

LIGHTING IMPACT ASSESSMENT

Neighbour 71 Blake Road N11 2AG

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1. INTRODUCTION

The purpose of this report is to establish the potential impact of any exterior and interior lighting from the proposed development on the surrounding area, in particular the Tunnel Gardens.

The report is based upon drawings as outlined and future changes to the architectural plans which will target a effect on the findings of this report. There is no current lighting design for the dwelling, so this report will include some outline recommendations for both internal and external lighting strategies.

2. SITE DESCRIPTION

The development is located within an urban area but next to Tunnel Gardens which is an open green space over a railway tunnel.

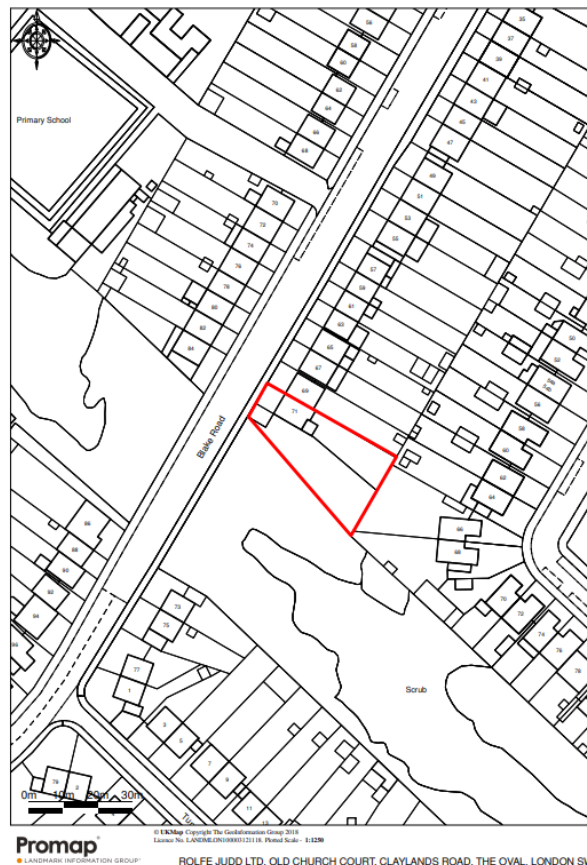


Figure 1 shows the location of the outline of the application boundary area shown in red.

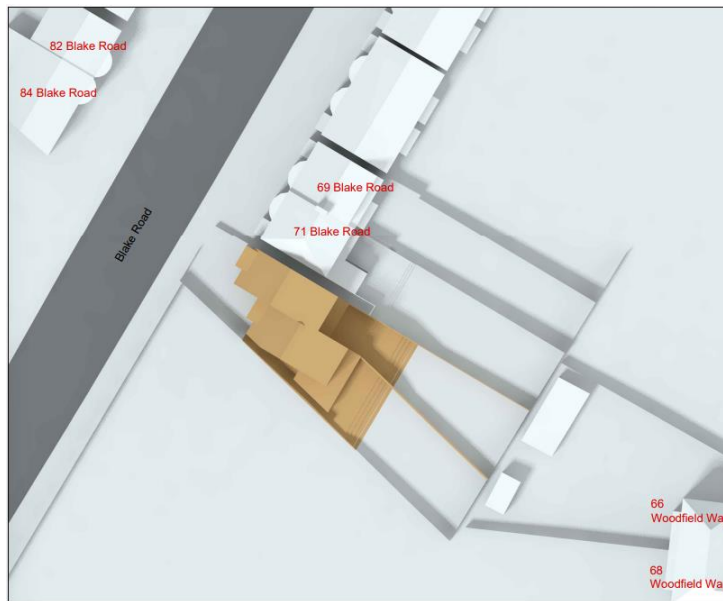


Figure 2. Proposed and existing dwellings

3. CRITICAL VIEWPOINTS

A number of publicly-accessed views of Blake Road have been previously identified. However, with the combination of the topography of the land, together with natural screening from mature vegetation, the proposed redevelopment is not considered to have a significant visible impact on the surrounding area.

