

Ikhlass Mosque – External Lighting Strategy Report

Project Details

Project Name: Ikhlass Mosque – External Lighting Strategy

Project Address: Halliwell Lane, Cheetham Hill, Manchester, M8 9DR

Prepared For: Ikhlass Mosque

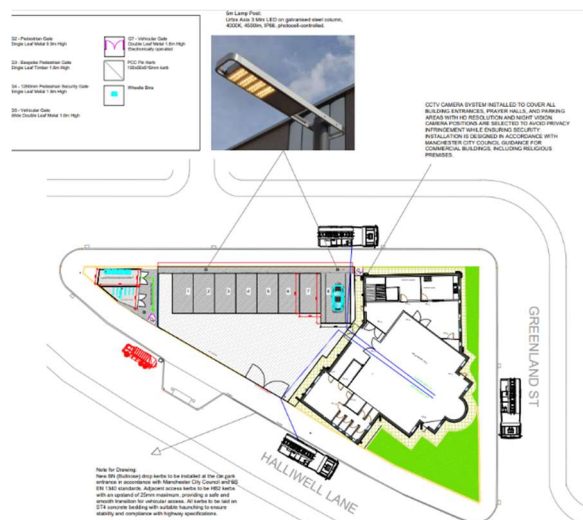
Prepared By: Hadi Sabawan, BEng (Hons)

Company: Karimi Construction

Email: Karimiconstruction4@gmail.com

Phone: 07971 994165

Date of Report: 02/07/2025



Document Purpose

This External Lighting Strategy Report has been prepared to support the planning application for the Ikhlass Mosque development. The report demonstrates compliance with relevant external lighting standards and provides a detailed assessment of the proposed lighting scheme's suitability, energy efficiency, safety, and minimal environmental impact.

Confidentiality

This document is intended for use by the Client and the Planning Authority in relation to the Ikhlass Mosque development. No part of this document may be reproduced or distributed without the prior consent of the author.

Introduction

This report presents the external lighting strategy for the proposed Ikhlass Mosque development on Halliwell Lane in Cheetham Hill, Manchester (M8 9DR). It is prepared to support the planning application by demonstrating that the site's lighting will be safe, effective, and compliant with relevant standards, while minimizing any adverse impacts. The strategy covers the new car park and building perimeter lighting shown on the site layout plan, ensuring adequate illumination for vehicular and pedestrian areas without causing obtrusive light to neighbors. All proposals follow recognized UK guidance for exterior lighting design (BS EN 13201, BS 5489, CIBSE LG6). *(Ecological considerations (e.g. bats) are beyond the scope of this report, focusing instead on lighting for amenity and safety.)*

Site Context and Existing Lighting

The Ikhlass Mosque site is located at the corner of Halliwell Lane and Greenland Street, in a built-up urban area of Cheetham Hill. The surrounding streets are equipped with existing public street lighting, which provides a baseline level of illumination around the site during hours of darkness. In particular, streetlamps along Halliwell Lane (fronting the site) and Greenland Street (flanking a side of the site) will contribute *background* lighting to the mosque's car park and vicinity at night. This existing lighting means the area is not completely dark after dusk, and the new lighting scheme will integrate with this urban environment.

There is currently no significant on-site lighting (as the project is a new development), so the proposed scheme is needed to ensure safe access and use of the car park and building after dark. The presence of streetlights and other local lighting classifies the area as a medium-brightness urban zone (ILP Environmental Zone **E3**, suburban/urban). The lighting strategy has been mindful of this context: providing sufficient light for safety and security while avoiding *over-lighting* beyond what is appropriate in a residential/commercial neighborhood.

Design Standards and Criteria

The exterior lighting design has been developed in line with current best-practice guidelines and British Standards. In particular, the following have been referenced in setting performance criteria:

- **BS EN 13201 & BS 5489** – UK standards for road and outdoor lighting, which include recommendations for car parks, pathways and public amenity lighting. For example, BS 5489-1:2013 (Table 5) suggests a maintained average illuminance of about **10 lux** for medium-traffic outdoor car parks. This level is used as a key design target for the vehicle parking areas (see Section below).

