

The Sondheim Theatre

External Lighting - Planning Document

PTL 415.9

August 2015

pritchard themis

Lighting Design

3rd Floor Studio
2 Plough Yard
London
EC2A 3LP

T: 0207 650 0700
F: 0207 650 0701

info@pritchardthemis.com
www.pritchardthemis.com

Solution Overview

The external lighting scheme for Sondheim Theatre seeks to both enhance the night time presence of the Theatre building itself and also improve the local night time scene. The proposed scheme will therefore combine functional and feature lighting components. The feature lighting details are designed to emphasise the key architectural components of the building façades and to ensure that the vertical extents of the building are defined. The addition of functional lighting details to Tower Court and the underside of the Theatre canopy will improve the afterdark environment for the pedestrian. A detailed description of the various lighting details is provided in the following pages. This document is to supplement the technical package which is included in Appendix A.

The proposed solution provides the facility for both a classical white light presentation of the façade and/or a more theatrical coloured light presentation. The colour changing aspect of the scheme however, is limited to the window reveals. The scheme thus provides the possibility of the colour identity associated with a particular show to be reflected in the night time presentation of the theatre.

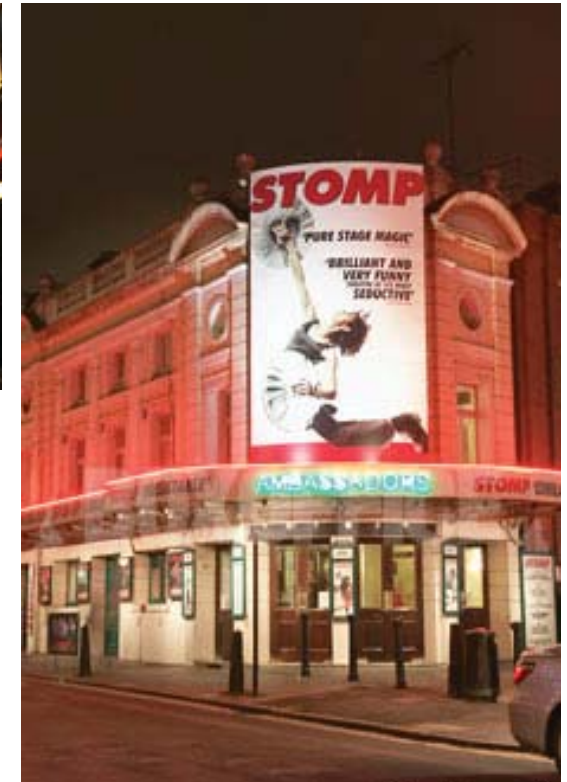
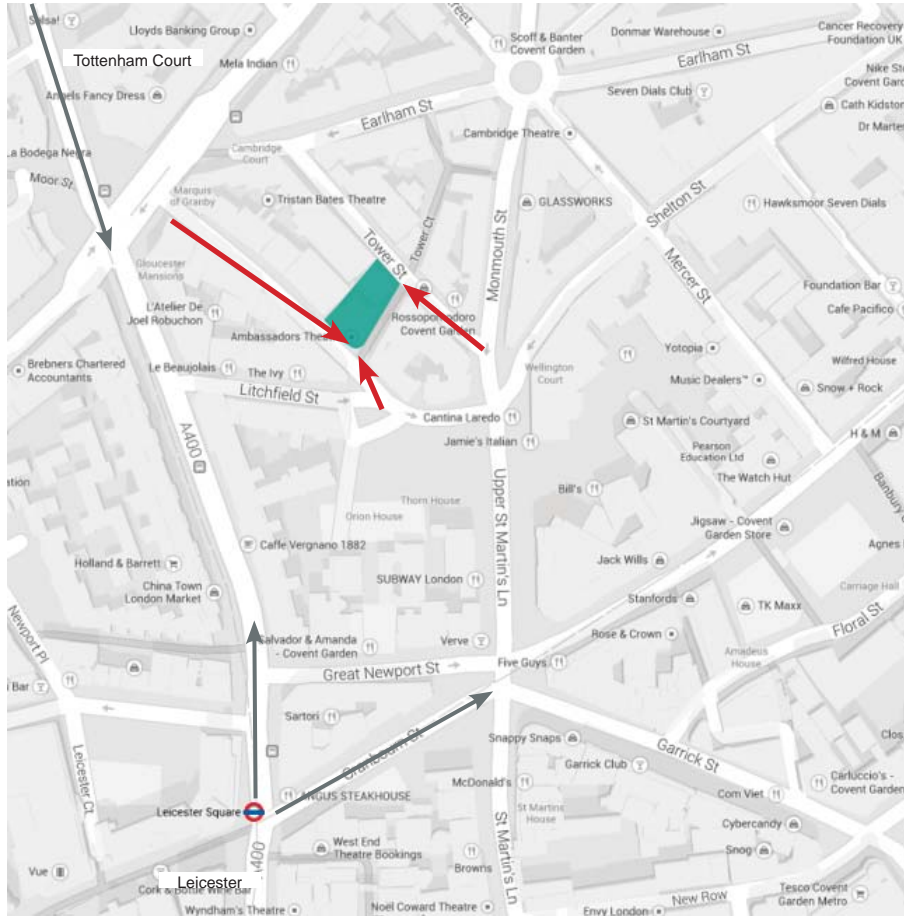
It is envisaged that the external feature lighting façade lighting will operate from 30 minutes before dusk to an agreed time appropriate to the site context. Functional lighting details will naturally have extended operating hours; the Tower Court lanterns and possibly the under canopy downlights will operate through until dawn. All lighting will operate via a new lighting control system which will issue automatic scene prompts from an astronomical time clock. All lighting details are currently specified as being dimmable LED, the control system will therefore allow the creation of a series of lighting states, or scenes, of varying light intensities which respond to both site context and time.

Plot calculations for the building perimeter at ground level are provided. These include the canopy downlights, projectors and lanterns along Tower Court all operating at 100% output. These plots are provided in Appendix B

The use of controlled optics and cowls will ensure that light spill from the façade uplight details will be minimised. This fact when combined with the dimmability of the proposed scheme will ensure that the scheme will provide a positive and sympathetic contribution to the local night time scene.



Site Context



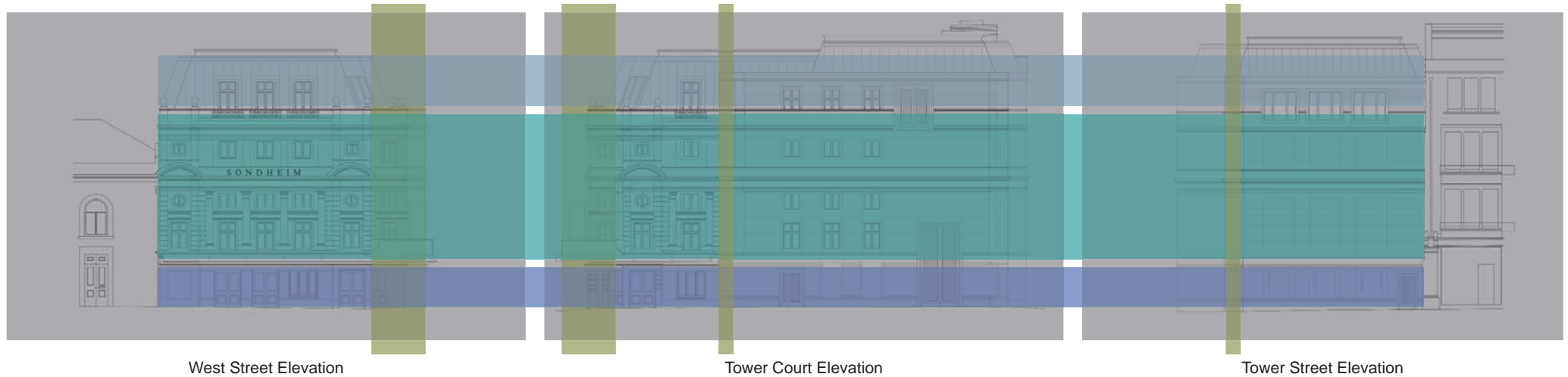
- routes
- primary views

This document introduces the design considerations that helped to develop the lighting design strategy for the façade to the Sondheim Theatre. Also included are solutions to the adjacent Tower Court.

At current the Sondheim has little presence by day or night. Views to the theatre are oblique and by night the theatre is dominated by the presence of it's neighbour the St Martin's Court Theatre.

The proposals discussed within this document will seek to ensure that the re-modelled Sondheim Theatre will have a positive night time presence that is sympathetic to both the building itself and the context that it finds itself in.

Building Analysis



- body
- base
- crown
- spines

Analysis

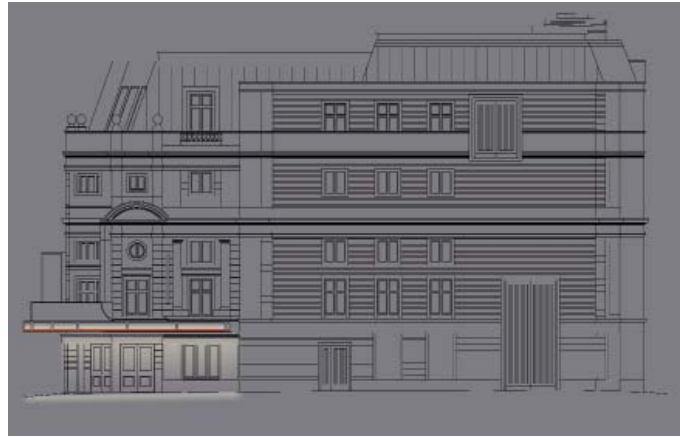
The elevations of the Sondheim theatre may be broken down into three primary horizontal tiers; base(1), body (2) and crown (3). The West Street and Tower Court elevations are seemingly reflected about the corner. This corner or spine is an important vertical element which counterpoints the previously described horizontal banding. The new design for the Tower Court elevation see the introduction of 2 additional strong vertical elements which offer an opportunity in relation to the lighting approach. When combined lighting treatments to these components will define the full extents of the façade and address the near and distant experience of the building by night.

