

Energy Efficiency with Lighting Controls:

Quick wins



DANLERS Limited



Designers and manufacturers
of controls for lighting, heating,
ventilation and air conditioning.

Julian Kay

Sales and Marketing Director

DANLERS
SIMPLY SAVING ENERGY

+44 (0)1249 443377 www.danlers.co.uk

Queen's Award for Enterprise: Innovation 2010



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Contents

- DANLERS “stand alone” lighting controls
- Energy saving benefits of DANLERS controls
- Example rooms with control solutions
- Case study

DANLERS products

- Specialise in straight-forward, “stand alone” lighting controls
- Aimed at Energy Saving
- Easy to install, using the existing wiring
- Significant savings on lighting bills, e.g. 40%
- Short payback periods, e.g. 18 months

Examples of DANLERS lighting controls



Occupancy switches



Photocells



Daylight-linked dimmers



Remote control switches or dimmers

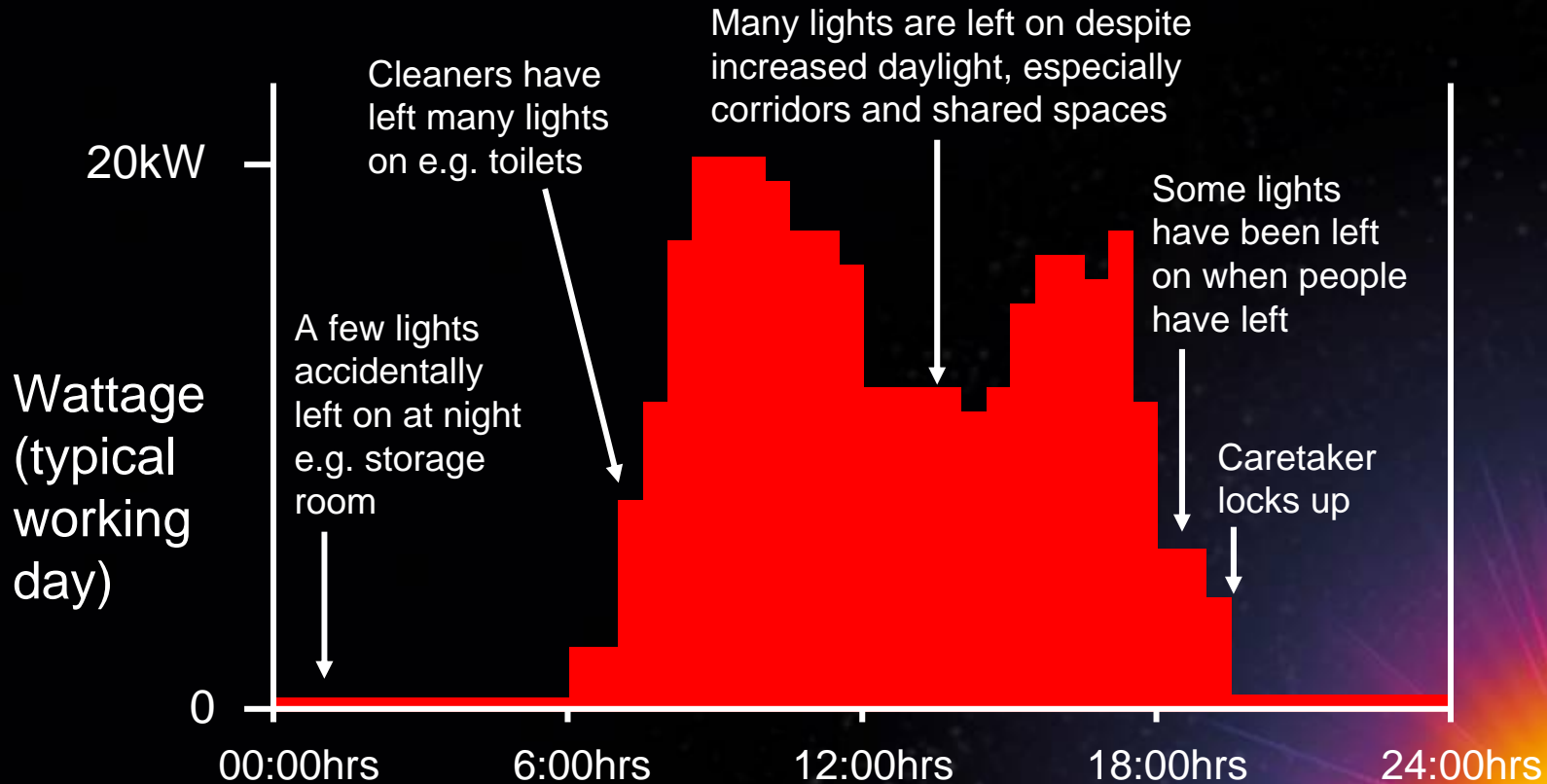


Time lag switches

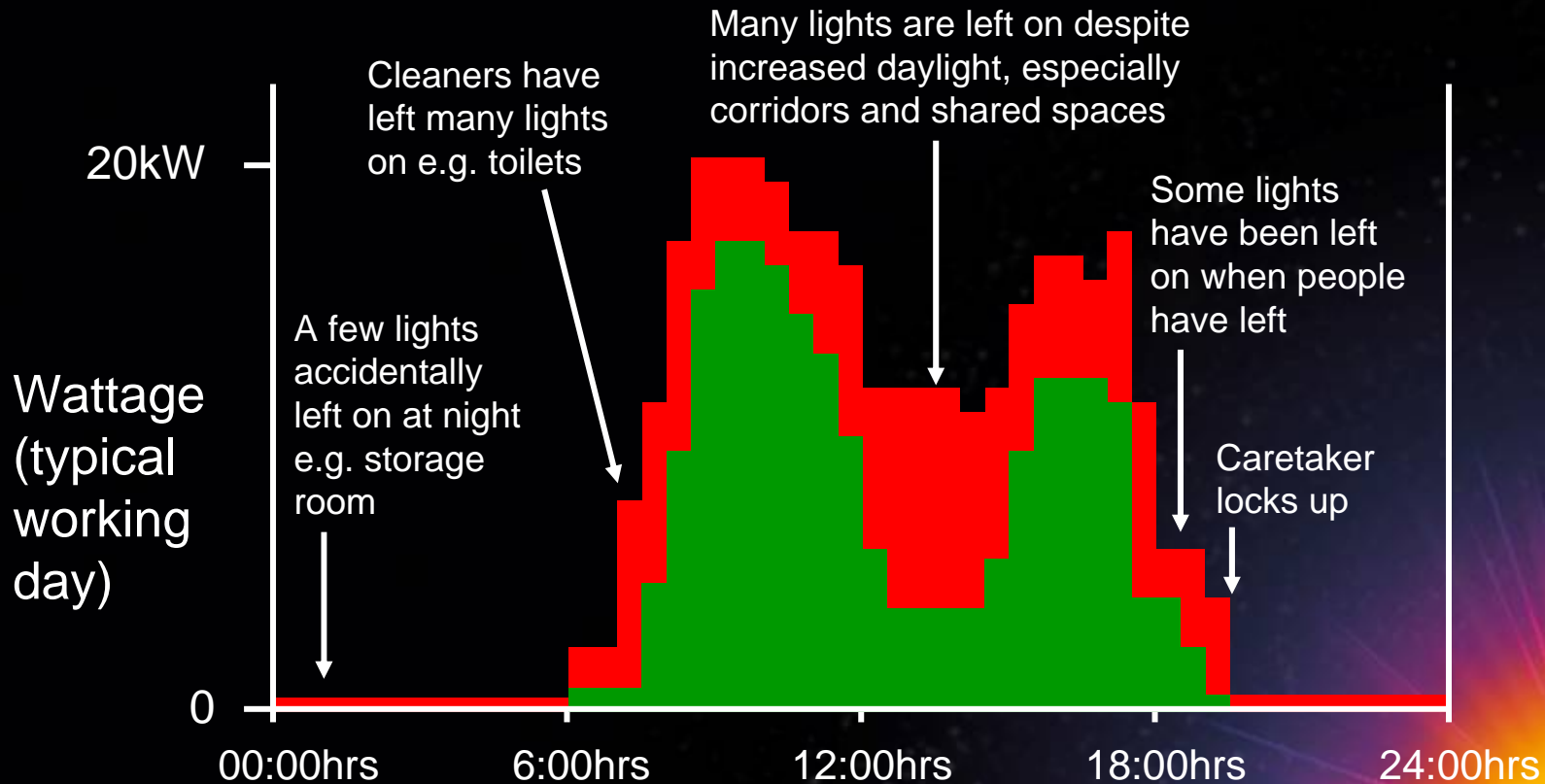


Dimmer switches

Lighting usage for whole building (primary school)

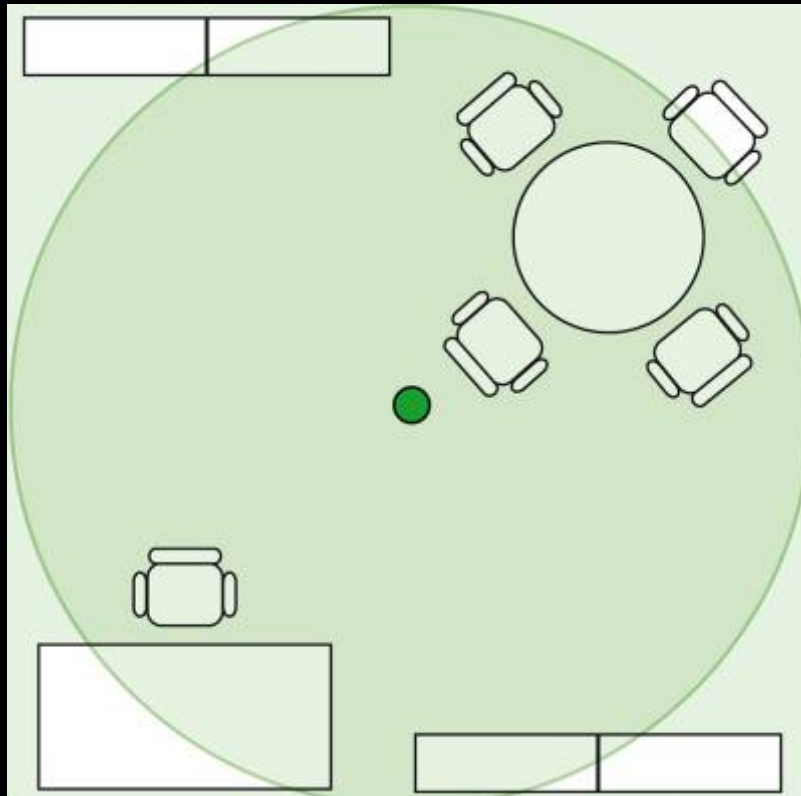


Lighting usage for whole building (primary school)



40% of lighting energy is saved by use of automatic lighting controls

Single office



Plan view

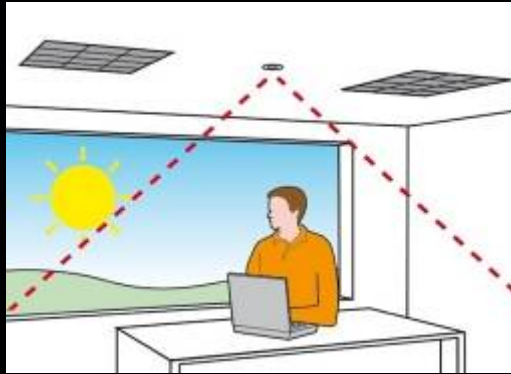


Ceiling flush mounted
PIR occupancy switch

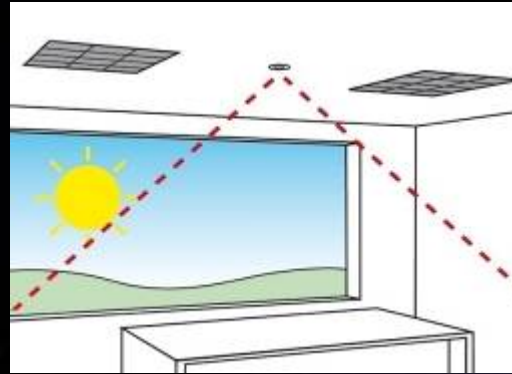
Automatic lighting
control

PIR occupancy switch in a single office

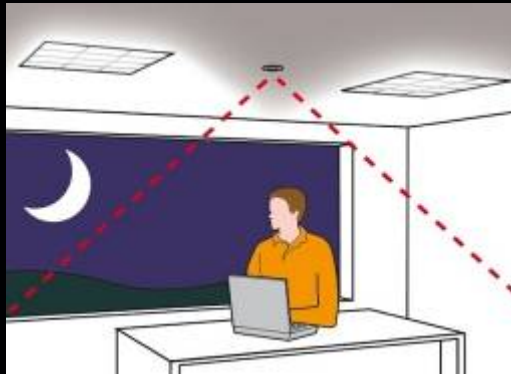
Enough daylight,
Occupied:
Lighting OFF



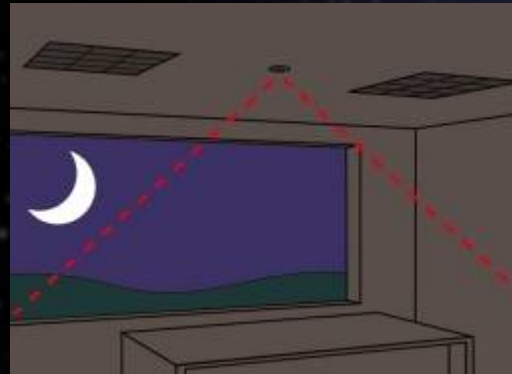
Enough daylight,
Unoccupied:
Lighting OFF



