

**From:** [lee@oha-architecture.co.uk](mailto:lee@oha-architecture.co.uk) [mailto:[lee@oha-architecture.co.uk](mailto:lee@oha-architecture.co.uk)]  
**Sent:** 07 August 2018 10:05  
**To:** Close, Roland <[Roland.Close@herefordshire.gov.uk](mailto:Roland.Close@herefordshire.gov.uk)>  
**Subject:** 180120 - Hazelhurst Nursing Home - Discharge of Planning Conditions

Dear Roland,

Please see further information below from the Service Engineer regarding the external lighting.

Following the below email I have since obtained the lighting calculations for the currently proposed scheme, and these are attached for your information.

Taking into account my email yesterday and the information provided below and attached, would you consider it acceptable to use the existing external lighting scheme / specification with the 4000k lamps?

If you have any queries or require any further information please let me know.

Kind regards,

Lee  
**OWEN HICKS ARCHITECTURE**  
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46 Bridge Street  
Hereford | HR4 9DG

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m: 07342 889 801

[www.oha-architecture.co.uk](http://www.oha-architecture.co.uk)

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Begin forwarded message:

**From:** Carl Brady <[CarlB@bsd.co.uk](mailto:CarlB@bsd.co.uk)>  
**Subject:** RE: Hazelhurst Nursing Home - Discharge of Planning Conditions  
**Date:** 6 August 2018 at 15:02:27 BST  
**To:** "[lee@oha-architecture.co.uk](mailto:lee@oha-architecture.co.uk)" <[lee@oha-architecture.co.uk](mailto:lee@oha-architecture.co.uk)>  
**Cc:** Sean Langton <[SeanL@bsd.co.uk](mailto:SeanL@bsd.co.uk)>, Martin Fishwick <[Martin.Fishwick@whitecroftlight.com](mailto:Martin.Fishwick@whitecroftlight.com)>

Lee,

Could you please ask the planning officer what their concerns are with 4000K as it is the common temperature for exterior lighting from the manufacturers we use on majority of our projects.

The light isn't a really white light if that is concerns, the naked eye could hardly tell the difference between 3000/4000 unless luminaires were next to each other and also the lighting levels will not be affected. 15 lux in 3000k is 15 lux in 4000k.

We could also prove with lighting calculations that there will be minimal light spill from the luminaires to surrounding properties.

Whitecroft have informed us they would have to make significant changes to the product if 3000k was required, which obviously results in cost or a new selection.

Regards, Carl.



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Consulting Engineers

**Carl Brady**  
Intermediate Electrical Engineer

E: [CarlB@bsd.co.uk](mailto:CarlB@bsd.co.uk)

T: 0161 8728383

W: [BSD.co.uk](http://BSD.co.uk)



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# Hazelhurst Care Home

Installation : External Lighting (Site)

Project number : 171335

Customer :

Processed by : Carl Brady

Date : 28.11.2017

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 1 Luminaire data

### 1.1 Whitecroft Lighting, BROADWALK L180 (BLF1824KG)

#### 1.1.1 Data sheet

Manufacturer: Whitecroft Lighting



#### BLF1824KG bollard / pole mounted luminaires BROADWALK L180

BROADWALK L180 flange plate mounted IP66 bollard with single direction distribution. 1100mm high finished in Graphite Grey.

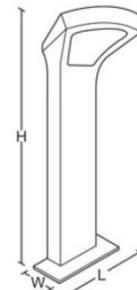
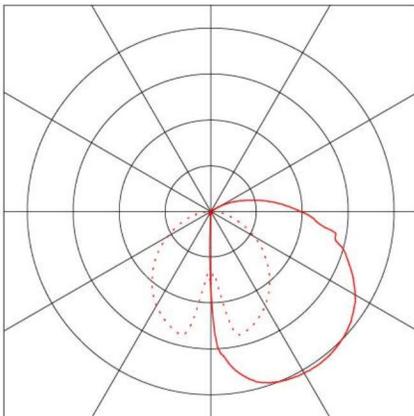
#### Luminaire data

Luminaire efficiency : 99.99%  
Luminaire efficacy : 47.73 lm/W  
Classification : A31 ↓91.5% ↑8.5%  
CIE Flux Codes : 37 66 87 91 100  
UGR 4H 8H : 30.0 / 20.6  
Control gear : electronic ballast  
Power : 11.5 W  
Luminous flux : 548.9 lm

