

Fountain House External Lighting Impact Study

Ref:	2126	Date:	29.11.17
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Signed:	Date:		
			

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Executive Summary

The Engineering Practice have been engaged by Morgarth to review the proposed external lighting scheme for Fountain House, Broad Street Mall, Reading and discuss its impact on the local environment for planning purposes.

The Engineering Practice have reviewed lighting designs produced by Nulty Lighting of the proposed development.

We have examined the local authority requirements and requirements of local wildlife and found that the proposed scheme as designed meets them.

1. Introduction

The Engineering Practice have been engaged by Morgarth to examine the plans of the proposed Fountain House, Broad Street Mall, Reading and consider the external lighting scheme produced by Nulty Lighting and its impact in regards to the planning requirements of the local authority, detailing items to be considered in a specification of such a scheme.

2. Standard Terms and Conditions

Information

All information supplied by the Client and the Client's staff, representatives and professional advisers, local authorities, other statutory bodies and investigation agencies is accepted as being correct unless otherwise specified, and is relied upon.

Deleterious Material

Unless specifically requested we do not arrange for an investigation to be carried out to determine whether or not asbestos, CFCs or any other deleterious material has been used or installed in the property. In addition, we have not carried out or arranged for any tests by a third party.

Inspection

We do not inspect those parts of the building or its services which are built-in, covered up or, otherwise, made inaccessible in the normal course of construction, fitting-out or occupation. We are, therefore, unable to Report on such parts of the installations that are inaccessible.

Testing and Commissioning

Unless specifically requested, we do not carry out any performance or safety tests of the existing water installations, mechanical installations, air conditioning, ventilation, heating installations, drainage, fire alarms or electrical systems. This Survey excludes the electrical "PAT" (Portable Appliance Tests) checks, the testing of water samples for contamination and the testing, re-commissioning and balancing of the existing systems.

Performance

The Survey and Report does not include an analysis of the performance or capacity or duty of the existing services or the capability of serving any proposed occupation or fit-out, unless specifically instructed. Any assessment of capabilities, if specifically requested will be based on industry standard "rules of thumb" and are therefore an opinion. If a detailed analysis is requested, this will require a detailed design. This Report does not form any guarantee as to the performance or capability of the existing system.

Enquiries of Local Authorities and Statutory Undertakers

Unless otherwise stated, we assume that all necessary permanent planning and other consents, approvals and permissions have been obtained for the construction and current use of the premises, and that there are no outstanding enforcement or other notices. Any non-compliance with Building Regulations, Offices, Shops and Railway Premises Act, Fire Precautions Act, Defective Premises Act, Health and Safety Acts is not established.

Except to the extent noted in this Report, we do not make any enquiries of any statutory authorities concerning the present arrangements in the building or the likely effect of the proposed occupation, and ask Clients to note that the complexity of the Building Regulations and other statutory enactments often has a material effect on the way in which a building is planned and used and the cost of consequential work. It is assumed that professional advice will be sought at the appropriate stage to determine any works that may be necessary due to the planned occupation.

Other Consultants and Specialists

Where Contractors or Consultants are instructed to carry out tests, whilst we have taken every care in instructing these firms, we cannot accept responsibility for their Reports and shall not be liable for any error or omission therein.

Suitability of the Property

The suitability of a property for any use is outside the scope of the Survey and Clients are, therefore, advised to ensure that all occupancies, processes, trades or activities are possible and permitted.

Repairs and Maintenance

Unless otherwise stated, this Report assumes that the services are regularly maintained and that they are, generally, in good working order. The Report does not include interrogation of each item of plant or component to determine whether or not it is working. No guarantee is given to the remaining life span of any system or component thereof.

Legionella and Bacteria Control

Unless otherwise stated, this survey and Report excludes any assessment or testing of water systems (open or closed) with regard to the prevention or control of bacteria and legionella or the testing of water samples.

Tenants' Fittings

All items normally regarded as tenants or trade fixtures and fittings are excluded from our Report unless specifically referred to therein.

Cost Appraisal

Any indication of cost in respect of the advice or items contained within this Report is given purely as guidance and should not be relied upon as being a guaranteed cost for the works; it is an opinion. An accurate cost of carrying out particular items of works or the items of work described within the Report can be obtained but will entail considerable further work in detailing accurately the nature, scope and extent of the work and will also take further time. An exercise of this nature is beyond the scope and instructions of this Survey and Report.

