



6600

# External (Public) Lighting Analysis

## ORCHARD GATE SHD

RESIDENTIAL APARTMENT DEVELOPMENT

**KENNELSFORT ROAD UPPER  
PALMERSTOWN  
CO DUBLIN**

AAI Palmerstown Ltd

Project file no  
**DKP-M70-6600 ; P3**  
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ING Gerard (Craig) van Deventer CEng., BE(mech)., HDip CIOB, MCIBSE

M : [00] 353 (0)87 260 8080  
 E : gerard@dkpartnership.com

DKPartnership  
 70 Main Street, Applewood , Swords, Co. Dublin, Ireland  
 Reen Kenmare Co. Kerry

post@dkpartnership.com  
 www.dkpartnership.com

T : [00] 353 (0) 1813 1930  
 T : [00] 353 (0)64664 1686

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	Appendix A External (public) lighting illumination calculation report .....	Separately attached
	Appendix B External (public) lighting illumination contour layout .....	Separately attached

## 1 Introduction

### 1.1 Report purpose

This report gives information on the external (public) lighting installation in connection with the new proposed project covering the internal amenity space and exiting public lighting on the Kennelsfort Road Upper to the West and an access road to the Cherry Orchard Industrial Estate to the South.

### 1.2 Instruction

DKPartnership (DKP) have been commissioned by AAI Palmerstown Ltd to carry out the analysis and report for the proposed Orchard Gate residential development as described below.

### 1.3 Development detail

The development is located at the former warehouse facility at units 54 & 65, Cherry Orchard Industrial Estate. The site presents a gateway location at the western junction of Kennelsfort Road Upper and Cherry Orchard Industrial Estate Road. This location represents the start of the lands zoned 'REGEN' continuing to the east.

The proposal is for 144 no. 'build to sell' apartments and associated facilities with a mix of 72 no. one bedroom apartments and 72 no. 2 bedroom apartments. The development is set out in 4 no. five storey buildings enclosing a raised podium courtyard with the junction corner building having a 9-storey gateway feature element. On-site parking of 65 no. resident spaces is contained within a landscaped podium element with 2 no. on street care share spaces provided.

## 2 Executive summary

### 2.1 Analysis conducted

This report analyses the illumination calculation results of the proposed lighting design in respect of new project amenity space and exiting public lighting on the Kennelfort Road Upper to the West and an access road to the Cherry Orchard Industrial Estate to the South.

### 2.2 Design considerations

The external lighting design has been executed using the European design standard EN 1332201 class P3 for the existing Kennelfort Road Upper and access road to the Cherry Orchard Industrial Estate and P4 for the general amenity space in the centre of the proposed development.

### 2.3 EN132201 External lighting calculation data

As per appendix A and B the overall average, maximum and minimum illumination calculations have been conducted for the external lighting for the foot / cycle path on the adjoining Kennelfort Road Upper and access road into the Cherry Orchard Industrial Estate and new proposed amenity spaces using the (existing) SOX 55W fitting on an 8 meter high pole and a clear glass Thorn Avenue F2 - Clear Diffuser - clear ring – 18x LEDs 3000K on a 4 meter pole respectively.

### 2.4 Calculation data results

The average illuminance calculated using the abovementioned fittings achieved 7.58 Lx and is in excess of the P3 standard. Minimum illuminance achieved is 1.63Lx and is in excess of the minimum P3 target of 1.5.

Element	E avg min (lx)	E max (lx)	E min (lx)
EN13201 standard P3	7.50	Na	1.5
Achieved	7.58	16.94	1.63

### 2.5 Conclusion

The external (public) lighting design as per illumination report appendix B meets the criteria set out in EN13201 for lighting class P3 for all existing and new areas covering the site - adjoining Kennelfort Road Upper, access road into the Cherry Orchard Industrial Estate and new proposed access road and amenity spaces and we, DKP therefore deem the external lighting design to be in compliance with the applied standards and recommendations.

### 2.6 Mitigation measures / actions

No mitigation measures required for compliance to lighting standards. Consideration could be given to upgrade existing SOX fittings to improve the maintenance requirements , operating cost and light colour.

### 3 Geographical overview

#### 3.1 Project overview

Image 3.1, the (google maps) site map below shows the approximate location of the site with proposed development approximately outlined



Image 3.1 Approximate proposed development site.