PTL 415.9 - Sondheim Theatre

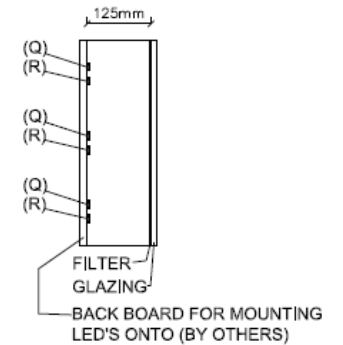
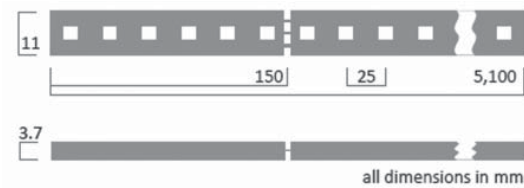
Building Analysis - Base



West Street Elevation



Tower Court Elevation



3M FILM REF: 3635.30 TO BE APPLIED TO BACK OF GLASS BY OTHERS

DIMENSION OF LIGHT BOX DEPTH TO BE DETERMINED ON SITE

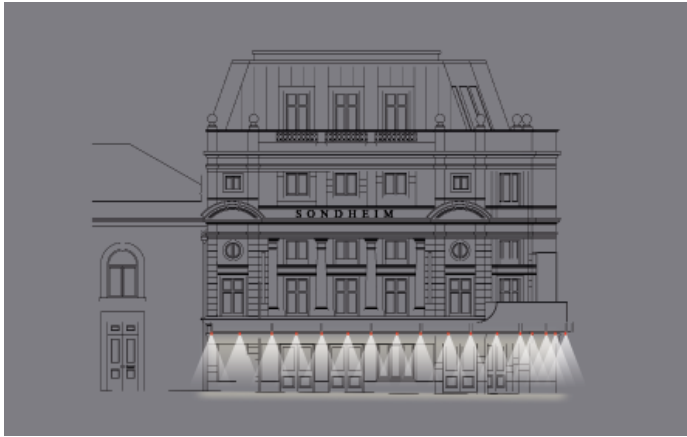
Surface mounted linear LED profile, IP rated Warm White. 40,000hrs lamp life, up to 100lms/W luminous efficacy

Canopy

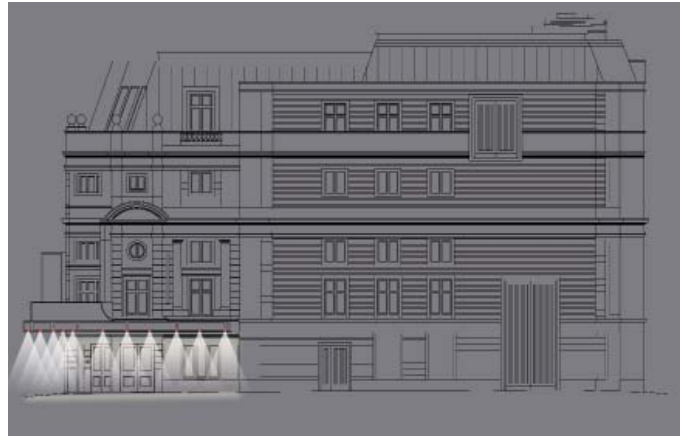
The refurbished canopy will benefit from a back lit fascia which will provide the means of illuminating the signage associated with both the Theatre and the production of the moment. The solution will be comprised of a linear IP rated LED tape which be capable of both white and a dynamic coloured light output to allow the possible colour referencing of a production.

PTL 415.9 - Sondheim Theatre

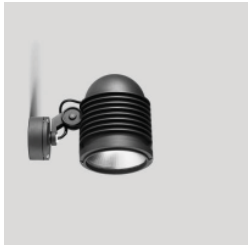
Building Analysis - Base



West Street Elevation



Tower Court Elevation



Surface mounted projector, IP rated Warm White. Xicato LED module 50,000hrs lamp life, up to 90lm/W luminous efficacy.

Canopy Apron

Surface mounted projectors will be employed to highlight the entrance threshold and define the doorways under the canopy. The fitting will be surface mounted to the canopy structure and be finished to match.

PTL 415.9 - Sondheim Theatre

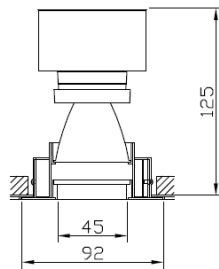
Building Analysis - Base



West Street Elevation



Tower Court Elevation



Recessed fixed LED downlight, IP rated Warm White. Xicato LED module 50,000hrs lamp life, up to 90lm/W luminous efficacy.

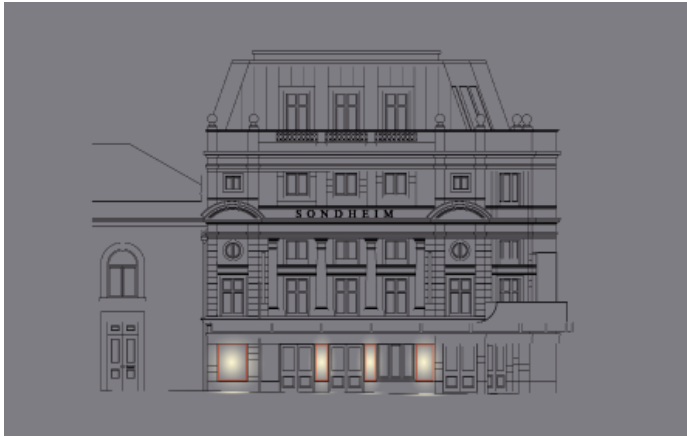


Thresholds

Deep recessed fixed LED downlights will be employed to highlight the entrance threshold and define the doorways under the canopy. The fitting will be recessed within the soffit of the doorway entrances. Source will require a full IP rating.

PTL 415.9 - Sondheim Theatre

Building Analysis - Base



West Street Elevation



Tower Court Elevation



Tower Street Elevation



Theatre Vitrines

All poster boxes will be internally illuminated and the suitable power provision allowed for. This will provide a discrete means of illuminating the signage and also introduce a human scale lighting component that may wrap about all three elevations thus providing a degree of continuity of presentation at street level.

PTL 415.9 - Sondheim Theatre

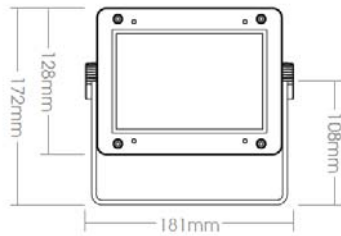
Building Analysis - Body



West Street Elevation



Tower Court Elevation



Bracket mounted LED projector, IP rated Warm White. LEDs 50,000hrs lamp life, 69lm/W luminous efficacy, 2079lm output.



Facade

The current façade body lacks any definition by night. A series of surface mounted LED projectors will be located so as to express the vertical aspects of the elevation in a warm white 3000K light. The luminaire optics will be controlled through the use of cowls and louvres to limit light spill.

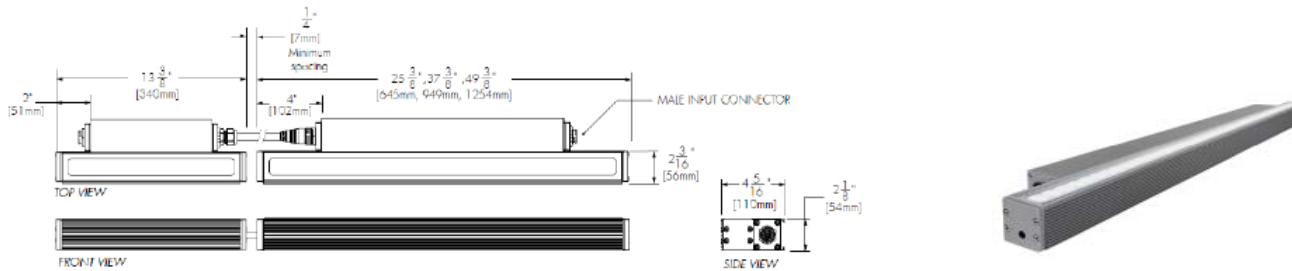
Building Analysis - Body



West Street Elevation



Tower Court Elevation



Bracket mounted LED projector, IP rated Warm White. LEDs 50,000hrs lamplife, 2079lm output.

Window Reveals 1

To further define the mass of the façade and so assist near and distant views towards the theatre, a series of upright luminaires will be surface mounted within the window reveals. These luminaires will provide the option of both a white light and a coloured light presentation.

There would be a suggestion that any back of house rooms/windows that face outwards might want to be lightly frosted to eliminate views into interior utility fittings. A standard warm white lighting solution will compliment the other lighting solutions to the façade.

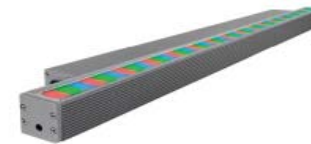
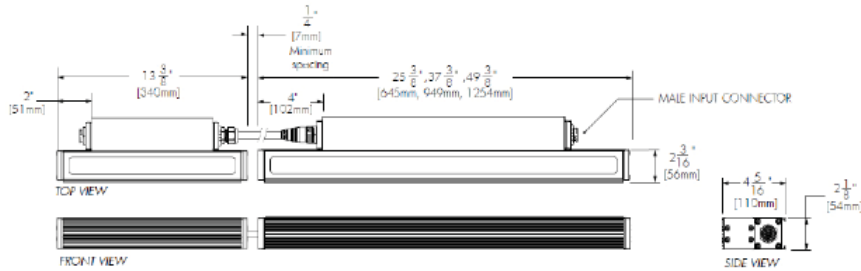
Building Analysis - Body



West Street Elevation



Tower Court Elevation



Bracket mounted LED projector, IP rated RGBW. LEDs 50,000hrs lamplife, 2041lm output.



Window Reveals 2

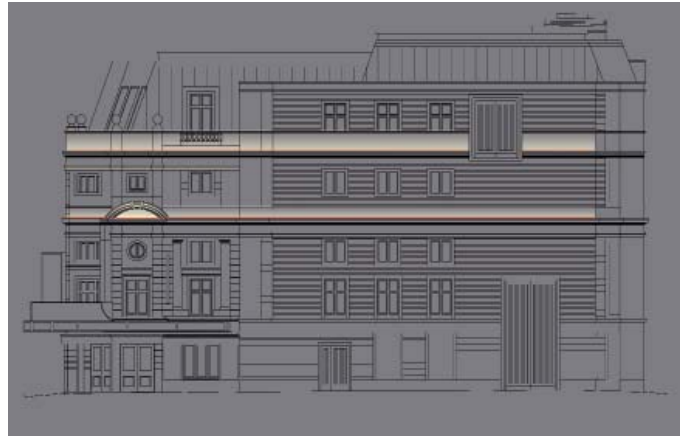
The RGB colour change component to the window reveal detail will allow the presentation of the façade to respond to the colour identity of a particular production. It will also allow a means of introducing a subtle dynamic through the use of movement across the façade as apart of something that may be termed as event lighting. This operation will need to be controlled via a DMX system to allow a clean movement between colours.



