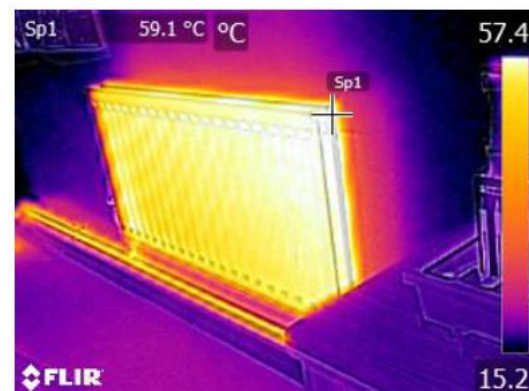


Energy at Langley Primary School



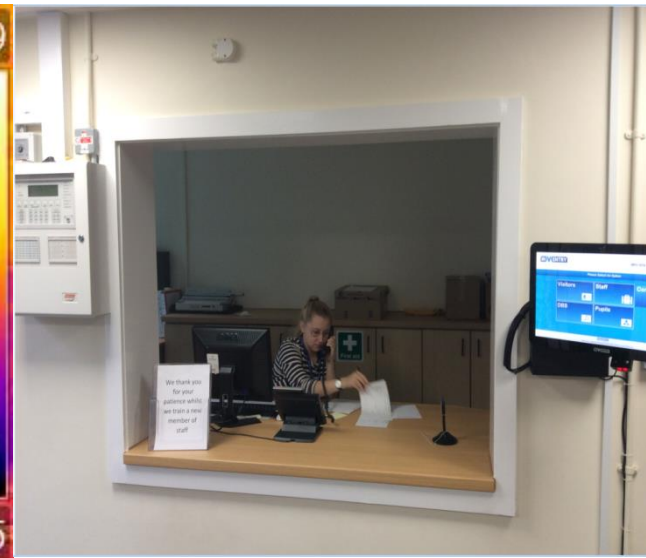
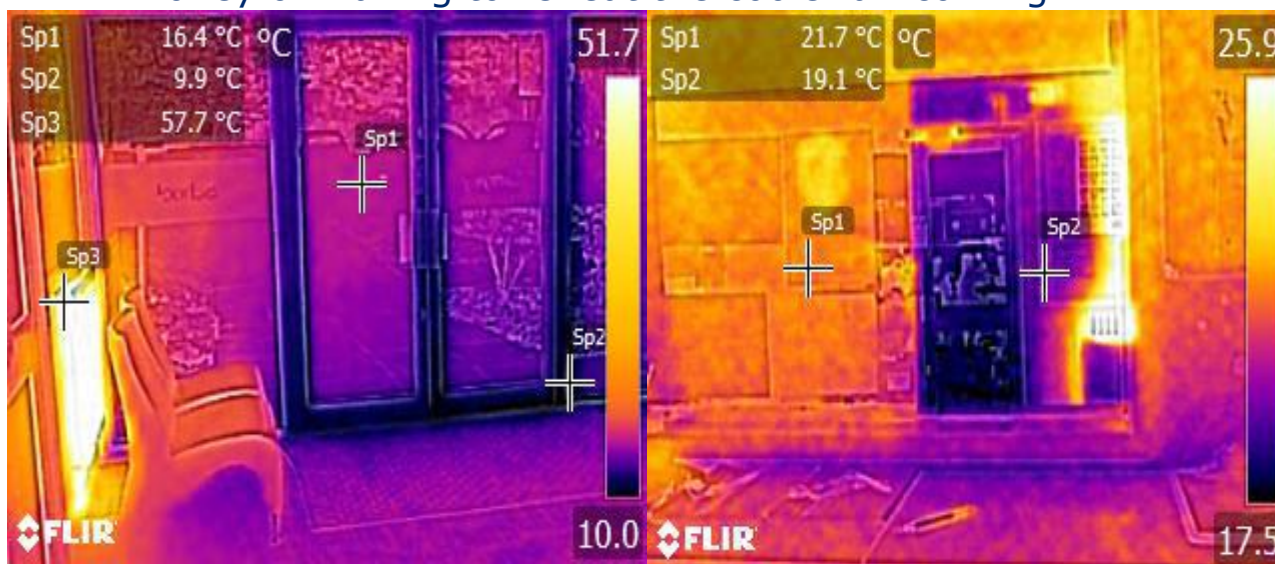
Energy Audit – What did it identify?

