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Contents

1 Introduction

The lighting design for the new Civic Park in Sandyford Industrial Estate will include specifications for new amenity lighting on an existing brown field development. The prime consideration will be to demonstrate design illuminance levels in accordance with relevant standards, no increase or detrimental influence on existing upplight, glare or light trespass levels and to specify lighting in accordance with the guidance set out in environmental and ecological survey reports.

The proposed lighting installation includes standalone lighting columns located at the perimeter of the site (each measuring 4/5m above ground level) and surface mounted luminaires within the covered sports area.

Nighttime obtrusive light levels are considered in accordance with IS EN 12464-2 Lighting of Workplaces - Part 2: Outdoor Workplaces.

Site lighting, while providing a minimum ground illumination for the local task, will be in accordance with IS EN 12464-2 and Part M of the Irish Building Regulations.

2 Planning Description

Part 8 Planning Application Description – Sandyford Civic Park (0.96 ha)

Dún Laoghaire-Rathdown County Council (DLR), in partnership with the Sandyford Business District, proposes the development of Sandyford Civic Park, a new 0.96-hectare civic and recreational urban park located at the corner of Corrig Road and Carmanhall Road, Sandyford, Dublin 18. The project responds to the identified need for high-quality public open space within Sandyford and supports the district's ongoing transformation from a traditional business park into a vibrant, mixed-use urban centre, as set out in the Sandyford Urban Framework Plan.

As part of the EU-funded IB-Green programme, the development integrates green-blue infrastructure, extensive planting, opportunities for sustainable drainage, and measures to mitigate urban heat stress. The project prioritises material reuse and circularity, with demolition arisings intended for reuse within the park where feasible.

The design for Sandyford Civic Park —being developed by Urban Agency (along with an extensive design team; Langan Consultant Engineers, Landscape QS, Malone Group, Donnachadh O'Brien Engineers, O'Herlihy Access Consultancy, Gordon White Associate Engineers) following extensive public and stakeholder engagement—combines a formal civic square for events and gatherings with a softer, biodiverse landscape for relaxation, play, and passive recreation. The scheme balances hard and soft landscaping, incorporates sculptural and artistic elements, and emphasises sustainability and climate resilience in accordance with DLR's Climate Action Plan.

The proposed development includes the following key elements:

- **Demolition of Buildings No. 27 and No. 28, Corrig Road**, with materials reused on-site where possible.
- **Adaptation of Building No. 26**, Corrig Road, into a **covered open sports and recreation structure**.
- A **new amphitheatre** in the north-western portion of the park, providing a partially covered community meeting and event space.
- A **viewing tower integrated into the north-western corner of the park**, designed to act as a visual landmark when viewed from Sandyford Central and Carmanhall Road, and to assist pedestrian orientation and wayfinding.
- A **naturalistic forested edge** along the eastern boundary, with dense planting transitioning to a more urban landscape character towards the west.
- A **large central lawn area** providing a flexible green space for informal recreation and community use.
- **Reduction in the width of Corrig Road** to calm traffic speeds, improve pedestrian safety, and enhance the setting of the park.
- **Planted buffering along Corrig Road and Carmanhall Road**, including the **extension of the existing tree line along Carmanhall Road**, to strengthen the green corridor, improve microclimate, and visually define the park edge.
- A **play area catering for a range of age groups**, offering inclusive and accessible play opportunities.
- A **"play along the way" design strategy**, incorporating informal play elements integrated throughout paths, seating, and landscape features.

- A comprehensive **SuDS strategy**, including swales and rainwater retention areas, designed to capture, attenuate, and integrate surface water into the landscape design.
- A **new level crossing at the junction of Corrig Road and Carmanhall Road**, improving pedestrian permeability, safety, and connectivity to the park.
- A **lighting strategy focused on the park perimeter**, with additional lighting provided to sports and recreation facilities, ensuring safety while minimising light spill and protecting biodiversity.
- High-quality paving, seating, accessibility measures, integrated lighting, and enhanced pedestrian connections throughout the park.

On completion, Sandyford Civic Park will function as a **central civic and recreational space** for workers, residents, and visitors, reinforcing local identity, encouraging social interaction, and demonstrating best-practice **climate-responsive urban greening** within a high-density urban district.

3 Lighting Design

3.1 Sandyford Civic Park Environmental Zone

In accordance with IS EN 12464 – 2, Table 2, the maximum obtrusive lux levels and upplight values are set in accordance with four Environmental Zone categories. The Sandyford site has been categorised as *Environmental Zone E3, medium district brightness areas, such as industrial or residential suburbs*.