Any figures given are based on our knowledge of current rates of medium sized Contractors and serve as an indication of the probable costs for the work evident from our Survey.

A cost indication is not a valuation.

Any figures given are approximate costings of the more salient items of works and exclude VAT and professional fees, and are for budget purposes only. No allowance for future likely inflation is included.

Reproduction and Use

Reports are for the use only of the party to whom they are addressed and should only be used within the context of the instructions under which they are prepared. They may only be disclosed to other professional advisers assisting in respect of that purpose. No responsibility is accepted to any third party for the whole or any part of the contents.

Neither the whole nor any part of the Report or any reference thereto may be included in any published document, circular or statement, or published in any way without written approval from The Engineering Practice.

3. General Lighting Requirements

The proposal is to illuminate the main facade of the office building with ground mounted floodlights and the car park façade with RGB strip lights in aluminium extrusions.

Lighting shall be designed and installed in line with industry guidance from the Institute of Lighting Engineers and the Chartered Institute of Building Services Engineers.

Local planning guidance should also be sought, however this will likely reference the above institutions.

The lighting scheme needs to be sympathetic to the environment, local residents and businesses.

An LED light source is to be used as they have a low UV content and narrow wavebands which have the least impact on bats and other wildlife.

Lighting adjacent adjoining properties should be designed to minimise spillage by design or by the use of integral and external shields to luminaires where necessary.

The lighting is for decorative purposes only therefore lux levels can be kept to a minimum and any spillage carefully controlled.

Luminaire types shall be carefully selected to provide very minimal upward light output to reduce obtrusive light and have glass lanterns to filter UV light.

The energy usage and life expectancy of LED lamps are also of significance in the lighting design.

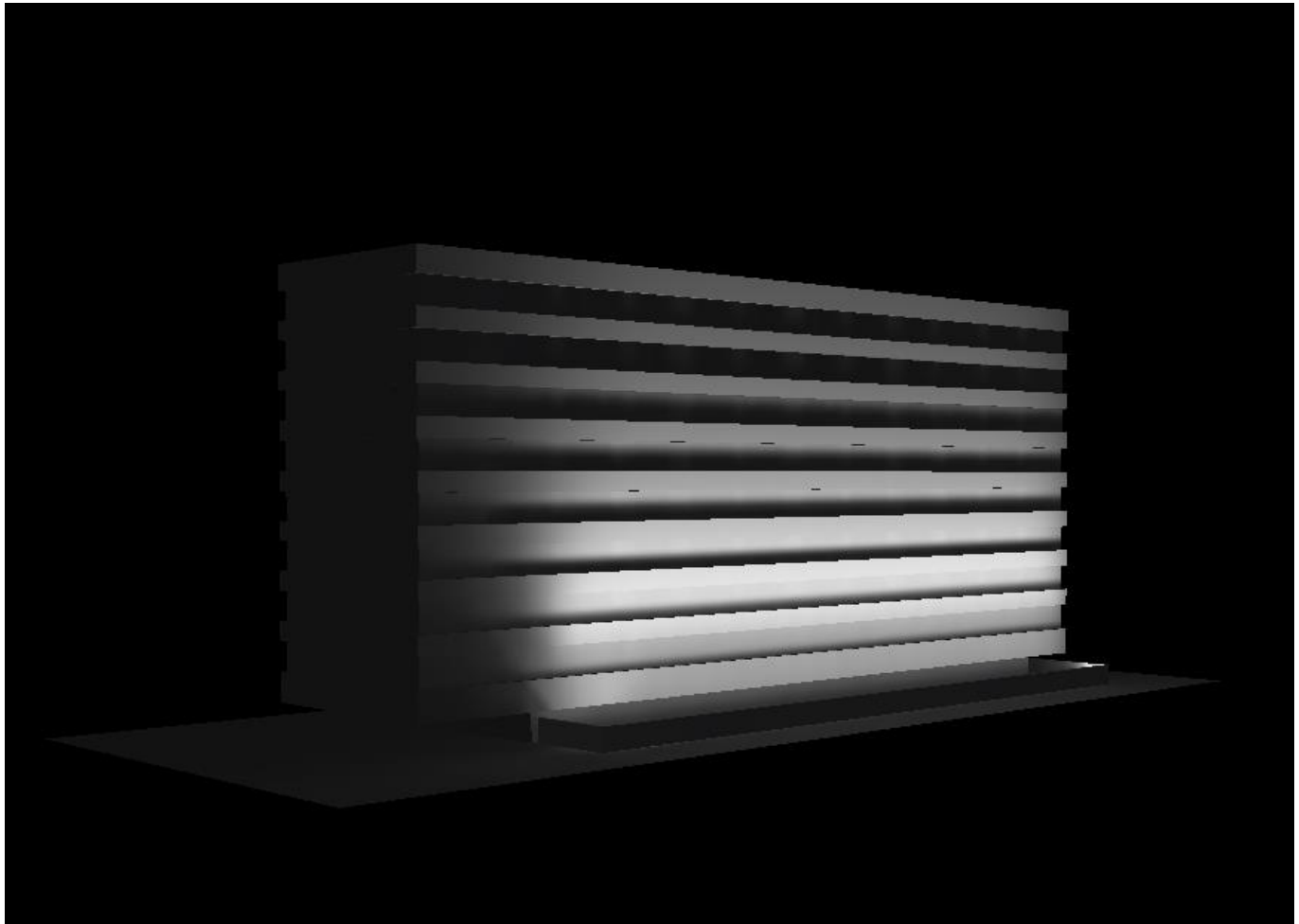
Control of the lighting to be planned so that car parks and building feature lighting are timeclock and photocell controlled to switch on/off at certain times. The proposed times of operation are 16:00 to 00:00.