#### Equipped with

Quantity : 1  
Designation : LED  
Power : 11.5 W  
Colour : 4000K  
Luminous flux : 549 lm  
Colour reproduction : 1B

Dimensions : 413 mm x 323 mm x 310 mm



Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 1 Luminaire data

### 1.2 Whitecroft Lighting, SIROCCO PARK (SIPSH14K)

#### 1.2.1 Data sheet

Manufacturer: Whitecroft Lighting



**SIPSH14K Wall / pole mounted luminaire SIROCCO PARK**  
SIROCCO PARK IP66 LED SYMMETRIC WIDE

ultra slim post top lantern with symmetrical distribution and zero upward light. Die cast aluminium body with integrated cooling fins and thermal shock resistant clear tempered glass. Electronic control gear with voltage surge protection and insulated safety switch. With 60mm diameter spigot for post top or side entry column mounting. Optional wall mounting bracket (order separately).

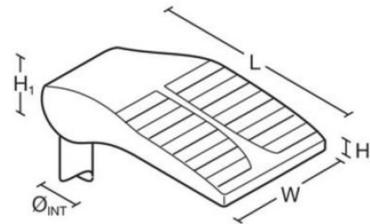
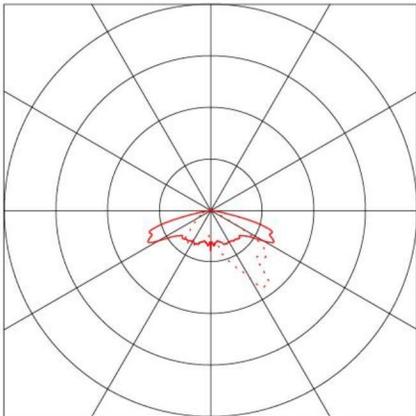
#### Luminaire data

Luminaire efficiency : 100%  
Luminaire efficacy : 95.69 lm/W  
Classification : A30 ↓100.0% ↑0.0%  
CIE Flux Codes : 31 72 98 100 100  
UGR 4H 8H : 36.9 / 26.2  
Control gear : electronic ballast  
Power : 52 W  
Luminous flux : 4976 lm

#### Equipped with

Quantity : 1  
Designation : LED  
Power : 52 W  
Colour : 4000K  
Luminous flux : 4976 lm  
Colour reproduction : 1B

Dimensions : 530 mm x 280 mm x 156 mm



Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017



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# 1 Luminaire data

## 1.3 Whitecroft Lighting, SIROCCO PARK (SIPAH24KF)

### 1.3.1 Data sheet

**Manufacturer: Whitecroft Lighting**



**SIPAH24KF Wall / pole mounted luminaire SIROCCO PARK**  
 SIROCCO PARK IP66 LED ASYMMETRIC FORWARD

ultra slim post top lantern with asymmetric forward throw distribution and zero upward light. Die cast aluminium body with integrated cooling fins and thermal shock resistant clear tempered glass. Electronic control gear with voltage surge protection and insulated safety switch. With 60mm diameter spigot for post top or side entry column mounting. Optional wall mounting bracket (order separately).

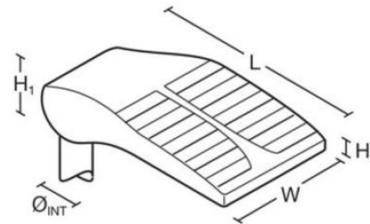
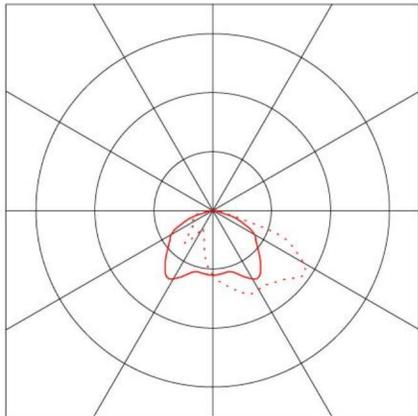
#### Luminaire data

Luminaire efficiency : 100%  
 Luminaire efficacy : 94.53 lm/W  
 Classification : A30 ↓100.0% ↑0.0%  
 CIE Flux Codes : 34 67 95 100 100  
 UGR 4H 8H : 30.3 / 25.9  
 Control gear : electronic ballast  
 Power : 68 W  
 Luminous flux : 6428 lm

