5-17 HAVERSTOCK HILL
LONDON
NW3 2BP

LIGHTING IMPACT ASSESSMENT

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1. INTRODUCTION

The purpose of this report is to establish the potential impact of any exterior landscape lighting or amenity lighting from the proposed development onto the surrounding area.

The report is based upon drawings and the development external lighting scheme. The general proposal is to provide downwards facing illumination to the site footpaths and roadways for safe passage. The scheme will focus on the use of downward facing lights, hooded amenity lighting and low lumen lighting to mitigate the effects of obtrusive light.

2. SITE DESCRIPTION

The site is located on Haverstock Hill in the London Borough of Camden and is a new build development adjacent to Chalk Farm Underground Station consisting of a new hotel and private residential flats. The site itself is not within a conservation area. The site is currently occupied by a number of retail units which are to be removed prior to the construction of the new site.

Figure 1 shows the location of the outline of the application boundary area shown in red.

3. CRITICAL VIEWPOINTS

As part of the planning application that has been agreed, a number of critical viewpoints of the site have been identified. For the purposes of this report, the external lighting impact will be considered on Adelaide Road, Haverstock Hill and on the façade of Eton Place opposite the service road.

Figure 2 shows the approximate assessment zones in red

4. BASELINE CONDITIONS

Running west to east along the south end of the site and north west to south east on the north side of the site there are public highways which are both to remain operational throughout the construction of the site. During the construction of the site, an unadopted service road on the west side of the building is to be introduced. The southeast corner of the site is directly adjacent to Chalk Farm London Underground Station on the Northern Line.

Surrounding the site are a number of commercial and retail units. Directly to the south of the site is a residential block. There are a number of existing streetlamps on the pavement directly outside of the site and Chalk Farm station also has frontage lighting.

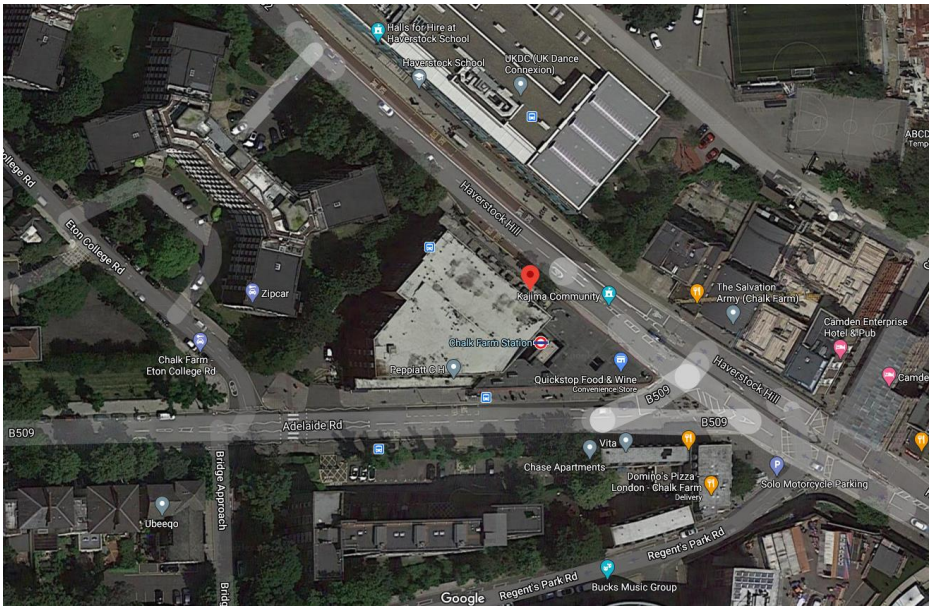


Figure 3 shows the aerial view of existing planting and treelines

5. ENVIRONMENTAL ZONE

The International Commission on Illumination (CIE) developed a series of environmental zones in order to control the impact of lighting at night. These have been adopted by the Institution of Lighting Professionals (ILP) in their Guidance Notes for the Reduction of Light Pollution (2011). They suggest limits for sky glow, light intrusion into windows (trespass), luminaire intensity and building luminance relating to each environmental zone as set out in figure 3.