Calculations will be required on recognised industry software such as Dialux or Relux for each area.

The types of luminaire should be kept to a minimum to reduce future maintenance issues and to bring the development together as a whole.

In compiling this report TEP have referenced and included sections from Nulty Lighting Design Report reference 0521.DIS.001.

4. Fountain House Façade Lighting



The Façade of Fountain House is to be flood lit with colour changing LED flood lights and illuminated signage will be positioned on the top of the building.

The roof mounted signage is internally illuminated and as such will not cause any spillage into neighbouring properties etc.

The design has carefully considered the impact of this lighting on surrounding properties and the environment.

The lighting installation will be controlled by a timeclock and photocell, expected hours of operations are 16:00 to 00:00 outside the hours of daylight.

The lighting designers, Nulty Lighting, have produced an isolux plot of the façade showing expected lux levels:-

Broad Street, Reading



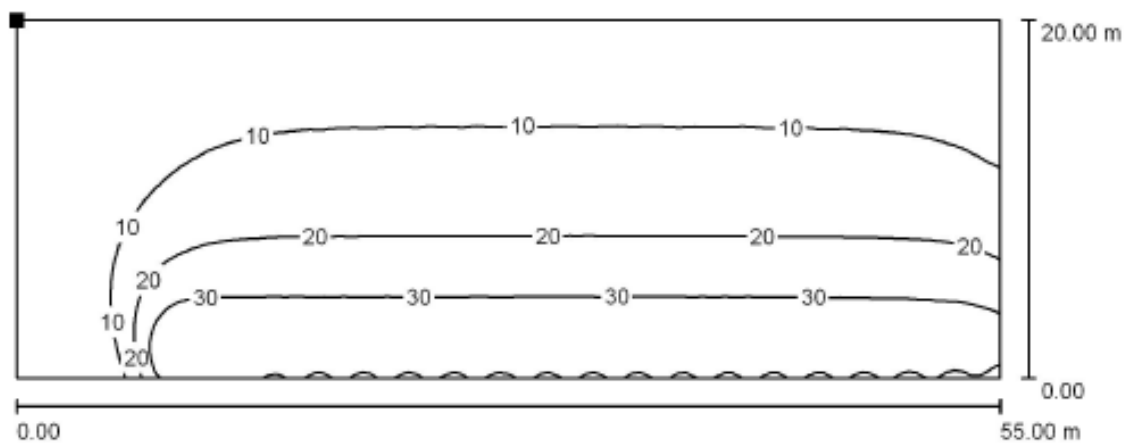
29.11.2017

NULTY +

The Tower Building, 7th Floor, 11 York Road, SE1 7NX, London

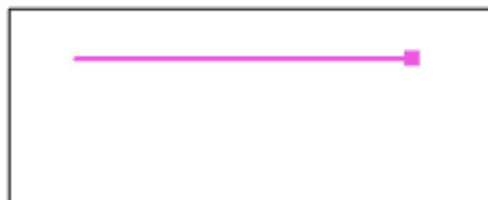
Operator Caroline Jonsson
Telephone 020 7401 3635
Fax
e-Mail office@nultylighting.co.uk