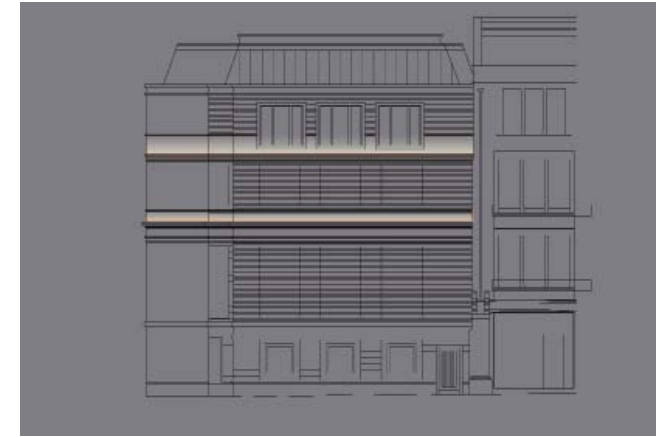
Building Analysis - Crown



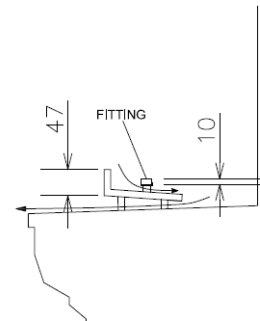
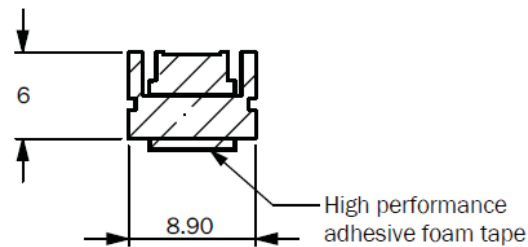
West Street Elevation



Tower Court Elevation



Tower Street Elevation



Surface mounted linear LED profile, IP rated Warm White. 40,000hrs lamp life, up to 100lm/W luminous efficacy



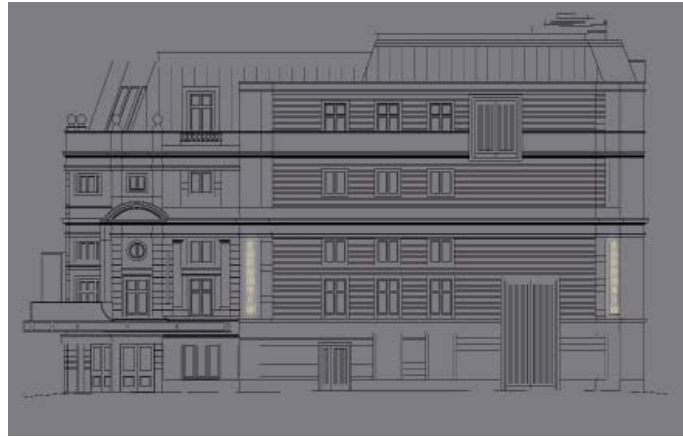
Cornice and Tympanum

A surface mounted linear LED profile will be concealed behind an upstand detail on the cornice so to provide illumination to the two cornice bands, with the uppermost treatment effectively defining the vertical extents of the building. Linear LED to be IP rated and drivers are to be located remotely for maintenance. Note the baffle will be finished to match the building facade.

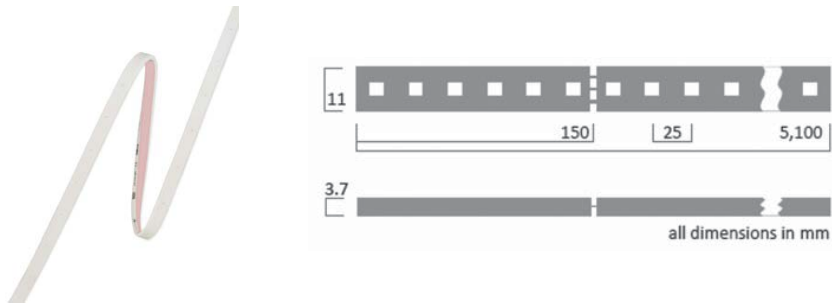
Building Analysis - Body: Signage



West Street Elevation



Tower Court Elevation



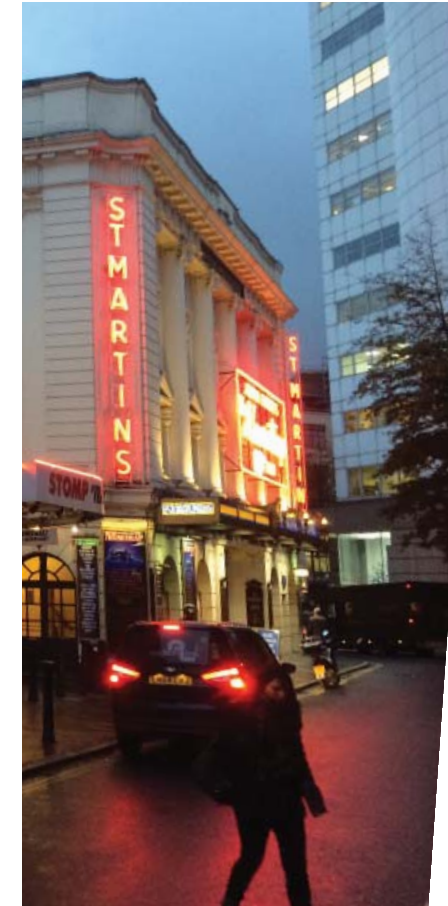
Surface mounted linear LED flex, IP rated Warm White. 50,000hrs lamp life, up to 72lm/W luminous efficacy

Signage

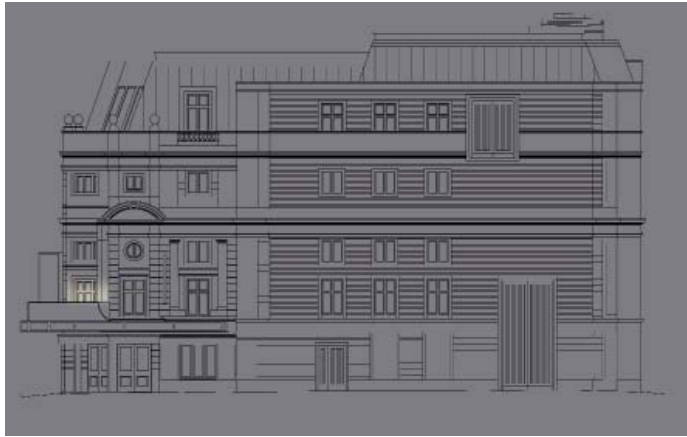
New signage will be added to the façade to improve legibility and assist the location of the theatre.

At present the vertical signage to St Martins Theatre is the prominent element that dominates the night time scene which may be viewed from Shaftesbury Avenue and upon approach from Upper St Martins Lane.

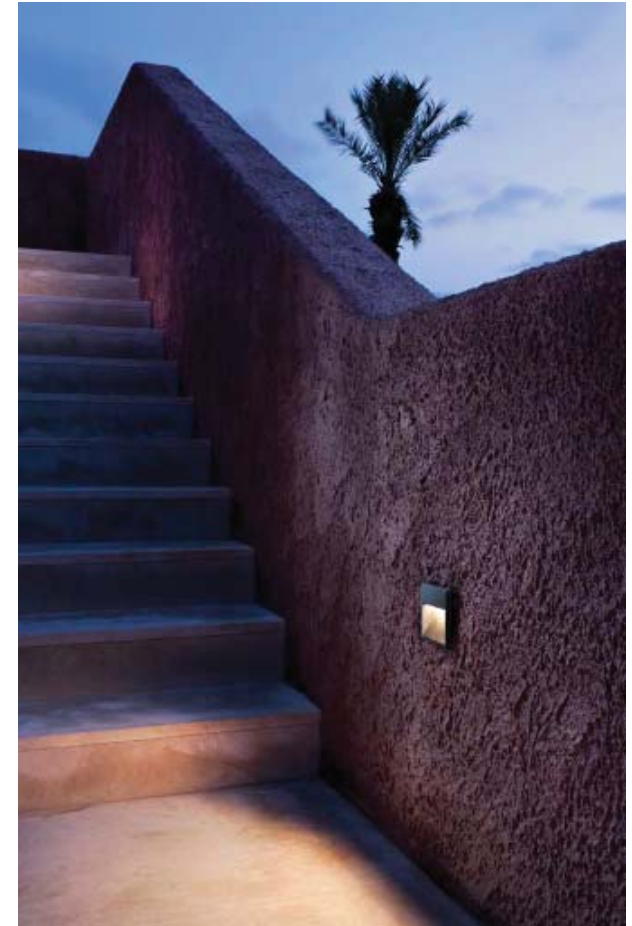
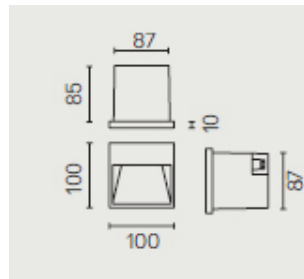
The new architectural design for the Sondheim Theatre sees the introduction of two vertical corner elements which seemingly seeks to address the corner details of the St Martin's Theatre. The lighting proposals see the introduction of a simple white lighting signage proclaiming the theatres name, running vertically up each of these elements.



