure that the night lighting proposal is retained and operated and will be enforced through the Planning Act on the owner and any subsequent purchaser of the development.</p>

		<p>Any changes to the approved night lighting proposal for the development (e.g. subsequent change in lighting concept, type of lighting equipment and specifications, etc.) are required to be submitted to URA for evaluation and approval.</p> <p>To facilitate the submission of night lighting proposals, URA has drawn up a checklist of submission requirements (<a href="#">Appendix 3</a>). The checklist provides a step-by-step guide on the design issues to be addressed from the overall lighting concept to detailed proposals. The checklist also lists all the supporting drawings and technical information that need to be submitted to facilitate the evaluation of the night lighting proposal.</p>
12	<p>Approvals and Temporary Occupation Permit (TOP)/Certificate of Statutory Completion (CSC)</p>	<p>The entire night lighting proposal, including all external building lighting installations, shall be installed, and commissioned according to the approved plans and verified and endorsed by URA under the Planning Act. URA will verify the completed night lighting proposal in the TOP/CSC application for the completed works.</p> <p>The standard processing time to evaluate and approve a complete and compliant TOP/CSC application for the completed works is about 4 weeks. Please note that a longer processing time may be required if the submission is incomplete or not in order.</p> <p>As part of the TOP/CSC application to URA, applicants are required to include labelled and annotated photographs (in .pdf file format) showing a side-by-side comparison of the approved rendering(s) of the night lighting installation, and photo(s) of the completed night lighting installation. The photo(s) are to be taken from the same angle adopted in the approved rendering(s). URA will evaluate the materials submitted and, if necessary, arrange for a site inspection to assess the TOP/CSC application for the completed works.</p> <p>If the external lighting fixtures are not installed and commissioned according to the approved plans, the Applicant or Building Owner will be required to revise the lighting installation to match the approved lighting design or provide reasons for the deviation for the URA's evaluation and approval.</p> <p>The night lighting fixtures are to be retained and maintained throughout the entire life of the building and shall not be removed without the prior approval of the URA.</p>

### Appendix 3: Lighting Specifications and Declaration Form for Developments

Building Element	Type/Building Height		Colour Temperature (Kelvin)		Colour Rendering (Ra)		Illuminance (Lux)	
	Requirement	Proposal*	Requirement	Proposal*	Requirement	Proposal*	Requirement	Proposal*
<b>Developments in Mandatory Night Lighting areas such as Central Business District, Marina Centre and the Marina Bay*</b>								
<b>Building Crown</b>	<b>Commercial/ Office/ Mixed-use</b>						No control on lux, however, lighting shall be executed sensitively. Dimmers are required to calibrate levels of illuminance.* Dimmers are not required for tree up-lights.	
	Bldg Ht > 151m		4500 - 6000K		> 85			
	Bldg Ht = 36m - 150m		3500 - 4500K		> 85			
	Bldg Ht < 35m		2500 - 3500K		> 85			
	<b>Residential/ Hotel</b>							
	Bldg Ht > 151m		3500 - 4500k		> 85			
	Bldg Ht < 150m		2500 - 3500K		> 85			
<b>Sky gardens</b>	<b>Roof Garden</b>							
	Tree Uplighting		3000 -4000 K		> 85			
	<b>Mid-level Gardens</b>							
	Tree Uplighting		2500-3000K		> 85			
	Soffit Space		2500-3000K		> 85			
<b>Façade</b>	Commercial/ Office/ Mixed-use		3500 – 6000K		> 85			
	Residential/ Hotel		2500 - 3500K		> 85			
<b>Covered Walkways</b>			2500 - 3500K		> 85		Ave floor Lux: Downlight 50-200 Indirect light 20-100	
<b>Public Spaces (Landscaped areas/ Plazas)</b>			2500 - 3500K		> 85		Ave Lux > 5 lux	
<b>Civic District</b>								
<b>Monument / Conserved Building</b>			2500 to 3500K		> 85		No control on lux, however, lighting shall be executed sensitively. Dimmers are required to calibrate levels of illuminance.	
<b>Non-conserved Building</b>			3000 to 6500K		> 85		Refer to lux levels for covered walkways and public spaces (if any)	

\*as well as for sites identified outside of mandatory night lighting areas.

Index of protection for night lighting of the development is IP 67 or higher

\* To be filled in by Applicant.

Notes :

1. Fill in the required information according to the type of building, e.g. office block, commercial tower, residential;
2. Indicate the proposed colour temp and rendering index;
3. Where the proposal deviates from the guidelines, please provide justifications for the deviation in relation to the architectural and night lighting concept, for our evaluation and consideration.