Fountain House Facade - Traxon / Fountain House Facade / Isolines (E, Perpendicular)



Values in Lux, Scale 1 : 394

Position of surface in external scene:
Marked point:
(-68.042 m, 33.846 m, 24.722 m)

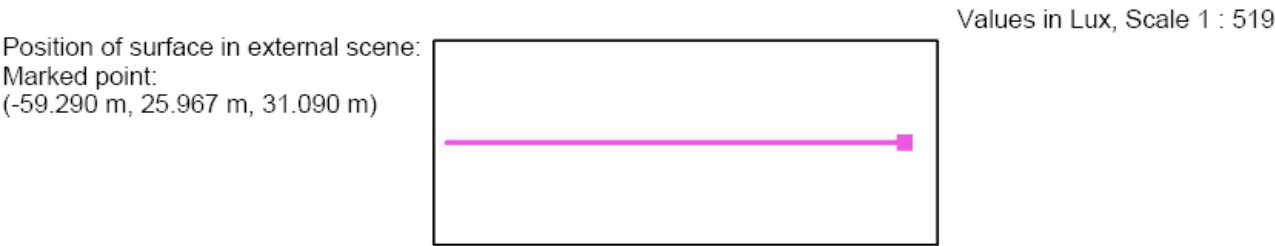
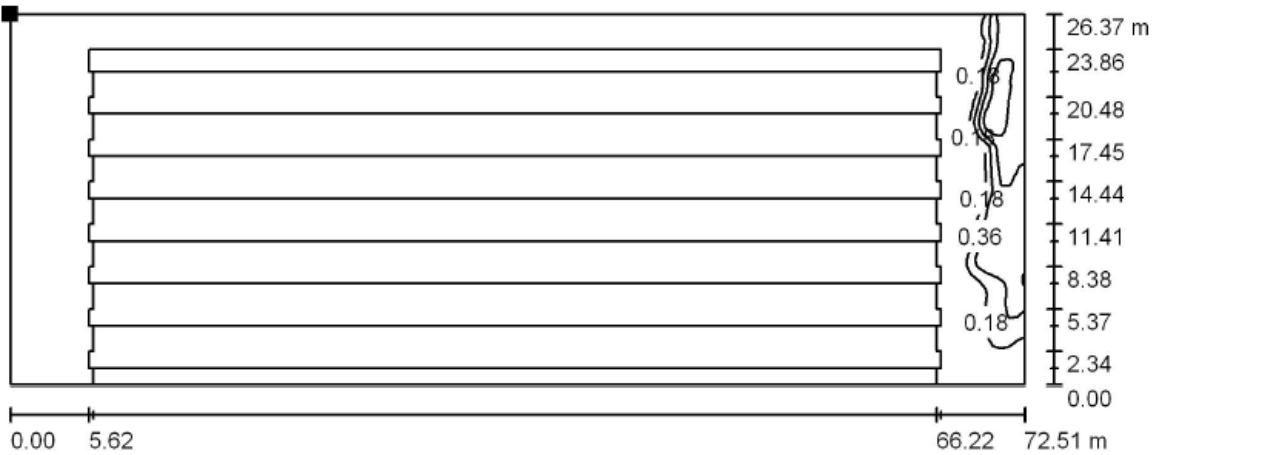


Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$	E_{min} / E_{max}
16	0.55	38	0.033	0.014