- **CIBSE Lighting Guide LG6: “The Outdoor Environment”** – which (though older and largely superseded by BS 5489) historically recommended around **20 lux** average for public car parks and provides guidance on exterior pedestrian lighting. Our design balances these recommendations by providing at least the minimum required levels without unnecessary excess, to ensure efficiency.
- **ILP Guidance Notes (GN01:2020) for the Reduction of Obtrusive Light** – used to ensure the scheme limits light pollution (sky glow and light trespass). The site’s urban zone implies a pre-curfew light trespass limit of ~10 lux into nearby windows and a maximum upward light output ratio (ULR) of 5% for luminaires. In response, the proposed luminaires are *full cut-off* (zero upward light) and will be aimed and located to keep light within the site boundaries, easily meeting these limits (see Light Control section).

In summary, the design objective is to **provide the right amount of light, where and when needed, in accordance with the above guidance, and with minimal wastage or nuisance**. All new external lighting will be installed to meet the recommendations of BS EN 13201, BS 5489 and CIBSE LG6 (as well as electrical safety standards in BS 7671). By adhering to these criteria, the scheme ensures adequate illuminance for safety and security, good uniformity, and compliance with “dark sky” policies on controlling upward light.

Proposed External Lighting Scheme

Lighting Layout and Equipment

The proposed external lighting layout is illustrated in the site plan and consists of two main elements: **column-mounted lighting** for the car park and **building-mounted lighting** around the mosque’s perimeter. All luminaires will utilize energy-efficient LED light sources with a warm-white (~4000 K) output for a balance of good visibility and minimal glare.

- **5m Lighting Columns (x2):** Two new lighting posts will be installed within the car park area at approximately 5 metres height. Each column will be fitted with an LED lantern (e.g. an *Urbis Axia 3 Mini LED* fixture as noted on the plan) providing around *4500 lumens* output at 4000 K color temperature. These luminaires are designed for outdoor car-park lighting, with a weatherproof rating of IP66 and robust construction (often IK08/IK10 impact rating) to ensure durability. Crucially, they have a downward-facing optic that produces *no upward light spill*, focusing illumination onto the car park surface. The two columns are positioned as shown on the layout drawing (e.g. likely one toward the rear of the car park and one near the entrance) to give overlapping coverage of the parking bays and drive aisles. The 5m mounting height is relatively low for a car park light, chosen to limit the spread of light beyond the site and to reduce visual impact on adjacent properties

compared to taller poles. Each lamp head includes a dusk-to-dawn **photocell control** (integral light sensor) so that it automatically turns on at nightfall and off at dawn.

- **Wall-Mounted Perimeter Lights:** In addition to the columns, several LED light units will be mounted on the building's exterior walls around the mosque's perimeter (locations as indicated on the plan, typically near entrances/exits and along footpaths by the building). These fixtures will be installed at approximately 2.5–3 m above ground on the façade. They are intended to illuminate the immediate pathways and doorways around the building, improving visibility and security for pedestrians. The wall-mounted luminaires will be *full cut-off* style (such as downlight bulkheads or small floods with shields), directing light downward onto paths and not outward above the horizontal plane – this prevents any glare to neighbors or upward leakage to the sky. Like the column lights, they will use ~4000 K LED lamps to maintain a consistent light color across the site, and will be tied into the same control system (photocell and timer). The exact number and placement of these units correspond to the layout plan's markings (ensuring coverage of all key perimeter areas, including the main entrances, side walkway, and the **bin store area** at the rear).

