

Queens Medical Centre Corridor

66% energy saving

Main results

- 21% reduction in maximum installed load by replacing the luminaires
- 57% further reduction in energy consumed by using Smart controls
- 66% reduction in CO₂ emissions overall

QMC corridor refurbishment

The Queens Medical Centre in Nottingham refurbished the lighting in the majority of their corridors as part of a carbon reduction programme.

The old 58W switch start luminaires with 11W switch start nightlight attachments were replaced with energy efficient Thorlux Jubilee Smart luminaires each using one 35W T5 lamp having a total load of 39W per luminaire.

The change of luminaires resulted in a 21% reduction in maximum load with an improved lighting level during the night.

The corridors benefit from good levels of daylight ingress and are not always occupied, the perfect environment for an automated lighting control system.

Each luminaire has an integral Smart sensor and are connected in groups using a two-core Motionline.



Method of control/operation

Movement Sensing

Any detected movement will switch all the luminaires on. If no movement is detected for a period of 5 minutes then the lights will dim to 20% output. This provides a basic security light level through the night.

Daylight Dimming

Each luminaire will dim itself independently depending upon the light level underneath it. If the natural light level exceeds the programmed level then the light will switch off.

This provides an automatic control regime which is tailored to the activities of the corridor occupants.

Genuine energy savings from Smart luminaires

The data displayed to the left demonstrates most effectively how Smart luminaires can provide significant energy savings.

Programmability

Tremendous flexibility can be achieved by individually programming luminaires to suit local conditions and the requirements of the users.

Manual override

Smart luminaires can be manually controlled using either a wall switch or a hand-held transmitter.

	OLD	NEW
Luminaires	12 qty 1 x 58W Batten and 6 qty 11W Nightlight	12 qty 1 x 35W Jubilee Smart
Total maximum load	593W**	468W
kWh per annum	7,792	2,644
Annual electricity cost *	£935.04	£317.32
Annual CO₂ production	4,130kg	1,401kg
Reduction in CO₂		2,728kg
No. of trees required per annum (carbon offsetting)	4.1	1.4

* Based on 12p per kWh

** Average over 24 hours

Data logging

A data logger connected to a CT Clamp was used to monitor the current drawn by the luminaires. Automatic readings were taken at 2 minute intervals to give a precise record of the energy used through the day.

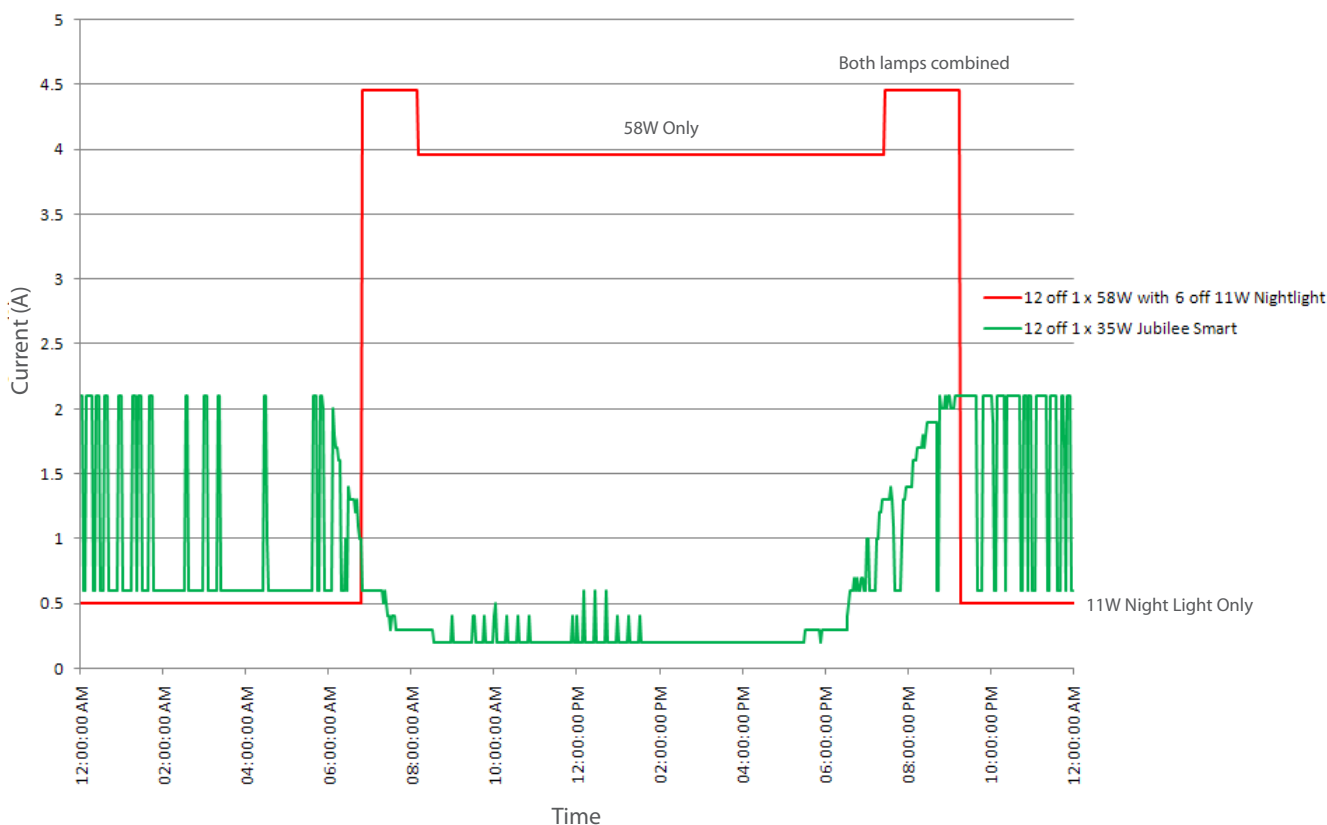
The data logger was left in place for 7 days before and after the luminaires were changed. This provides a direct energy comparison between the old and new systems.



Energy saved graph

The graph below illustrates the typical energy saved during the monitoring trial.

The red line indicates the energy consumed by the old luminaires whilst the green line shows the actual energy consumption of the installed Jubilee Smart luminaires.



Site: Queens Medical Centre - Nottingham

Installed: Summer 2009

Luminaires: 1 x 35W Jubilee Smart

Monitored: Summer 2009 for 1 week