

ABA

CONSULTING LTD

515 - 521 Barlow Moor Road

Lighting Impact Assessment Report

Web: www.abaconsultingltd.co.uk

Submitted and Prepared by: Ade Alabi

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Approvals

This document requires the following approvals.

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Ade Alabi	AA	Director	26/01/2026	P01
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Distribution

Name	Organisation	Role
Simon James	Simon James Arq Ltd	Architect
Carol Clarke	Bramhall Town Planning Ltd	Planning Consultant

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1.0 Introduction

1.1 Background

ABA Consulting Ltd are appointed by Simon James Arq Ltd to undertake a Lighting Impact Assessment for the proposed development at 515-521 Barlow Moor Road, Manchester. The assessment is to support the 'revised planning application' for the Proposed Development.

The 'revised planning application' will comprise 5no. car parking spaces at the rear of the building, whereas the Approved Planning scheme mainly comprised a landscaped area only.

Lighting from vehicles accessing the rear car park of the Proposed Development have the potential to cause obtrusive lighting at sensitive receptors in the vicinity of the site. As such, a lighting assessment was undertaken to consider the likely effects and mitigation measures.

This statement assesses the likely impact of the lighting from vehicles accessing the rear carpark, on identified sensitive receptors around the site.

1.2 Site Location and Proposed Development

The Application Site is situated on 515 - 521 Barlow Moor Road, Manchester. The National Grid Reference (NGR): 381792, 393680.



Figure 1 – Google map image of the Proposed Development location on Barlow Moor Road

The development will comprise multiple apartments across three floors. The rear of the development will comprise 5no. car parks and landscaping features. This area will require the provision of suitable light fixtures to provide sufficient illumination for safe general access.

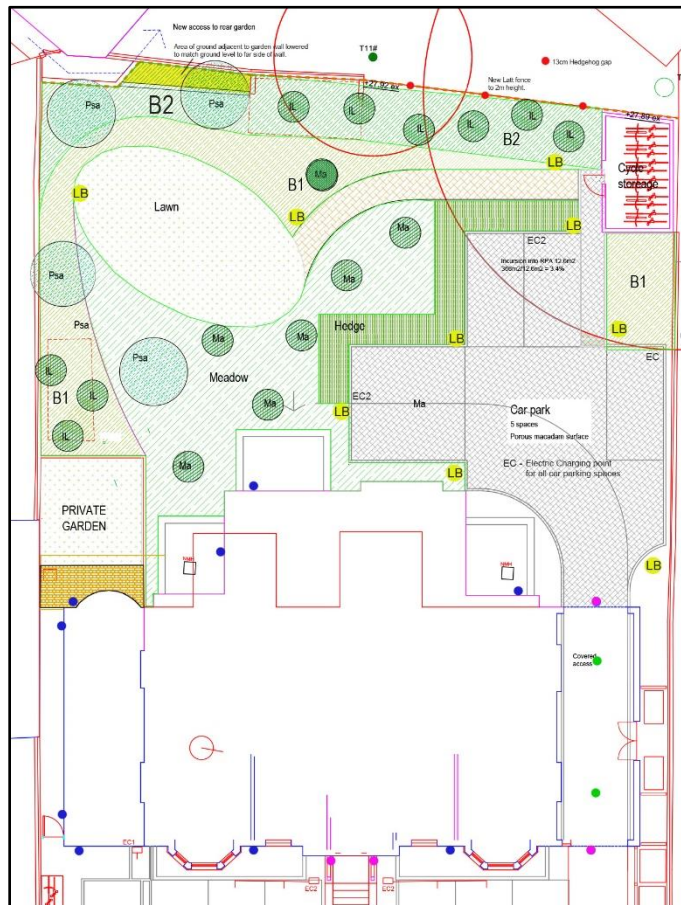


*Figure 2 – General Arrangement plan of the Proposed Development
for the revised Planning Application*

The impact of the vehicle headlights has been quantified by calculating the level of obtrusive lighting at specified receptors. This is detailed in the following sections of this report.

2.0 Lighting Background

2.1 Document Consulted

The following relevant legislation and guidance were used in this assessment:-

- Clean Neighbourhoods and Environment Act, 2005;
- Guidance Notes for the Reduction of Obtrusive Light GN01/2021, The Institution of Lighting Practitioners (ILP), 2021; and;
- Environmental Protection Act, 1990.
- National and Local Planning policies

2.2 Legislative Framework

Light pollution was introduced within the Clean Neighbourhoods and Environment Act (2005) as a form of statutory nuisance under the Environmental Protection Act (1990). This was amended to include the following nuisance definition:

"(fb) artificial light emitted from premises so as to be prejudicial to health or nuisance;"

Although light was described as a statutory nuisance, no prescriptive limits or rules have been set for assessment. Guidance produced by the International Commission on Illumination (CIE), ILP and the Chartered Institute of Building Services Engineers (CIBSE) have been referred to whilst undertaking this assessment.

The document provides advice on how to reduce impacts associated with development, as well as identifying relevant considerations for environmental assessments. Although it is noted the site is not located in a rural area, the guidance provides useful background to lighting assessment and has therefore been considered throughout this report as necessary.

2.3 National Planning Policy

The National Planning Policy Framework (NPPF) includes reference for the need to consider the effects of artificial lighting:

Paragraph 198 of the NPPF states: *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation." (Page 57)

2.4 Local Planning Policy

The proposed site located within Manchester City Council's area of jurisdiction. Policy DM 1 of the Manchester Core Strategy 2012 – 2027, requires all development to have regard to the following specific issues:

- Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.