#### Equipped with

Quantity : 1  
 Designation : LED  
 Power : 68 W  
 Colour : 4000K  
 Luminous flux : 6428 lm  
 Colour reproduction : 1B

Dimensions : 530 mm x 280 mm x 60 mm



Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017

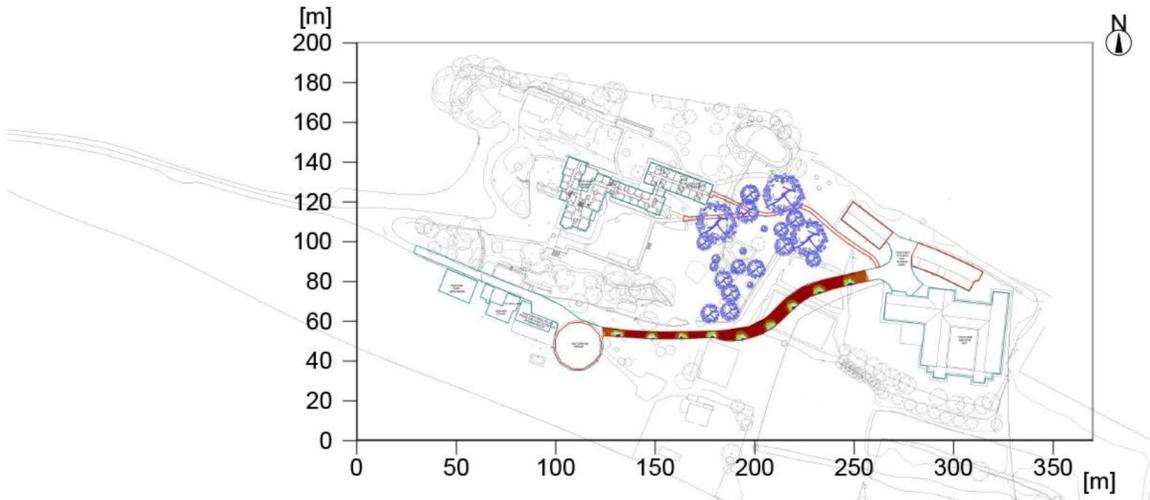


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## 2 Exterior 1

### 2.1 Summary, Exterior 1

#### 2.1.1 Result overview, Access road



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.02 m
Maintenance factor	0.80

Total luminous flux of all lamps	52594 lm
Total power	655 W
Total power per area (74000.00 m <sup>2</sup> )	0.01 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Eav	2.8 lx
Minimum illuminance	Emin	0.1 lx
Maximum illuminance	Emax	63.8 lx
Uniformity U <sub>o</sub>	Emin/Em	1:47.5 (0.02)
Diversity U <sub>d</sub>	Emin/Emax	1:1090 (0)

#### Type No.\Make

- |   |   |
|---|---|
| <b>Whitcroft Lighting</b>   |   |
| 1   | 18  |
|  | Order No. : BLF1824KG<br>Luminaire name : BROADWALK L180<br>Equipment : 1 x LED 11.5 W / 549 lm |
| 2   | 6   |
|   | Order No. : SIPSH14K<br>Luminaire name : SIROCCO PARK<br>Equipment : 1 x LED 52 W / 4976 lm     |

Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 2 Exterior 1

### 2.1 Summary, Exterior 1

#### 2.1.1 Result overview, Access road

3	2	Order No.	: SIPAH24KF
		Luminaire name	: SIROCCO PARK
		Equipment	: 1 x LED 68 W / 6428 lm