- **CAR PARK** - Recommend outside lighting to be changed for LED
- **MAIN BUILDING**
 - lighting in reception was poor potential to update to LED's
 - Draught issues on old external doors
 - Uninsulated pipework
 - Installation of Thermostatic Radiator Valve's required
 - Install building management system
 - Fit reflective radiator panels behind each radiator
 - Fit de stratification fans into main assembly hall
 - Windows poor condition, replace with double or secondary glazing
 - Roof insulation required
 - Boiler plant is old
 - Water usage improvements
 - Pool improvement
 - Renewables



Energy Audit - Identified Draughts

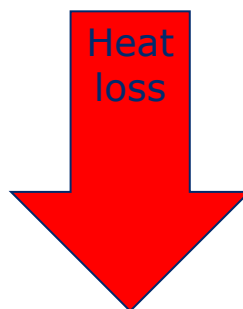
- There is a good “draught lobby” at the entrance of the school: these are spaces with an external door that can be opened and closed before moving to the internal door to open that one. This prevents the cold draught being drawn through into the building and heat lost to the outside.
- Left shows the inside of the external door and is performing pretty well.
- The image on in the middle is from inside the office looking out through the hatch. The left side is the closed glass, the right is the opening to the draught lobby, showing that it is a decent buffer zone and having the lobby cooler than the rest of the school is fine, no need to have it as warm as the School Office. It also shows how the hatch should be kept closed when it can else the coolness will impact the office. There is also a hot radiator in the buffer zone so this could be turned down cooler than the rest of the school
- The right photo shows the new area, admin office no longer exposed to “draught lobby” because a wall has been built across blocking the main office from lobby. The advantage is that no heat from the office is going into the lobby out the front door, this will save money on having to reheat the cooler air coming in.



Energy Audit

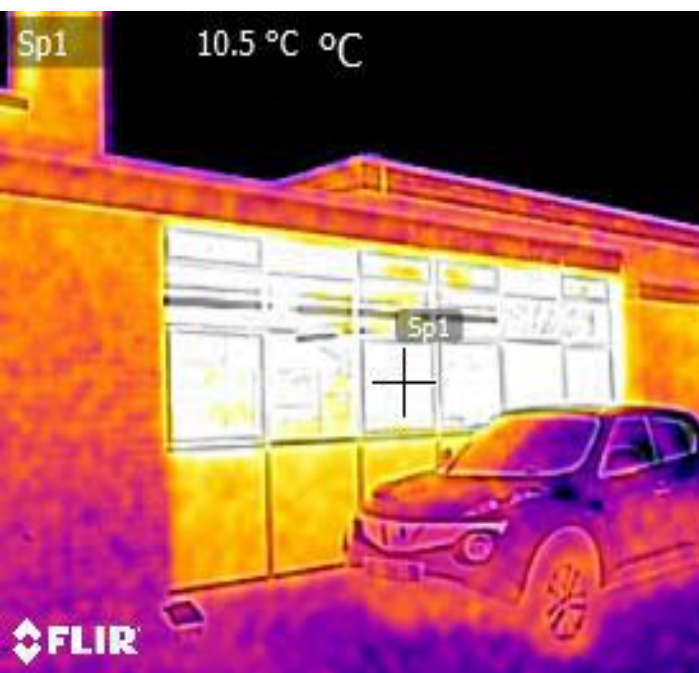
Energy Audit Identified - Windows

- Windows in the school are a mix of double-glazed and single-glazed and inevitably the double perform well and the single much worse. The photo below shows singled glazed windows leaking inside heat out .



Result & Action

Installed double glazed windows round the front of the building including the admin office



Old single glazed

New double glazed

Energy Audit – identified poor lighting

- **CAR PARK** - recommendation change old low pressure sodium halide lights for LED's

Wattage dropped from 250 w to 50 watt



**Previously
8 x sodium low
pressure metal
halide (250 W
each)**

**NOW
8 X LED Lights
(50 W)**

**New LED Wall
Lights 2018**



Posts with old lights



Old Lights halide (post)



Langley Energy Audit – Identified poor lighting

- **ADMIN OFFICE** - Lighting in reception and admin office is inadequate (T12) fluorescent tubes. These are by today's standards inefficient, dirty, dull and yellow.

