

# ENERGY EFFICIENT LED LIGHTING PROJECT

## THE SITE

Friarsland Crescent is a multi tenanted apartment complex including underground car park facility in Clonskeagh, Dublin.



## THE OBJECTIVE

The Management Company were seeking energy saving opportunities, with the assistance of the Frontline Energy Team identified that electrical consumption of the development would be greatly reduced by upgrading the lighting in both the car park and common areas of the development.

## FRONTLINE ENERGY SERVICE

Designed Specified Solution by the Frontline Energy in-house Engineering Team.

Initial Site Survey and Energy Report carried out to establish existing efficiencies.

DIALux was used for a designed lighting solution ensuring optimum lighting levels and reducing the number of fittings required to achieve this level.

Project management of installation.

Project handover, complete with equipment warranties.

## TECHNICAL OVERVIEW

Lux readings taken across the site in order to determine current lighting levels.

Levels in basement Car park were higher than necessary according to industry standards, not all fittings were functioning.

Car park lighting was modelled using DIALux indicating over specified lighting levels. Action Taken:

- Existing twin 58W Fluorescent fittings operating 24hrs 365 days replaced with twin 24W LED units with individual inbuilt microwave motion sensors. The new LED units operate independently when motion is detected ensuring maximum energy savings.
- The quantity of fittings in the basement car park were reduced from 40 to 30. This was achieved by using lighting modelling software to simulate and specify lighting levels in according with current CIBSE Guidelines and BS 5489 Part 9. Design layout was agreed and the reduced quantity of fittings were installed.

Common areas, hallways and corridors, action taken:

- 2D 26W fittings replaced with new 2D 14W LED units with inbuilt microwave sensor.
- These 2D downlighters are scheduled in two ways. Firstly a LUX sensor determines if enough natural light is present in the area, if so the fitting will not light. If inadequate light is detected the microwave sensor will activate the fitting once a presence is detected and remain on for a set time period.
- 50W incandescent spotlight replaced with new modern Philips 4W LED units, saving almost 92% in consumption before any controls were put in place.

## RESULTS

The site benefited from huge energy savings with the use of LED in conjunction with improved controls and microwave sensors on individual fittings, preventing excess lighting when not needed. Total electrical consumption on site is reduced by between 65-80%.

Payback period of 1.7years is expected.