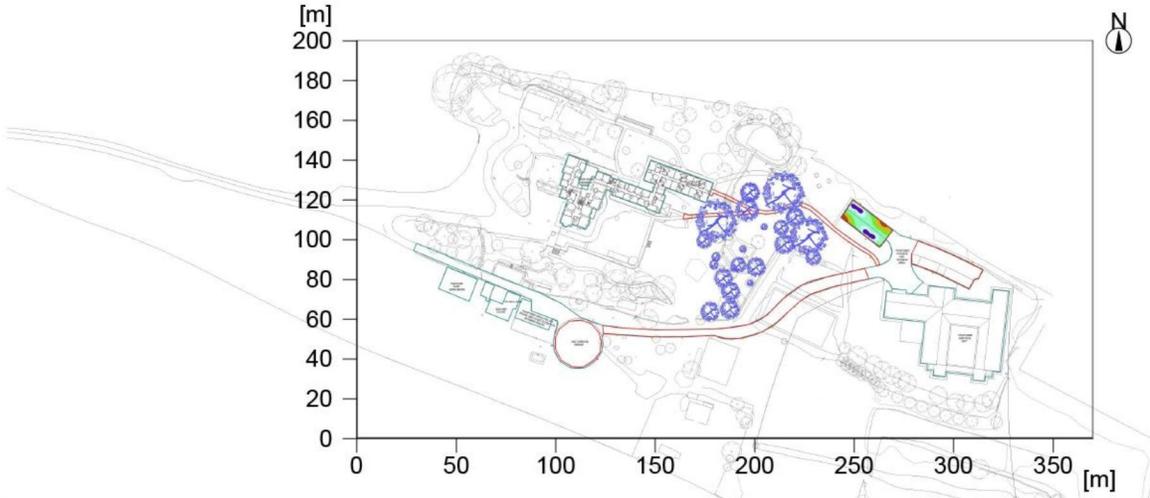
Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.2 Result overview, Car Park 1



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.02 m
Maintenance factor	0.80

Total luminous flux of all lamps	52594 lm
Total power	655 W
Total power per area (74000.00 m <sup>2</sup> )	0.01 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Eav	15.9 lx
Minimum illuminance	Emin	1.6 lx
Maximum illuminance	E <sub>max</sub>	37.9 lx
Uniformity U <sub>o</sub>	E <sub>min</sub> /E <sub>m</sub>	1:9.7 (0.1)
Diversity U <sub>d</sub>	E <sub>min</sub> /E <sub>max</sub>	1:23.1 (0.04)

#### Type No.\Make

- |   |   |
|---|---|
| <b>Whitcroft Lighting</b>   |   |
| 1   | 18  |
|  | Order No. : BLF1824KG<br>Luminaire name : BROADWALK L180<br>Equipment : 1 x LED 11.5 W / 549 lm |
| 2   | 6   |
|   | Order No. : SIPSH14K<br>Luminaire name : SIROCCO PARK<br>Equipment : 1 x LED 52 W / 4976 lm     |

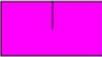
Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.2 Result overview, Car Park 1

3	2	Order No.	: SIPAH24KF
		Luminaire name	: SIROCCO PARK
		Equipment	: 1 x LED 68 W / 6428 lm

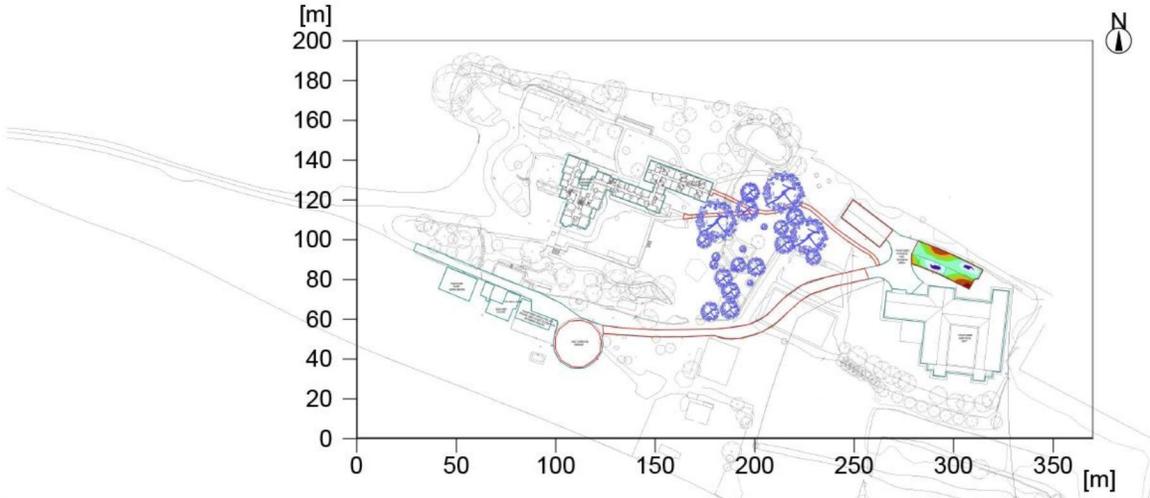
Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.3 Result overview, Car Park 2