2.5 Guidance Notes

The Institute of Lighting Professionals (ILP), GN01:2021 Guidance note sets out the industry standard for numerically measuring, (both through lighting design calculations and on site), the light spill from lighting into windows, sky glow, source luminance and building façade brightness. The ILP guidance note provides illuminance, luminance and percentage figures which must be satisfied both pre and post curfew for various types of environmental zone classifications.

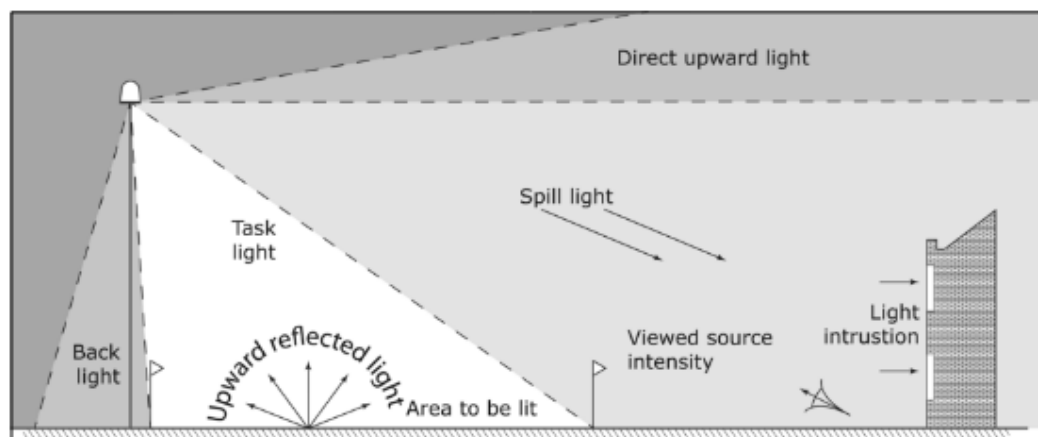


Figure 3: ILP GN 01/21 Types of Obtrusive Lighting

ILP - Guidance on Undertaking Environmental Lighting Impact Assessments (2013): Provides information regarding the production of a comprehensive environmental lighting assessment.

Chartered Institution of Building Services Engineers (CIBSE) – Lighting Guide 6: The exterior environment: Provides a holistic approach to the design of the exterior environment for lighting assessment.

2.6 Technical Standards

BS EN 12462 - Light and lighting - Lighting of workplaces - Part 2: Outdoor workplaces (2014): This standard specifies requirements for lighting of tasks in most outdoor workplaces and their associated areas in terms of quantity and quality of illumination. In addition, recommendations are given for good lighting practice.

BS EN 13201 - Road Lighting Part 2: Performance Requirements (2003): This standard defines lighting classes for road lighting according to photometric requirements and aims at the visual needs of road users.

BS 5489 Part 1 (2003): Provides recommendations on the general principles, aesthetic and technical aspects of road lighting and advises on statutory provisions, operation and maintenance of lighting. It recommends the design of lighting for all types of highways and public thoroughfares, including those specifically for pedestrians and cyclists, and for pedestrian subways and bridges. It also provides recommendations for the design of lighting in urban centres and public amenity areas.

3.0 Sensitive Receptors

Sensitive receptors surrounding the Application Site have been identified, drawing on the recommendations in ILP Guide Notes 01/21. The guidance note recommends consideration of adjacent premises, particularly with windows. Obtrusive lighting could impede view of the night sky or adversely affect the performance of an adjacent lighting installation.

For the lighting impact assessment, existing building windows at No. 4 and No. 6 High Lane, facing the back of the Proposed Development (landscaped areas and car parks) have been considered as sensitive receptors.



Figure 4: Google Maps Satellite image of sensitive receptor location



Figure 5: Site Photo showing sensitive receptor locations from the proposed rear car park entrance.

4.0 Methodology

The Lighting Assessment included the establishment of baseline ambient light conditions and an evaluation of impacts. This included assessment of obtrusive light at sensitive receptors using computation modelling. The utilised methodology is summarised in the following sections.

4.1 Baseline

Lighting conditions within the landscaped area of the Approved Planning scheme were identified to provide a reference for assessment. The following were considered during the determination of the baseline:

- Proposed lighting design to the landscaped area
- an overview of existing lighting from adjacent development; and,
- Identification of potential receptors.

4.2 Model

Modelling was undertaken using DIALux Evo software to quantify light spillage from the proposed development lighting, at the identified sensitive receptors. DIALux is an independent lighting software package capable of calculating daylight and artificial lighting scenes in exterior and interior scenarios. The software is commonly used throughout the UK.

Model inputs included:

- Typically, proposed luminaire specifications and locations;
- Existing and proposed building geometries; and,
- Landscaping and vegetation.