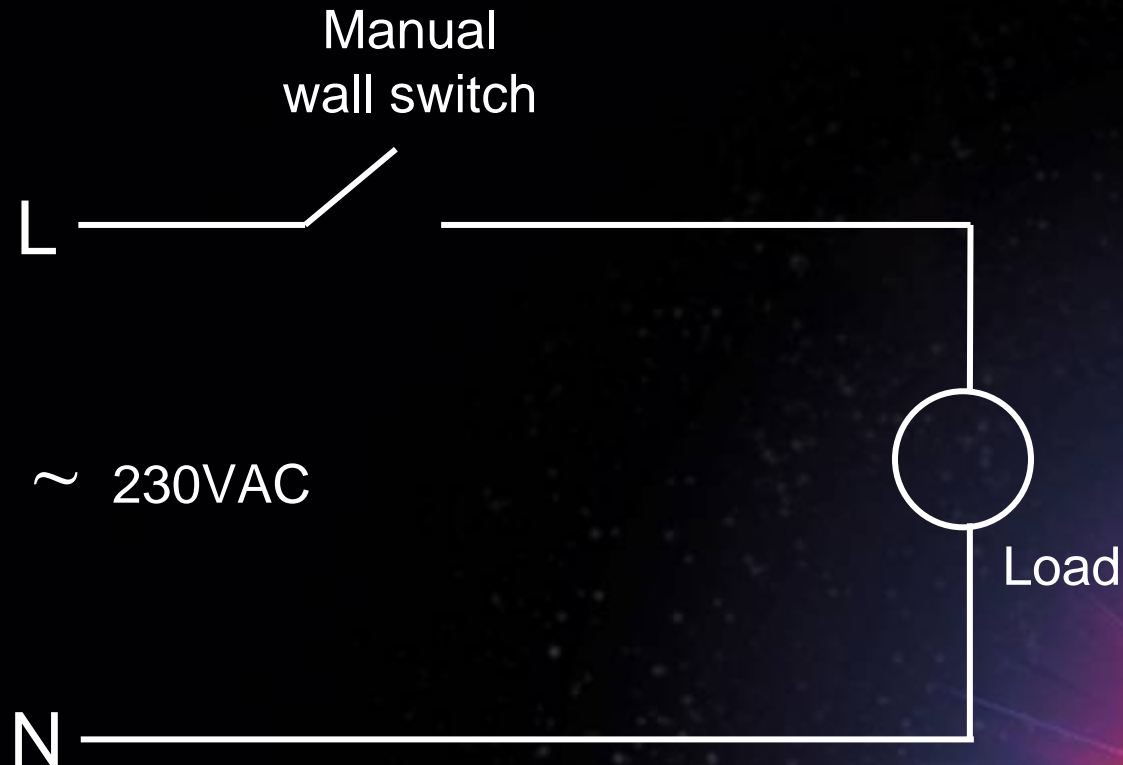
Night,
Occupied:
Lighting ON



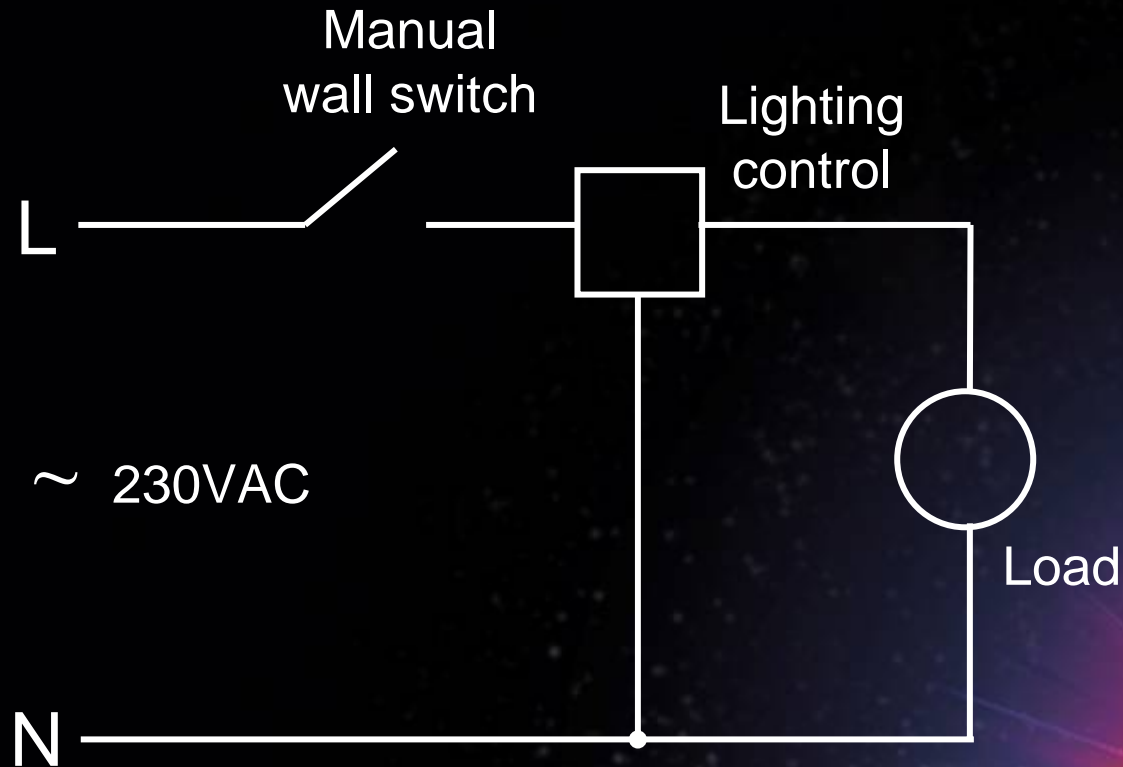
Night,
Unoccupied:
Lighting OFF



Existing lighting wiring diagram



Single lighting control typical wiring diagram



Classroom / Open plan area

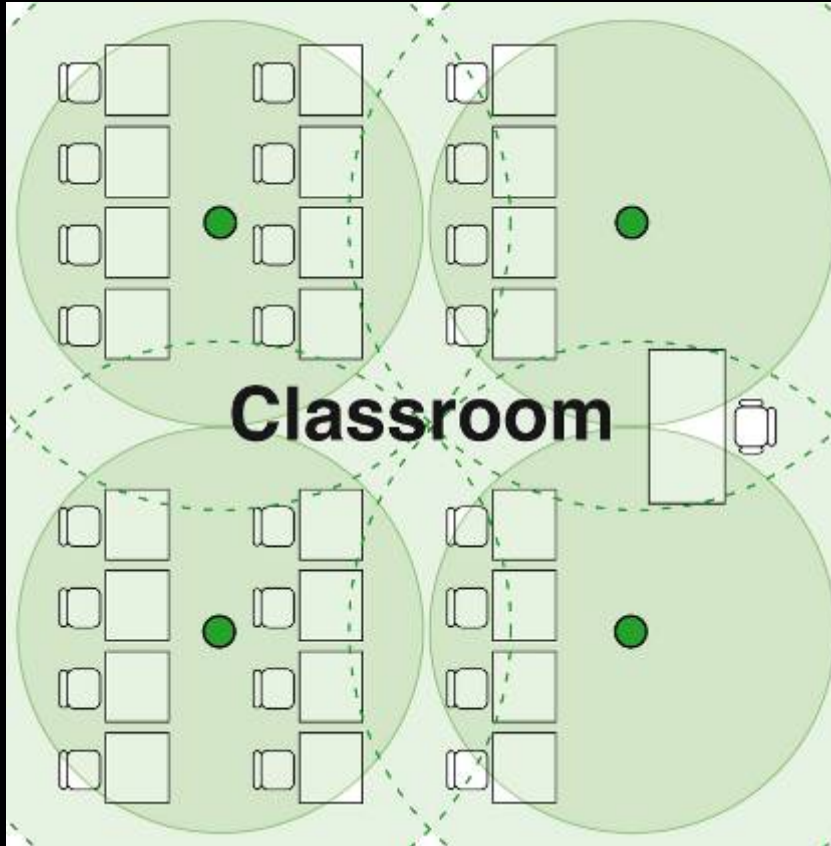


Ceiling flush-mounted
PIR occupancy switches

Automatic lighting
control

Classroom / Open plan area

Windows



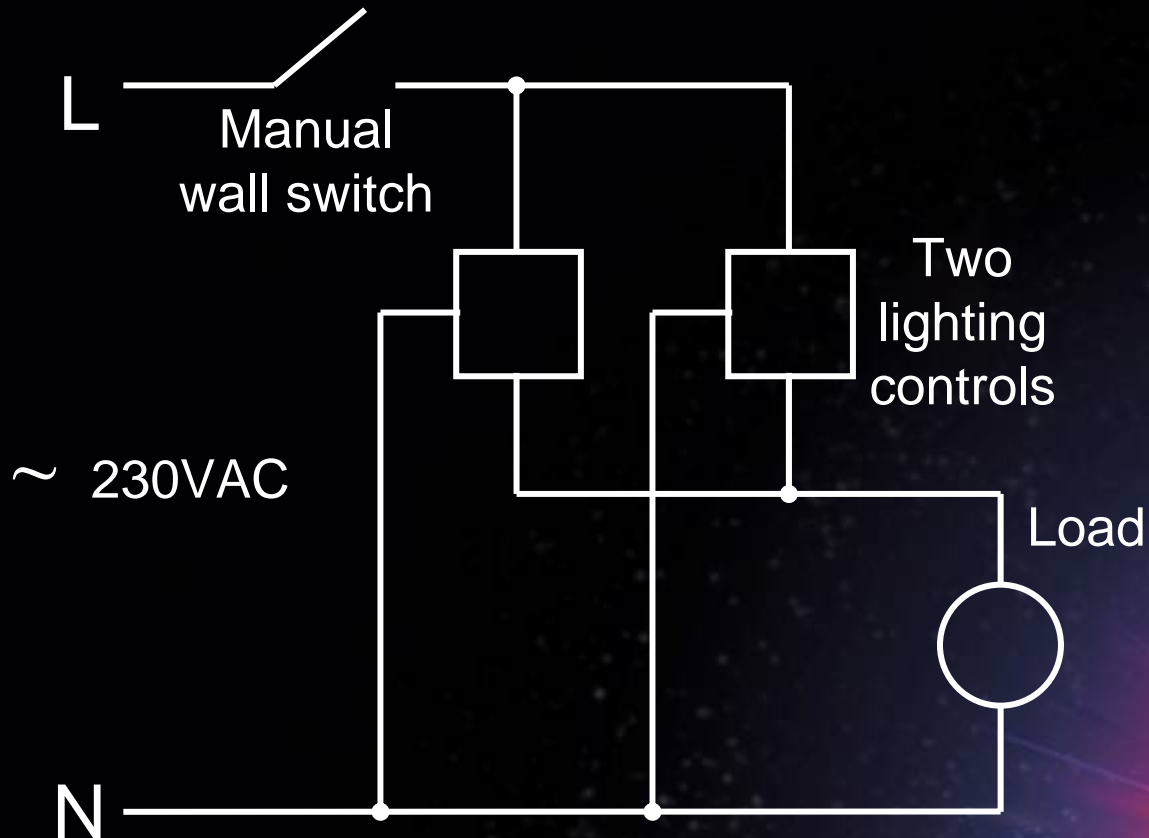
Plan view



Ceiling flush-mounted
PIR occupancy switches

