

Public Lighting Report

Proposed Strategic Housing Development
at Player Wills Site, South Circular Road, Dublin 8

Project No. H613

09th December 2020



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



Public Lighting Report



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OCSC Job No.: H613	Project Code	Originator Code	Zone Code	Level Code	File Type	Role Type	Number Series	Status/ Suitability Code	Revision
	PLA	OCSC	XX	XX	RP	E	0001	S8	P04
Rev.	Status	Authors		Checked	Authorised		Issue Date		
P04	S8	BOB		MH	MH		09.12.20		
P03	S8	BOB		MH	MH		06.11.20		
P02	S8	BOB		MH	MH		26.03.20		
P01	S8	BOB		MH	MH		11.03.20		

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1. INTRODUCTION

This report outlines the design criteria and considerations taken into account with regard to the lighting scheme within the proposed development at 'Player Wills Site, South Circular Road, Dublin 8.

- i. DBTR-SCR1 Fund, a Sub-Fund of the CWTC Multi Family ICAV intend to apply to An Bord Pleanála for permission for a mixed-use Build to Rent Strategic Housing Development at the former 'Player Wills' site (2.39 hectares) and adjoining lands (0.67 hectares) under the control of Dublin City Council. A public park, public road and works to South Circular Road and to facilitate connections to municipal services at Donore Avenue are proposed on the Dublin City Council land. The former 'Player Wills' site incorporates Eircode's: D08 T6DC, D08 PW25, D08 X7F8 and D08 EK00 and has frontage onto South Circular Road, St. Catherine's Avenue and Donore Avenue, Dublin 8. The Dublin City Council undeveloped land adjoins the former 'Player Wills' site to the west and the former 'Bailey Gibson' site to the east. The total area of the proposed development site is 3.06 hectares.
- ii.
- iii. The design rationale is to create and deliver a high quality, sustainable, residential led mixed use strategic housing development within this inner city brownfield site which respects its setting and maximises the site's natural attributes while achieving maximum efficiency of existing infrastructure. The Proposed Site Layout is illustrated on Drawing No. PL0003 contained within the architectural suite of drawings.
- iv.
- v. The development will consist of;
- vi. the demolition of all buildings (15,454 sq.m GFA), excluding the original fabric of the former Player Wills Factory, to provide for the development of a mixed use(residential, community, arts and culture, creche, food and beverage and retail) scheme comprising predominantly build to rent apartment dwellings (492 no.) together with a significantly lesser quantity of single occupancy shared accommodation private living areas (240 no.), with an average private living floor area of 24.6 sq.m (double the minimum private living space size required for single occupancy shared accommodation) and a arts/culture/community hub within the repurposed ground floor of the former factory building;
- vii. change of use, refurbishment, modifications and alterations to the former Player Wills Factory building (PW1) to include the removal of 1 no. later addition storey (existing 4th storey) and the later addition rear (northern) extension, retention and modification

