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March 2009

Gifford

ITCHEN COLLEGE, SOUTHAMPTON

EXTERNAL LIGHTING ASSESSMENT

Itchen College
Middle Road
Bitterne
Southampton
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EXTERNAL LIGHTING ASSESSMENT

CONTROLLED DOCUMENT

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ITCHEN COLLEGE, SOUTHAMPTON
EXTERNAL LIGHTING ASSESSMENT

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1. ATP FLOODLIGHTING

The new ATP will utilise a total of eight 15m tall columns (all hinged close to the bottom for ease of maintenance). Each column will support either three or four x 2kW floodlights (refer to Thorn Lighting drawing number LIZ0087822, dated 12/02/09 for details). The floodlighting will be provided with an element of flexible control whereby each individual floodlight will be separately controlled from a bank of switches in the main college building. The new ATP will offer an overall maintained lighting level of 500 lux and uniformity of 0.7 (suitable for football and hockey played at regional and county levels).

Summary of new ATP floodlighting arrangement:

- 15 metre tall base hinged galvanised steel columns as Thorn Lighting 'Hinged Col 15m'
- Each column supports three or four x Thorn Champion 2 kW floodlights
- All floodlights are mounted horizontally parallel with the ground to minimise glare
- Lighting levels at ground level drop to below 1 lux outside the boundary of neighbouring residential properties.

Lighting Control

Each individual floodlight will have the facility for individual control.

2. MUGA FLOODLIGHTING

The new MUGA will utilise a total of four 12m tall columns (all hinged close to the bottom for ease of maintenance). Each column will support two x 2kW floodlights (refer to Thorn Lighting drawing number LIZ0087822, dated 12/02/09 for details). The floodlighting will be provided with an element of flexible control whereby each individual floodlight will be separately controlled from a bank of switches in the main college building. The new MUGA will offer an overall maintained lighting level of 300 lux and uniformity of 0.7 (suitable for tennis and netball played at regional and county levels).

Summary of new MUGA floodlighting arrangement:

- 12 metre tall base hinged galvanised steel columns as Thorn Lighting 'Hinged Col 12m'
- Each column supports two x Thorn Champion 2 kW floodlights
- All floodlights are mounted horizontally parallel with the ground to minimise glare
- Due to the location of the MUGA light spill outside the site boundary is negligible

Lighting Control

Each individual floodlight will have the facility for individual control.

3. LIGHT SPILL

Due to the orientation of the floodlights and the accurately focused beams lighting levels drop off markedly outside the respective playing areas such that with all floodlights on a level of 6 lux is achieved along the centre of the carriageway of Bursledon Road and this falls to below 1 lux on the other side of the road (outside the boundary of the neighbouring properties). This will have a negligible impact on the neighbouring households. Due to the flat orientation of the floodlights glare experienced from within the adjacent residential properties is minimised.

APPENDIX A
THORN LIGHTING DRAWING
LIZ0087822

APPENDIX B – THORN LIGHTING

CHAMPION FLOODLIGHT BROCHURE

Ordering guide Dimensions Photometric Data

Reflector options

There are 2 reflector options for the range:

Option 1:

Side flanges in brilliant finish for 2kW long arc metal halide (Philips) and 2kW long arc metal halide (Osram).

Option 2:

Side flanges in specular finish for 1kW high pressure sodium, 1kW long arc metal halide (Philips), 1kW short arc (Osram) and 2kW short arc (Osram).

Accessories/Attachments

- Lux Guillotine (front and sides)
- Lux Guillotine (rear) – also known as 'adjustable visor'.
- Wire guard.
- Reverse mounting Stirrup (required for certain mounting positions).

Lamps

 1/2 kW HQ/LTS/S metal halide double ended (Osram) short arc

2 kW HQ/LTS/L metal halide double ended (Osram) long arc

1/2 kW MHN-LA metal halide double ended (Philips) long arc

 1 kW HST (ST) high pressure sodium tubular.
Cap: E40

Materials/Finish

Body: die-cast aluminium (ENAB 44300), unpainted
Glass: 4mm toughened.




Wiring/ignitor box: polyamide (66 YO block: 20% glass fibre re-inforced).

Screws: stainless steel.