Automatic lighting
control

Two lighting controls wired in parallel



Sports hall / Factory

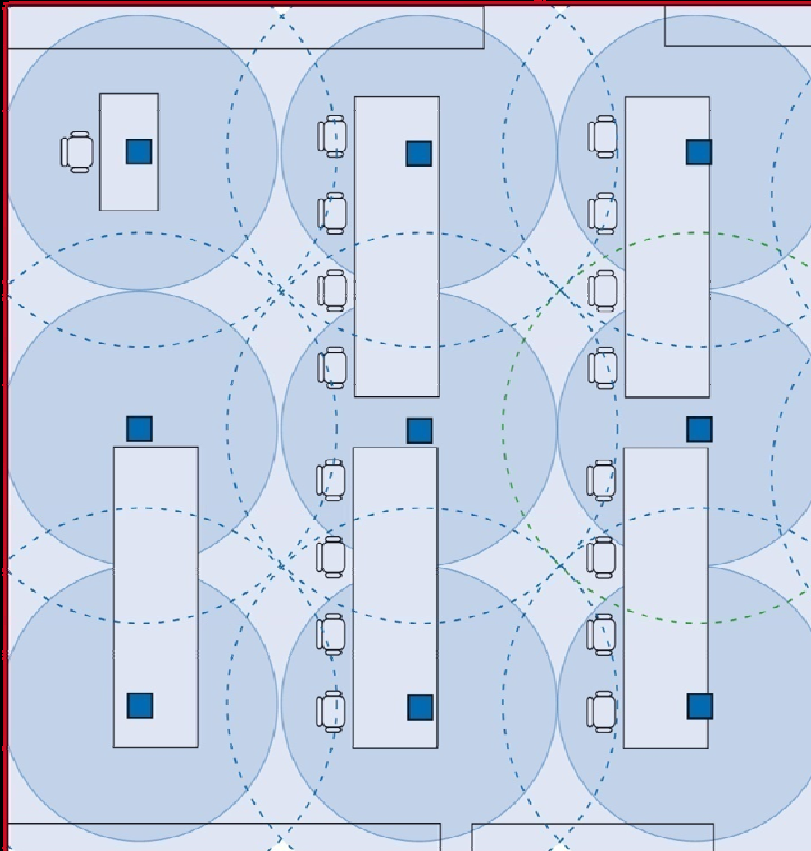


Ceiling surface-mounted
PIR occupancy switches

Hard wired or plug-in
versions

Automatic lighting control

Sports hall / Factory



Plan view



Ceiling surface-mounted
PIR occupancy switches

Hard wired or plug-in
versions

Automatic lighting control

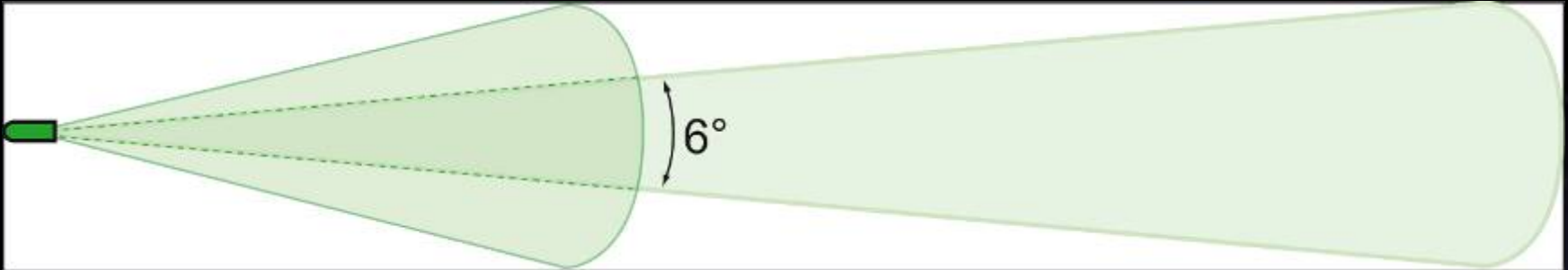
Corridor



Plug-in long range
Directional PIR
occupancy switch with