- of 3 no. existing storeys and addition of 2 no. storeys set back on the building's south, east and west elevations with an 8-storey projection (max. height 32.53m) on the north eastern corner, with a cumulative gross floor area of 17,630 sq.m including ancillary uses, comprising;
- viii. at ground floor 852 sq.m of floor space dedicated to community, arts and cultural and exhibition space together with artist and photography studios (Class 1 and Class 10 Use), 503 sq.m of retail floor space (Class 1 Use), 994 sq.m of café/bar/restaurant floor space, 217 sq.m of co-working office floor space (Class 3 Use) and ancillary floor space for welfare facilities, waste management and storage;
 - ix. 240 no. single occupancy shared accommodation private living areas, distributed over levels 1-4, including 2 no. rooms of 30 sq.m, 49 no. rooms of 25 sq.m; 14 no. rooms of 23 sq.m, 58 no. rooms of 22.5 sq.m, 8 no. rooms of 20 sq.m, 104 no. rooms of 19 sq.m and 5 no. disabled access (Part M) rooms (3 no. 32 sq.m and 2 no. 26 sq.m); 21 no. kitchen/dining areas, and, 835 sq.m of dedicated shared accommodation services, amenities and facilities distributed across levels 1-4, to accommodate uses including lounge areas, entertainment (games) area, 2 no. external terraces (Level 03 and 04), laundry facilities, welfare facilities and waste storage;
 - x. 47 no. build-to rent apartments distributed across levels 1-7 including 12 no. studio apartments; 23 no. 1 bed apartments, 8 no. 2 bed apartments: and, 4 no. 3-bed apartments;
 - xi. 1,588 sq.m of shared (build to rent and shared accommodation) services, amenities and facilities including at ground floor reception/lobby area, parcel room, 2 no. lounges and administration facilities; at Level 01 entertainment area, TV rooms, entertainment (games room), library, meeting room, business centre; at Level 02 gym and storage and at Level 07, a lounge area.
 - xii. Provision of communal amenity outdoor space as follows; PW1 - 450 sq.m in the form of roof terraces dedicated to shared accommodation and 285 sq.m roof terrace for the proposed apartments .
 - xiii. a basement (190 sq.m) underlying the proposed 8-storey projection to the northeast of PW1 to accommodate plant.
 - xiv. the construction of 445 no. Build to Rent apartment units, with a cumulative gross floor area of 48,455 sq.m including ancillary uses distributed across 3 no. blocks (PW 2, 4 and 5) comprising;
 - xv. PW2 (45,556 sq.m gross floor area including ancillary uses) - 415 no. apartments in a block ranging in height from 2-19 storeys (max. height 63.05m), incorporating 16 no. studio units; 268 no. 1 bed apartments, 93 no. 2 bed apartments and 38 no. 3-bed

- apartments. At ground floor, 2 no. retail units (combined 198 sq.m) (Class 1 use), and a café/restaurant (142 sq.m). Tenant services, amenities and facilities (combined 673 sq.m) distributed across ground floor (lobby, mail room, co-working and lounge area), Level 06 (terrace access) and Level 17 (lounge). Provision of communal amenity open space including a courtyard of 1,123 sq.m and roof terraces of 1,535 sq.m
- xvi. Double basement to accommodate car parking, cycle parking, waste storage, general storage and plant.
 - xvii. PW4 (1,395 sq.m gross floor area including ancillary uses) - 9 no. apartments in a part 2-3 storey block (max. height 10.125m) comprising, 2 no. 2-bed duplex apartment units and 7 no. 3-bed triplex apartment units. Provision of communal amenity open space in the form of a courtyard 111 sq.m
 - xviii. PW5 (1,504 sq.m gross floor area including ancillary uses) - 21 no. apartments in a 4 storey block (max. height 13.30m) comprising 12 no. studio apartments, 1 no. 1-bed apartment, 5 no. 2-bed apartments, and 3 no. 3-bed apartments. Provision of communal amenity space in the form of a courtyard 167sq.m. Provision of communal amenity open space in the form of a courtyard 167 sq.m
 - xix. the construction of a childcare facility (block PW4) with a gross floor area of 275 sq.m and associated external play area of 146 sq.m;
 - xx. the provision of public open space with 2 no. permanent parks, 'Players Park' (3,960 sq.m) incorporating active and passive uses to the northwest of the former factory building on lands owned by Dublin City Council; 'St. Catherine's Park' (1,350 sq.m) a playground, to the north east of the Player Wills site adjacent to St. Catherine's National School. A temporary public park (1,158 sq.m) to the northeast of the site set aside for a future school extension. The existing courtyard (690 sq.m) in block PW1 (former factory building) to be retained and enhanced and a public plaza (320 sq.m) between proposed blocks PW and PW4.
 - xxi. 903 no. long-stay bicycle parking spaces, with 861 no. spaces in the PW2 basement and 42 no. spaces at ground level in secure enclosures within blocks PW4 and PW5. 20 no. spaces reserved for non-residential uses and 110 no. short-stay visitor bicycle spaces provided at ground level.
 - xxii. 4 no. dedicated pedestrian access points are proposed to maximise walking and cycling, 2 no. from South Circular Road, 1 no. from St. Catherine's Avenue and 1 no. from Donore Avenue.
 - xxiii. In the basement of PW2, 148 no. car parking spaces to serve the proposed build to rent apartments including 19 no. dedicated disabled parking spaces, 20 no. spaces reserved for a car sharing club ('Go Car' or similar) and 6 no. motorcycle spaces. 10% of parking spaces fitted with electric charging points.