Building Analysis - Body



Tower Court Elevation



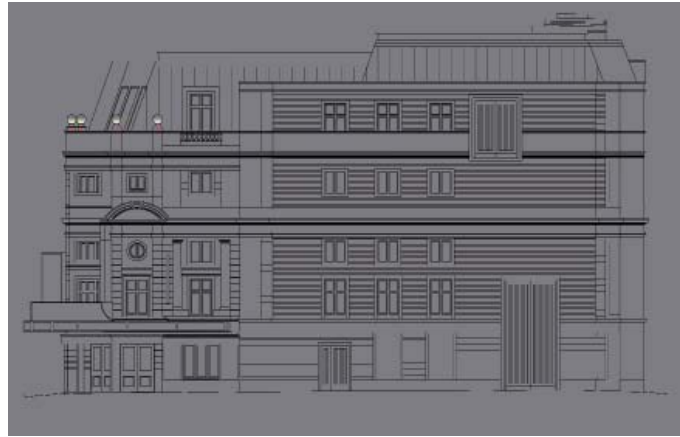
Balcony

The new balcony will benefit from the introduction of the exterior quality luminaires recessed in to the balcony front. This will provide a safe level of light across the balcony to facilitate the use of the balcony after dark.

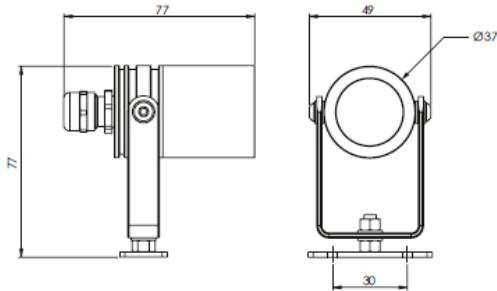
Building Analysis - Crown



West Street Elevation



Tower Court Elevation



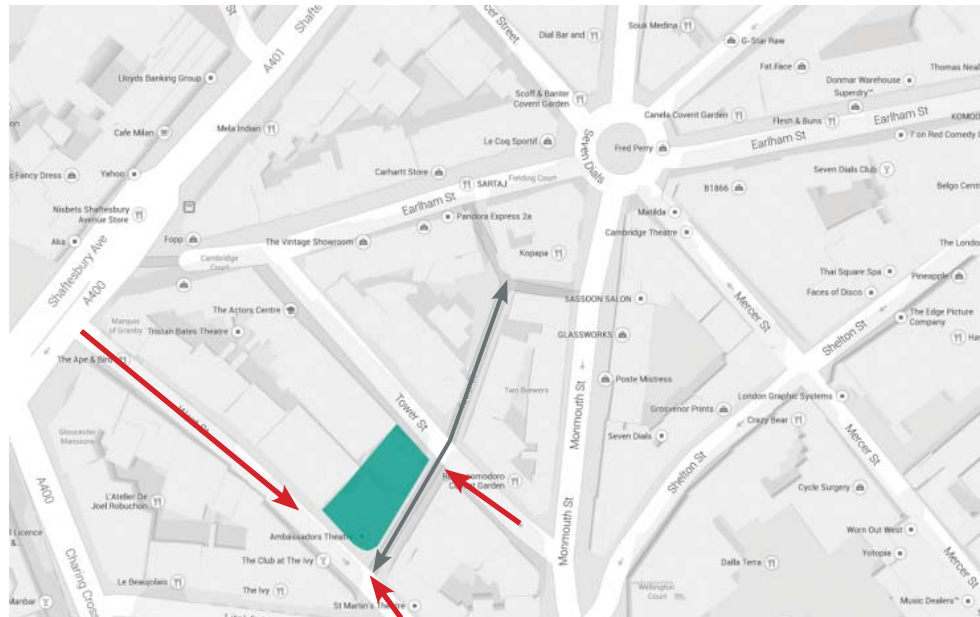
Bracket mounted LED spotlight, IP rated Warm White. 65,000hrs lamp life, up to 140lm output.



Architectural Urns

Architectural details at high level are to be illuminated. Fittings may either be attached with a chemical bond and an additional safety cable to the lead lined cornice, or cantilevered via a mechanical fixing to the building façade. Sources will again be LED but using micro sized fittings to minimise any view of these items from the ground.

Site Context



- routes
- primary views



This section of the document considers Tower Court and how it can be improved into a positive night-time public realm for both general pedestrians and theatre attendees. The current lighting provision is delivered by a single 8m high Wornum lanterns which was not working at the time of our site visit. We assume from adjacent fittings that the light source would be high pressure sodium. This detail is then complemented by a series of torchers wall mounted to the St Martin Theatre façade and bulkhead fittings local to the Sondheim Theatres set door.

With the proposed extension to Tower Court. This area is squeezed to approx 3m width leaves little room for the intervention of benches or planters, to this end we have moved to a building mounted proposal. The proposal seeks to transform Tower Court from it's present less than positive state into something dynamic and vibrant and so in keeping with the local night time environment.

Building Analysis - Tower Court Option 1

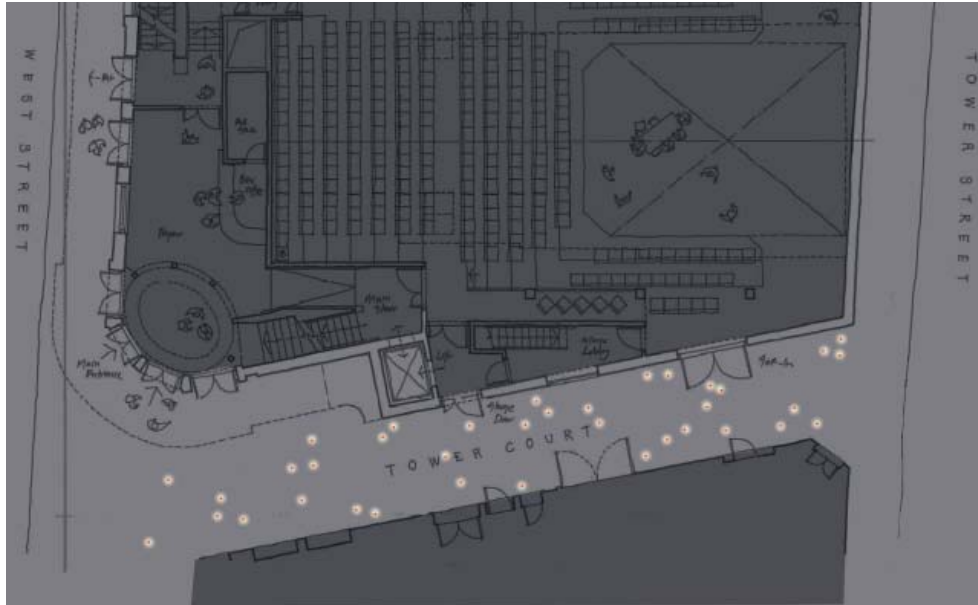


Bracket mounted LED lantern, IP rated Warm White. 50,000hrs lamp life

Functional Lighting

Mounted to the new Tower Court façade will be 3No. Windsor style period lanterns which will utilise an LED source. These lanterns will deliver good quality white light solution with high colour rendering characteristics along Tower Court. These sources will deliver the statutory illumination requirements and will benefit from a good vertical lighting component, ensuring good facial recognition and thus presenting Tower court as a safe night time environment.

Building Analysis - Tower Court 2



Recessed LED inground marker light, IP66 rated RGB, 4watts, R;12,32lm G;20,41lm B;4,87lm.



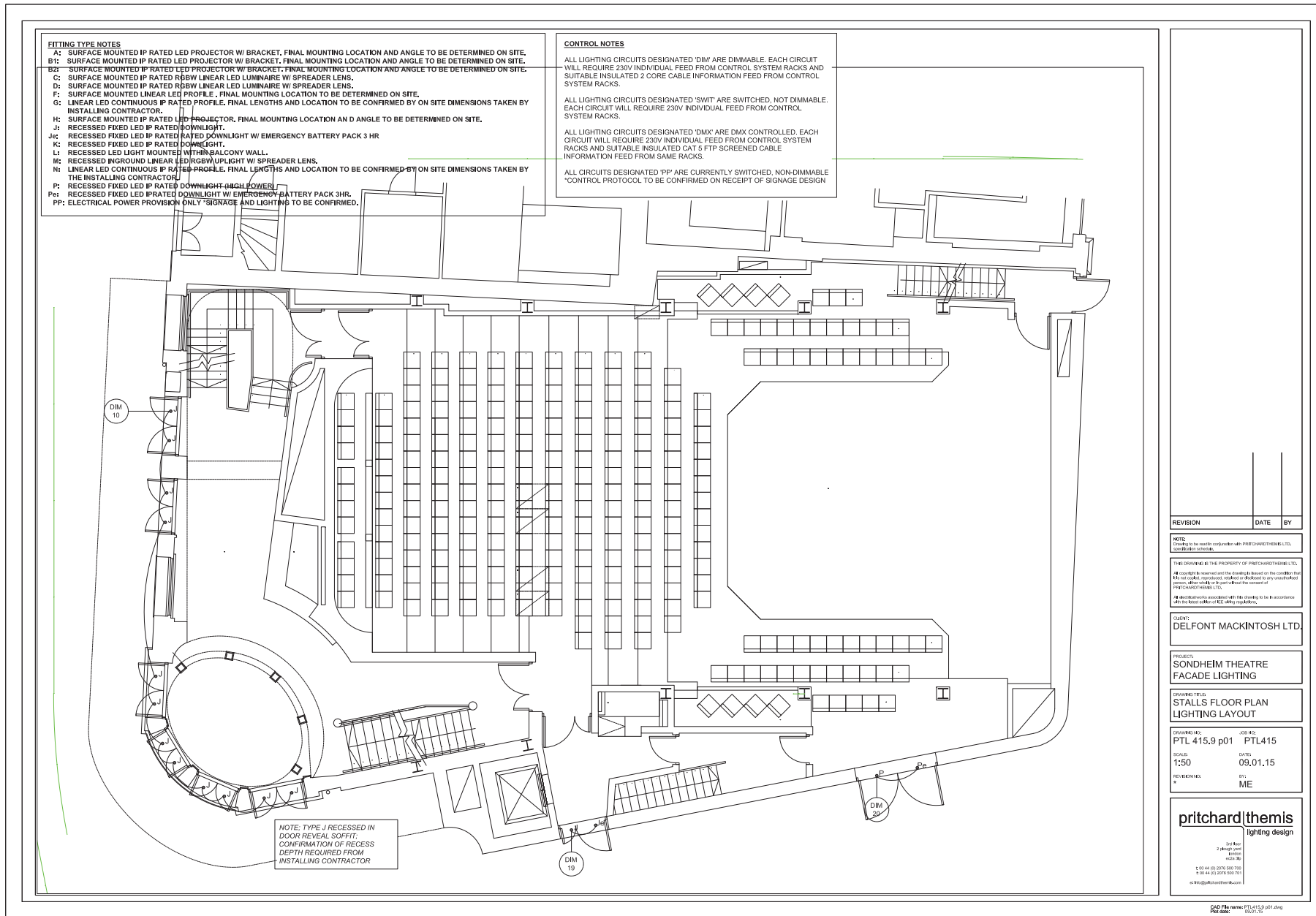
Buried Inground Lighting

Point sources introduced into the street pavement to provide a hint of drama to Tower Court. These points could be a static or changable colour linked to the performance, interactive, responsive as mentioned in the previous slide. These fittings will be low powered so as not act as a source of glare to pedestrian as the negotiate their way along Tower Court.