**Declaration by Lighting Designer**

I hereby declare that

- a) the particulars given in this declaration are true and correct.
- b) the submission is in accordance with all relevant Night lighting guidelines unless specifically stated otherwise.
- c) where I am unable to meet the guidelines, I have clearly indicated the respective deviations/changes, and put forth my justification for such deviations/changes.

\_\_\_\_\_  
Name, Signature

\_\_\_\_\_  
Firm's Name

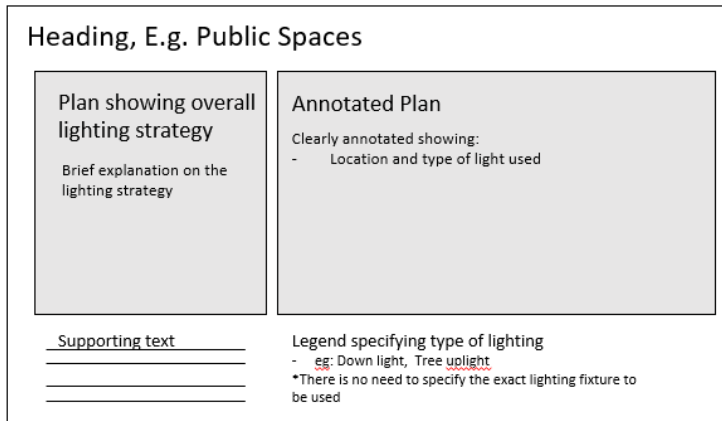
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Date

## Appendix 4: Submission Checklist

S/N	Item	Checklist (please tick)
1	<p><b>Write-up of Night Lighting Concept</b>  <i>Max 1 A4 sheet, Arial font size 12</i></p> <p>The write-up should cover:</p> <ol style="list-style-type: none"> <li>a. Description of the overall night lighting concept. This shall relate to the design concept of the building;</li> <li>b. How the proposed night lighting enhances the architecture of the building (e.g. building form, façade(s) and roof areas);</li> <li>c. How the proposed night lighting complements the uses within the development and surrounding context.</li> </ol>	
2	<p><b>Rendered Perspectives</b></p> <p><u>For all developments</u></p> <ol style="list-style-type: none"> <li>a. Street-level views of the building from its main approaches that illustrate the proposed night lighting in relation to the surrounding context.</li> <li>b. Façades</li> <li>c. Key public spaces, such as sky terrace(s), roof garden(s), covered walkway(s), Privately Owned Public Space (POPS)</li> </ol> <p><u>Additional requirements for buildings forming the skyline at Marina Bay</u></p> <ol style="list-style-type: none"> <li>d. For buildings forming the skyline at Marina Bay, the rendered perspectives should include the simulated illuminated building inserted into the skyline.</li> </ol>	

**Drawings**

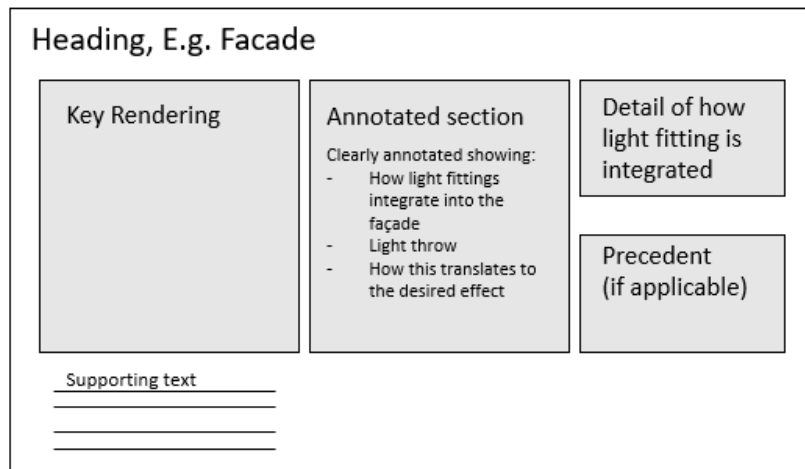
- a. **Rendered Overall plans, sections, and elevations** showing the lighting strategy and how the proposed lighting effect could be achieved for the overall facade;



- b. **Rendered detail sections** illustrating how the light fittings are fully integrated with the architecture (e.g. façade or roof detailing) and how this would translate into the desired effect.

There is no need to submit for interior lighting that is not be visible from the street and/or skyline. This includes lighting fixtures of doorways, lobbies, landscape lighting, etc within sky terraces and/or other internal spaces.

3



- c. Measures taken to ensure the proposed choice and placement of light fittings do not result in light trespass and pollution.