- xxiv. in the basement of PW2, 81 no. car parking spaces (1,293 sq.m net floor area) including 5 no. dedicated disabled parking spaces, 3 no. motorcycle spaces and 10% of parking spaces fitted with electric charging points to facilitate future residential car parking associated with future development in the wider masterplan area and on lands contiguous with the masterplan lands. The use of this area for carparking is subject to receiving a separate development consent. An alternative use is proposed for this area (additional storage (cage/container) for residents of the proposed development) if the separate development consent is not secured.
- xxv. in the basement of PW2, use for 81 no. car parking spaces (1,293 sq.m net floor area) including 5 no. dedicated disabled parking spaces, 3 no. motorcycle spaces and 10% of parking spaces fitted with electric charging points to facilitate residential car parking associated with future development on neighbouring lands. The area will not be used for carparking without a separate grant of permission for that future development. In the alternative use for additional storage (cage/container) for residents of the proposed development.
- xxvi. 37 no. surface level car parking spaces including 3 no. disabled access and 3 no. creche set down spaces and 10% fitted with electric charging points. 2 no. loading bays and 2 no. taxi set-down areas.
- xxvii. development of internal street network including a link road (84m long x 4.8m wide) to the south of the proposed 'Players Park' on land owned by Dublin City Council that will provide connectivity between the former 'Bailey Gibson' site and the 'Player Wills' site.
- xxviii. vehicular access will be provided via Donore Avenue with a one-way exit provided onto South Circular Road to the east of block PW1(the former factory building);
- xxix. replacement and realignment of footpaths to provide for improved pedestrian conditions along sections of Donore Avenue and South Circular Road and realignment of centreline along sections of Donore Avenue with associated changes to road markings;
- xxx. a contra-flow cycle lane is proposed at the one-way vehicular exit to the east of PW1 (former factory building) to allow 2-way cycle movements via this access point;
- xxxi. decommissioning of existing 2 no. ESB substations and the construction of 2 no. ESB substations and associated switch rooms, 1 no. single ESB substation in PW 1 (43.5 sq.m) and 1 no. double ESB substation in PW2 (68 sq.m);
- xxxii. the construction of a waste and water storage building (combined 133 sq.m, height 4.35m) to the west of building PW1;
- xxxiii. all ancillary site development works; drainage, rooftop solar photovoltaics (20 no. panels total), landscaping, boundary treatment and lighting.

The report considers the lighting design as developed by O'Connor Sutton Cronin (OCSC), and should be read in conjunction with OCSC drawing number.

PLA-OCSC-XX-XX-DR-E-0001

The drawing is provided to demonstrate:

- Compliance with DCC public lighting standards for areas to be taken in charge,

This predicted performance of the external lighting installation has been assessed in detail using Lighting Simulation software Lighting Reality.

Standards and guidelines in relation to the lighting design are:

- BS 5489-1-2013
- I.S. EN 13201-2-2015
- Dublin City Council Public Lighting General Specification.

The electrical services for the external lighting installation will be designed in accordance with ETCI National Rules for Electrical Installations ET101:2008.

2. THE DESIGN

The lighting design has been developed with the following principal considerations:

- Provide adequate illumination to contribute towards the safe use of the main access/feeder road and adjoining footpaths by both vehicles, cycles and pedestrians.
- Provide adequate illumination to junctions with the development.
- Provide the required illumination with minimum energy use.
- To control the lighting to prevent energy wastage.

2.1 Areas taken in charge by DCC.

All lighting within the area to be taken in charge is to be powered from the existing public lighting supply on South Circular Road, via a new lighting mini-pillar to meet DCC specification.