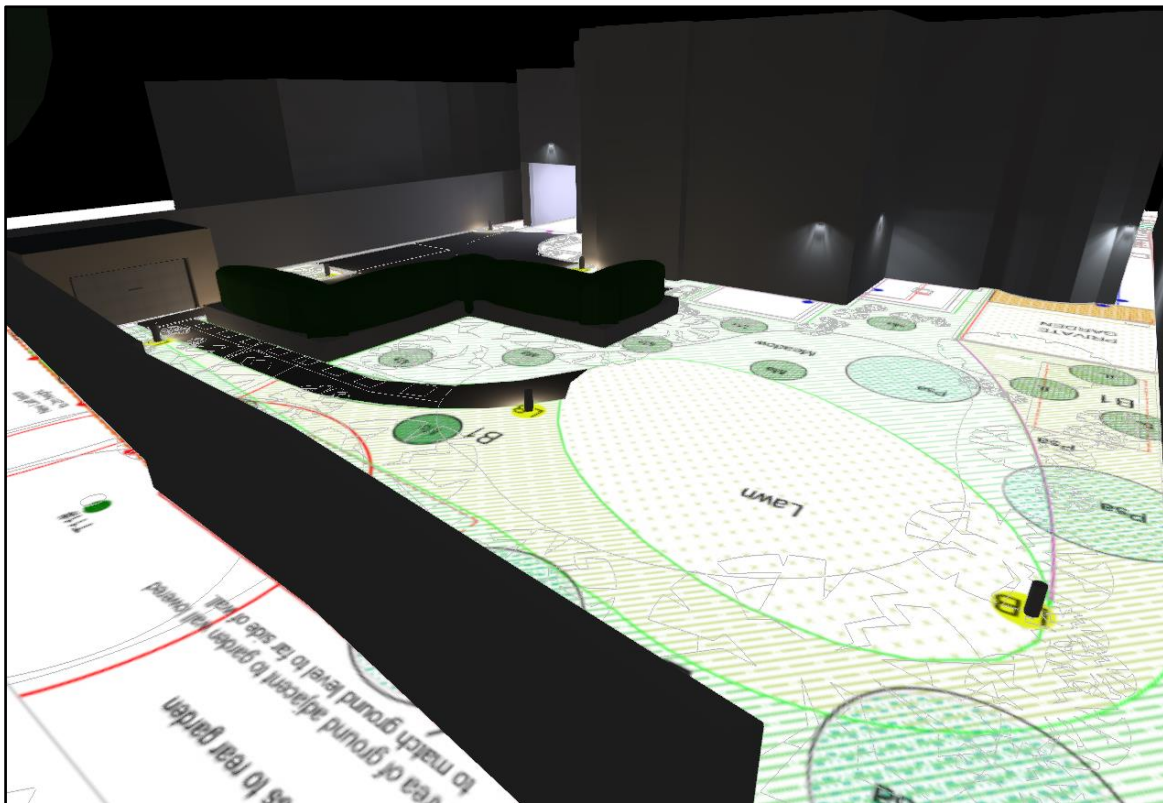


Figure 6: DIALux Evo 3D model of the Revised Planning scheme (Proposed Development)

4.3 Assessment Criteria

The ILP provides categories for different environment. The location of the Proposed Development has been classified as Suburban, thus within Zone E3 of the ILP environmental zones as described below.

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Table 1: ILP Guidance Notes 01/21 Environmental Zones

Predicted obtrusive light was compared with the criteria provided within the Guidance Notes 01/21 - The Reduction of Obtrusive Light document produced by the ILP. This provides reference lighting levels on the vertical plane for the different environmental zones, as shown in the table below.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Table 2: Light Intrusion - Maximum values of vertical illuminance on premises for Pre / Post Curfew*

* Curfew: The time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by the local planning department. Depending upon application curfew times often commence between 21:00 to 23:00 and may run until 07:00.

To comply with the ILP guidance, the predicted maximum obtrusive light at the windows should not exceed 10 lux and 2 lux at pre-curfew and post-curfew respectively.

5.0 Baseline

The Approved Planning Scheme lighting conditions were identified and assessed to determine a baseline for the Proposed Development lighting assessment. These are detailed in the following Sections.

5.1 Approved Planning Scheme Lighting

The baseline review considered the lighting installations to the landscaped areas and building mounted installations that were included in the Approved Planning scheme.