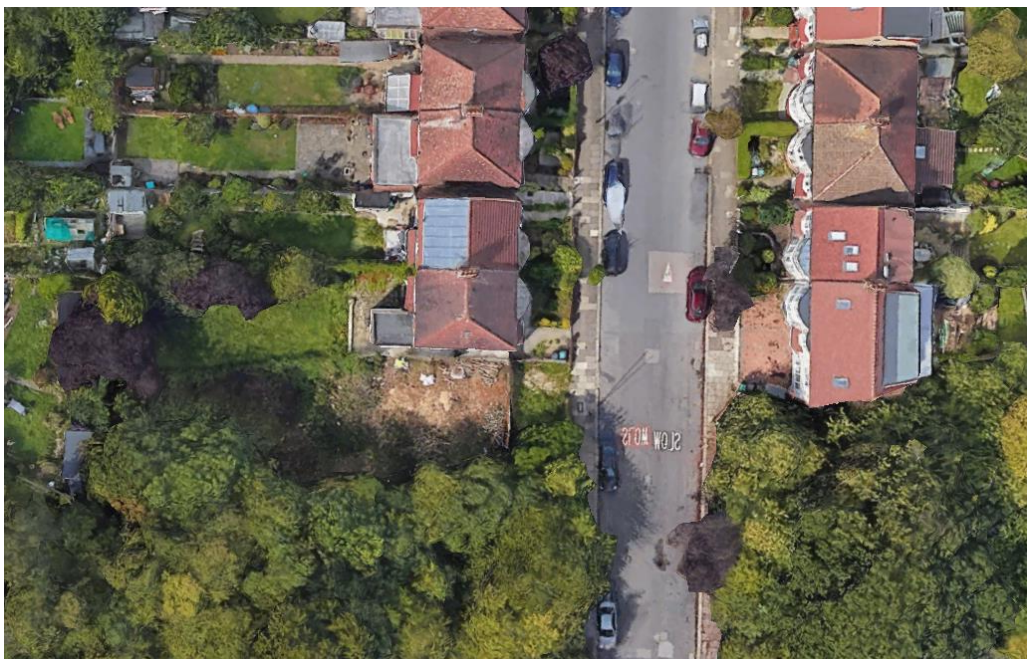


Figure 3. Critical viewpoints

4. BASELINE CONDITIONS

As might be expected, there is existing street lighting on Blake Road and any of the neighbouring roads.

As such, overall, there will be a high level of district brightness and a sky glow in the area.



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 5.

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/m ²)
		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 <i>Guidance Notes for the Reduction of Obtrusive Light</i> 2011 – www.theilp.org.uk						

Figure 5. ILP environmental zones and limits

As can easily be seen, Blake Road fall into Category E3 and Tunnel Gardens fall into Category E2 for the purposes of controlling light pollution and light trespass.

It is not considered that there is likely to be light trespass into the neighbouring houses but the impact on the landscape and, in particular on local flora & fauna will be carefully controlled. It is known that birds and hedgehogs frequent the site, this will be a particular consideration in the external lighting design.

6. PROPOSED DEVELOPMENT

The proposed development consists of the development of an empty plot to two private dwellings.

Figure 6 shows the site plan of the proposed development.