Obtrusive light limitations for exterior lighting installations – general observers – ILP UK Recommendations 2011

Environmental zone	Sky glow ULR (Max) %	Light intrusion (into windows) Ev (lux)		Luminaire intensity I candelas (cd)		Building luminance L (cd/m²)
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Pre-curfew
E0 IDA Dark Sky Parks, UNESCO Starlight Reserves	0	0	0	0	0	0
E1 Intrinsically dark landscapes National Parks, Areas of Outstanding Natural Beauty etc	0	2	0 (1*)	2,500	0	0
E2 Low district brightness Rural, small village, relatively dark urban location	2.5	5	1	7,500	500	5
E3 Medium district brightness Small town centres or urban location	5	10	2	10,000	1,000	10
E4 High district brightness areas Town/city centres with high night-time activity levels	15	25	5	25,000	2,500	25

ULR Upward light ratio of installation (maximum permitted percentage of luminaire flux that goes directly into the sky

Ev Vertical illuminance in lux (Lumens/m²) – measured flat on glazing at centre of window

I Light source intensity in candelas (cd)

L Luminance in candelas per square metre (cd/m²)

Curfew Time after which stricter requirements for the control of obtrusive light will apply

* Permitted only from public road lighting installation

See Institution of Lighting Professionals *Guidance Notes for the Reduction of Obtrusive Light* 2011 – www.theilp.org.uk

Figure 4 - ILP environmental zones and limits

As is demonstrated by the table above, the site falls within Category E4, Town/city centres with high night-time activity levels, as is common for London locations.

It is not considered that there is likely to be light trespass from the proposed development above the levels stated by the CIE

6. PROPOSED DEVELOPMENT

The proposed development consists of the demolition of the existing buildings, and the re-development of 35 Residential units (mixed social and private ownership) and a 118 key hotel.

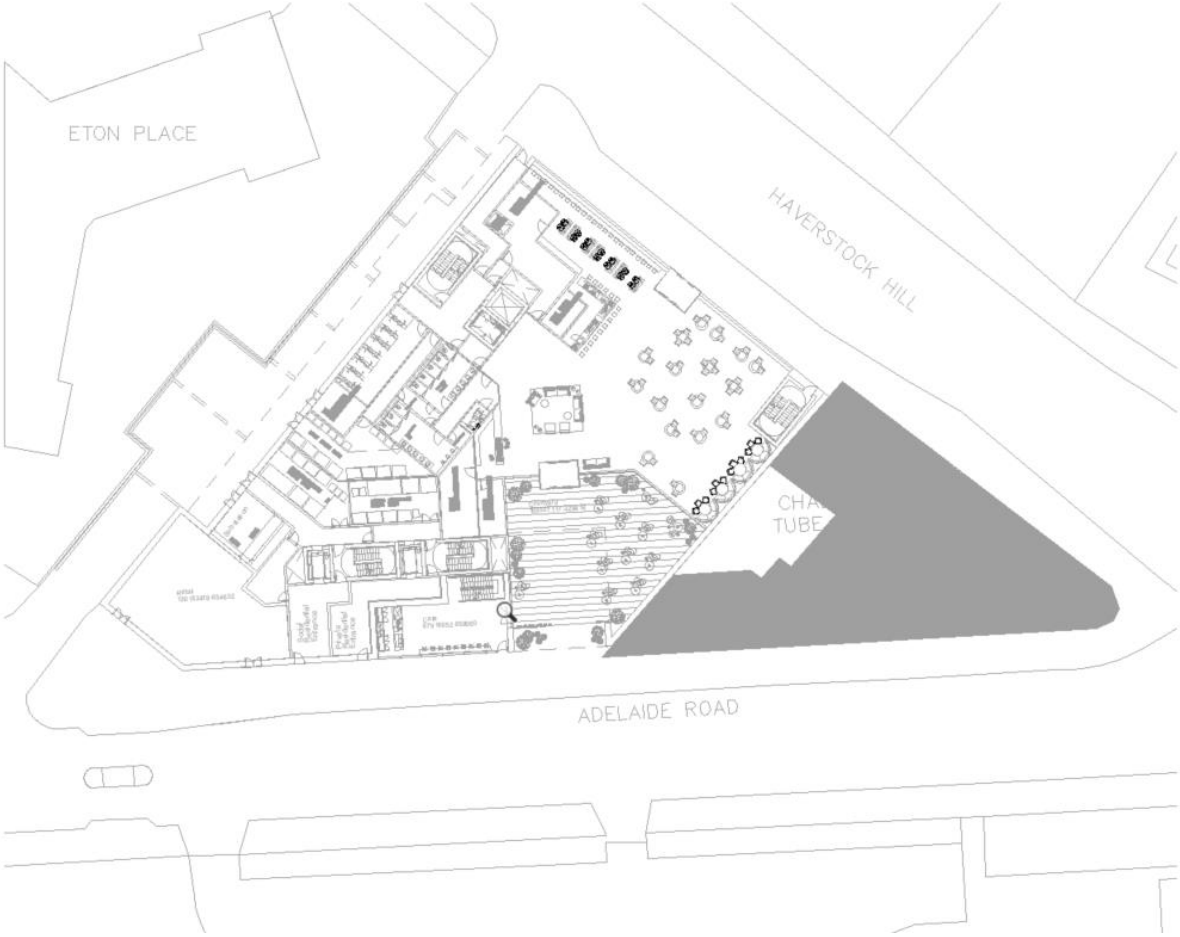


Figure 5 shows the site layout plan.