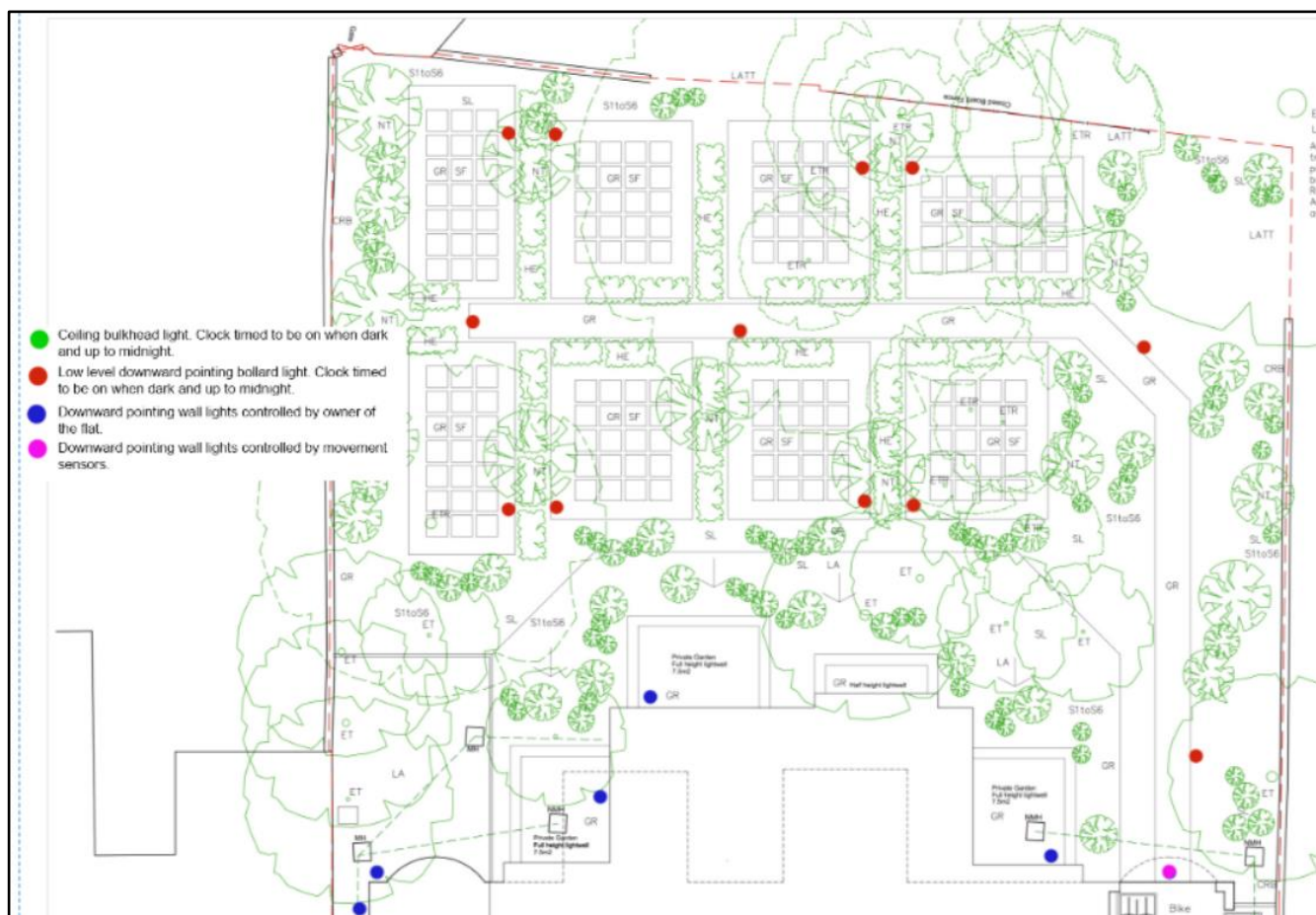


Figure 7: General arrangement plan and lighting layout for Approved Planning Scheme

6.0 Lighting Assessment

6.1 Model

A model of the preliminary lighting design, including vehicular lighting was produced in DIALux Evo to assess potential impacts associated with the Proposed Development. The specific fittings chosen for the purpose of the assessment were:

Luminaire Specification	Designation	Image
Philips Aluline PRO III 55W Halogen lamp, 1500 lumens representative of a typical 55W 12v 1500lumen Halogen car headlight.	Vehicle dipped beam headlights	
Ansell Lighting Kappa 5W 3000K compact wall light with zero upward lighting to prevent unnecessary light spill, ideal for residential settings.	Building mounted amenity lighting	
Ansell Lighting Leo 8W 3000K 450mm high modern styled bollard, with white reflector with clear polycarbonate diffuser, providing downlight.	Landscaped area	
Whitecroft Lighting ACL 29.2W, 4000K; 158.5 lm/W LED. Surface fixed to under pipe bridge and stair landing.	Driveway	

Table 3: Typical luminaire specification

A maintenance factor of 0.8 was utilised in the lighting software, for the building mounted lights. This is routinely utilised to represent 'normal' levels of pollution, dirt depreciation and lamp depreciation and as such was considered suitable for a site of this nature.

6.2 Lighting Trespass Results – Baseline (Approved Planning Scheme) Lighting

An assessment of the rear external lighting in the Approved Planning scheme was carried out to determine the lighting impact on the sensitive windows, identified in Section 3.0. A lighting model was constructed to assess the impact of the existing lighting.