range up to 25 metres

Automatic lighting
control

Corridor



Plan view



Plug-in long range
Directional PIR
occupancy switch with
range up to 25 metres

Automatic lighting
control

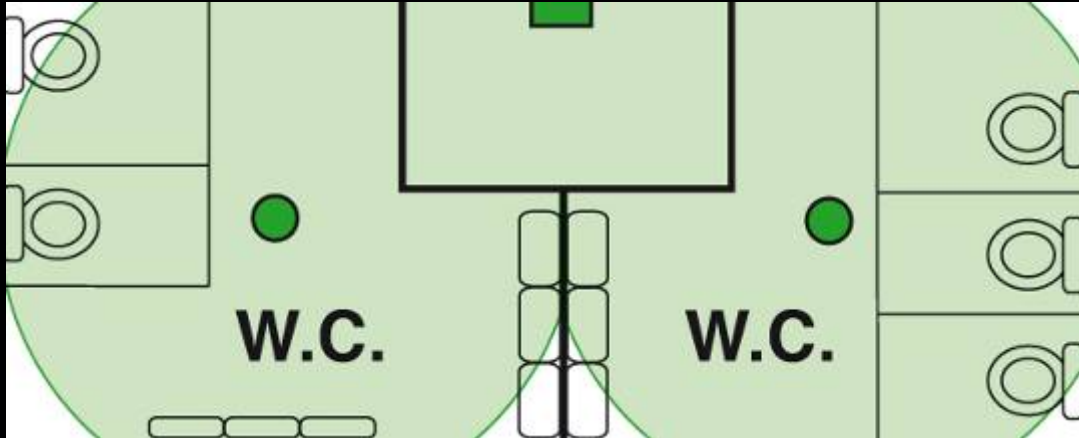
Toilets



Ceiling surface mounted PIR occupancy switches in toilet area.
Wall mounted PIR occupancy switch in toilet lobby

Automatic lighting control

Toilets



Plan view



Ceiling surface mounted PIR occupancy switches in toilet area.
Wall mounted PIR occupancy switch in toilet lobby