All luminaires are specified to be high-efficiency LEDs (efficacy ~100 lumens/W or better), which not only conserve energy but also have long service lives (~50,000 hours) resulting in reduced maintenance needs. The LED light sources also allow precise optical control – beams can be directed where needed with sharp cut-offs, which helps in avoiding light spillage beyond the site. The fittings will have a neutral white light (4000 K) which provides good colour rendering for CCTV and personal recognition, but is warmer and less harsh than higher-color-temperature lighting, thereby being more community-friendly. Figure 1 (site plan) and Appendix A (luminaire specifications) of the planning submission provide further details on the layout and equipment.

Illuminance Levels and Uniformity

The lighting scheme is designed to achieve illuminance levels that meet or exceed the recommended minima for safety and comfort in each part of the site, in line with the British Standard and CIBSE guidance mentioned. **Maintained average illuminance** targets for the various external areas are:

- **Building perimeter (footpaths and entrances): ~20 lux** average, with ~0.25 uniformity (min/avg)
- **Car park & vehicular circulation areas: ~10 lux** average, with ~0.40 uniformity
- **Pedestrian pathways** within the site (e.g. from car park to doors): **~5 lux** average, ~0.25 uniformity

- **Bin store area:** ~40 lux average, ~0.40 uniformity (for waste handling/task visibility)

(Uniformity = ratio of minimum illuminance to average illuminance, indicating evenness of lighting.) These levels are based on relevant guidelines for each area type. For instance, ~10 lux in car parks aligns with the “medium traffic, medium crime risk” category for outdoor parking in industry guidance, and ~5 lux on footpaths is consistent with standards for low-use pedestrian routes. The ~20 lux around building edges corresponds to a **medium-risk security lighting** level (suitable for enhancing safety and CCTV coverage at entry points). The bin storage area is more of a task zone (occasional handling of refuse), so a brighter level (~40 lux) is provided to ensure clarity – this is in the order of recommended lighting for loading bays or detailed tasks outdoors.

By meeting these illuminance targets, the design ensures that all users of the site (worshippers, visitors, and staff) will have sufficient light to navigate safely at night. Importantly, these levels will be maintained *on average* over time (accounting for lamp lumen depreciation and dirt), and lighting calculations (to be provided in detailed design) will confirm that minimum illuminance and uniformity criteria are satisfied in each area. This avoids dark spots and provides a consistent lighting environment appropriate for a place of worship’s parking and access areas. The lighting will also make the site more secure by deterring anti-social behavior and aiding surveillance after dark (the mosque will have CCTV coverage of entrances and the car park, which benefits from the planned lighting levels).

Control Strategy for Energy Conservation

To prevent energy wastage and limit lighting to only when necessary, a control system using **photocells and time clocks** will be employed. Each exterior luminaire (or circuit of luminaires) will be linked to a *photocell* dusk sensor so that the lights automatically switch on at dusk and off at dawn, ensuring they are never operating during daylight hours. In addition, an astronomic time clock or programmable timer will be used to set curfew periods – for example, the lighting could be set to dim or switch off during late-night hours when the site is not in use (e.g. after a certain time in the evening, if there are no events or prayers, to reduce overnight lighting). The exact timing schedule can be adjusted to the mosque’s usage patterns and any security requirements, but the principle is that lighting will **only be on when needed**. This is in line with sustainable lighting practices and local authority expectations to minimize light pollution.

A manual override facility will be incorporated as well (e.g. a switch for maintenance or special events), allowing the lights to be turned on outside of the automatic schedule if required for safety or testing. However, under normal operation the system will be automated, requiring no user intervention day-to-day. By using these controls, the scheme ensures energy efficiency – lights are off when not needed – and also helps

preserve the amenity of neighbors by avoiding unnecessary illumination late at night. For example, if the mosque's activities generally conclude by a certain time in the evening, the external lights can be programmed to dim down or switch off after that time (while still maintaining any necessary security lighting at low level). Photocell control also means the lighting will respond to actual dusk/dawn times and even adjust for seasonal changes in daylight.