The design of the site means that light spill is likely to be of minimal impact due to the nature of the environment surrounding the site. The south west corner of the site is occupied by a retail unit, it is possible this will be closed during post-curfew hours. The Café on the south facing façade will likely be closed during post-curfew hours also, this will limit the light spill on the south side of the site during post-curfew hours.

The large food and beverage area on the north east façade will likely be open into the post-curfew hours but the impact on Haverstock hill is likely to be minimal.

Please refer to appended external lighting plan for proposed scheme.

7. EXTERNAL AREAS

There are two external landscaped areas on the site (for details, please refer to RBMP layouts), One external landscaped courtyard at ground floor level and one resident's garden located at 5th floor level.

It is envisaged that the courtyard area will incorporate floor mounted up-lighting for features such as trees and seating areas and a number of bollard/wall mounted luminaires to supplement access walkways. These fittings will be installed in locations as to minimise upwards light spill and spill onto neighbouring properties.
As this courtyard provides the main point of access to the Hotel, the lighting within the courtyard will be controlled via a photocell & timeclock arrangement allowing the number of fittings energised to be reduced accordingly outside of the operating hours of the restaurant, to only illuminate walkways in post curfew hours.

It is apparent that there will be an element of light spill from the internal lighting as it is anticipated that the lighting within the lobby/restaurant area will be on (likely at reduced capacity at night time) at all times. However this light spill is unlikely to affect neighbouring properties as the property to the east is Chalk Farm underground station and there is an amount of shading which will limit upward spill to the properties within the development.

The shared resident's garden at 5th floor level will likely incorporate floor mounted up-lighting to light features such as trees and covered seating areas. This will be supplemented by the use of bollard lighting installed to mark paths and any obvious trip hazards. The bollard fittings will be downwards directional to minimise upwards light spill and to focus the light on the footpaths rather than general lighting of the space. It is not anticipated that the lighting will be operational in post curfew hours as the garden can only be accessed by

tenants, which will also serve to minimise the risk of vandalism. It is also assumed that the rooftop garden will be screened on it's edges which will effectively mitigate any light spill to neighbouring buildings and therefore have little effect on local residents.

8. POTENTIAL IMPACT & MITIGATION STRATEGIES

Due to the orientation of the site, the service road, which is likely to be in regular use at varying times of day and night (which may require longer lighting hours than the other facades of the building. The service road façade faces Eton place, a large private residential development which will likely have the most impact from the external lighting.

Fortunately, there is an existing treeline along the service yard between the façade of the development and Eton place which will mitigate a large proportion of light spill from the external lighting on the service road. To further mitigate this light spill, the lighting will be timeclock controlled to control the hours of operation but will be fitted with a switch override so that any out of hours delivery or maintenance access may be illuminated on an ad-hoc basis.

As a part of the mitigation of upwards light spill, we will propose the use of wall mounted amenity lighting with a hooded or "eyelid" chassis to minimise upward spread.

Figure 6. Hooded Wall Amenity Lights

Any external lighting required by the entrance door, is to be a downward-only light distribution, such as that shown in figure 7, with narrow distribution to ensure spill light is contained within the porch area.

Figure 7. Wall light

All external lighting to the façade is to be controlled by timeclocks and photocells so that they are only activated during active times when dark and will be switched off at a pre-determined time. Lighting on the public facades will be kept to a minimum where possible and where suitable, will be downward directional lighting. Due to the nature of the Camden environment, it is determined that general background lighting