Reception old lights T12 Fluorescents



Admin office new LEDS



Wattage
dropped from
70W to 15W

LED's in admin
have a nice
daylight colour,
flicker free,
reduce risk of
migraine,
potentially save
65%

Reception new LED's 2018



**Previously
3 x 5ft T12 Fluorescent
tubes (70 W each)**

**NOW
3 X LED lights (15 W)**

Langley Energy Audit – Identified Poor Lighting

- **CORRIDOR** - Lighting corridor was is inadequate (T12) fluorescent tubes.

Previously
5 x 5ft T12 Fluorescent
tubes (80 W each)

NOW
5 X LED lights round
fittings (15 W)

Wattage
dropped from
80W to 15W

BEFORE – old dark lights



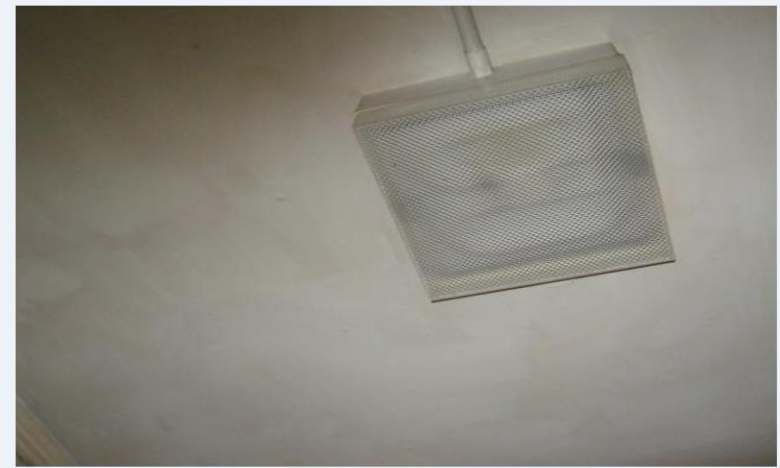
AFTER – new bright lights



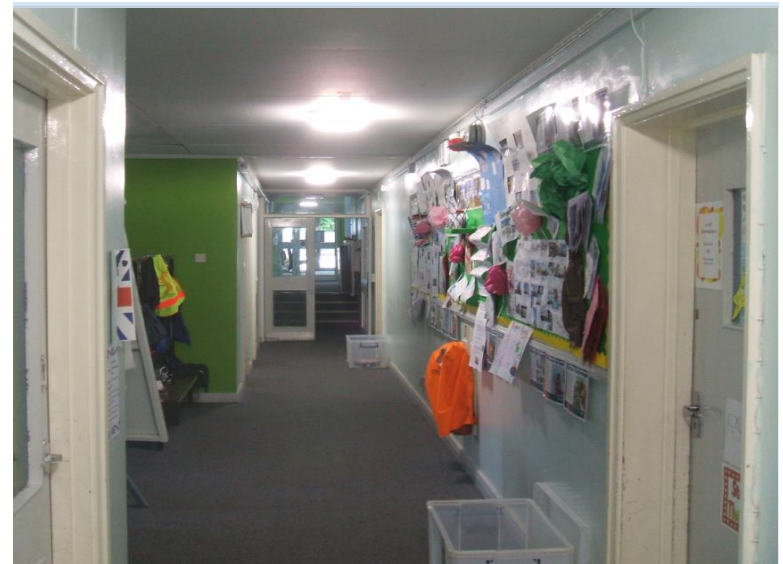
Langley Energy Audit – Identified poor lighting

- **Stairs next to hall – (3 steps down)** Lighting was inadequate 2D fluorescent

Lights by steps Old – 2D lights



Lights by steps now LED



**Previously
2 x 2D Fluorescent (36 W)**

**NOW
2 X LED lights round
fitting (15 W)**

Wattage
dropped from
36W to 15W

Langley Energy Audit – Identified poor lighting

- **Music Room** - Lighting is inadequate (T12) fluorescent tubes.