Automatic lighting control

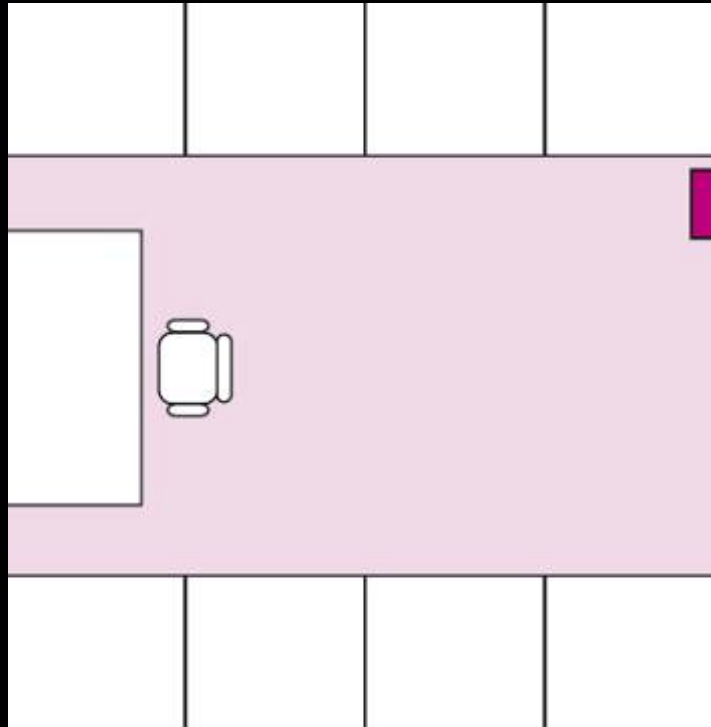
Storage cupboard



Time lag switch
with illuminated
push button

Manual switch on,
automatic off

Storage cupboard



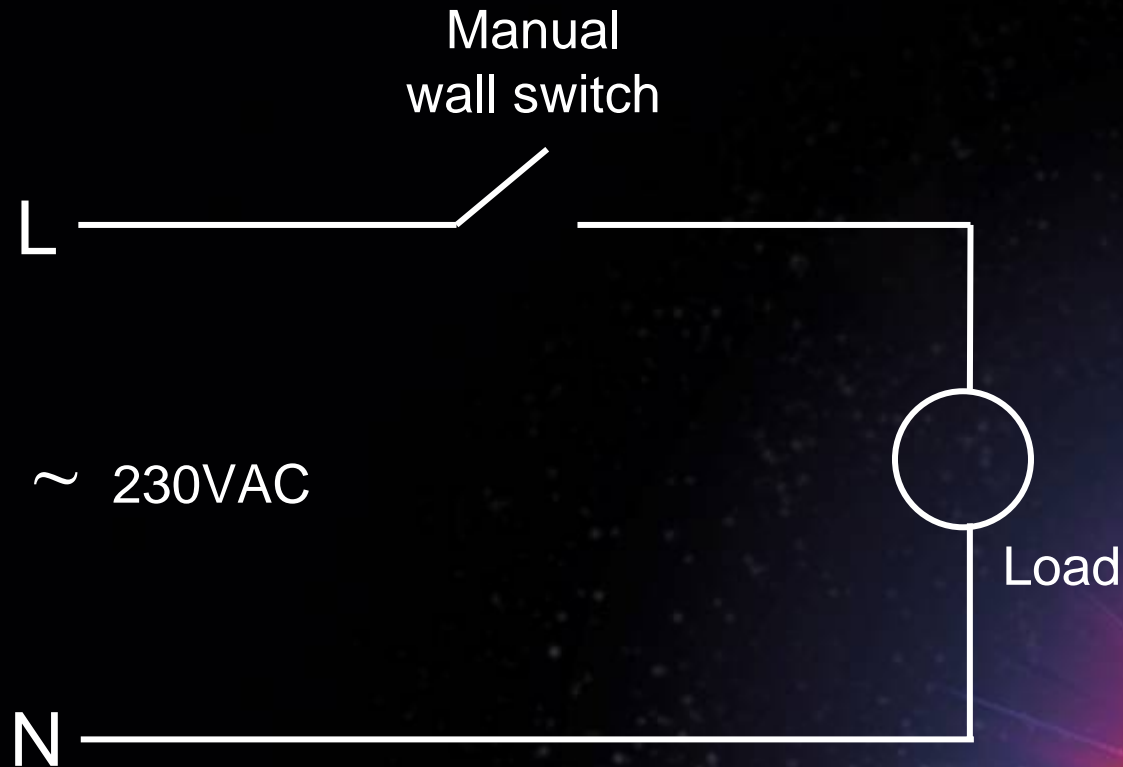
Plan view



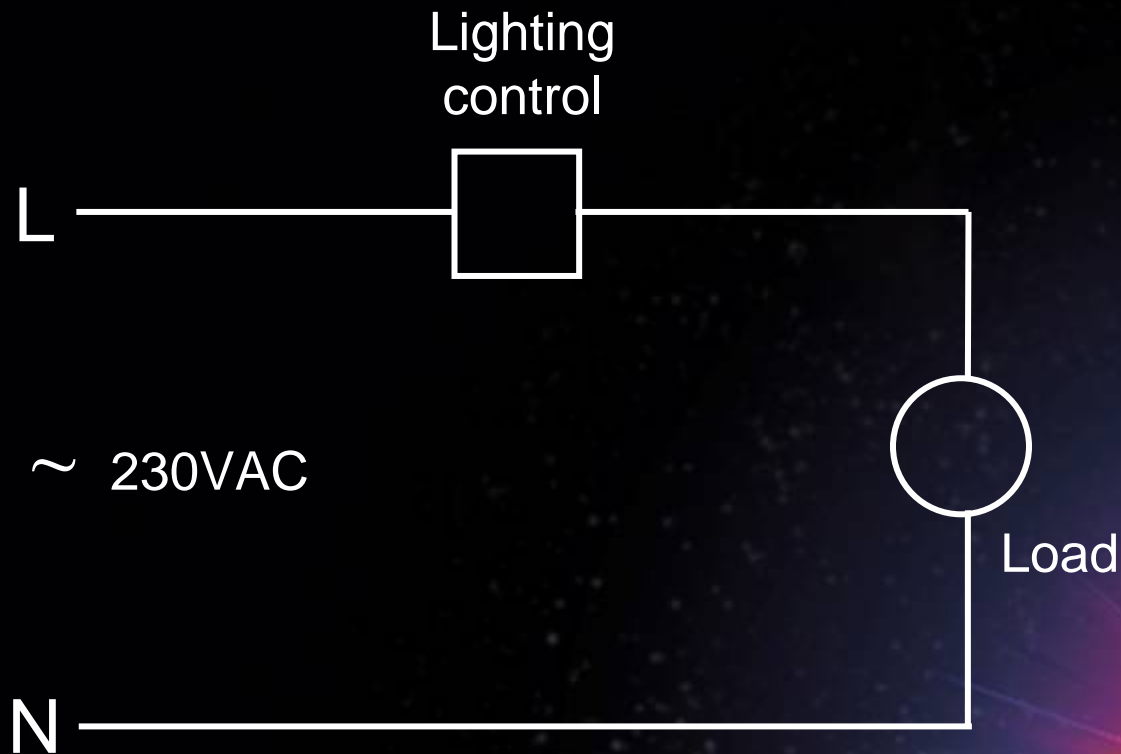
Time lag switch
with illuminated
push button