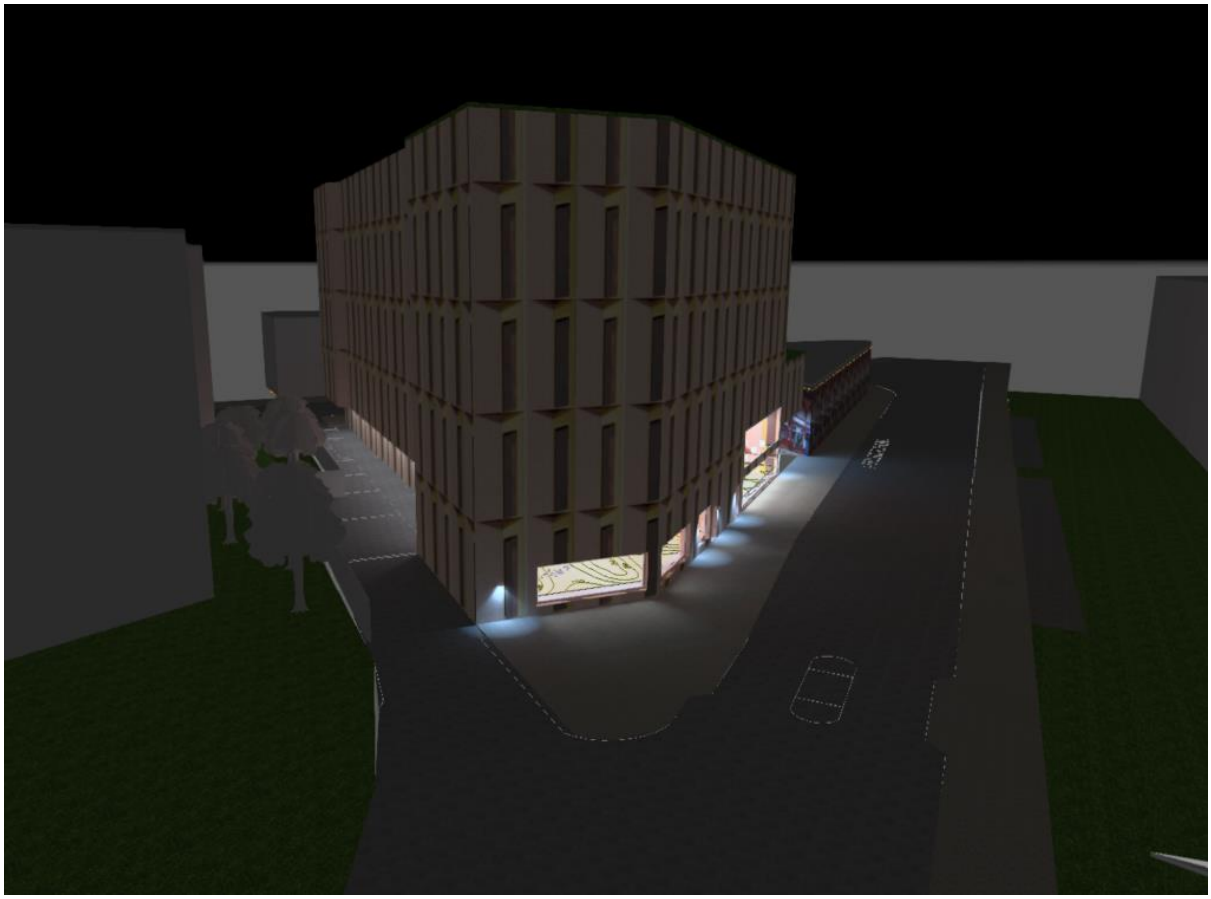
levels from existing properties on both Haverstock Hill and Adelaide Road is noticeable and the additional lighting being incorporated onto this development is unlikely to make much visual impact to the street scene.

Figure 8. Bollard Lighting

Upwards light spill from the bollard lighting in the courtyard area and on the rooftop garden area will likely be minimal. It is recommended that downward directional bollards (as shown above or similar) are used to mitigate the spill of light both upward (due to the downwards facing nature of the fitting) and also spill to neighbouring properties as the fitting has no vertical plane light sources.

Light spill from the internal lighting is expected to be minimal, as there are not large areas of glazing on any façade and due to the nature of the development, it is expected that internal lighting will be blocked out by curtains/blinds at night time. The level of light spill will be calculated once internal lighting calculations are carried out.