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.02 m
Maintenance factor	0.80

Total luminous flux of all lamps	52594 lm
Total power	655 W
Total power per area (74000.00 m <sup>2</sup> )	0.01 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Eav	13 lx
Minimum illuminance	Emin	0.7 lx
Maximum illuminance	E <sub>max</sub>	37.1 lx
Uniformity U <sub>0</sub>	E <sub>min</sub> /E <sub>m</sub>	1:19.7 (0.05)
Diversity U <sub>d</sub>	E <sub>min</sub> /E <sub>max</sub>	1:56.2 (0.02)

#### Type No.\Make

- |   |   |
|---|---|
| <b>Whitcroft Lighting</b>   |   |
| 1   | 18  |
|  | Order No. : BLF1824KG<br>Luminaire name : BROADWALK L180<br>Equipment : 1 x LED 11.5 W / 549 lm |
| 2   | 6   |
|   | Order No. : SIPSH14K<br>Luminaire name : SIROCCO PARK<br>Equipment : 1 x LED 52 W / 4976 lm     |

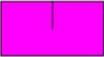
Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.3 Result overview, Car Park 2

3	2	Order No.	: SIPAH24KF
		Luminaire name	: SIROCCO PARK
		Equipment	: 1 x LED 68 W / 6428 lm

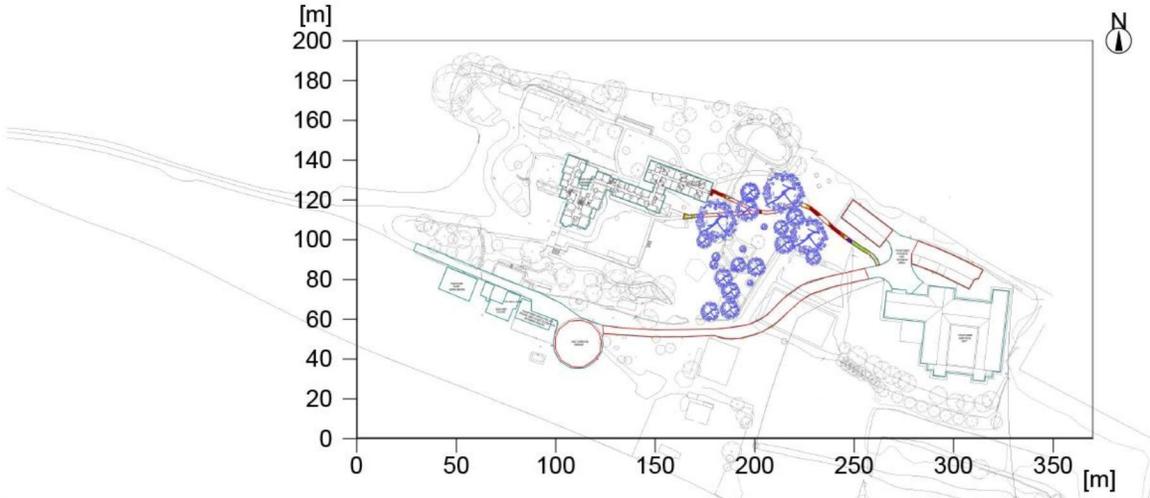
Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.4 Result overview, Link Path



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.02 m
Maintenance factor	0.80

Total luminous flux of all lamps	52594 lm
Total power	655 W
Total power per area (74000.00 m <sup>2</sup> )	0.01 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Eav	11.9 lx
Minimum illuminance	Emin	0.4 lx
Maximum illuminance	Emax	84.8 lx
Uniformity U <sub>0</sub>	Emin/Em	1:29.3 (0.03)
Diversity U <sub>d</sub>	Emin/Emax	1:209 (0)

#### Type No.\Make

- |   |    |                                     |
|---|----|-------------------------------------|
| <b>Whitcroft Lighting</b>   |    |                                     |
| 1   | 18 | Order No. : BLF1824KG               |
|  |    | Luminaire name : BROADWALK L180     |
|   |    | Equipment : 1 x LED 11.5 W / 549 lm |
| 2   | 6  | Order No. : SIPSH14K                |
|   |    | Luminaire name : SIROCCO PARK       |
|   |    | Equipment : 1 x LED 52 W / 4976 lm  |