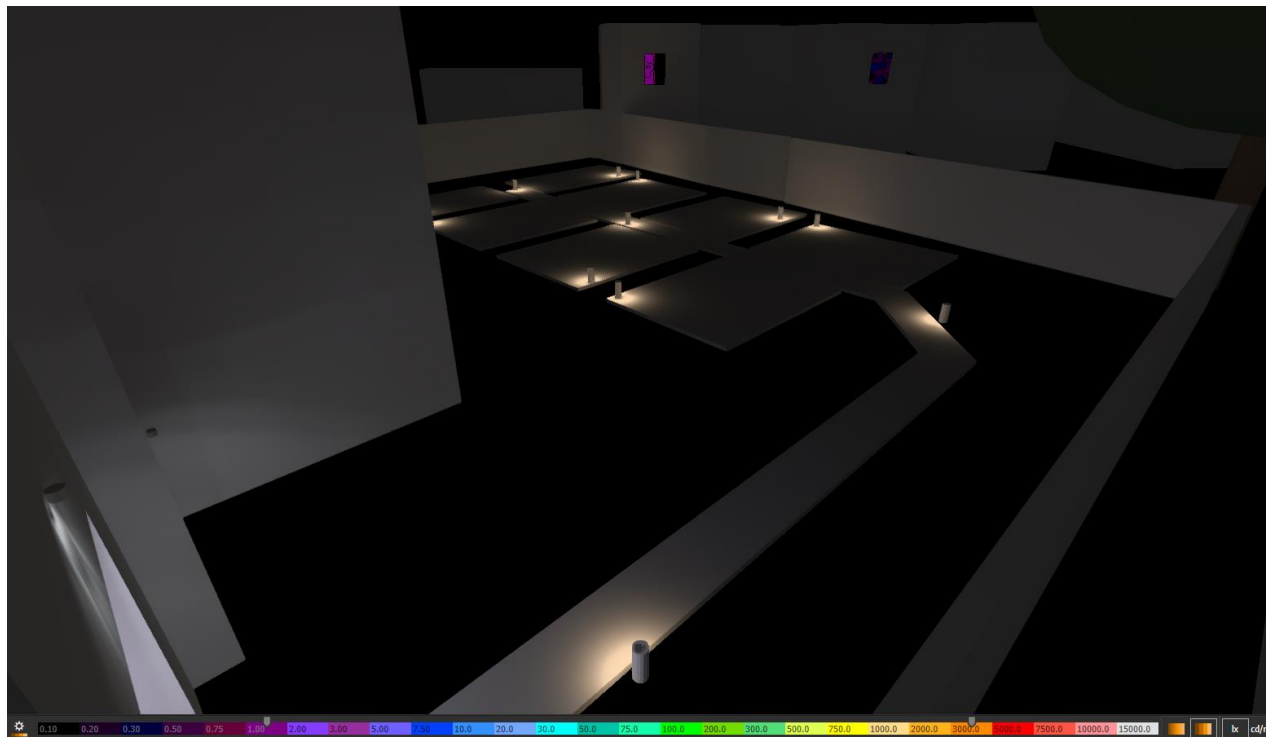


Figure 8 – Baseline (Approved Planning Scheme) lighting impact study

There appears to be minimal obtrusive lighting at the sensitive windows, from the lighting planned within the Approved Planning scheme. The obtrusive light result is as follows:

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	Calculated Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	1.54
Rear window at No. 6 High Lane	2.0	0.72

Table 4: Baseline (Approved Planning Scheme) lighting illumination at the sensitive receptors

The results of the assessment fall within the limits of obtrusive lighting recommended in the Institution of Lighting Practitioners (ILP), 2021, Guidance Note 01 for Zone E3 Suburban environment.

6.3 Lighting Trespass Results – Revised Planning Scheme Lighting

Obtrusive Lighting at the sensitive receptors identified in Section 3.0, because of the revised Planning Scheme was also predicted using DIALux Evo. The prediction is based on 4no. positions of vehicles accessing the rear car park. The result of the obtrusive lighting assessment, based on the different vehicle positions are as follows:

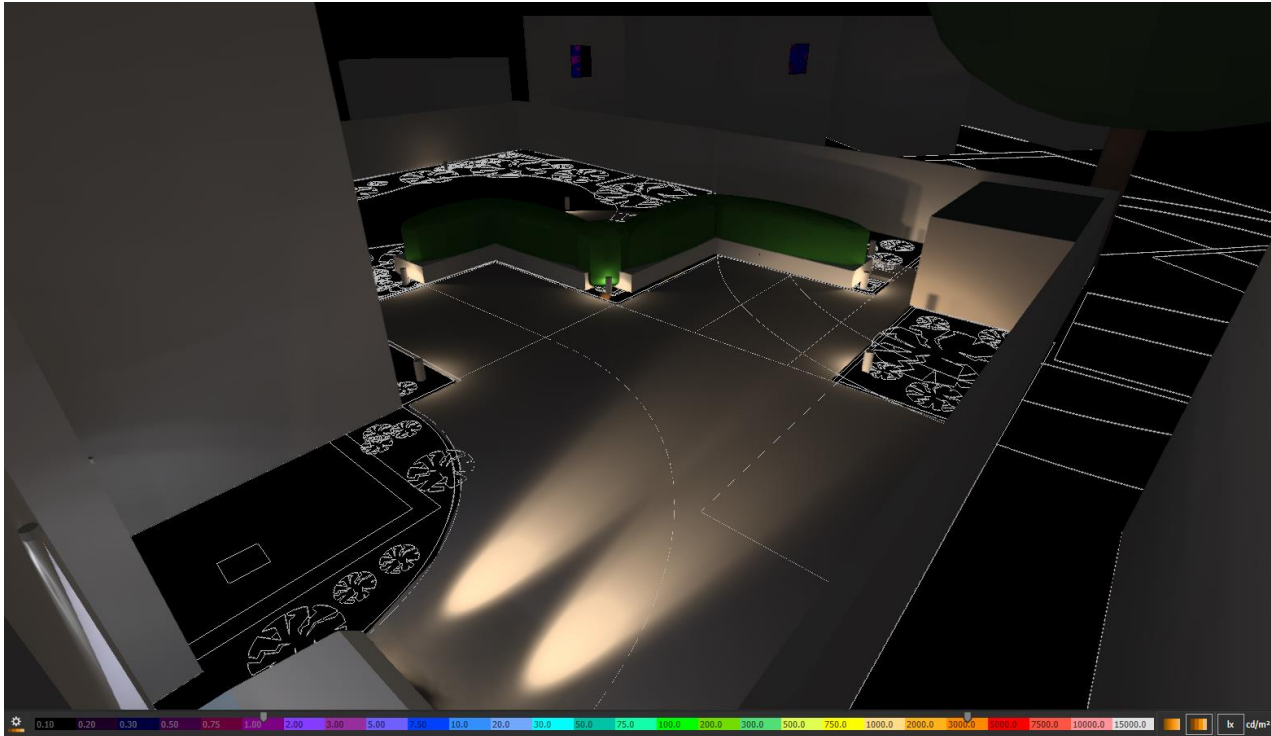


Figure 9: Result of position of vehicle accessing the rear car park

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	Calculated Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	0.78
Rear window at No. 6 High Lane	2.0	0.43