The lighting class to I.S. EN 13201-2-2015 selected for the design is Lighting Class P3

The road lighting luminaires to be LED, 4000k CCT, LM80 >15 years using TM21-11 test results, driver current < 750mA, minimum IK08 impact resistance, at least IP65 ingress protection, as required by DCC specification.

The road lighting shall be by individual electronic solid state photocell per luminaire, with test switch in column base, to DCC specification.

Lighting columns shall be tubular type, galvanised steel, fully in accordance with DCC standard specification.

All wiring to be to DCC standard specification and to ETCI ET101 National Rules for Electrical Installations.

Calculation results are presented in the Appendix A.

Manufacturer's data sheets for the selected luminaires are attached to this document as Appendix B.

2.2 Areas proposed to remain under control of the management company.

All lighting within the area is to be powered from the metered landlord supply via sub-distribution boards as required and to comply with ETCI ET101 National Rules for Electrical Installations.

All access routes shall comply with TGD M 2010 “Access for people with disabilities”, e.g. 20 lux for level and 100 lux for steps and ramps.

The luminaires proposed for these areas are combination of column mounted and low level bollard lights.

All wiring to be to DCC standard specification and to ETCI ET101 National Rules for Electrical Installations.

The desired lighting design may also be achieved by other luminaires and the final lighting installation may use other luminaires, with modified positioning and aiming to achieve the same result. Manufacturers’ stated performance characteristics are subject to change. Any changes to be agreed with DCC Road Lighting Department.

APPENDIX A. CALCULATION RESULTS.

DATE: 11 March 2020
DESIGNER: Barry O'Brien
PROJECT No: H613
PROJECT NAME: Player Wills Site Lighting



Outdoor Lighting Report

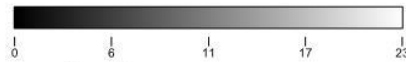
PREPARED BY: O'Connor Sutton Cronin
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Stoneybatter,
Dublin 7.

e-mail: sales@lightingreality.com
website: www.lightingreality.com

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Horizontal Illuminance (lux)

Grid 1



Results

Eav	7.30
Emin	1.52
Emax	22.65
Emin/Emax	0.07
Emin/Eav	0.21

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin 714126.7m x 732672.4m
Area 253.0m x 256.4m
Sample Spacing 1.01m x 1.03m

Luminaires



Luminaire A Data

Supplier	Thorn UK
Type	Isaro PRO - 36 x Warm White 3000K LED 35 0mA - EWR Optic
Lamp(s)	LED 3000 K
LampFlux(klm)/Colour	5.29 3000/70
File Name	IP36L35EWR730G35_DC.LDT
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	615.4, 67.1, 0.0
No. in Project	19

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	714312.73	732786.82	6.00	271.00	0.00	0.00	0.60			
2	A	714286.24	732699.02	6.00	0.00	0.00	0.00	0.60			
3	A	714259.45	732784.48	6.00	271.00	0.00	0.00	0.60			
4	A	714290.91	732790.29	6.00	0.00	0.00	0.00	0.60			
5	A	714297.77	732734.44	6.00	180.00	0.00	0.00	0.60			
6	A	714285.27	732767.90	6.00	0.00	0.00	0.00	0.60			
7	A	714223.45	732784.57	6.00	270.00	0.00	0.00	0.60			
8	A	714290.68	732839.11	6.00	0.00	0.00	0.00	0.60			
9	A	714290.56	732864.89	6.00	0.00	0.00	0.00	0.60			
10	A	714325.77	732870.94	6.00	86.00	0.00	0.00	0.60			
11	A	714301.88	732888.86	6.00	262.00	0.00	0.00	0.60			
12	A	714276.55	732878.64	6.00	80.00	0.00	0.00	0.60			
13	A	714363.51	732883.31	6.00	136.00	0.00	0.00	0.60			
14	A	714228.40	732885.15	6.00	79.00	0.00	0.00	0.60			
15	A	714255.04	732894.18	6.00	263.00	0.00	0.00	0.60			
16	A	714341.24	732885.65	6.00	294.00	0.00	0.00	0.60			
17	A	714290.98	732815.20	6.00	357.00	0.00	0.00	0.60			
18	A	714186.93	732781.19	6.00	278.00	0.00	0.00	0.60			
19	A	714149.38	732773.35	6.00	281.00	0.00	0.00	0.60			

APPENDIX B MAUFACTURERS DATA SHEET.

