

15710-WAT-XX-XX-RP-E-10135

Atlas Park Development, Wythenshawe

Review of Existing and Proposed External Lighting

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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Comments

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Revision		Status	
P*nn*	Preliminary (shared; non-contractual)	S1	Coordination
C*nn*	Contractual	S2	Information
		S3	Review & Comment
		S4	Review & Authorise
		S5	Review & Acceptance
		A0, A1, A*n*	Authorised & Accepted (*n*=work stage if applicable)

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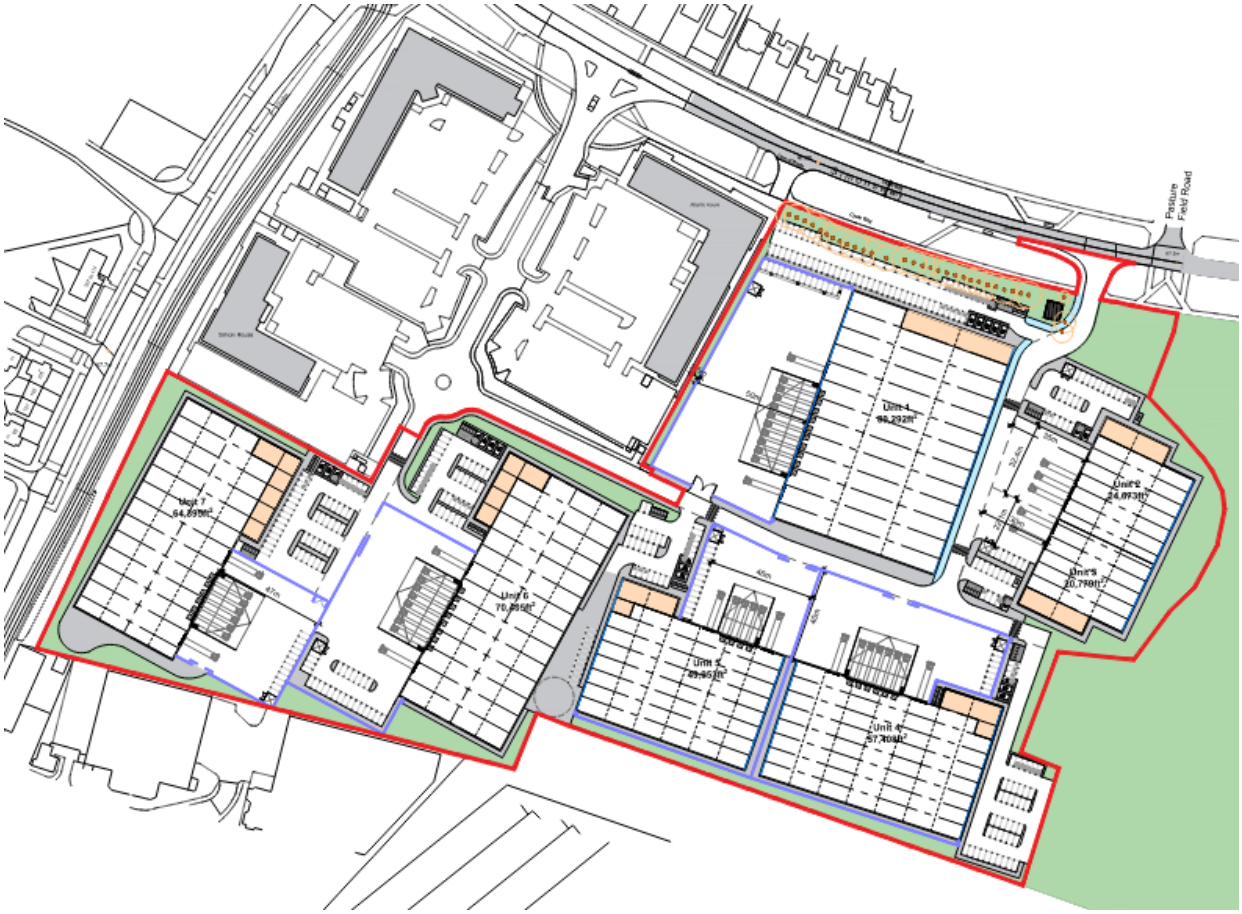
1. Introduction

The proposed development at Atlas Business Park, Wythenshawe is at a site neighbouring Manchester Airport. As such upward light pollution and glare from the proposed new external lighting fittings must be kept to a minimum.