Appendix A

Drawings and Specification



FITTING TYPE NOTES

A: SURFACE MOUNTED IP RATED LED PROJECTOR W/ BRACKET. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.

B1: SURFACE MOUNTED IP RATED LED PROJECTOR W/ BRACKET. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.

B2: SURFACE MOUNTED IP RATED LED PROJECTOR W/ BRACKET. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.

C: SURFACE MOUNTED IP RATED RGBW LINEAR LED LUMINAIRE W/ SPREADER LENS.

D: SURFACE MOUNTED IP RATED RGBW LINEAR LED LUMINAIRE W/ SPREADER LENS.

F: SURFACE MOUNTED LINEAR LED PROFILE. FINAL MOUNTING LOCATION TO BE DETERMINED ON SITE.

G: LINEAR LED CONTINUOUS IP RATED PROFILE. FINAL LENGTHS AND LOCATION TO BE CONFIRMED BY ON SITE DIMENSIONS TAKEN BY INSTALLING CONTRACTOR.

H: SURFACE MOUNTED IP RATED LED PROJECTOR. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.

J: RECESSED FIXED LED IP RATED DOWNLIGHT.

Jc: RECESSED FIXED LED IP RATED DOWNLIGHT W/ EMERGENCY BATTERY PACK 3 HR

K: RECESSED FIXED LED IP RATED DOWNLIGHT.

L: RECESSED LED LIGHT MOUNTED WITHIN BALCONY WALL.

M: RECESSED INGROUND LINEAR LED RGBW UPLIGHT W/ SPREADER LENS.

N: LINEAR LED CONTINUOUS IP RATED PROFILE. FINAL LENGTHS AND LOCATION TO BE CONFIRMED BY ON SITE DIMENSIONS TAKEN BY THE INSTALLING CONTRACTOR.

P: RECESSED FIXED LED IP RATED DOWNLIGHT (HIGH POWER)

Pc: RECESSED FIXED LED IP RATED DOWNLIGHT W/ EMERGENCY BATTERY PACK 3HR.

PP: ELECTRICAL POWER PROVISION ONLY. SIGNAGE AND LIGHTING TO BE CONFIRMED.

CONTROL NOTES

ALL LIGHTING CIRCUITS DESIGNATED 'DIM' ARE DIMMABLE. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS AND SUITABLE INSULATED 2 CORE CABLE INFORMATION FEED FROM CONTROL SYSTEM RACKS.

ALL LIGHTING CIRCUITS DESIGNATED 'SWIT' ARE SWITCHED, NOT DIMMABLE. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS.

ALL LIGHTING CIRCUITS DESIGNATED 'DMX' ARE DMX CONTROLLED. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS AND SUITABLE INSULATED CAT 5 FTP SCREENED CABLE INFORMATION FEED FROM SAME RACKS.

ALL CIRCUITS DESIGNATED 'PP' ARE CURRENTLY SWITCHED, NON-DIMMABLE *CONTROL PROTOCOL TO BE CONFIRMED ON RECEIPT OF SIGNAGE DESIGN

NOTE: TYPE J RECESSED IN DOOR REVEAL SOFFIT. CONFIRMATION OF RECESS DEPTH REQUIRED FROM INSTALLING CONTRACTOR

REVISION	DATE	BY

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CLIENT: DELFONT MACKINTOSH LTD.