THORN
LIGHTING



ISARO PRO

BUILT TO LAST

member of zumtobel group





BUILT TO LAST

This robust and high-performance LED lantern brings comfort and safety to any road or street. Pressure to reduce energy costs and carbon emissions for outdoor lighting is stronger than ever. High-quality LED street lanterns offer a great solution, thanks to clever design, highly efficient light sources, long life and smart controls.



A FUTURE PROOF SOLUTION

Made of top-quality alloy, Isaro Pro is built to withstand all conditions, and to cope with physical impact and vibration. With a lifetime up to 100 000 hours, it guarantees years of reliable performance, ensuring a low-cost of ownership. And with connectivity built in, it's a truly futureproof solution. As well as being robust, this modern lantern is slim, sleek and performs brilliantly. With light output of up to 21300 lm with 2 sizes, Isaro Pro is powerful enough to handle roads

& streets, residential areas, car parks and walking/cycling paths. Because every application is different, Isaro Pro uses Thorn's unique R-PEC® optic to offer unprecedented optical flexibility. A choice of several precise light distributions is available for highly efficient and comfortable light, exactly where it is needed, whether lighting a residential street, a busy road or a pedestrian crossing.



APPLICATION AREAS

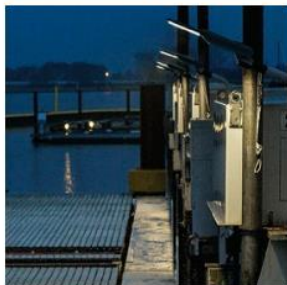




IP66	IK09

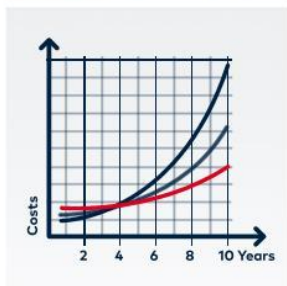
Built to last

Isaro Pro is built to withstand almost everything that nature and the outdoor environment can throw at it. With an IP66 rating for ingress protection and IK09 for impact, the luminaire also has strong corrosion resistance and vibration resistance. There are few applications Isaro Pro can't handle.



Corrosion resistant

Thanks to the best in class alloy and the specific fixing system treatment, Isaro Pro has strong corrosion resistance and easily reaches Category 5 (C5 – very high corrosivity) according to ISO 9223 – Corrosion of metal and alloys.



Great ROI potential

Isaro Pro's long life (up to 100 000 h) and efficacy of up to 160 lm/W in addition to a wide choice of controls (radio frequency, daylight sensor and others) mean that overall cost of ownership is low, ensuring a quick ROI (Return of Investment) but also allowing operators to make significant long-term savings. The ability to easily add or replace internal components including the driver, LEDs and controls, means the luminaire is truly futureproof.

- Existing 70 W SON HID
- ISARO PRO 12LED WS
- ISARO PRO 12LED WS + Light management

