

West Kirby Grammar School

75% energy saving

Main results

- 25% reduction in maximum installed load by replacing the luminaires
- 75% total reduction in energy when combined with Smart controls
- 75% reduction in CO₂ emissions

West Kirby Grammar School for Girls

Wirral MBC refurbished the lighting in the laboratories at West Kirby Grammar School for Girls.

The old 2 x 58W T8 switch start batten luminaires have been replaced on a one for one basis by 2 x 49W T5 Jubilee Smart luminaires.

The change of luminaire type alone resulted in a 25% reduction in load with no change to the general light level.

The laboratories benefit from good levels of daylight making Smart luminaires an ideal choice and provides significant additional energy savings.

Genuine energy savings from Smart luminaires

The data displayed below demonstrates most effectively how Smart luminaires can provide significant energy savings.

	OLD	NEW
Luminaires	12 qty 2 x 58W Surface Batten	12 qty 2 x 49W Jubilee Smart
Total maximum load	1.68kW	1.27kW
kWh per annum	2,673	668
Annual electricity cost *	£267	£67
Annual CO₂ production	1,416kg	354kg
Reduction in CO₂		1,062kg
No. of trees required per annum (carbon offsetting)	1.4	0.35

* Based on 10p per kWh



Method of control/operation

Movement Sensing

Any detected movement will switch all the luminaires on. If no movement is detected by any of the luminaires for a period of 5 minutes the luminaires will dim and switch off until a further movement detection is made.

Daylight Dimming

Depending upon ambient daylight, each luminaire will brighten or dim independently to maintain a pre-set light level. Should ambient daylight exceed the programmed level for more than 10 minutes the individual luminaires, due to the Thorlux "bright out" functionality, will switch off until ambient light levels drop once more below the pre-set level.

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

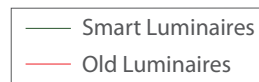
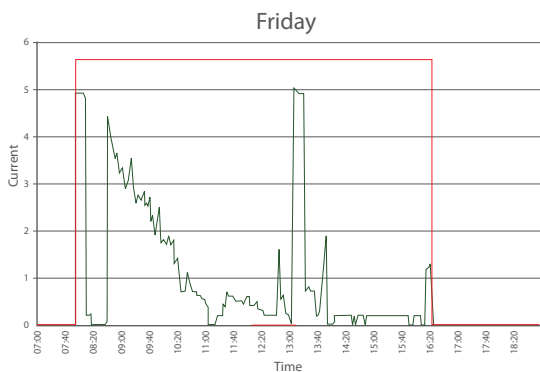
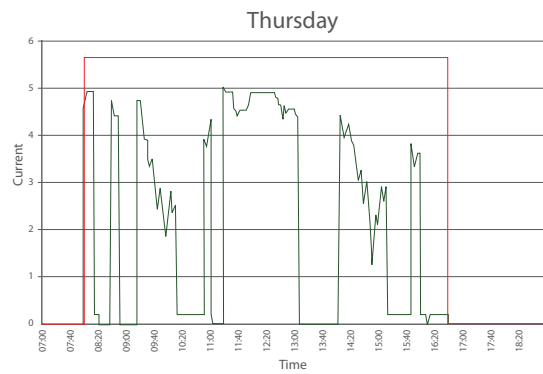
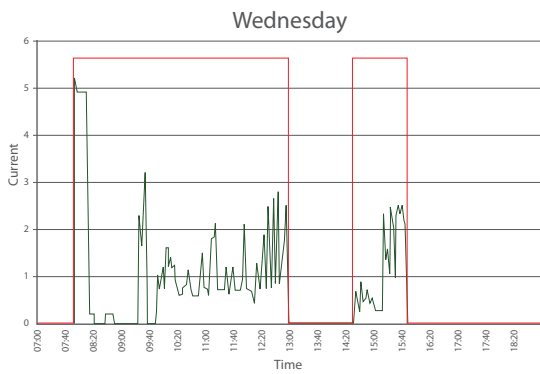
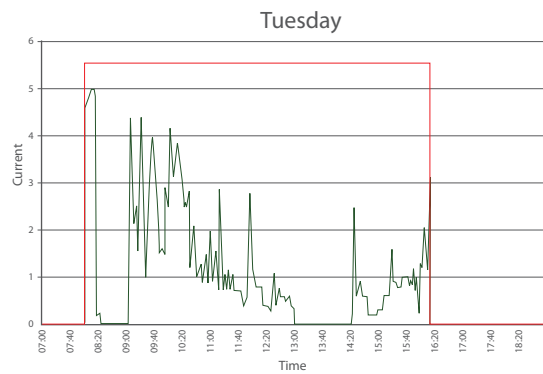
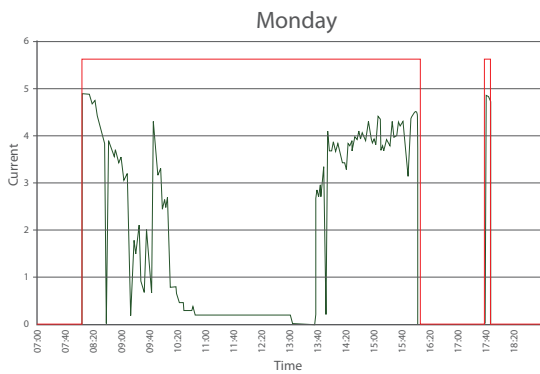
Data logging

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.



Energy saved graphs

The graphs below illustrate the energy saved during the week of the monitoring trial. The red line indicates the energy that would have been consumed with manual switching and the green line shows the actual energy consumption of the Smart luminaires.



- Site:** West Kirby Grammar School for Girls
- Authority:** Wirral Metropolitan Borough Council
- Installed:** Summer 2008
- Luminaires:** 2 x 49W Jubilee Smart
- Monitored:** October 2008