PROJECT: SONDHEIM THEATRE FACADE LIGHTING

DRAWING TITLE: STALLS FLOOR PLAN LIGHTING LAYOUT

DRAWN BY: PTL 415.9 p01 PTL415

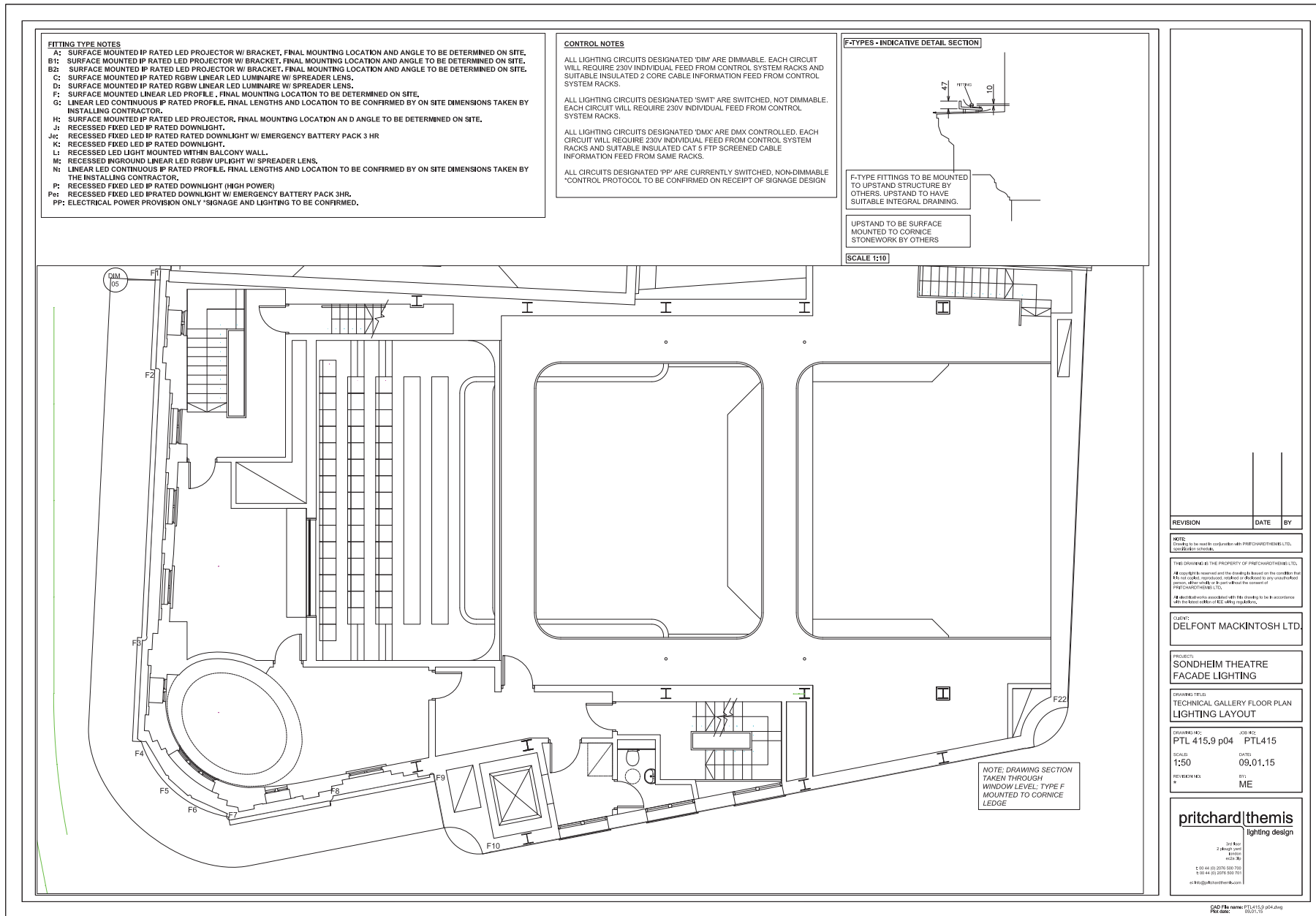
SCALE: 1:50 DATE: 09,01,15

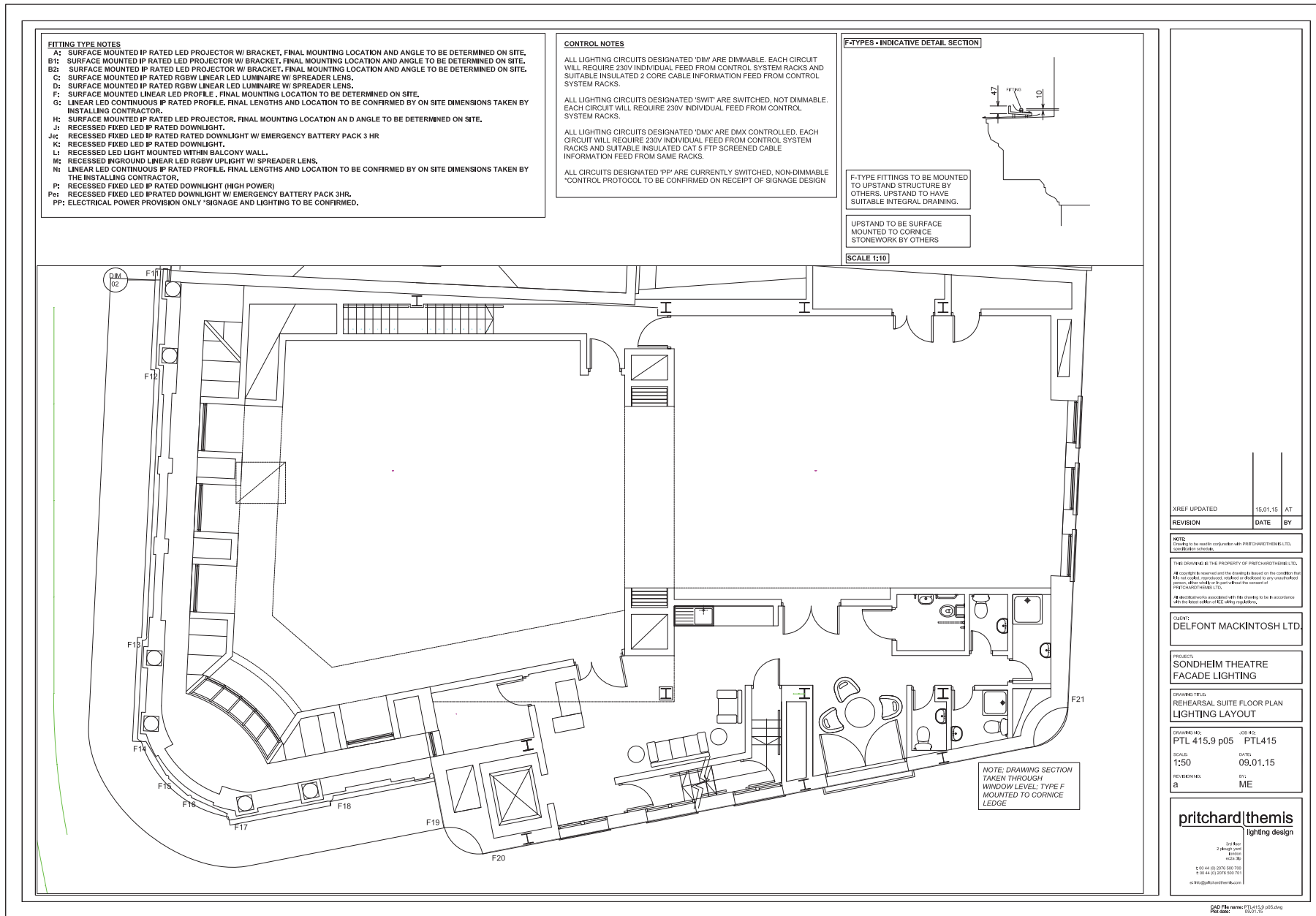
REVISIONS: BY: ME

pritchard|themis
lighting design

15th Floor
2, Market Street
London
EC1A 1BB

T: 020 4411 0076 / 020 500 700
F: 020 4411 0075 / 020 500 701
e: info@pritchardthemis.com





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PROJECT: SONDHEIM THEATRE FACADE LIGHTING

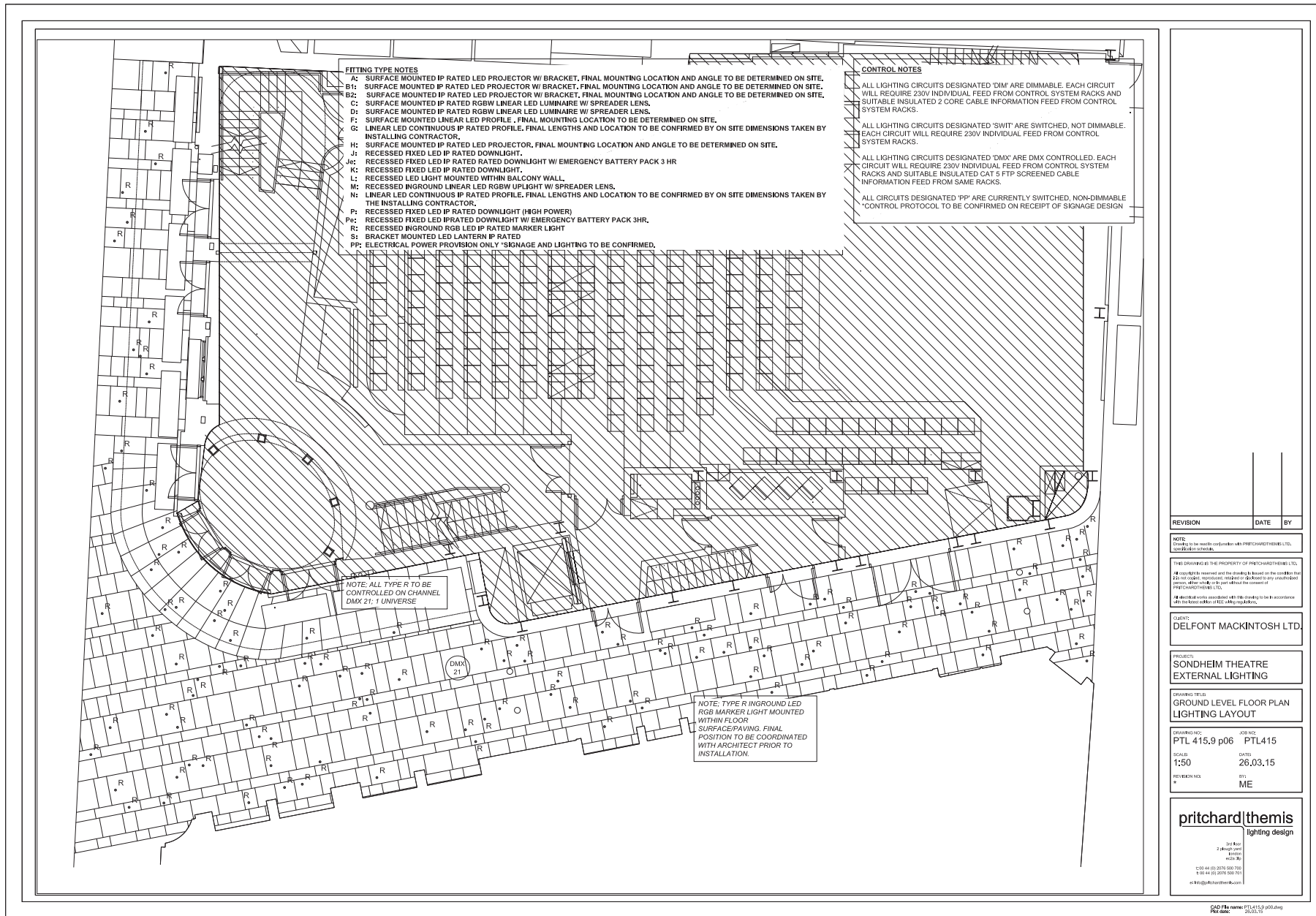
DRAWING TITLE: REHEARSAL SUITE FLOOR PLAN LIGHTING LAYOUT

DRAWN BY: PTL 415.9 p05 PTL415
SCALE: 1:50 DATE: 09.01.15
REVIEWER BY: a ME

pritchard|themis
lighting design

101 King
2 Park Street
Bristol
BS2 9BQ

0117 441 0076 0070 700
0117 441 0070 500 700
info@pritchardthemis.com



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PROJECT:
SONDHEIM THEATRE
EXTERNAL LIGHTING

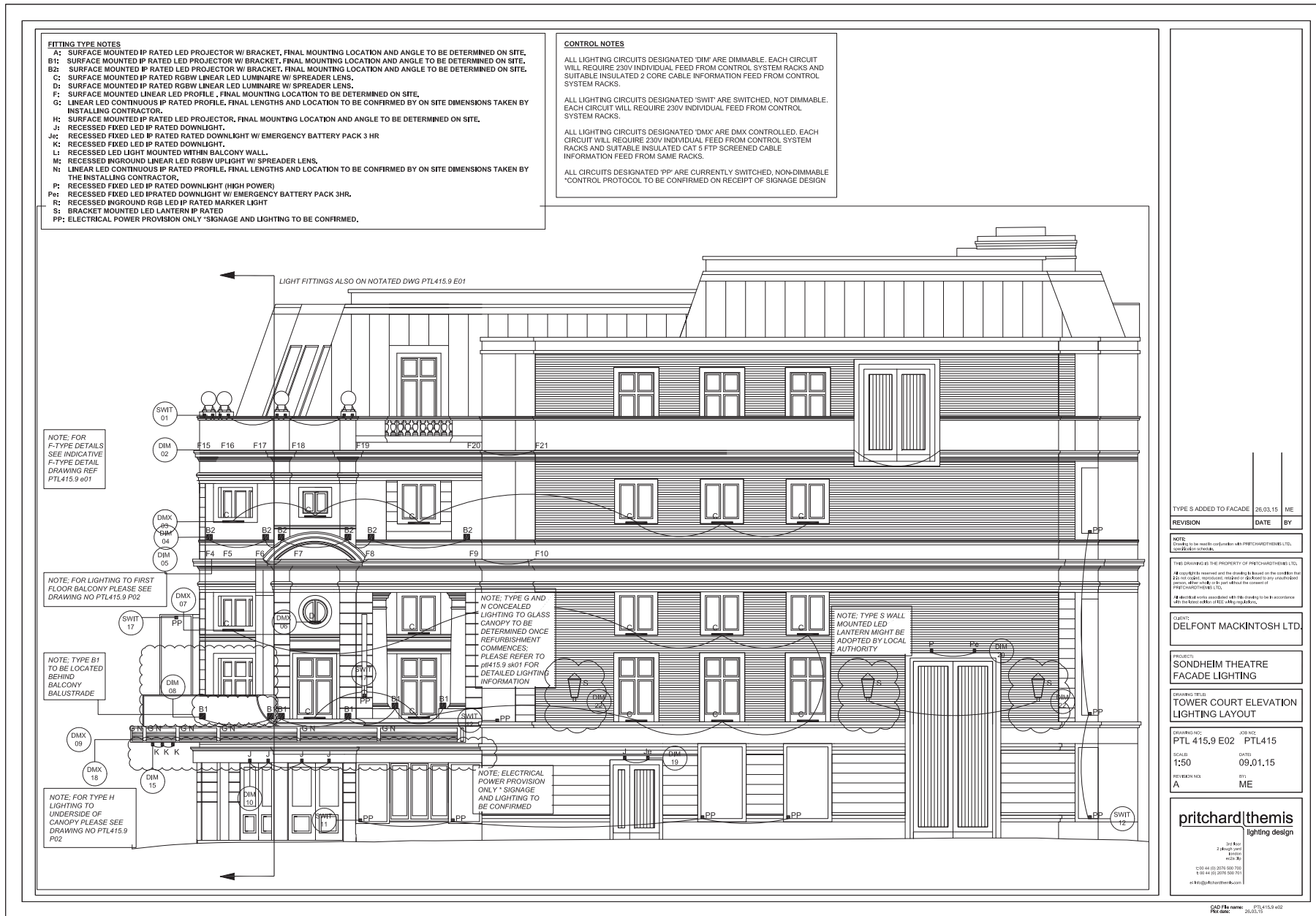
DRAWING TITLE:
GROUND LEVEL FLOOR PLAN
LIGHTING LAYOUT

DRAWING NO.: PTL 415.9 p06	REV NO.: PTL415
SCALE: 1:50	DATE: 26.03.15
REVISION NO.: *	BY: ME

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lighting design

100 Rue
2, rue de la gare
44000
Nantes, France

02 40 40 00 70 / 00 700
0 20 40 00 700 / 00 700
+33 (0)2 40 40 00 700



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CUSTOMER: DELFONT MACKINTOSH LTD.

