In this case study, allowable lighting power for Driveways is 576W and Walkways (3m wide or greater) is 220W.

If the project team propose 150W for street light instead of 80W, then the revised design LPD values are as shown in Table 502.05 (3).

Table 502.05(3): Exterior Lighting Power Density Calculation

Space Type	Light Fitting Type	No. of Light Fittings	Lighting Power / Luminare (W)	Total Power (W)	Area (m^2)	Total Design LPD (W/ m^2)	Allowable LPD (W/ m^2)
Driveways areas	Street light	6	150	900	360	2.5	1.6
Walkways 3m wide or greater	Bollard light	6	30	180	100	1.8	2.2
Total				1,080	460		

From Table 502.05 (3), it can be observed that the LPD values for Driveways exceeds the requirements. The total lighting power is now 1,080W whereas the allowing lighting power for this project is 796W. The excess lighting power in this case is 284W. Hence, the project team should provide renewable energy for the additional lighting load of 284W, to comply with the regulation.

COMPLIANCE DOCUMENTATION

Table 502.05(4): Documents Required

Project Stages	Submittal Documents
Design Permit Application	1. DM BLDG Al Sa'fat declaration.
Construction Completion Application	1. Final approved lighting layout indicating locations of the fixtures. 2. Lighting fixtures manufacturer technical data-sheet.
After Completion	Not applicable.

REFERENCES AND ADDITIONAL INFORMATION

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (2016). ASHRAE standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings, www.ashrae.org.

Dubai Municipality. (2018). Al Sa'fat Dubai Green Building System: Regulations 303.01 – Exterior Light Pollution and Control.