TROUP BYWATERS + ANDERS

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26.06.17
Re: Bridgewater House - Facade Lighting
TB+A reference – LLSA0316
CC: Adam Watson

The below outlines the environmental impacts and requirements for obtrusive lighting as well as calculations undertaken for the newly proposed facade lighting to Bridgewater House. The calculations have centred around the obtrusive light to the neighbouring buildings and building luminance (brightness) of the facade, in line with the latest guidance and legislation.

The following guidance and lighting legislation was used when carrying out the design and assessment of the environmental impacts of the proposed Bridgewater House façade lighting installation-

Guidance and lighting legislation used-
SLL – Guide to limiting obtrusive light 2012
LG6 – The exterior environment 2016
ILP – Guidance notes for the reduction of obtrusive light GN01:2011

Software used to create calculations – Dialux 4.12
Facade layout drawing used in model – Bridgewater Floor Plans DWG, Received 12.11.15

Bridgewater House is located in Manchester city centre, an area with mixed recreational and commercial land use with high night-time activity; therefore Bridgewater House falls into the lighting environment category E4 high district brightness. Environmental Zone E4 states a maximum light intrusion measured in vertical luminance on windows (allowable light spill onto a neighbouring window) of 25 lux pre-curfew. There is also a requirement regarding the brightness of a building and this is a maximum average building luminance of 25 cd/m² pre-curfew.

Maximum illuminance on windows –
The maximum illuminance on windows was calculated and assessed by creating a 3D model of Bridgewater House in Dialux, including architectural façade details and exact luminaire data.
The maximum window illuminance on neighbouring windows directly opposite Bridgewater House is 1.89 lux, falling below the required 25 lux.

Maximum average building luminance –
To assess the building luminance for Bridgewater House, we have selected an area of the façade which is worst case scenario due to the size and complexity of the building.

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The maximum average building luminance (for a selected area, worst case scenario) is 2.7 cd/m², falling below the required 25 cd/m².

Assumptions

- An area drawings taking in the surrounding buildings was not available for use. Site measurements were taken using a laser measurer to obtain adjacent building locations and heights.
- While the dimension information may vary slightly we do not believe that the variations would result in non compliance as the values seen are well below the recommended value maximums.
- Obtrusive light calculations were not undertaken in Atwood St as the adjacent property on that street is an NCP car park.

Please do not hesitate to contact myself or Adam Watson if you require any additional information or have any queries.

Kind regards,

Zoe Faulkner
Lighting Designer
Light + Lighting Solutions
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