Table 2 — Maximum obtrusive light permitted for exterior lighting installations

Environmental zone	Light on properties		Luminaire intensity		Upward light	Luminance	
	E_v lx		I cd		ULR %	L_b cd·m^{-2}	L_s cd·m^{-2}
	Pre-curfew [a]	Post-curfew	Pre-curfew	Post-curfew		Building facade	Signs
E1	2	0	2500	0	0	0	50
E2	5	1	7500	500	5	5	400
E3	10	2	10000	1000	15	10	800
E4	25	5	25000	2500	25	25	1 000

[a] In case no curfew regulations are available, the higher values shall not be exceeded and the lower values should be taken as preferable limits.

Table 1: IS EN 12464 – 2, Table 2 – Maximum Obtrusive Light Levels

3.2 Light on Adjoining Properties

There are a number of buildings adjoining the site as indicated in the below image. Trespass lux levels are measured on the face of each property and tabulated below against pre and post curfew values. The effect of any existing elements such as trees that would block light trespass have been discounted to assume worst case trespass lux levels.

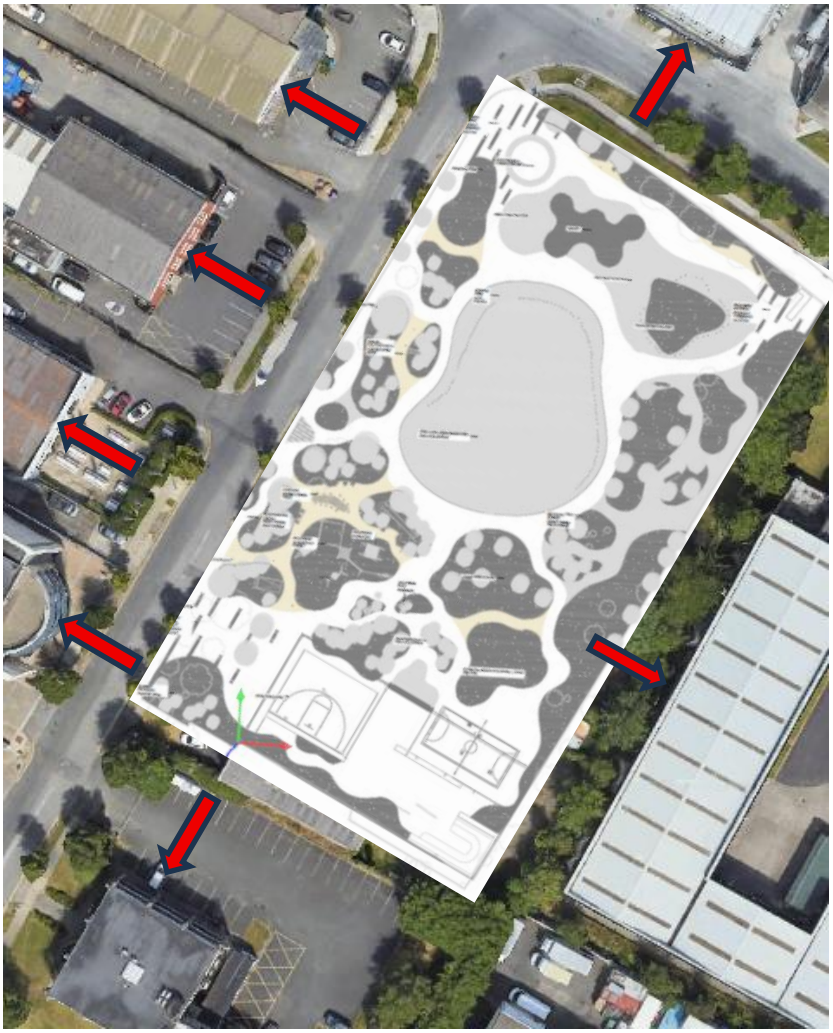

Figure 1: Sandyford Civic Park

Maximum pre and post curfew lux levels on adjoining do not exceed 10lx and 2lx respectively in accordance with Zone E3 requirements. The calculated vertical lux levels on each of the buildings are indicated below.