Old Lights

Previously
9 x 5ft T12 Fluorescent
tubes (80 W each)

NOW
5 X LED lights (15 W)

Wattage
dropped from
80W to 15W
Number of
fittings
dropped from
9 to 5



Shows gap where old light was

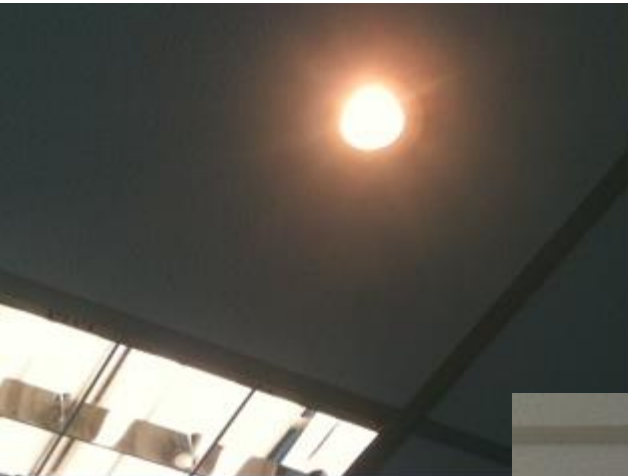


New LEDs



Langley Energy Audit – Identified poor lighting

- **Small Kitchen-** Lighting kitchen was is inadequate halogen spot lights



Old spot Lights

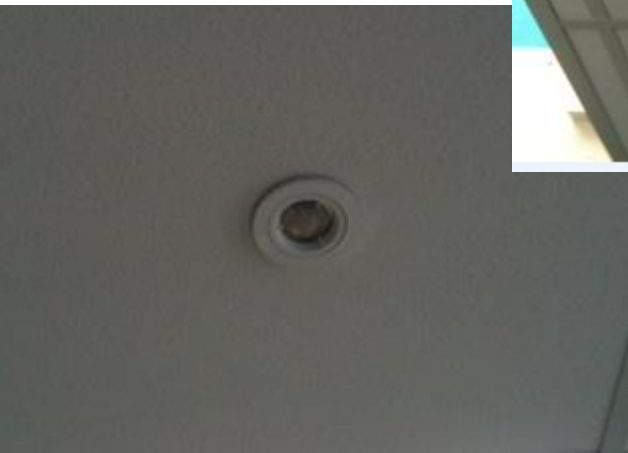
Wattage dropped from
40 W to 5W
20 OLD AND 19 NEW

**Previously
40 W Halogen spot
lights**

**NOW
5 W LED spot lights**



New LED spots



New LED spots



Screw out old screw in new

Langley Energy Audit – Identified poor lighting

- **Library**- Lighting was old fluorescent tubes

Previously
9 x 5ft T12 Fluorescent
tubes (80 W each)

NOW
5 X LED BATTENS (15 W)