For Resubmissions or Additions & Alterations

Please include the earlier proposed/approved rendering(s)/photographs of the lighting fixtures so that a side-by-side comparison with the current proposal could be made for evaluation.

4

**Lighting Specifications (Appendix 3)**

	<p>Please provide relevant information on the proposed lighting specifications and declare compliance with the prevailing guidelines, using <a href="#">Appendix 3</a>.</p> <p>Where the proposal deviates from the guidelines, please provide justifications for the deviation in relation to the architectural and night lighting concept, for our evaluation and consideration.</p> <p>Please <u>do not</u> submit technical specifications (e.g manufacturer's specifications/extract of catalogue) of the proposed light fittings as these are not required as part of the evaluation.</p>	
5	<p><b>Maintenance statement</b></p> <p>All light fittings should be easily replaced and maintained. Please provide a statement of maintenance for façade lighting demonstrating how they would be replaced should the lights fail.</p>	

## Appendix 5: Good Practices

### LIGHTING THE CITY

We have come a long way since the inception of the first night lighting masterplan for the Civic District in 1995. In partnership with building owners, architects and lighting professionals, we have over the years shaped a signature nightscape around the city centre and Marina Bay. This is attributed to well-executed lighting schemes that are elegant, tasteful, sensitive to the architecture of the buildings and cognizant of the surrounding developments.

Through the good practices listed in this Appendix, we hope to raise awareness among building owners, architects, lighting professionals and facility managers of the importance of sensitive night lighting which enriches one's experience of the building and city. Areas of concerns are also included so that these can be factored in early in the design stage for all developments, including those that are lit up voluntarily by the owners. This will enable the formulation of appropriate design strategies to mitigate the potential disamenities caused by the oversight of these areas of concern. Collectively, all of us in the building industry can work together to shape an attractive city at night.

#### A. Emphasising Architectural Design Elements

1. Flood lighting the façade of buildings is often presumed to be the easiest lighting option. However, this often fails to excite the eye or create any visual interest, in addition to potentially causing glare and light pollution. To create visual interest and highlight the architectural features of the building, the focus should be on:
  - Illuminating the building crown;
  - Highlighting architectural/structural features that define the qualities and character of the building by considering use of accent lighting; and
  - Achieving balance between the various illuminated elements of the building

#### Examples of Good Night Lighting for Monuments/Conserved Buildings



National Gallery, comprising Former Supreme Court (left), a new infill (centre) and the Former City Hall (right)

Photo credit: National Gallery of Singapore

### Accentuating Architecture

Lighting is used to tie the old and new portions of the complex together at night and enables the reading of the complex as a contiguous whole. This is also a brilliant example of using accent lighting to accentuate key architectural features while still maintaining balance in the overall façade without any part being overly or under lit.

### Examples of Good Night Lighting for Modern Buildings



The Sail  
Photo Credit: Wee Liang

### **Building Form**

In the case of The Sail, its curved edges of the facades, a key architectural feature, are being highlighted.



Marina Bay Financial Centre  
Photo credit: Rendy Aryanto / VisualVerve.SG

### **Building Crown**

For Marina Bay Financial Centre, the roof crown makes a design statement at night with well-placed lighting.

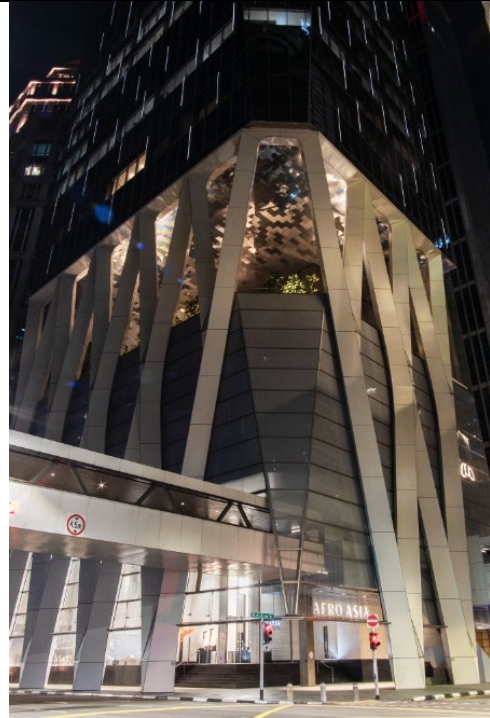
Consideration should also be given to the placement of building signage to ensure that it is proportionate to the crown/facades and appropriately lit without competing with or obliterating the night lighting scheme of the building.