Table 5: Lighting illumination at the sensitive receptors for vehicle accessing the rear car park

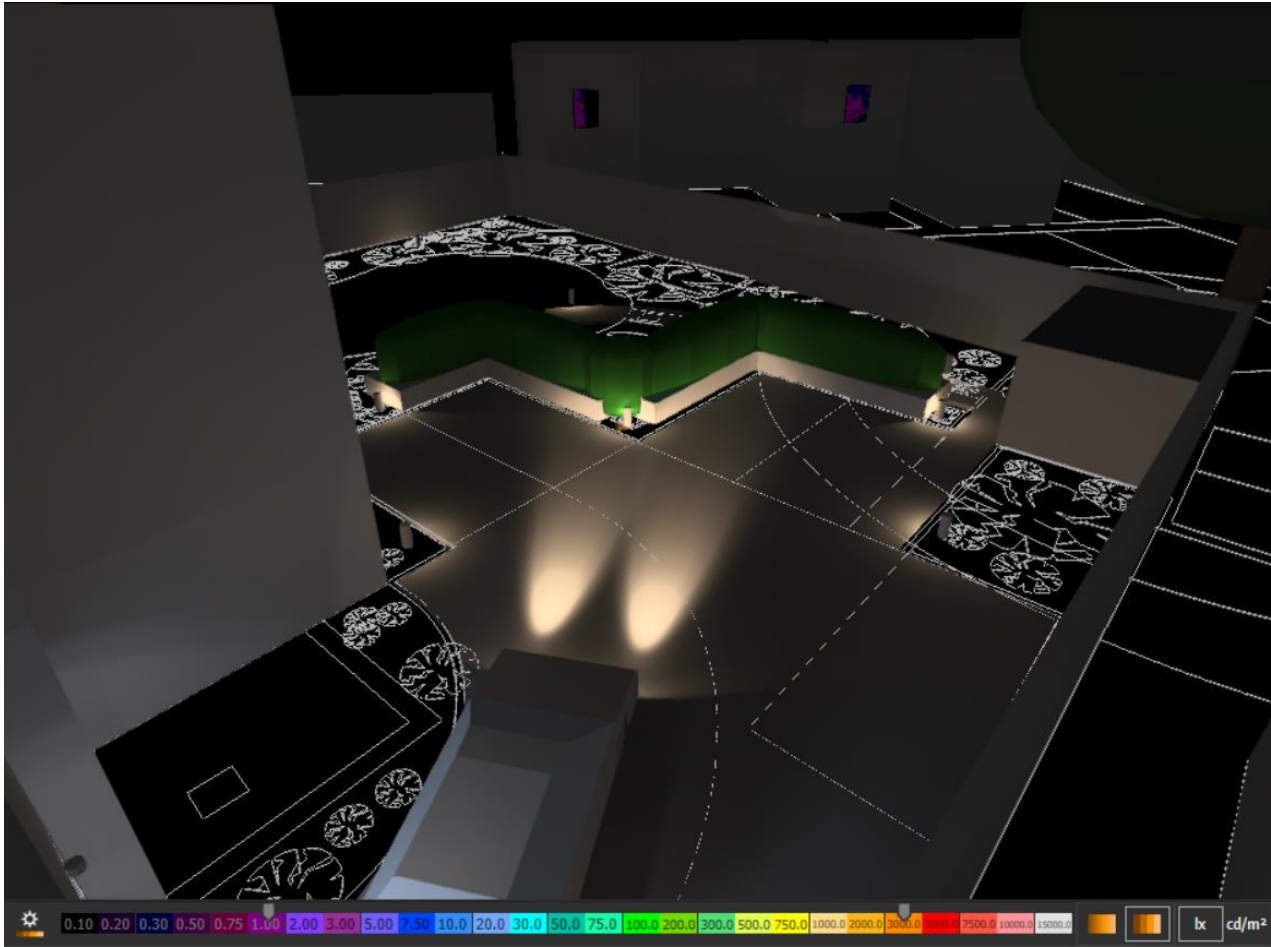


Figure 10: Result of position of vehicle turning towards West parking spaces

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	Calculated Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	1.01
Rear window at No. 6 High Lane	2.0	0.70

Table 6: Lighting illumination at the sensitive receptors for vehicle turning towards West parking spaces