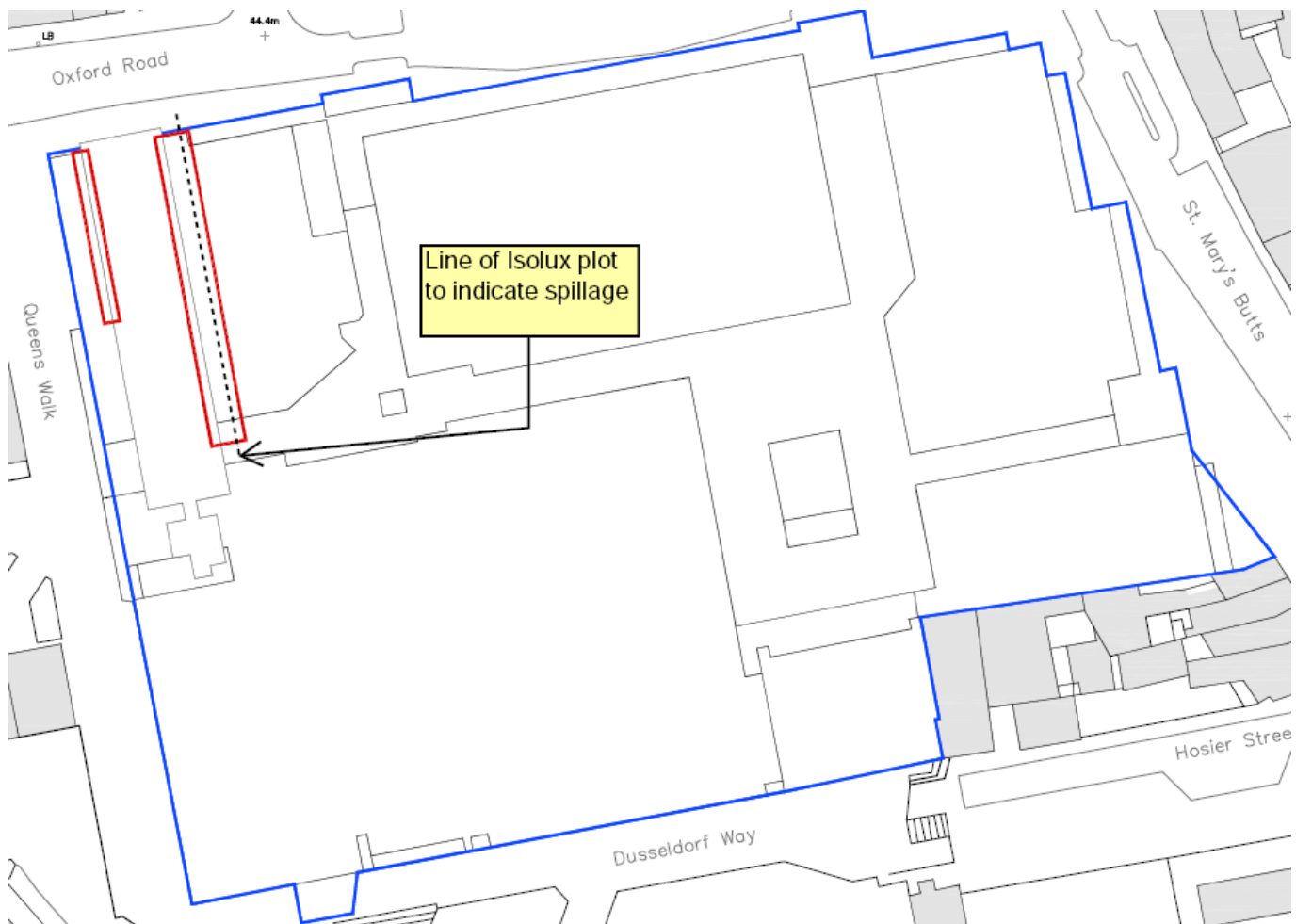
We have re-run the calculation to prove that light spillage is negligible, see isolux plot below:-

Fountain House Facade - Traxon / Fountain House Facade Spillage / Isolines (E, Perpendicular)