9. EXTERNAL LIGHTING CALCULATIONS



Surrounding Building Facades:

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Haverstock School Facade Perpendicular illuminance Height: 4.400 m	3.07 lx	0.88 lx	6.60 lx	0.29	0.13	S15

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Eton Place Facade Perpendicular illuminance Height: 3.000 m	1.16 lx	0.52 lx	2.35 lx	0.45	0.22	S2

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Bridge House Facade Perpendicular illuminance Height: 6.200 m	2.00 lx	1.05 lx	7.38 lx	0.53	0.14	S3

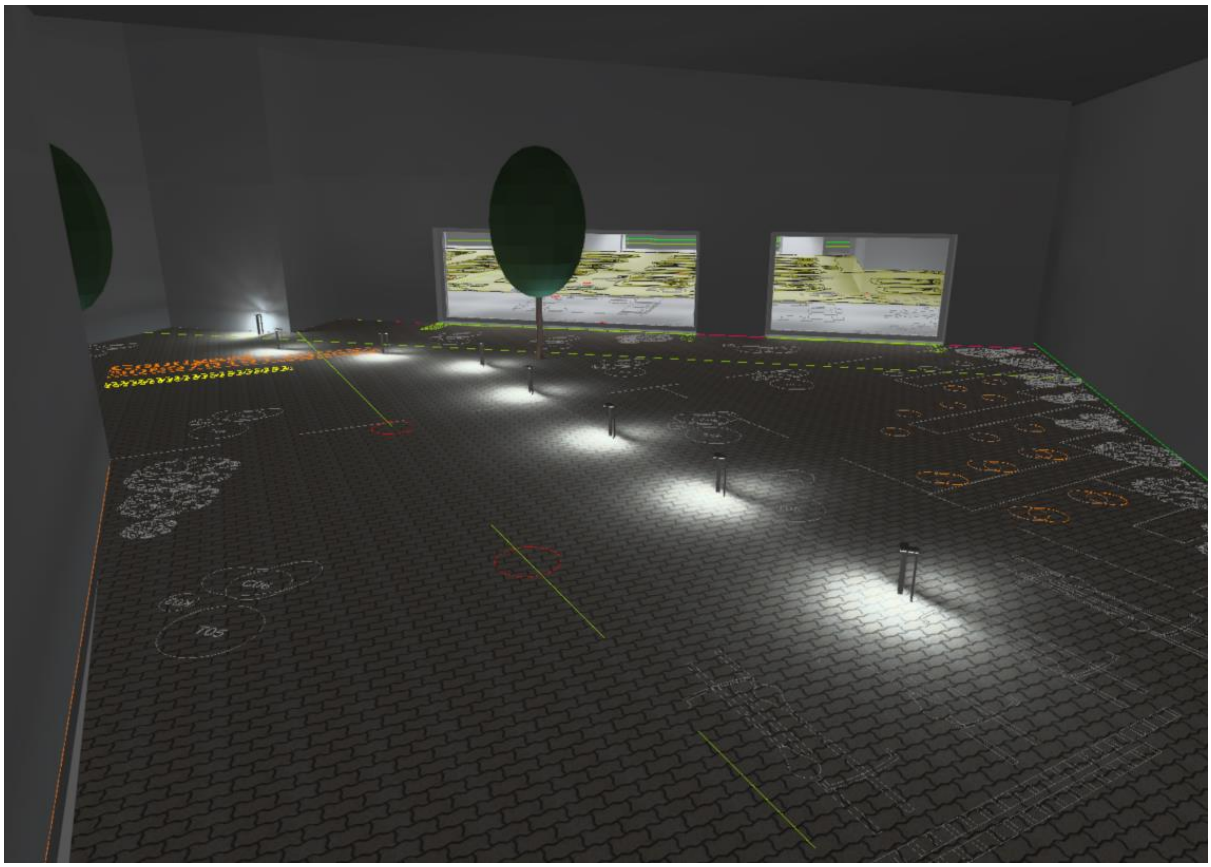
Footpath:

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Haverstock Hill Pavement Perpendicular illuminance Height: 0.200 m	4.76 lx	0.30 lx	127 lx	0.063	0.002	S16

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Service Road Perpendicular illuminance Height: 0.000 m	29.2 lx	0.14 lx	61.8 lx	0.005	0.002	S12

Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Adelaide Road Pavement Perpendicular illuminance Height: 0.200 m	12.5 lx	0.043 lx	195 lx	0.003	0.000	S1

External Courtyard



Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Calculation surface 2 Perpendicular illuminance Height: 0.100 m	13.5 lx	0.051 lx	442 lx	0.004	0.000	S3

10. SUMMARY

To summarise using the figures extrapolated for the lighting design model, we have provided sufficient low-level lighting illuminance for footpath for pedestrian use without causing excessive light spill. We believe there is no requirement for us to provide additional street lighting due to the urban nature of the site. The external lighting calculations carried out at this stage do not show the lux level on the face of the buildings surrounding the development exceeding the 5 lux post-curfew figure, not taking into account the existing ambient lighting.

We have also calculated light spill zones to the surrounding buildings to demonstrate the light spill is with accordance with the ILP UK recommendations for light intrusion figures.