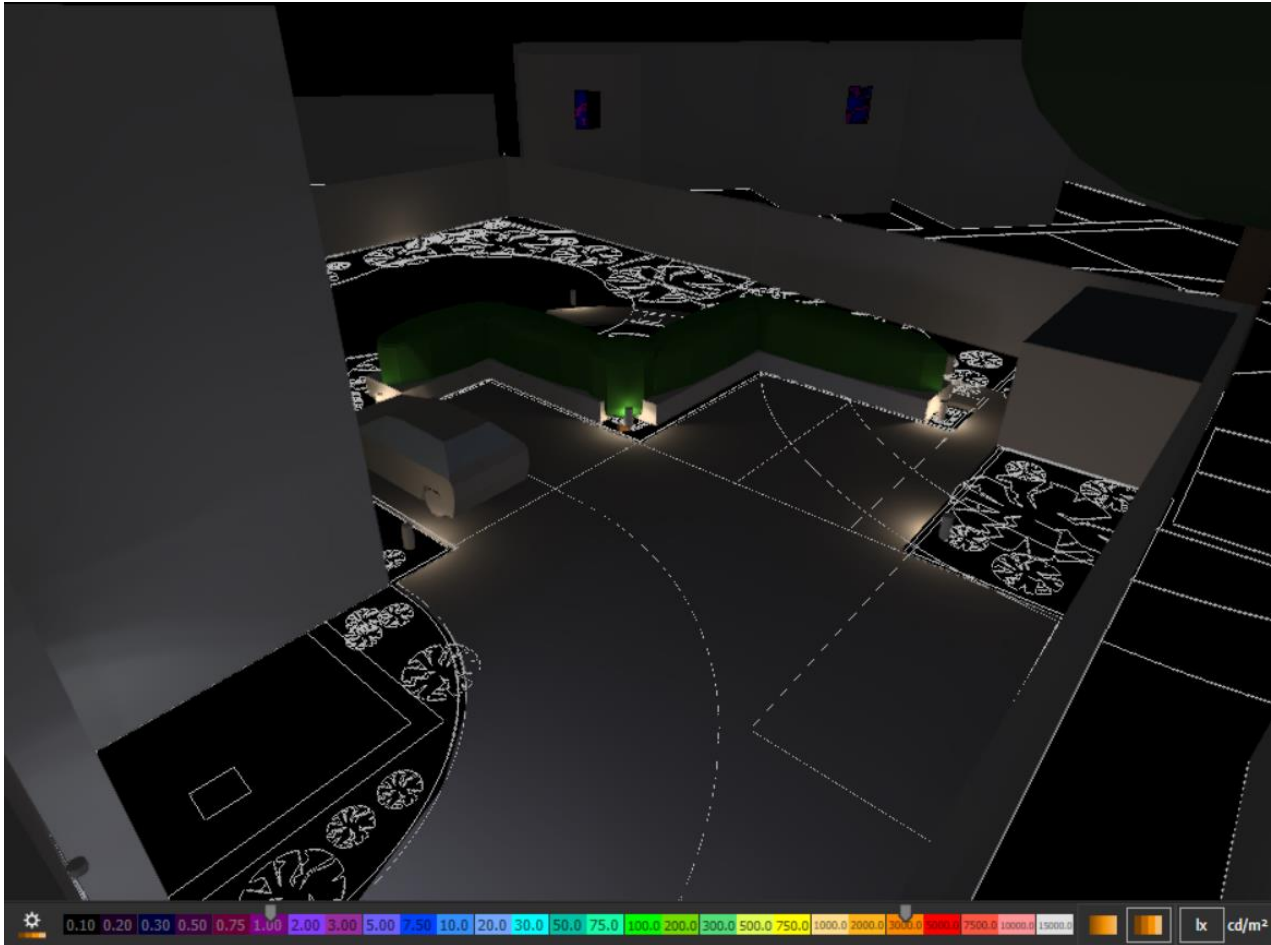


Figure 11: Result of position of vehicle parked at the West parking space

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	Calculated Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	0.86
Rear window at No. 6 High Lane	2.0	0.45

Table 7: Lighting illumination at the sensitive receptors for vehicle parked at the West parking space