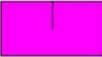
Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.4 Result overview, Link Path

3	2	Order No.	: SIPAH24KF
		Luminaire name	: SIROCCO PARK
		Equipment	: 1 x LED 68 W / 6428 lm

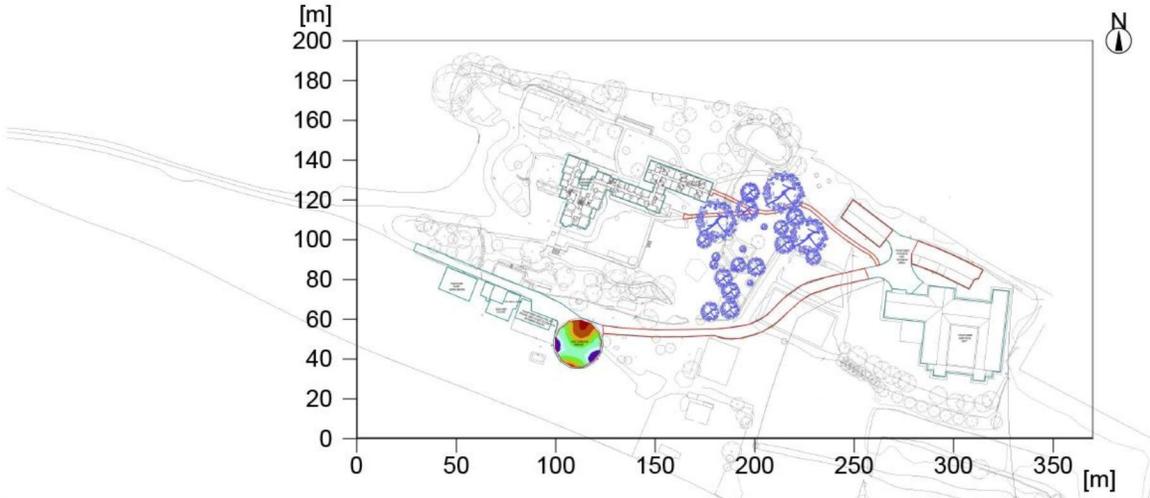
Object : Hazelhurst Care Home  
 Installation : External Lighting (Site)  
 Project number : 171335  
 Date : 28.11.2017



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## 2.1 Summary, Exterior 1

### 2.1.5 Result overview, HGV Turning Circle



#### General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.02 m
Maintenance factor	0.80

Total luminous flux of all lamps	52594 lm
Total power	655 W
Total power per area (74000.00 m <sup>2</sup> )	0.01 W/m <sup>2</sup>

#### Illuminance

Average illuminance	Eav	12.1 lx
Minimum illuminance	Emin	0.6 lx
Maximum illuminance	E <sub>max</sub>	53.9 lx
Uniformity U <sub>0</sub>	E <sub>min</sub> /E <sub>m</sub>	1:20.6 (0.05)
Diversity U <sub>d</sub>	E <sub>min</sub> /E <sub>max</sub>	1:91.4 (0.01)

#### Type No.\Make

- |   |    | <b>Whitcroft Lighting</b> |                           |
|---|----|---------------------------|---------------------------|
| 1   | 18 | Order No.                 | : BLF1824KG               |
|  |    | Luminaire name            | : BROADWALK L180          |
|   |    | Equipment                 | : 1 x LED 11.5 W / 549 lm |
| 2   | 6  | Order No.                 | : SIPSH14K                |
|   |    | Luminaire name            | : SIROCCO PARK            |
|   |    | Equipment                 | : 1 x LED 52 W / 4976 lm  |

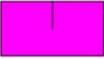
Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



**Building Services Design**  
Consulting Engineers

## 2.1 Summary, Exterior 1

### 2.1.5 Result overview, HGV Turning Circle

3	2	Order No.	: SIPAH24KF
		Luminaire name	: SIROCCO PARK
		Equipment	: 1 x LED 68 W / 6428 lm

Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017

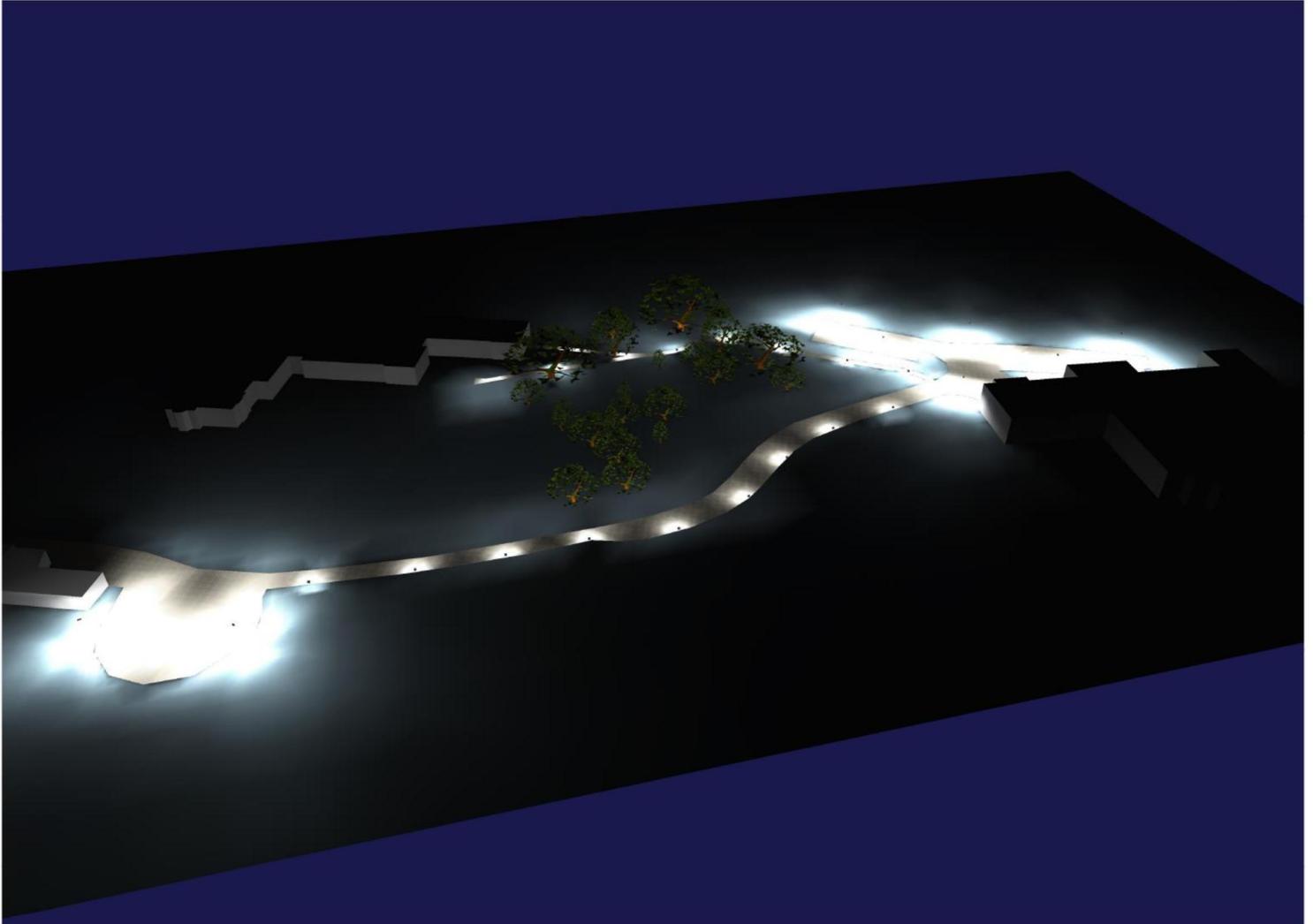


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## 2 Exterior 1

### 2.2 Calculation results, Exterior 1

#### 2.2.1 3D luminance, View 1



Luminance in the scene  
Minimum: : 0 cd/m<sup>2</sup>  
Maximum: : 5.76 cd/m<sup>2</sup>

Object : Hazelhurst Care Home  
Installation : External Lighting (Site)  
Project number : 171335  
Date : 28.11.2017



**Building Services Design**  
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## 2.2 Calculation results, Exterior 1

### 2.2.2 3D pseudo colours, View 1 (E)