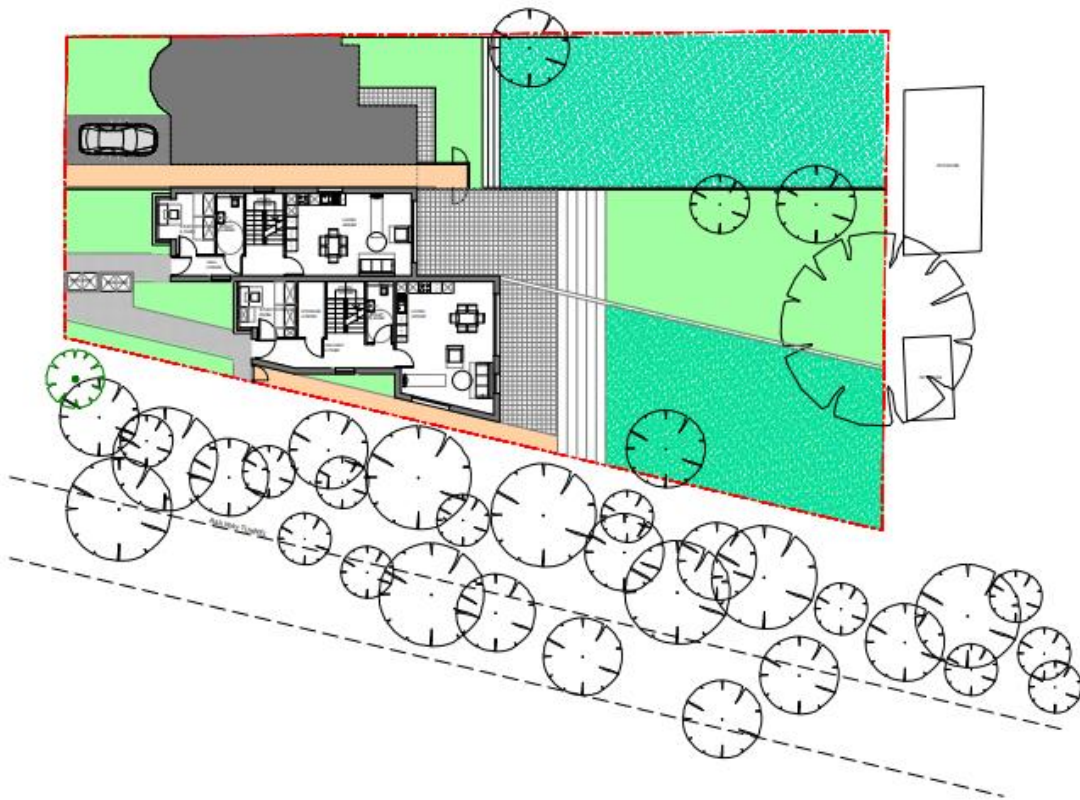


Figure 6. Site plan

There is a normal level of glazing to the proposed dwellings.

The design will carefully consider this area to take account of minimal light spill post curfew.



Figure 7. Proposed Elevations

7. POTENTIAL IMPACT & MITIGATION STRATEGIES

The combination of site location and the glazing means that the lighting design will need to take potential light spill into account, to ensure that any possible internal and external lighting does not interfere with the habitats and/or habits of birds, hedgehogs and insects.

The lighting design will take onboard recommendations from the ecology team and Natural England, in order to ascertain acceptable light levels surrounding the building, especially for Tunnel Garden side.

Given the site location and E2 and E3 environmental zone, it is considered that it would be inappropriate to have any external lighting, with horizontal or upward light spill, to the façades of the development, nor to the grounds beyond the immediate vicinity of the dwelling.

With the need for external lighting between the parking area and side entrance for pedestrian guidance and security purposes, the lighting design will keep this to an absolute minimum. Luminaires will be carefully

selected to ensure that there is no upward light in the area and spill is controlled away from Tunnel Gardens. This could be in the form of a shielded ground-recessed luminaire to graze light solely onto the path such as types shown in figure 8, or low level bollards with a downward-only light distribution, such as shown in figure 9.



Figure 8. Shielded in-ground luminaires



Figure 9. Low-level bollards

Any external lighting required by the entrance door, is to be a downward-only light distribution, such as that shown in figure 10, with narrow distribution to ensure spill light is contained within the porch area.



Figure 10. Wall light

Any external lighting is to be controlled by low-range motion sensors so that they are only activated as and when someone requires them.

The internal lighting will require very careful consideration so as to minimise the impact of spill light onto the surrounding area, particularly within the garden. A specialist lighting designer will be employed to develop the internal lighting in agreement with the client, specifically with this in mind.

The glazed area is not perceived to be a cause of considerable light spill to critical areas; as all fixed internal lighting within the glazed areas, primarily within the Tunnel Garden area of the building footprint is to be downlight only to ensure minimal external light spill in accordance with ILP UK Recommendations. Internal lighting controls will be designed to ensure lighting is not left on when not needed and will be a key part of the overall lighting strategy.

8. SUMMARY

It is evident that there is potential for spill light to reach the Tunnel Garden area which may interrupt birds/hedgehogs' habitats, especially from the internal lighting. A specialist lighting designer should be able to mitigate, as much as possible, the light spill through the fenestration.

The client will have discussions with a façade engineer or glazing expert who is to work alongside the lighting designer, in order to advise on glazing types and techniques that may be used in order to mitigate the impact of the internal lighting.

The final lighting design will be modelled, to calculate any external light spill caused by the internal lighting, to ensure the Ecology team, AONB and ILP UK recommendations are adhered to.

Subject to the results of that activity, it may be necessary to reduce the transmission of the glazing through the use of films or low-transmission glass, or otherwise reduce the amount of fenestration, until the results are acceptable to the ecology team.

It is believed that, although the proposed development presents challenges with regard to potential light spill, with the appropriate professionals working together, there are enough strategies that can be taken forward to mitigate this, to the satisfaction of Natural England and the local planning authority.