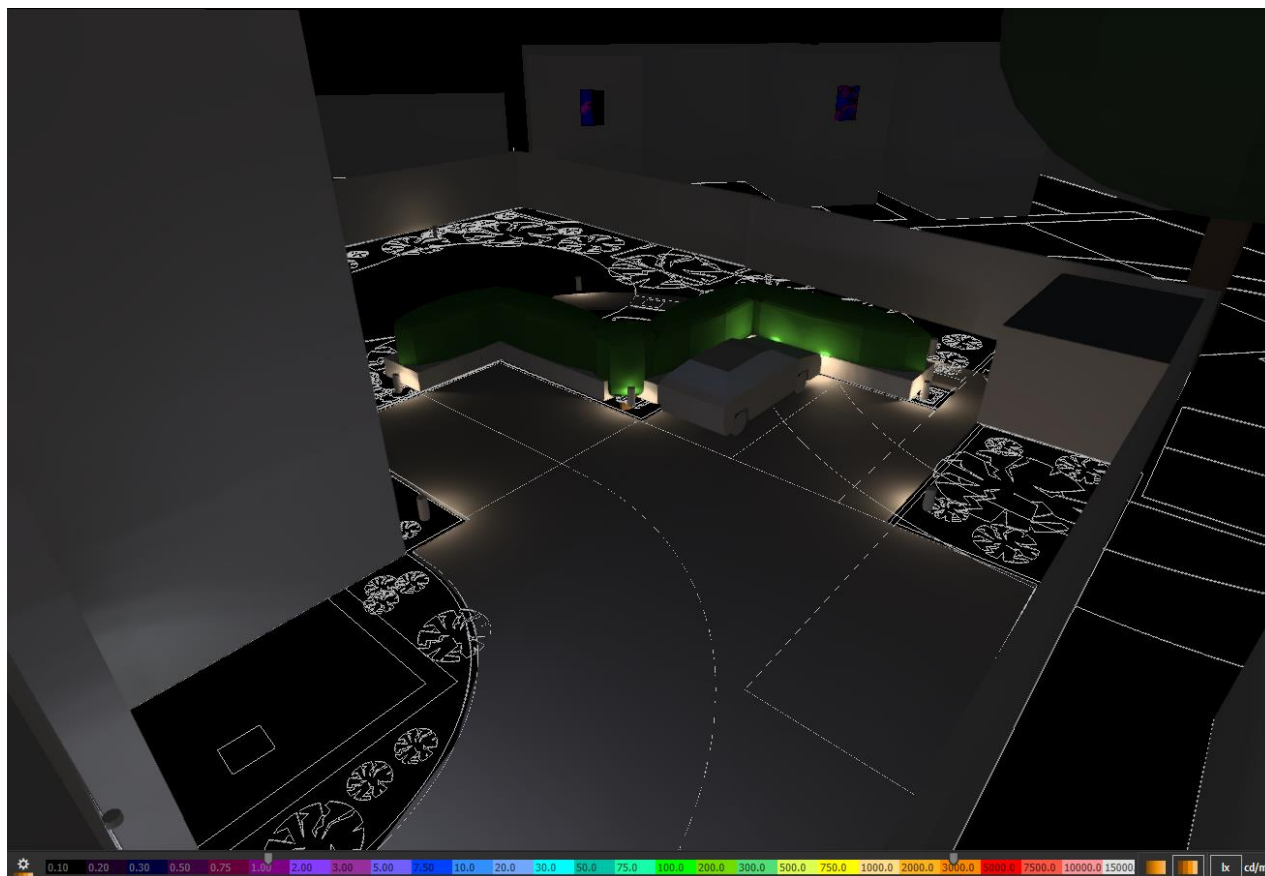


Figure 12: Result of position of vehicle parked at the North parking space

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	Calculated Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	0.85
Rear window at No. 6 High Lane	2.0	0.45

Table 8: Lighting illumination at the sensitive receptors for vehicle parked at the North parking space

There appears to be minimal obtrusive lighting at the sensitive windows, caused by the vehicles accessing the proposed car parks within the Revised Planning Application scheme.

The results of the assessment fall within the limits of obtrusive lighting recommended in the Institution of Lighting Practitioners (ILP), 2021, Guidance Note 01 for Zone E3 Suburban environment.

Furthermore, the lighting spill within the Revised Planning scheme is a reduction from the Approved Planning Scheme.

7.0 Mitigation Measures

Obtrusive light to adjacent properties/ sensitive receptors has been mitigated in the design of the 'Revised Planning Scheme' by the measures below. These enable the proposed development to comply with the limits for obtrusive light for the environmental zone.

- Landscape luminaires directed inwards, towards the site to avoid unnecessary lighting beyond the boundary.
- Over 2m high hedge planting to obstruct direct light from vehicle.
- Use of movement and time sensors within the landscape to switch the lights on, on demand. Lights to be switched off post-curfew.
- The luminaire mounting height on the buildings reduced as far as practicable to ensure only the required area is illuminated.
- LED luminaires used due to their sharp cut off, lower intensity and good colour rendition.
- A warm white light source (3000 Kelvin or lower) adopted to reduce blue light component.
- Lighting designed to the correct standard for the task and compliance with the British Standards.

To further reduce obtrusive light at the identified sensitive receptors, the proposed development should consider the following mitigation measures:

- Tall plants/ vegetation within the proposed landscaped areas to obstruct any direct/indirect lighting to sensitive receptors.

8.0 Conclusion

ABA Consulting Ltd are appointed by Simon James Arq Ltd to undertake a Lighting Impact Assessment in support of the Revised Planning application for the proposed residential development at 515-521 Barlow Moor Road, Manchester.

Lighting from vehicles accessing the rear car parks have the potential to cause obtrusive lighting at existing sensitive windows/ buildings in the vicinity of the Application Site. As such, a lighting assessment was undertaken to consider the likely effects.

A site visit and desk top study were undertaken to determine baseline conditions in the vicinity of the site.

Sensitive receptors were identified around the Application Site. These are windows at No. 4 and No. 6 High Lane that face the rear of the Proposed Development.

A preliminary lighting design for the scheme was developed using DIALux Evo software to establish the level of obtrusive lighting at the identified receptor locations for the Approved Planning scheme (baseline) and the Revised Planning scheme (Proposed Development).

Specific design measures have been employed to limit light intrusion in the design of the proposed development. The outcome of the lighting assessment confirmed there is no significant impact to the sensitive receptor locations. The results of the assessment fall within the limits of obtrusive lighting recommended in the Institution of Lighting Practitioners (ILP), 2021, Guidance Note 01.

Furthermore, the lighting spill within the Revised Planning scheme is a reduction from the Approved Planning Scheme as shown in the results summary below:

Sensitive Receptors	ILP Zone E3 Post-Curfew Maximum illuminance (lux) Limit	'Approved Planning Scheme' Maximum illuminance (lux)	'Revised Planning Scheme' Maximum illuminance (lux)
Rear window at No. 4 High Lane	2.0	1.54	1.01
Rear window at No. 6 High Lane	2.0	0.72	0.70

Table 9: Summary of maximum lighting intrusion at the sensitive receptors

Further mitigation measures, although not necessary to apply, have been recommended for consideration in this report to reduce any residual light spill/ obtrusive lighting. These would considerably benefit the sensitive receptors.