Installation/Mounting

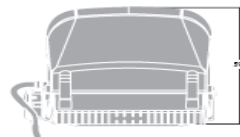
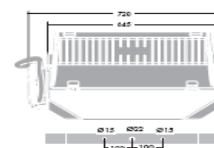
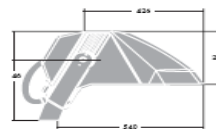
Rear access to lamp.
Automatic power interruption on opening of rear access door.
Stirrup fixed by M20 bolt through 22mm diameter hole, or through 15mm diameter holes.
Ballast and capacitors to be mounted separately.
Cable gland for 7.5-13mm cable.

Standards

Designed and manufactured to comply with EN60598.
Class I Electrical.
Windage: 0.21 m².
 IP66 (including the wiring/ignitor box).
 IP65 (Ignitor box for the Hot Restrike version) 

Specification

To specify state:
Die cast aluminium asymmetric floodlight for 1/2kW lamps, IP66 rated, rear lamp access, adjustable lamp position with internally inclined front glass and integral front cowl.
As Thorn Champion.



Ordering Guide Lamps to be ordered separately

Lamp type and rating	Description	Weight (kg)	Cat. No.
1 KW HST	Champion with internal ignitor	19.0	CHAMP1HFS
1 KW HQ/LTS (short arc)	Champion with internal ignitor	19.0	CHAMP1SSA
1 KW MHN-LA (long arc)	Champion with internal ignitor	19.0	CHAMP1PLA
2 KW HQ/LTS (long arc)	Champion with internal ignitor	19.0	CHAMP2SLA
2 KW HQ/LTS (short arc)	Champion with internal ignitor	19.0	CHAMP2SSA
2 KW MHN-LA (long arc)	Champion with internal ignitor	19.0	CHAMP2PLA
1 KW HQ/LTS (short arc)	Champion hot restrike with internal ignitor	19.0	CHAMP1SSAHR
2 KW HQ/LTS (short arc)	Champion hot restrike with internal ignitor	19.0	CHAMP2SSAHR

Accessories

Accessories	Description	Weight (kg)	Cat. No.
CHAMPION WGS	Wire Guard accessory	1.8	CHAMP1WGS
CHAMPION REVERSE STIRRUP	Reverse stirrup accessory	4.4	CHAMP1RS
CHAMPION AJ VS FRONT	Adjustable front and side visor	1.7	CHAMP1FV
CHAMPION AJ VS REAR	Adjustable rear visor	0.9	CHAMP1RV

APPENDIX C – THORN LIGHTING

HINGED COLUMNS BROCHURE

Hinged Raise and Lower Floodlighting Columns

Updated March 2006

A range of 8 - 20m heavy duty, steel, hinged raising and lowering columns. Supplied in sections, with floodlighting support cross arms and ground fixing bolts, gear sets, and operating power tools.

Ordering Details

Gear trays to suit other types of lamp are available on request, and gear trays to operate more than 3 lamps can be supplied to special order. Gear trays are supplied with gear mounted and wired. Columns are supplied to site in sections for on-site assembly. Gland plate type should be checked before ordering as variants may be needed depending on number of gear trays.

Example: 20m Column with 5 Floodlights (MHLA 2kW lamps)
Main supply cables to column are terminated on to a main gland plate assembly fitted with triple pole miniature circuit breaker assemblies to provide protection to each control gear tray - see below. Column reference QCFH20 (96228086).

Cable
5 QCFHC/20SW (96228142)
Interconnection cables in 3 core PVC and SWA cable can be supplied with each tray to connect from lighting control gear to each floodlight fitting.

Also optional connection cables from the control gear to the floodlights to form a complete unit for ease of assembly on site.

Raise and lower jack frame assembly (required to lower column) is supplied with optional portable power tool attachment supplied via a weather proof socket outlet fitted to column base section.



Gear Trays

1-QCFHG-T32 (96227999) and 1-QCFHG-T22 (96227998). Lighting control gear mounted in base compartment of column on pre-wired control gear trays.