Manual switch on,
automatic off

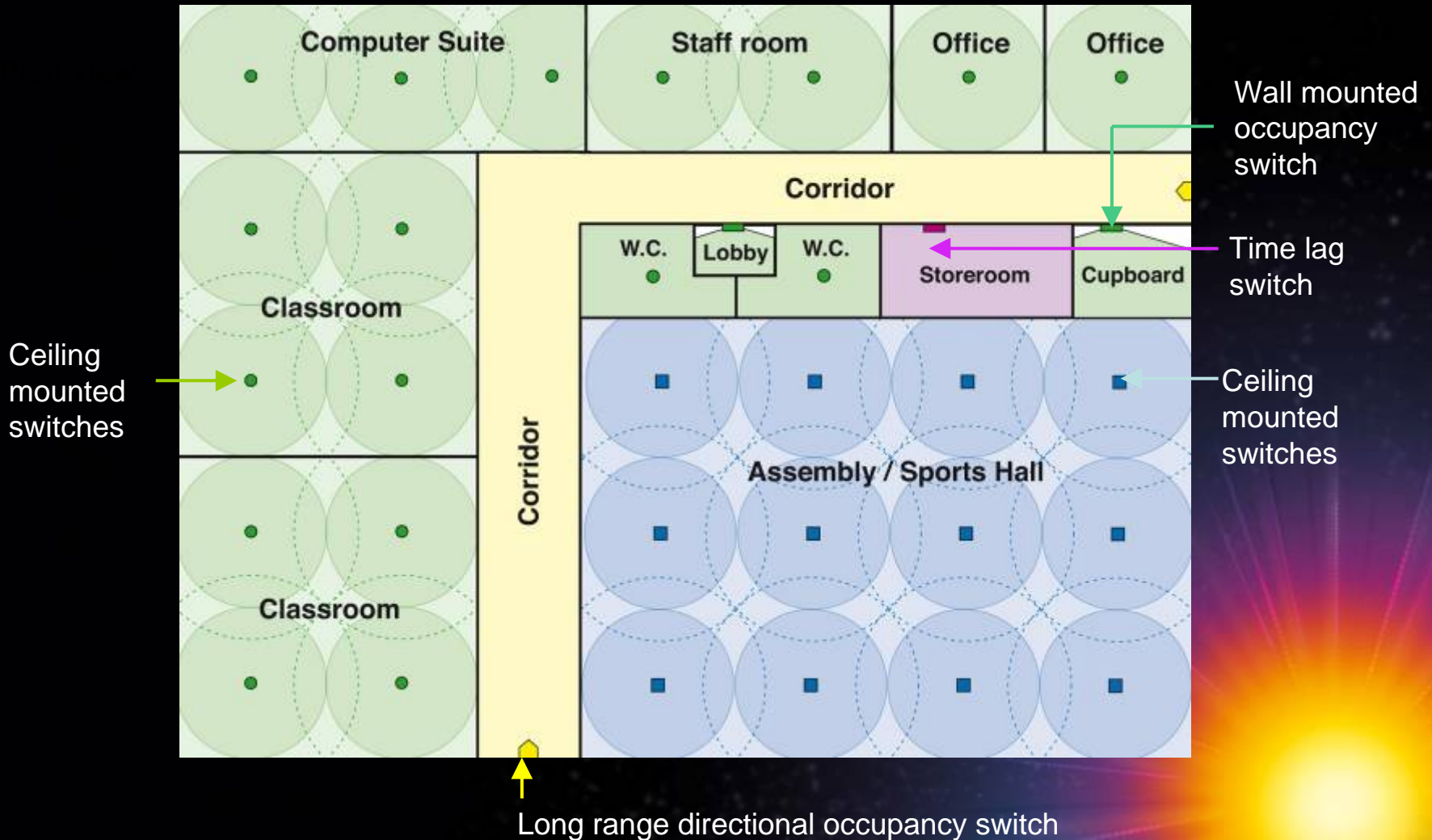
Existing lighting wiring diagram



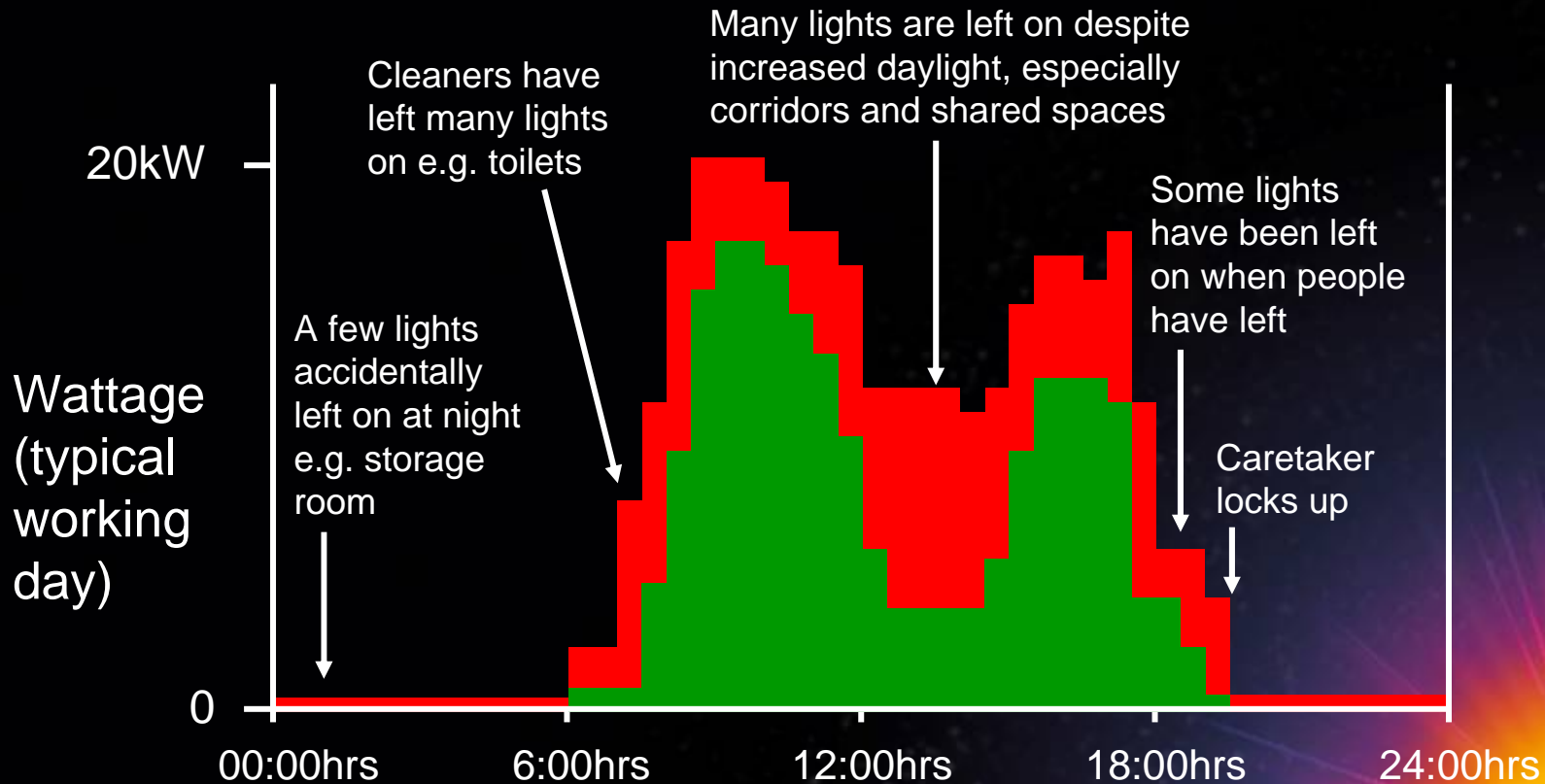
“2 wire” lighting control wiring diagram