Calculation Summary						
Description	**Avg**	**Max**	**Min**	**Min/Avg**	**Min/Max**	**Units**
Building 1 Verticals	0.46	0.59	0.59	0.78	0.61	Lux
Building 2 Verticals	1.02	1.24	0.88	0.85	0.71	Lux
Building 3 Verticals	1.23	1.52	1.04	0.85	0.68	Lux
Building 4 Verticals	0.58	0.98	0.42	0.72	0.43	Lux
Building 5 Verticals	0.41	0.54	0.28	0.68	0.52	Lux
Building 6 Verticals	3.44	3.81	3.11	0.9	0.82	Lux
Building 7 Verticals	0.62	0.99	0.43	0.69	0.43	Lux

Table 2: Vertical Illuminance

3.3 Upward Light

To achieve appropriate uniformity at low luminaire mounting heights, as required for the Civic Park some luminaires may require adjusted tilt angles. This can affect up light, light pollution. An up light calculation in accordance with IS EN 12464-2 sets out the percentage upward light ratio (R_{UL}) for environmental zone E3 in Table 1. As demonstrated in Figure 2 the calculated R_{UL} is below 15%.

General obtrusive light scene results

Symbol	Calculated	Threshold value	Check
R_{UL}	4.9 %	≤ 15.0 %	✓
R_{DLO}	95.1 %	-	
R_{ULO}	4.9 %	-	

Figure 2: Upward Light Ratio

3.4 Light Spill

An assessment of light spill has resulted in a maximum ground illuminance level 4 meters from the site boundary of **5lx.**

3.5 Luminaires

All the luminaires used are full cut off/flat glass type, so they are very good at minimising glare and light spill and have excellent directional control through the use of quality optics.

Figure 3: Proposed Luminaires

3.6 Lighting Control

Site lighting will be controlled to ensure operating time is kept to a minimum. Photocell and timeclock control limits the operating time for lighting to within the hours of darkness and then switches off the lighting as required after a pre-determined time.

3.7 Lighting Levels

3.7.1 Part M Routes

Circulation around the Sandyford Civic Park will be designed in accordance with Part M of the Building Regulations. Pedestrian access routes will require 20 lux on level and gently sloped in accordance with this standard. Design illuminance levels are tabulated below for the designated Part M routes.

Figure 4: Designated Part M Routes

Part M Route Calculation Results			
Route	Ave	Uo	Units
Part M Surface 1	38.6	.42	Lux
Part M Surface 2	24.7	.21	Lux
Part M Surface 3	36.6	.47	Lux
Part M Surface 4	33.4	.22	Lux

Table 3: Part M Route Lux Levels

3.7.2 Sports Area

The CIBSE Lighting Guide recommends lux levels and Glare Ratings for indoor and outdoor sports areas. Sports areas are categorised by class. The Sandyford Civic Park sports area will be Lighting Class III, General Training and Recreational Activities.

Class	Horizontal illuminance				Colour rendering index	Glare rating
	Outdoor courts		Indoor courts(note 1)			
	E_{av} (lx)	E_{min}/E_{av}	E_{av} (lx)	E_{min}/E_{av}		
I	-	-	750	0.7	60	-
II	-	-	500	0.7	60	-
III	75	0.5	200	0.5	20	55(note 2)

Figure 5: Football/Basketball Requirements

Lighting class III

- Low-level competition; local or small club competition
- Minimal or no spectator provision
- General training; school sports and recreational activities

Table 1: Selection of lighting class

Level of competition	Lighting class		
	I	II	III
International and national	*		
Regional and county	*	*	
Principal clubs	*	*	*
Small clubs		*	*
General training, recreational and school sports			*

Figure 6: Lighting Class Selection

As per Figure 5 outdoor courts, lighting Class III, require and average illuminance (E_{av}) of 75 lux at a uniformity (Uo) 0.5. Also, the Glare rating shall not exceed 55. Design results are tabulated below.

Sports Lighting				
Area	Ave	Uo	Glare Rating	Units
Sports Zone	112	.45	46	Lux

Figure 7: Sports Area Calculation Results

4 Local Bat Commuting & Foraging Routes

The draft Appropriate Assessment (AA) screening report indicates that the development is unlikely to impact local fauna and therefore a Stage II (Natura Impact Statement) of the proposed development is not required.

For bats and other light sensitive species, a lower colour temperature LED will be provided. The luminaires used in the design are LED 2700K colour temperature (warm white) in line with recommendations for reducing the impact of lighting on wildlife & bats (ILP GN08).

5 Conclusion

In conclusion, it is noted that there is no adverse impact on the local commercial properties to the north and west of the Civic Park from this external lighting proposal.

Site lighting, while providing a minimum ground illumination for the local task and is minimised to reduce any impact to local fauna of the surrounding environs.