Gland Plates

A Gland plate is required for each column. These plates are supplied, fitted with circuit breakers appropriate to the number of floodlights on the column. QCFHP/2-T30 (96228015)



Cross arms

2-QCFH CR-3 (96227993)

Ordering Guide Hinged base columns

Column					Foundation bolts req'd	Cable (Per floodlight)	Ground Jack Req'd	Power tool Req'd
New Description	Height above ground (m)	Floodlight capacity (units)	SAP Code	Old UK Cat. No.	SAP Code	Old Cat. No.	SAP Code	Old Cat. No.
HINGED COL 20M HEAVY DUTY	20	10	96227972	QCFH 20/P	96228142	QCFH/M30-1800	96228107	QCFHC/20SW
HINGED COL 20M	20	5	96228086	QCFH 20	96227975	QCFH/M30-1600	96228107	QCFHC/20SW
HINGED COL 16M HEAVY DUTY	16	7	96228122	QCFH 18/P	96227975	QCFH/M30-1600	96227676	QCFHC/18SW
HINGED COL 16M	16	5	96228158	QCFH 18	96227988	QCFH/M33-1400	96227676	QCFHC/18SW
HINGED COL 16M HEAVY DUTY	16	8	96227679	QCFH 16/P	96227988	QCFH/M33-1400	96228035	QCFHC/16SW
HINGED COL 16M	16	5	96227690	QCFH 16	96228034	QCFH/M33-1200	96228108	QCFHC/16
HINGED COL 15M	15	5	96227676	QCFH 15	96228034	QCFH/M33-1200	96228108	QCFHC/16
HINGED COL 14M	14	4	96227677	QCFH 14	96227989	QCFH/M30-1200	96227990	QCFHC/14
HINGED COL 12M	12	4	96228087	QCFH 12	96228072	QCFH/M30-1000	96228016	QCFHC/12
HINGED COL 10M	10	4	96228123	QCFH 10	96228072	QCFH/M30-1000	96228054	QCFHC/10
HINGED COL 8M	8	4	96227678	QCFH 8	96228072	QCFH/M30-1000	96228054	QCFHC/10

Pre-wired gear trays

New Description	To operate lamp types:	Lamp rating	To operate no of lamps:	SAP Code	Old Cat. No.
QCFHGT12 G/T CW GEAR 2KW	MH/LA, HQ/TS, MBL/H, HS/TD	2kW	1	96227997	QCFHGT12
QCFHGT22 PREWIRED G/T 2X 2KW	MH/LA, HQ/TS, MBL/H, HS/TD	2kW	2	96227998	QCFHGT22
QCFHGT32 PREWIRED G/T 3X 2KW	MH/LA, HQ/TS, MBL/H, HS/TD	2kW	3	96227999	QCFHGT32
QCFHGT115 PREWIRED G/T C/W GEAR	MBL/H	1.5kW	1	96228003	QCFHGT115
QCFHGT215 PREWIRED G/TRAY C/W G	MBL/H	1.5kW	2	96228004	QCFHGT21
QCFHGT315 PREWIRED G/TRAY C/W G	MBL/H	1.5kW	3	96228005	QCFHGT315
QCFHGT11 PREWIRED G/T 1X 1KW	MH/LA, HQ/TS	1kW	1	96228000	QCFHGT11
QCFHGT21 PREWIRED G/T 2X 1KW	MH/LA, HQ/TS	1kW	2	96228001	QCFHGT21
QCFHGT31 PREWIRED G/T 3X 1KW	MH/LA, HQ/TS	1kW	3	96228002	QCFHGT31

Mounting Cross Arms

New Description		No of Floodlights	SAP Code	Old Cat. No.
HINGED COL BRAK1	CROSS ARM	1	96227991	QCFHC1-1
HINGED COL BRAK2	CROSS ARM	2	96227992	QCFHC1-2
HINGED COL BRAK3	CROSS ARM	3	96227993	QCFHC1-3
HINGED COL BRAK4	CROSS ARM	4	96227994	QCFHC1-4
HINGED COL BRAK4 MTP	POST TOP UNIT	4	96227995	QCFHC1P4
HINGED COL BRAK8 MTP	POST TOP UNIT	8	96227996	QCFHC1P8