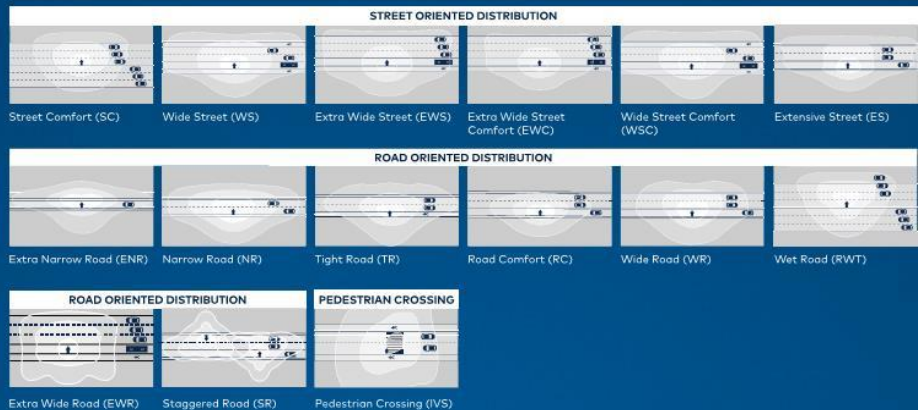
ISARO PRO



SMART LIGHTING

Isaro Pro incorporates many control solutions such as InCity, our state-of-the-art intelligent outdoor lighting system: save energy, provide light only when and where it is required and control the whole system from a simple dashboard. Combine it with our expert service team, and you'll get revolutionary lighting without the risk.

BEST IN CLASS ROAD AND STREET OPTICS



CONTRACTOR FRIENDLY

Isaro Pro is designed to make life easy for contractors. With internal components easily accessed from above without the need for tools, maintenance couldn't be simpler. It is available pre-wired and its automatic disconnect function means maintenance is safe.



R-PEC® OPTIC

Isaro Pro features the best in class optical performance of the R-PEC® optic. R-PEC® offers several precision light distributions, achieving wide column spacing, excellent uniformity plus no waste or obtrusive light.

TILTING TECHNOLOGY

Very versatile installation thanks to our tilting technology where using the same spigot you can achieve lateral (-15°/+15°) and top (0°/+20°) mounting with a wide choice of angles, by steps of 5°.



ISARO PRO CONFIGURATION GUIDE

IP	12L	70	740	NR	CLO	BPS550	HFX	SP	CL1	N7	RF	T60F	W6	R9006
Range	LED	mA	CCT/CRI	Optic	CLO	Diming	DALI	Fuse	Safety	Photocell	Comm	Spigot	Wiring	Colour
														Optional RALxxx Different RAL possibility
													Optional XX m Several lengths of wires	
													Optional L42E Pre-fitted 42 mm spigot lateral 0°	
													L60E Pre-fitted 60 mm spigot lateral 0°	
													T60F Pre-fitted 60 mm spigot post top +5°	
													T76F Pre-fitted 76 mm spigot post top +5°	
													M42 42 mm spigot non-fitted for freedom of position	
													M60 60 mm spigot non-fitted for freedom of position	
													M76 76 mm spigot non-fitted for freedom of position	
													Optional RF Incity	
													Optional RF Incity	
													N3 3 pin NEMA socket	
													N7 7 pin NEMA socket	
													Z4 4 pin ZAGHA socket	
													PM Minicell	
													CL1 Class I electrical (earthed)	
													CL2 Class II electrical (double insulated)	
													Optional SP 10 kV multi pulse surge protection	
													Optional HFX DALI Dimmable	
													Optional BPL Bi Power Power Line	
													LRT Light Reduction Twin Phases	
													BPSX Bi-Power switchable with different diming profiles	
													BPX Bi-Power with different diming profiles	
													Optional CLO Constant Light Output	
													R-PEC® All R-PEC® optics available	
													730 CRI 70 – 3000 K	
													740 CRI 70 – 4000 K	
													830 CRI 80 – 3000 K	
													840 CRI 80 – 4000 K	
													ALO Adjustable lumen output	
													35 to 105 350 mA to 1050 mA	
													From 12 LEDs to 72 LEDs	
													12L to 72L	
													IP Isaro Pro	

Up to 10 kV Single Pulse as standard
Up to 21300 lm
Up to 160 lm/W
Up to 100 000 h L90 B10 @25°C



* ambient temperature available depending on lumen output

Accessories

IK10 accessory
Back, front and side louvers

Material

Full Die cast Aluminium and flat glass

Standards



Configure the ideal product solution with myProduct. The myProduct configurator allows you to easily configure a luminaire according to your needs. Try it now at <http://www.thornlighting.com/myproduct>



THORN LIGHTING



5 YEAR GUARANTEE

As a globally leading luminaire manufacturer, Thorn Lighting provides a five year warranty for its complete product range within all European Countries.
THORNLIGHTING.COM/GUARANTEE

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Publication No. 96644360 (INT) Publication Date: 11/18



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