## 4 Approach and methodology

### 4.1 Analysis approach

The external lighting design mainly covers the proposed public amenity space(s) but to ensure sufficient light levels on the footpath for the new proposed development on the 2 adjoining roads to the West & South we have also calculated the luminance on the footpath using the existing public light installation from both roads.

### 4.2 EN132201 external lighting data and targets

The for the external lighting standard EN132201 was applied using the class P3 for illumination calculations of the existing Kennelfort Road Upper, existing Cherry Orchard Industrial Estate road and new access road and amenity spaces within the proposed development mainly on the podium slab. The table below indicates the P class minimum EN13201 illumination targets.

CLASS	E avg min (lx)	E min (lx)
P1	15.0	3.00
P2	10.0	2.00
P3	7.50	1.50
P4	5.00	1.00
P5	3.00	0.60

EN132201 standards for P3

### 4.3 The extend of the external lighting sections

The following area have been including in the external (public) lighting design.

A = New proposed lighting covering the access road and amenity space(s). (yellow)

B = Existing public lighting installation including foot / cycle path. (green)



## 5 Calculation data and conclusion

### 5.1 EN132201 External lighting calculation data

As per appendix A and B the overall average, maximum and minimum illumination calculations have been conducted for the external lighting for the foot / cycle path on the adjoining Kennelfort Road Upper and access road into the Cherry Orchard Industrial Estate and new proposed amenity spaces using the (existing) SOX 55W fitting on an 8 meter high pole and a clear glass Thorn 18x LEDs 3000K on a 4 meter pole respectively and Phillips .

### 5.2 Calculation data results

From appendix A and B or documents 6601 and 6602 representing the illumination calculations and illustrations we note the average illuminance calculated using the proposed fittings achieved 7.58 Lx and is in excess of the P3 standard. Minimum illuminance achieved is 1.63Lx and is in excess of the minimum P3 target of 1.5.

Element	E avg min (lx)	E max (lx)	E min (lx)
EN13201 standard P3	7.50	Na	1.5
Achieved	7.58	16.94	1.63

### 5.3 Light fittings applied for the purpose of illumination calculation.

The table below represent a summary of the light fitting schedule applied for the illumination calculations. See appendix B External (public) lighting illumination calculation report.

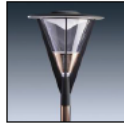
Existing lamps and standards ; **Luminaire B**



#### Luminaire B Data

Supplier	_Historic Lanterns
Type	SRS201
Lamp(s)	SOX55W/-
LampFlux(klm)/Colour	7.80 -/
File Name	SRS201 1xSOX55W.ltd
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	303.0, 191.0, 43.0
Lamp S/P Ratio	0.00
No. in Project	7



New lamps and standards type 1 ; **Luminaire C 18W****Luminaire C Data**

Supplier	Thorn UK
Type	Avenue Deco - Clear Prismatic Diff - 18 x L EDs 4000K 700mA -
Lamp(s)	LED 4000K
LampFlux(klm)/Colour	3.37 4000/
File Name	AVD18L70RS4KG32_DC.LDT
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	203.8, 155.7, 69.3
Lamp S/P Ratio	1.50
No. in Project	9

New lamps and standards type 1 ; **Luminaire D 13.6W****Luminaire D Data**

Supplier	
Type	BRP708 T25 DM50 LED21/740 NO
Lamp(s)	LED21-4S/740
Lamp Flux (klm)	2.10
File Name	ofmt1_brp708t251xled21-4s740dm50.ies
Maintenance Factor	1.00
Imax70,80,90(cd/klm)	807.3, 28.3, 0.0
Lamp S/P Ratio	0.00
No. in Project	6

**5.4 Conclusion**

The external (public) lighting design as per illumination report appendix B meets the criteria set out in EN13201 for lighting class P3 and P4 for foot / cycle path on the adjoining Kennelfort Road Upper and access road into the Cherry Orchard Industrial Estate and new proposed amenity spaces respectively and we, DKP therefore deem the external lighting design to be in compliance with the applied standards and recommendations.

**5.5 Mitigation measures / actions**

No mitigation measures required for compliance to lighting standards. Consideration could be given to upgrade existing SOX fittings to improve the maintenance requirements , operating cost and light colour.