Light Pollution Mitigation and Neighboring Amenity

Preventing light spill and glare has been a key consideration in the lighting design. The specified luminaires have **“dark-sky friendly”** optics – i.e. they emit *no upward light* at all, and their beam distributions are tightly controlled. All lights (both column and wall-mounted) will be angled downward and/or fitted with appropriate shields or optics to ensure the illumination is confined to the mosque's site. As a result, there will be negligible sky-glow produced (virtually 0% upward light output, well under the 5% allowance for zone E3) and minimal light trespass beyond the boundaries. The perimeter wall lights, in particular, will be installed with their beams directed onto the ground near the building, and the 5m car park columns are positioned and lensed such that little to no light shines beyond the car park/driveway area.

The nearest residential properties and road users will thus not experience any significant intrusive light from this installation. In technical terms, the design aims to keep illuminance at the site boundary and windows of adjacent buildings below the ILP recommended limit of 10 lux (before curfew) – a criterion that will be comfortably met given the moderate mounting heights and cut-off lighting proposed. By **avoiding any direct view of bright light sources** from outside the site (the lamps are recessed or aimed downward) and by using a warm-white 4000 K LED, the potential for glare or discomfort to neighbors is greatly reduced. A 4000 K light has a lower blue content than cooler LEDs, making it less obtrusive to the night-time ambiance while still providing good visibility. Furthermore, the relatively low height of the lighting poles and the building acting as a shield for some of the wall lights will help contain the light within the premises.

Overall, the external lighting has been designed on the principle of **“light only what needs to be lit, only when it needs to be lit, and no more brightly than necessary”**. This ensures that the mosque's car park and entrances will be safely illuminated for users, without creating a nuisance for surrounding properties or the environment. The strategy complies with the local planning policies on light pollution and the ILP's guidance for obtrusive light control (all fixtures effectively have 0% Upward Light Ratio and minimal spill). There are no floodlights or feature lights proposed that would shine into the sky or beyond the site. In addition, the lighting color and intensity have been chosen to be in keeping with the residential character of the area – similar to modern municipal street lighting – so the installation will not appear out of place or overly harsh.

Conclusion

In conclusion, the proposed lighting strategy for the Ikhlass Mosque development has been carefully formulated to meet functional requirements and planning guidelines. The scheme will provide **safe, well-lit conditions** for vehicle movements and pedestrians on site during hours of darkness, with illuminance levels in line with UK standards for car parks, footpaths, and building perimeters. By utilizing efficient LED technology and appropriate lighting controls, the design minimizes energy consumption and ensures that lighting is **only operational when needed**. All new luminaires are specified as downward-lighting, full-cutoff types, which **prevent light spill upward or into neighboring properties**, thereby protecting local amenity and dark skies. The lighting will be **4000 K warm-white**, providing a comfortable quality of light that complements the urban setting and avoids the cold glare of higher-color-temperature lamps.

The external lighting scheme demonstrates compliance with relevant standards (BS EN 13201, BS 5489, CIBSE LG6) and adheres to the principles of the ILP's *Reduction of Obtrusive Light* guidance, ensuring no undue impact on the surrounding environment. It achieves the necessary illuminance for **security and convenience** in the mosque's car park and around the building, which will enhance safety for worshippers and visitors attending evening prayers or events. Importantly, these benefits are delivered while **mitigating potential negative effects**: the use of modern LED fittings with precise optics and smart controls means the scheme will not cause light nuisance, glare to road users, nor excessive glow in the night sky.

This lighting assessment illustrates that the proposed external lighting is well-considered and appropriate for the site. The strategy strikes a balance between providing sufficient illumination for functionality and exercising restraint to prevent light pollution. As such, it is expected to satisfy planning requirements and contribute positively to the overall development. The design will be finalized in the detailed design stage (with final luminaire selection subject to approval), but all fundamental parameters and principles presented here will be upheld. We trust that this lighting strategy demonstrates the project's commitment to a safe, efficient, and neighbor-friendly lighting solution, and we respectfully submit it for approval as part of the planning process.