Capita Spring  
Photo Credit: CapitalLand

### **Building Facade**

The lighting of facades is an important factor in the composition of distant views of the city. The use of coloured lights should be avoided and features of the building such as sky terraces can be accentuated, as in the case of CapitaSpring.



Sky Terrace at Afro Asia  
Photo Credit: Ng Wee Liang

### Utilising Materiality

Materiality can be utilised to achieve the desired lighting effect. For example, Afro Asia utilised a reflective ceiling to achieve a dappled lighting effect at the sky terrace that is visible from the street.



Public spaces at Guoco Tower  
Photo Credit: GuocoLand

### Public Spaces

The lighting scenery in public spaces should not only provide visual enjoyment but also serve as a backdrop for activities. Lighting should not be limited to stand-alone fixtures but can be integrated into the landscape and urban elements to create points of emphasis.

The lighting scheme for the public spaces at Guoco Tower not only ensures adequate illuminance to support activities at night but also highlights its canopy structure and complements the landscape lighting in the adjacent park.

If landscape up-lights are used, care should be taken to ensure that the lights are not easily adjusted by accident to shine in unintended directions.



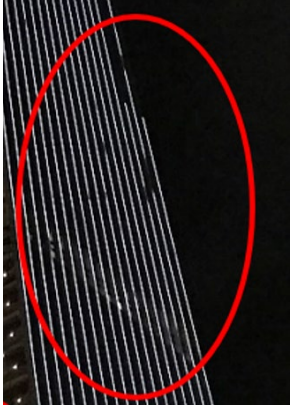
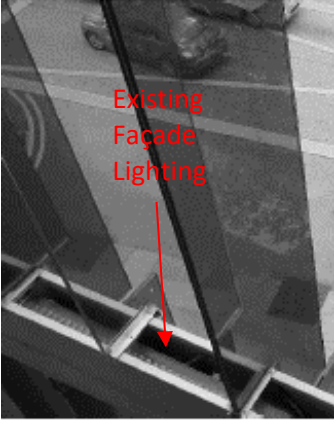
Façade lighting at Singtel Waterfront Theatre at Esplanade  
Photo credit: Esplanade – Theatres on the Bay, Architects  
61 Pte Ltd, Finbarr Fallon

## Dynamic Lighting

While animated and coloured lighting is restricted to festive occasions and events, static light display could utilise simple elements to generate interesting and immersive lighting effects. An example is Esplanade's Waterfront Theatre that utilises light boxes with perforations to achieve subtle lighting effect. The façade lighting extends underneath the benches to create an animated façade.


## B. Integrating Light Fittings and Mounting Details

2. Be it in the day or at night, architectural facades play an important part in shaping the streetscape. Light fittings should have minimal presence and interference with the architectural features. Where possible, the light sources and their light fittings should be integrated with the architectural and landscaping designs.
3. However, the integration of lighting fixtures with architecture of the building should not be at the expense of easy maintenance. Lighting professionals should consider how light fixtures are housed in relation to the lighting concept and work together with architects to design for both integration and ease of maintenance. Maintenance of lighting fixtures should preferably be from the interior of the building without risking safety and/or incurring excessive work, e.g. having to replace the entire façade.
4. In addition, fixtures should have an Index of Protection of IP67 or higher for better sealing effectiveness and longer lifespan of fixtures to minimise the need for replacement.

	
<p>These faulty façade lightings are not easily replaceable as they are hard to reach.</p>	<p>Lighting fixtures cannot be replaced without removing façade fins.</p>

### C. Preventing Light Trespass and Light Pollution

5. There is a growing concern about the excessive use of lights to illuminate the cityscape. Night lighting should be executed sensitively to avoid glare, light trespass and light pollution. The design should be energy-efficient and avoid light spillage that could adversely affect pedestrians, residents, drivers, and other fields of vision. . If landscape up-lights are used, the lighting fixtures should be placed such that they do not shine onto pedestrians.
6. A good way to prevent light trespass or glare is to avoid direct light sources, by leveraging reflected light and/or building element to shield the light source.

	<p>Negative examples of glare without any shield of light sources</p>
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7. Unnecessary wastage in lighting up buildings should also be avoided. This happens when light is reflected into the sky, thereby resulting in light pollution. In this case, other buildings in the vicinity may become victims of unwanted light trespass. Dimmers are encouraged for all lighting fixtures to allow for calibration of light. For mandatory night lighting areas, dimmers are required.

## **D. Conclusion**

8. The examples listed in this good practice guide are not exhaustive. We hope that this will inspire lighting consultants to work together with building and landscaping professionals in coming up with innovative yet sensitive lighting proposals as well as sensitise the industry to key considerations. The lighting up of key buildings has a large impact on the streetscape, skyline and night-time image of the city.