Example building (part of school)

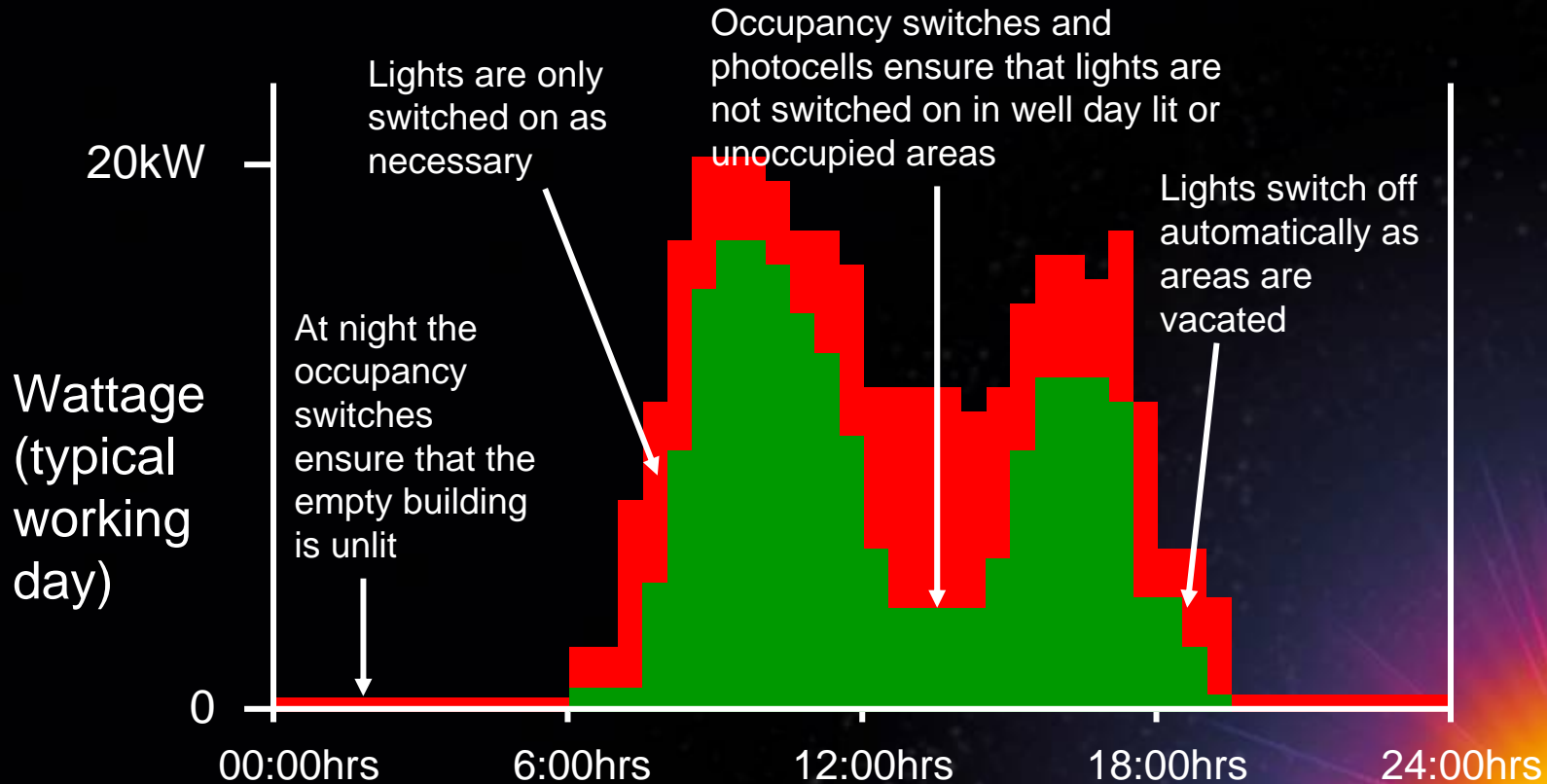


Lighting usage for whole building (primary school)



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Lighting usage for whole building (primary school)



40% of lighting energy is saved by use of automatic lighting controls

Case study

- UK Storage Company



Corridors in storage company

- Covered by plug-in long range directional PIR occupancy switches



Estimated savings

- Total lighting load of 16.2kW in treated areas
- Average of 6.65 hours of lighting saved per day
- Average of 2075 hours of lighting saved per year
- Total of 33 600 kW hours saved per year

- Annual saving of £2016
- Cost of installation £2450
- Payback period of 14.6 months
- Carbon footprint reduction 14.2 tonnes CO₂ per year

- “DANLERS Limited have worked closely with us to provide quality products that are very reliable, so that we can fit and forget them.
- “They look nice and allow us to provide our customers with the environment that they like, whilst allowing considerable savings at the same time.
- “As we develop other sites, we have the confidence to specify DANLERS whenever we can.”
 - Keith Taylor, Managing Director

Other clients

- GEC Marconi, Portsmouth
- Lidl Stores, throughout UK
- Nat West Bank, Bristol
- AETC Turbine Factory, Yeadon
- Cardiff International Airport
- NUIG Business School, Galway
- Hong Kong Police Headquarters
- Mater Dei Hospital, Malta



Conclusion of benefits

- Reduce energy usage
- Reduce carbon emissions
- Save money
- Comply with Building Standards and CRC
- Improve ratings on Energy Performance Certificates / Display Energy Certificates
- Demonstrate social responsibility