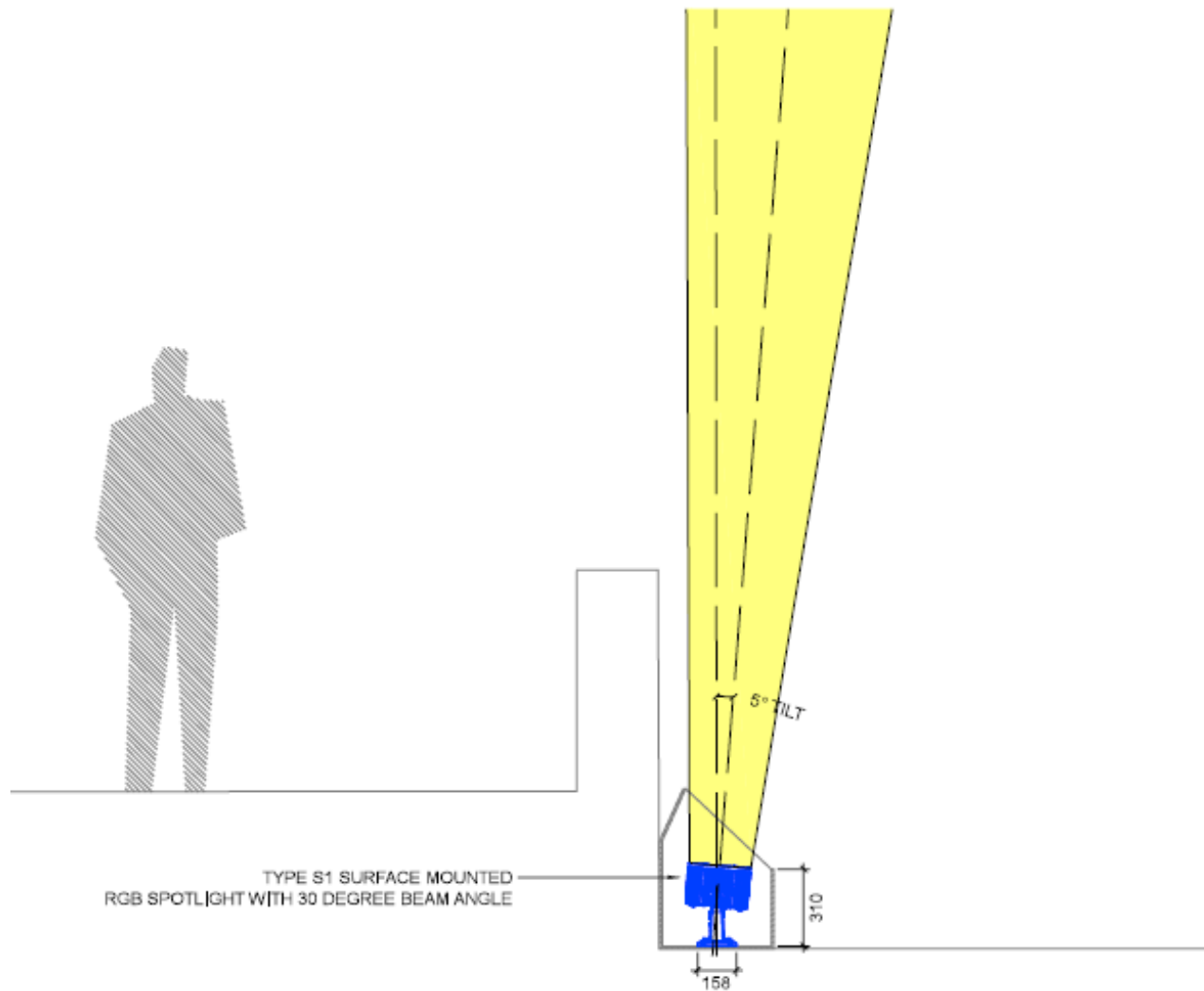
Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$	E_{min} / E_{max}
0.09	0.00	0.92	0.000	0.000



The plot has been taken approximately 5.5m around the perimeter of the façade and can demonstrate that the spillage is less than 1 lux. We are confident this will have no impact on the surrounding buildings or environment.

The luminaires are to be positioned on the ground behind a low level wall, they will have a 30° beam angle and a 5° tilt.



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SECTION FOR FOUNTAIN HOUSE FACADE LIGHTING

1 : 20 @A1

5. Schedule of Equipment

LOAD AND CONTROL SCHEDULE

NULTY+

PROJECT: BROAD STREET, READING

PROJECT REF: 0521.LS.01 Rev -

CONTROL CHANNEL:	LUMINAIRE:								TOTAL LOAD:	CONTROL TYPE:				
	REF:	QTY:	DESCRIPTION:				QUANTITY:	LAMP TYPE:			WATTAGE:	LOAD:		
Fountain House Façade														
FH-L	001	S1	22	RGBW (White 4000K) Surface Mounted LED Spotlight.				1	4-in-1 LED clusters	85 W	85.0 W	1870.0 W	DMX	
											TOTAL	1870.0 W		