PROJECT: SONDEHEIM THEATRE FACADE LIGHTING

DRAWING TITLE: TOWER COURT ELEVATION LIGHTING LAYOUT

DRAWING NO:	PTL 415.9 E02	REV NO:	PTL415
SCALE:	1:50	DATE:	09.01.15
REVISION NO:	A	BY:	ME

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100 Rue
2 rue du canal
Lyon
69004

033 44 05 3076 600 700
033 44 05 3076 500 700
uk@pritchardthemis.com

CAD FILE NAME: PTL415.9 E02
PRC DATE: 26.03.15

FITTING TYPE NOTES

- A1: SURFACE MOUNTED IP RATED LED PROJECTOR W/ BRACKET. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.
- B1: SURFACE MOUNTED IP RATED LED PROJECTOR W/ BRACKET. FINAL MOUNTING LOCATION AND ANGLE TO BE DETERMINED ON SITE.
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- J: RECESSED FIXED LED IP RATED DOWNLIGHT.
- Je: RECESSED FIXED LED IP RATED DOWNLIGHT W/ EMERGENCY BATTERY PACK 3 HR
- K: RECESSED FIXED LED IP RATED DOWNLIGHT.
- L: RECESSED LED LIGHT MOUNTED WITHIN BALCONY WALL.
- M: RECESSED INGROUND LINEAR LED RGBW UPLIGHT W/ SPREADER LENS.
- N: LINEAR LED CONTINUOUS IP RATED PROFILE. FINAL LENGTHS AND LOCATION TO BE CONFIRMED BY ON SITE DIMENSIONS TAKEN BY THE INSTALLING CONTRACTOR.
- P: RECESSED FIXED LED IP RATED DOWNLIGHT (HIGH POWER)
- Pe: RECESSED FIXED LED IP RATED DOWNLIGHT W/ EMERGENCY BATTERY PACK 3HR.
- PP: ELECTRICAL POWER PROVISION ONLY *SIGNAGE AND LIGHTING TO BE CONFIRMED.

CONTROL NOTES

- ALL LIGHTING CIRCUITS DESIGNATED 'DIM' ARE DIMMABLE. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS AND SUITABLE INSULATED 2 CORE CABLE INFORMATION FEED FROM CONTROL SYSTEM RACKS.
- ALL LIGHTING CIRCUITS DESIGNATED 'SWIT' ARE SWITCHED, NOT DIMMABLE. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS.
- ALL LIGHTING CIRCUITS DESIGNATED 'DMX' ARE DMX CONTROLLED. EACH CIRCUIT WILL REQUIRE 230V INDIVIDUAL FEED FROM CONTROL SYSTEM RACKS AND SUITABLE INSULATED CAT 5 FTP SCREENED CABLE INFORMATION FEED FROM SAME RACKS.
- ALL CIRCUITS DESIGNATED 'PP' ARE CURRENTLY SWITCHED, NON-DIMMABLE *CONTROL PROTOCOL TO BE CONFIRMED ON RECEIPT OF SIGNAGE DESIGN

NOTE, FOR F-TYPE DETAILS SEE INDICATIVE F-TYPE DETAIL DRAWING REF PTL415.9 e01



REVISION	DATE	BY

NOTE: Drawings to be read in conjunction with PITCHARDTHEMIS LTD. 2022/23 Terms and Conditions.

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CLIENT: DELFONT MACKINTOSH LTD.

PROJECT: SONDEHEIM THEATRE FACADE LIGHTING

DRAWING TITLE: TOWER ST ELEVATION LIGHTING LAYOUT

DRAWN BY: PTL 415.9 E03 JOB NO: PTL415

SCALE: 1:50 DATE: 09,01,15

REVISIONS: BY: ME

pritchard|themis
lighting design

1st Floor
2nd Floor
4th Floor
5th Floor

019 44 01 070 600 700
019 44 01 070 500 700
info@pritchardthemis.com

PRITCHARDTHEMIS EQUIPMENT SPECIFICATION LIST

PROJECT TITLE:	Sondheim Theatre	DATE OF ISSUE:	26.03.15
PROJECT NO:	415.9	ISSUE NUMBER:	02
DRAWING REFS:	PTL415.9 e01, PTL415.9 e02, PTL415.9 e03, PTL415.9 p00, PTL415.9 p01, PTL415.9 p02, PTL415.9 p04, PTL415.9 p05, PTL415.9 sk01	ORIGINATED BY:	ME

Notes:

- Electrical contractor to ensure correct supply voltage at lamp
- All wiring to be carried out in accordance with the latest IEE regulations
- All transformers to be manufactured in accordance with the relevant British Standards and manufacturers' recommendations
- pritchardthemis ltd. recommends the use of transformers with a secondary supply voltage of 95%
- All fixing detail/cut-out and recess dimensions are to be confirmed with manufacturers by the contractor
- All quantities are to be checked against the appropriate drawings
- The Electrical Contractor is to ensure the co-ordination and compatibility of all luminaire control gear/transformer types with the lighting control system.
- EXACT DIMENSIONS TO BE DETERMINED ON SITE PRIOR TO ORDER BEING PLACED.

LUM REF	VOLT	LAMP CAP	MAX WATT	CUT OUT	REC DEP	MANUFACTURER'S REFERENCE	DESCRIPTION	QTY	SPECIFIED LAMP TYPE
A	230/24	n/a	3.5w	n/a	n/a	Light Projects LEDstar 1 4500724-930-30-1 Remote dimmable 1-10v driver 42143-30 IP66 4x LEDStar3 at 700mA	Surface mounted IP rated LED projector w/ bracket IP67 Dims: 11x105x87mm (LxHxW) Finish: PTFE White RAL 9003 Beam spread: 30degree Weight: 0.63kg	16	LED Warm white 3000K
B1	230 / 24	n/a	28w	n/a	n/a	ACDC Lighting Plaza 35 ACDC1185/35/TWH/30/30R/DIM/STD/COL/WAB Integral 1-10v dimmable control gear Accessories: Cowl and wall bracket	Surface mounted IP rated LED projector w/ bracket. IP66 Dims:172x181mm (HxW) Finish: White Beam spread:30degree Weight: 2.9kg	16	LED Warm white 3000K
B2	230 / 24	n/a	16w	n/a	n/a	ACDC Lighting Plaza 20 ACDC1185/20/TWH/30/30R/DIM/STD/COL/WAB Integral 1-10v dimmable control gear Accessories: Cowl and wall bracket	Surface mounted IP rated LED projector w/ bracket. IP66 Dims:141x150mm (HxW) Finish: White Beam spread:30degree Weight: 1.95kg	14	LED Warm white 3000K

C	230 / 24	n/a	15w	n/a	n/a	Lumenpulse Lumenfacade horizontal color changing LOGH-220/240-36-RGBW-1FX-10x60-RF-UMAS-WH-CRC Integral DMX control gear Accessories: Universal Adjustable Mounting	Surface mounted IP rated linear LED RGBW projector. IP66 Dims:949x54x110mm (LxHxW) Finish: White Beam spread:10x60degree	29	LED RGBW
D	230 / 24	n/a	5w	n/a	n/a	Lumenpulse Lumenfacade horizontal color changing LOGH-220/240-12-RGBW-1FX-10x60-RF-UMAS-WH-CRC Integral DMX control gear Accessories: Universal Adjustable Mounting	Surface mounted IP rated linear LED RGBW projector. IP66 Dims:340x54x110mm (LxHxW) Finish: White Beam spread:10x60degree	3	LED RGBW
F1	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-2000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	2m	LED Warm white 3000K 120 LEDs/m
F2	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-8000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	8m	LED Warm white 3000K 120 LEDs/m

F3	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-2000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	2m	LED Warm white 3000K 120 LEDs/m
F4	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-1200 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	1.2m	LED Warm white 3000K 120 LEDs/m
F5	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-800 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	0.8m	LED Warm white 3000K 120 LEDs/m

F6	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-1200</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	1.2m	LED Warm white 3000K 120 LEDs/m
F7	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-3000</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	3m	LED Warm white 3000K 120 LEDs/m
F8	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-3000</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	3m	LED Warm white 3000K 120 LEDs/m

F9	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-1600</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	1.6m	LED Warm white 3000K 120 LEDs/m
F10	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-16500</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	16.5m	LED Warm white 3000K 120 LEDs/m
F11	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-3000</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	3m	LED Warm white 3000K 120 LEDs/m

F12	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-8000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	8m	LED Warm white 3000K 120 LEDs/m
F13	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-3000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	3m	LED Warm white 3000K 120 LEDs/m
F14	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-1200 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	1.2m	LED Warm white 3000K 120 LEDs/m

F15	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-800 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	0.8m	LED Warm white 3000K 120 LEDs/m
F16	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-1200 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	1.2m	LED Warm white 3000K 120 LEDs/m
F17	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-3000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	3m	LED Warm white 3000K 120 LEDs/m

F18	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-3000 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	3m	LED Warm white 3000K 120 LEDs/m
F19	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-1600 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	1.6m	LED Warm white 3000K 120 LEDs/m
F20	230 / 24	n/a	20w/m	n/a	n/a	Light Projects Mini LEDBar 4286-1034-830-16500 *exact dimensions to be determined on site by installing contractor prior to order. Remote 1-10v dimmable driver Accessories: 4286-1901 Mini LEDBar fixed mount bracket	Surface mounted IP rated linear LED profile. IP66 Dims: *x11x29mm (LxHxW)	16.5m	LED Warm white 3000K 120 LEDs/m

F21	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-13000</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	13m	LED Warm white 3000K 120 LEDs/m
F22	230 / 24	n/a	20w/m	n/a	n/a	<p>Light Projects Mini LEDBar</p> <p>4286-1034-830-13000</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>Remote 1-10v dimmable driver</p> <p>Accessories: 4286-1901 Mini LEDBar fixed mount bracket</p>	<p>Surface mounted IP rated linear LED profile. IP66</p> <p>Dims: *x11x29mm (LxHxW)</p>	13m	LED Warm white 3000K 120 LEDs/m
G	230/24	n/a	10w/m	n/a	n/a	<p>KKDC FXS301 RGB linear</p> <p>L/5/01/W/88000mm IP rated</p> <p>*exact dimensions to be determined on site by installing contractor prior to order.</p> <p>KKSC-03B DMX Remote DMX visDIM Sub-controller IP20</p> <p>Accessories: KKCP-08 IP65 RGB side silicon bracket (allow 4 per metre)</p>	<p>Surface mounted IP rated linear LED profile. IP65</p> <p>Dims:*x1.9x12mm (LxHxW)</p>	88m	LED RGB