A new lighting scheme is proposed within the site development boundary which will utilise modern LED technology. These new LED luminaires will have significant improvements in photometric light output control over older existing street and car park lighting that utilise metal halide or SON type lamps, and that are currently installed in the wider Atlas Business Park site.

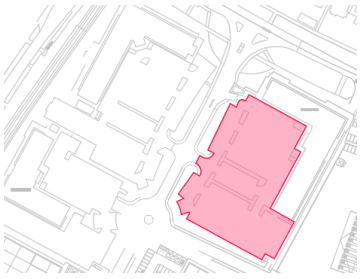
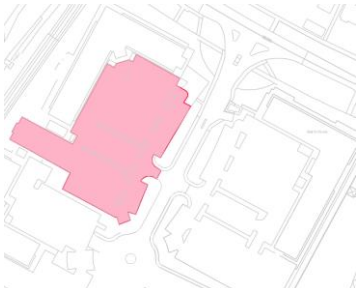
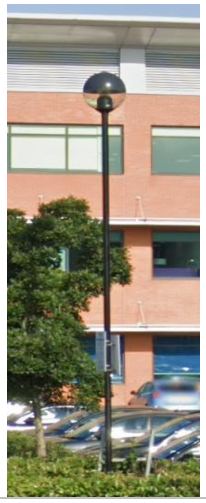
The purpose of this report is to illustrate the older street and car park lighting on the existing Atlas Business Park site (outside the new development boundary) and that the new LED lighting will be superior in minimising upward light pollution and glare.

Atlas Business Park site plan with development site within the red boundary:

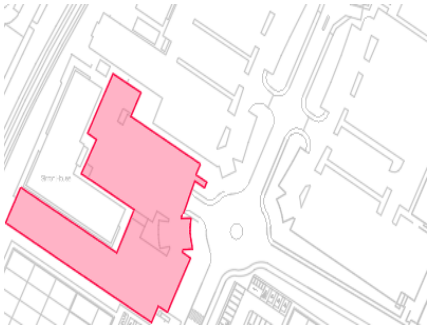


2. Review of Existing Street and Car Park Lighting

The following external lighting can be found currently within the wider Atlas Business Park site:

Site Plan Location	Typical Column		Comments
Road Lighting Columns 			Existing road way column typically with metal halide / SON lamp c/w internal photometric reflector and curved drop glass emitter. Typically, this fitting would have been installed before light spill and glare were primary design criteria, therefore the point source light output control is limited compared to modern LED technology.
Atlantic Car Park 			Existing car park column typically with metal halide / SON lamp c/w internal photometric reflector and curved drop glass emitter. Typically, this fitting would have been installed before light spill and glare were primary design criteria, therefore the point source light output control is limited compared to modern LED technology.
Altitude Car Park 			Existing car park globe column typically with metal halide / SON lamp c/w photometric reflector. Typically this fitting would have been installed before light spill and glare were primary design criteria, therefore the point source light output control is limited compared to modern LED technology.

Pacific Car Park







Existing car park column typically with metal halide / SON lamp c/w internal photometric reflector and curved drop glass emitter.

Typically, this fitting would have been installed before light spill and glare were primary design criteria, therefore the point source light output control is limited compared to modern LED technology.

3. New Proposed External Lighting



(Locations as drawing 15710-WAT-XX-00-DR-E-60131 - External Lighting Outline Layout)

These proposed fittings are equipped with:

- Energy efficient LED technology – meaning reduced quantity of lighting points (when compared to older technology).
- Highly controlled flat glass photometric output via directional LEDs and lense technology – meaning more focussed optics, leading to reduced quantity of lighting points (when compared to older technology).
- Minimum light spill can be achieved due to tight photometric control.
- Zero upward lighting output due flat, downward facing output lense.

The above outlines that the light output from the new LED technology will be more controlled than for the older existing technology found elsewhere within the wider site.

Further luminaire data can be found in document – 15710-WAT-XX-XX-SH-E-0001 - Luminaire Schedule.

The preliminary calculations for the LED lighting scheme show 0% upward light output ratio, and the luminaires are compliant with Class G4 installed intensity requirements of BS EN 13201-2:2003, which is a key requirement of the ‘Combined Aerodrome Safeguarding Team’ (CAST) advice note.

4. Summary

In comparison with the existing street and car park lighting currently on the wider Atlas Business Park, the proposed new LED external lighting layout will be an improvement in photometric lighting output control, upward light pollution control, as well as energy efficiency.

All these benefits of LED technology mean that the quantity of luminaires are minimised, with the performance of LEDs meaning increased spacing of luminaire positions is possible.

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