Gland Plates

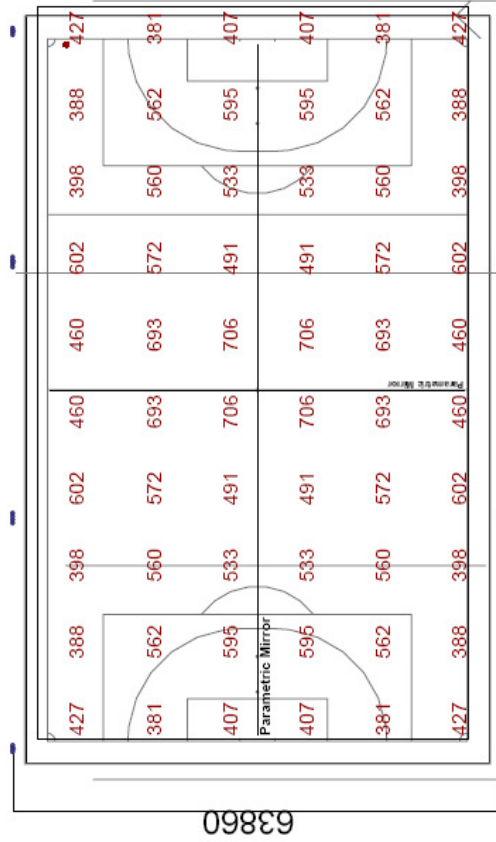
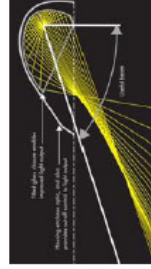
HINGED COL GLAND PL MAX F/LIGHT	up to 3	96228053	QCFHP/1-T30
HINGED COL GLAND PL MAX 6 F/LIGHT	4 to 6	96228015	QCFHP/2-T30
HINGED COL GLAND PL MAX 9 F/LIGHT	7 to 9	96228124	QCFHP/3-T30
HINGED COL GLAND PL MAX 12 F/LIGHT	10 to 12	96228052	QCFHP/4-T30
HINGED COL GLAND PL MAX 15 F/LIGHT	13 to 15	96228086	QCFHP/5-T30

APPENDIX D – THORN LIGHTING

ATP AND MUGA LIGHT PLOT SUMMARIES



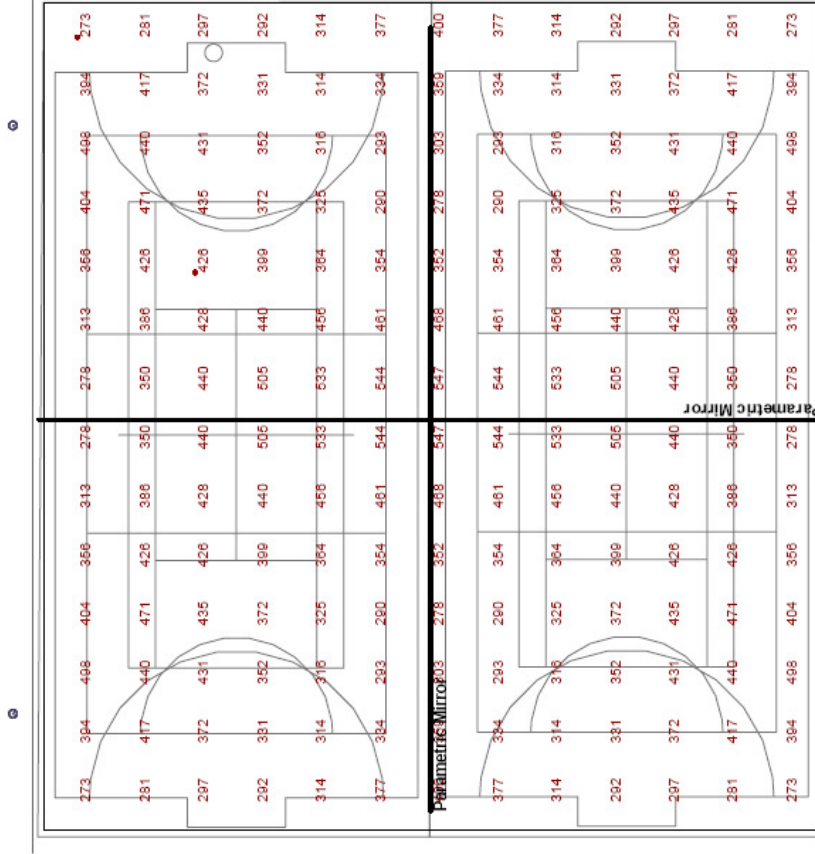
Luminaire Schedule			
Symbol	Qty	Label	LLF
⊙	28	CHAMP2SLA V2	0.800



Results for playing area
 Illuminance Values (Lux)
 Average =518.33
 Maximum =706
 Minimum =381
 Min/Avg Ratio=0.74
 Min/Max Ratio=0.54

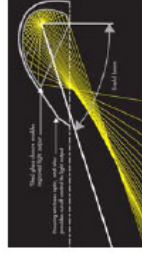


THORN



Results for playing area

Illuminance Values (Lux)
Average =383.20
Maximum =547
Minimum =273
Min/Avg Ratio=0.71
Min/Max Ratio=0.50



THORN