H	230/	n/a	17w	n/a	n/a	Bega Floodlight 7502+K3 RAL VAR * To be determined on confirmation of canopy structure colour. Remote 1-10v dimmable driver *distance dependant on cable size	Surface mounted adjustable IP rated LED projector. IP65 Dims: 175x225x110mm (LxHxW) Finish: RAL VAR Weight: 1.7kg	18	LED Warm white 3000k
J	230	n/a	19.5w	70mm	121mm	Projection Lighting Imp Wet 20-30-8-M-VAR-DA Softening lens accessory Baffle accessory Remote 1-10v dimmable driver	IP54 rated recessed fixed LED IP rated downlight with baffle and softening lens accessories. Dims: 80 x 121mm (diaxH) Finish: RAL TBC Beam spread: 40 degree 1-10v dimmable driver	13	LED warm white 3000k
Je	230	n/a	19.5	70mm	121mm	Projection Lighting Imp Wet 20-30-8-M-VAR-DA-M3 Softening lens accessory Baffle accessory Remote 1-10v dimmable driver Standalone 3hr emergency battery pack	IP54 rated recessed fixed LED IP rated downlight with baffle and softening lens accessories. Dims: 80 x 121mm (diaxH) Finish: RAL TBC Beam spread: 40 degree 1-10v dimmable driver modified to run of standalone 3hr battery pack in the event of an emergency.	1	LED warm white 3000k
K	230	n/a	19.5w	70mm	121mm	Projection Lighting Imp Wet 20-30-8-M-VAR-DA Softening lens accessory Baffle accessory Remote 1-10v dimmable driver	IP54 rated recessed fixed LED IP rated downlight with baffle and softening lens accessories. Dims: 80 x 121mm (diaxH) Finish: RAL TBC Beam spread: 40 degree 1-10v dimmable driver	3	LED warm white 3000k

L	230/12	n/a	2w	77x85mm (HxW)	62mm	Light Graphix LD10234/LWW/** RAL VAR *To be determined on confirmation of balcony structure colour Remote 1-10v dimmable driver (Constant current driver) TXDD350 350mA Supplied in an IP rated box First fix concrete box supplied as standard	Recessed LED wall light. IP54 Dims:90x90mm (HxW) Finish: *To be determined on confirmation of balcony structure colour	4	LED Warm white 2950k
M	230 / 12	n/a	30w	n/a	n/a	Lumenpulse Lumenfacade Inground color changing LOI-12V-36-PGBW-DMX 1FX-10x60-TS0-ASL Integral DMX control gear Accessories: Anti-slip lens Accessories: PACBOX-WATTAGE-240-12V-DMX Pre-installation kit Accessories: LOI-RBO- 36-GPD Pre Installation blockout	Surface mounted IP rated linear LED RGBW projector. IP66 Dims:941x141x215mm (LxHxW) Finish: White Beam spread:10x60degree	1	LED RGBW
N	230/24	n/a	7w/m	n/a	n/a	KKDC FXS902 linear P/5/01/W/88000mm IP rated *exact dimensions to be determined on site by installing contractor prior to order. visDIM 1-10v PSU (100W 24V) IP67 Accessories: KKCP-08 IP65 side silicon bracket (allow 4 per metre)	Surface mounted IP rated linear LED profile. IP65 Dims:*x1.9x12mm (LxHxW)	88m	LED Warm white 3000K

P	230	n/a	19.5w	70mm	121mm	Projection Lighting Imp Wet 20-30-8-M-VAR-DA Softening lens accessory Baffle accessory Remote 1-10v dimmable driver	IP54 rated recessed fixed LED IP rated downlight with baffle and softening lens accessories. Dims: 80 x 121mm (diaxH) Finish: RAL TBC Beam spread: 40 degree 1-10v dimmable driver	1	LED warm white 3000K
Pe	230	n/a	19.5w	70mm	121mm	Projection Lighting Imp Wet 20-30-8-M-VAR-DA-M3 Softening lens accessory Baffle accessory Remote 1-10v dimmable driver Standalone 3hr emergency battery pack	IP54 rated recessed fixed LED IP rated downlight with baffle and softening lens accessories. Dims: 80 x 121mm (diaxH) Finish: RAL TBC Beam spread: 40 degree 1-10v dimmable driver modified to run of standalone 3hr battery pack in the event of an emergency.	1	LED warm white 3000K
R	230/24	n/a	4w	46mm	108mm tbc	Aldabra ALPHA Power LED ALP.194.28 CAS.0072.99 ALI.0109.99 ECO.0038.99	Recessed Inground LED marker light IP66 Dims;60x78mm(DiaxH) Finish; Housing box Multi system interface DMX Power supply unit 120w	119 119 3 4	LED RGB
S	23/12	n/a	48w	n/a	n/a	DW Windsor Windsor Avenue WIA/ F/E/L230/10/D/PD w/part-night dim Post top mounted bracket Scroll Traditional (*Wall mounted)	Wall mounted LED lantern Dims; 745x390(LxW) Shaft size; 76mm Finish; RAL 9005 Black Dims; 750mm projection Shaft size; 76mm	3	LED 3000K
PP	230/tbc						Electrical power provision only *Signage and lighting to be confirmed by others	16	

Revisions:

Issue 02:

Change of description; J, Je, K, P, Pe
Addition of types; R, S

LIGHTING CONTROL SYSTEM:

iLight Ref~: Q38026JT_a

Contact Details:

KKDC	Chris Schulikns	0203 142 6678
Light Projects	Simon Gratten	07974 423 954
ACDC Lighting	Liam Dears	0845 862 6400
Lumenpulse	Martin Barker	07766 406 6561
iLight	David Doyle	01923 495 495
Projection Lighting	Martin Barker	07766 406 6561
Light Graphix	Richard Hargreaves	01322 527 629
Aldabra	Neil Partridge	07972 043 103
DW Windsor	Tara Moyles	01992 474 600

Appendix B

Plot Calculations

Sondheim Theatre - External Lighting



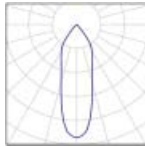
DIALux
25.08.2015

Operator
Telephone
Fax
e-Mail

Sondheim Theatre / Luminaire parts list

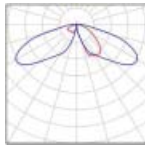
18 Pieces BEGA 77952
Article No.:
Luminous flux (Luminaire): 331 lm
Luminous flux (Lamps): 331 lm
Luminaire Wattage: 6.0 W
Luminaire classification according to CIE: 100
CIE flux code: 96 99 100 100 100
Fitting: 1 x LED 4,2W (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



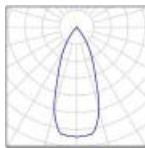
3 Pieces DW Windsor WIS L245 D WINDSOR STREET :- LED CONFIGURATION 'D'
Article No.: WIS L245 D
Luminous flux (Luminaire): 4568 lm
Luminous flux (Lamps): 4568 lm
Luminaire Wattage: 59.0 W
Luminaire classification according to CIE: 98
CIE flux code: 21 57 88 98 100
Fitting: 1 x 24 x 2.4w CREE XT-E 4.5k Cct (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



12 Pieces Projection Lighting 40deg 2000Lm AlphaLED Nimble 40deg 2000Lm AlphaLED Nimble
Article No.: 40deg 2000Lm AlphaLED Nimble
Luminous flux (Luminaire): 1776 lm
Luminous flux (Lamps): 2000 lm
Luminaire Wattage: 1.0 W
Luminaire classification according to CIE: 100
CIE flux code: 99 100 100 100 89
Fitting: 1 x AlphaLED XSM-02 - typical module at 70C, 1000mA, 80CRI(min) (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



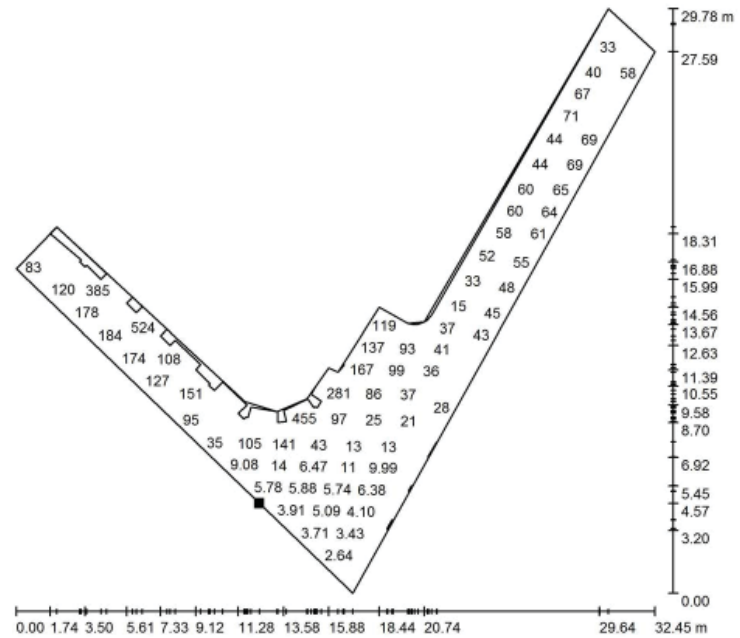
Sondheim Theatre - External Lighting



DIALux
25.08.2015

Operator
Telephone
Fax
e-Mail

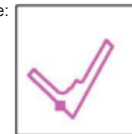
Sondheim Theatre / Theatre Perimeter / Value Chart (E, Horizontal)



Values in Lux, Scale 1 : 233

Not all calculated values could be displayed.

Position of surface in external scene:
Marked point:
(17.200 m, 11.313 m, 0.000 m)



Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
88	2.44	589	0.028	0.004

Sondheim Theatre - External Lighting



Operator
Telephone
Fax
e-Mail

Sondheim Theatre / 3D Rendering