New Lights



Shows gap where old light removed

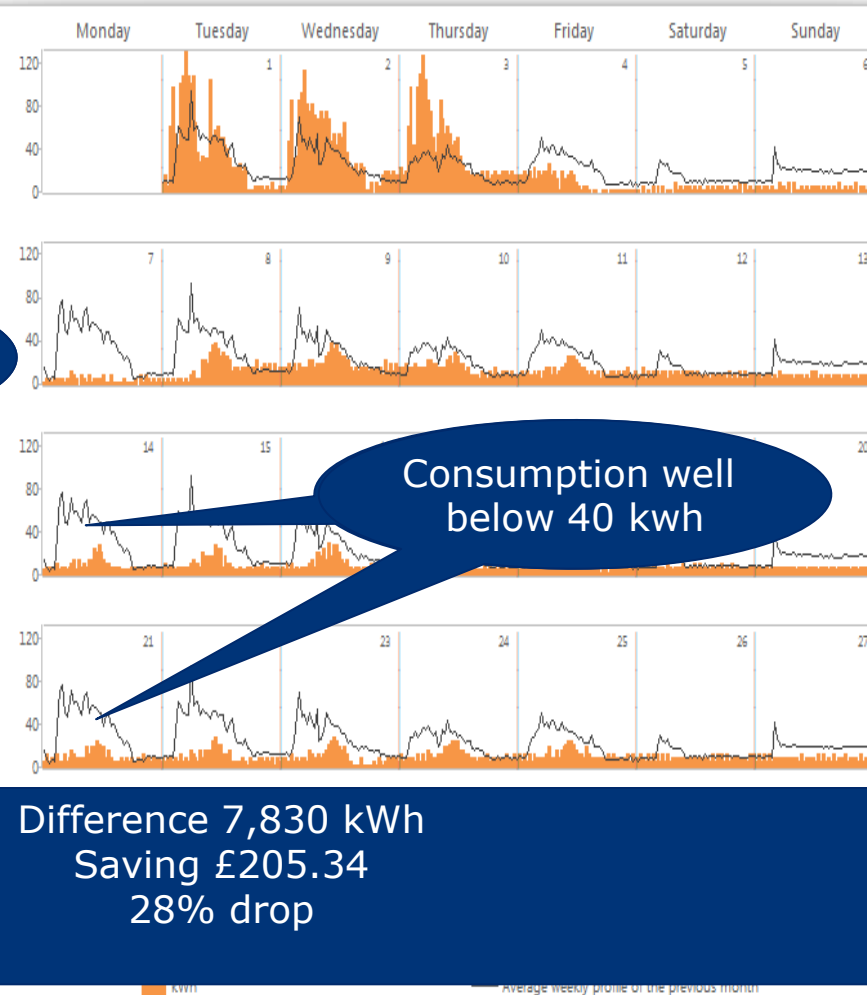
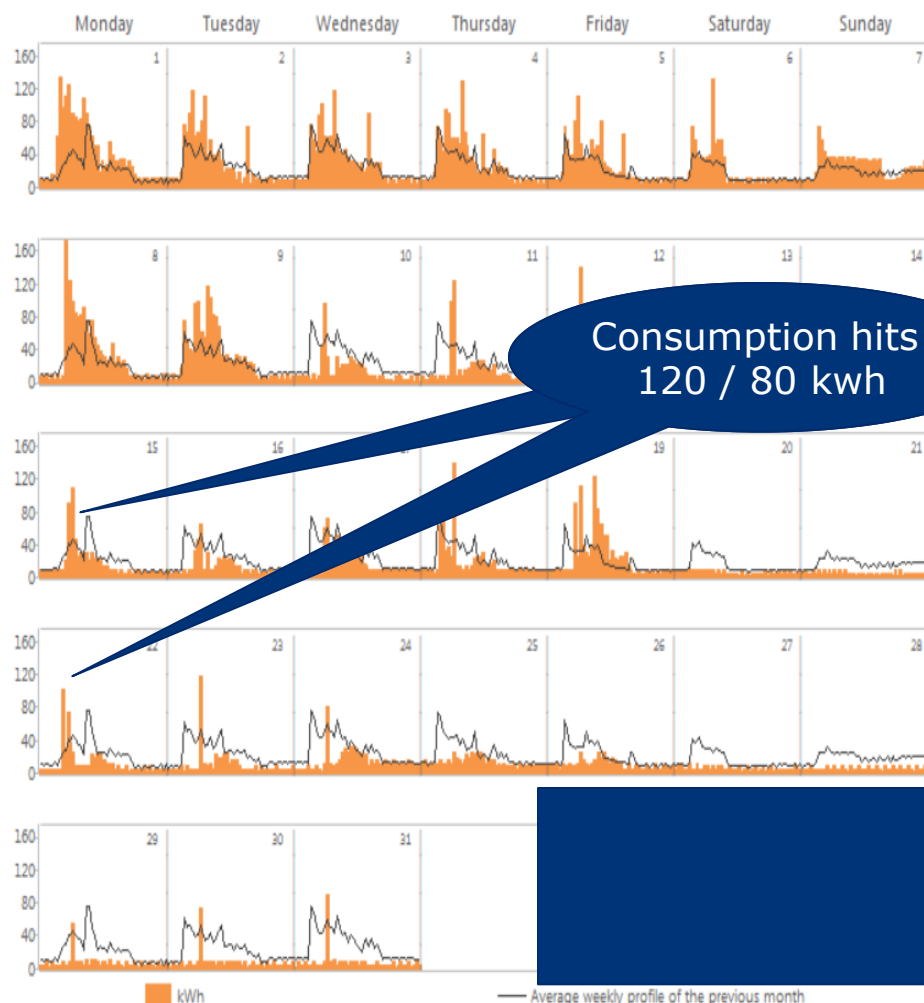


Old Lights - dark



Wattage
dropped from
80W to 15W
Number of
fittings
dropped from
9 to 5

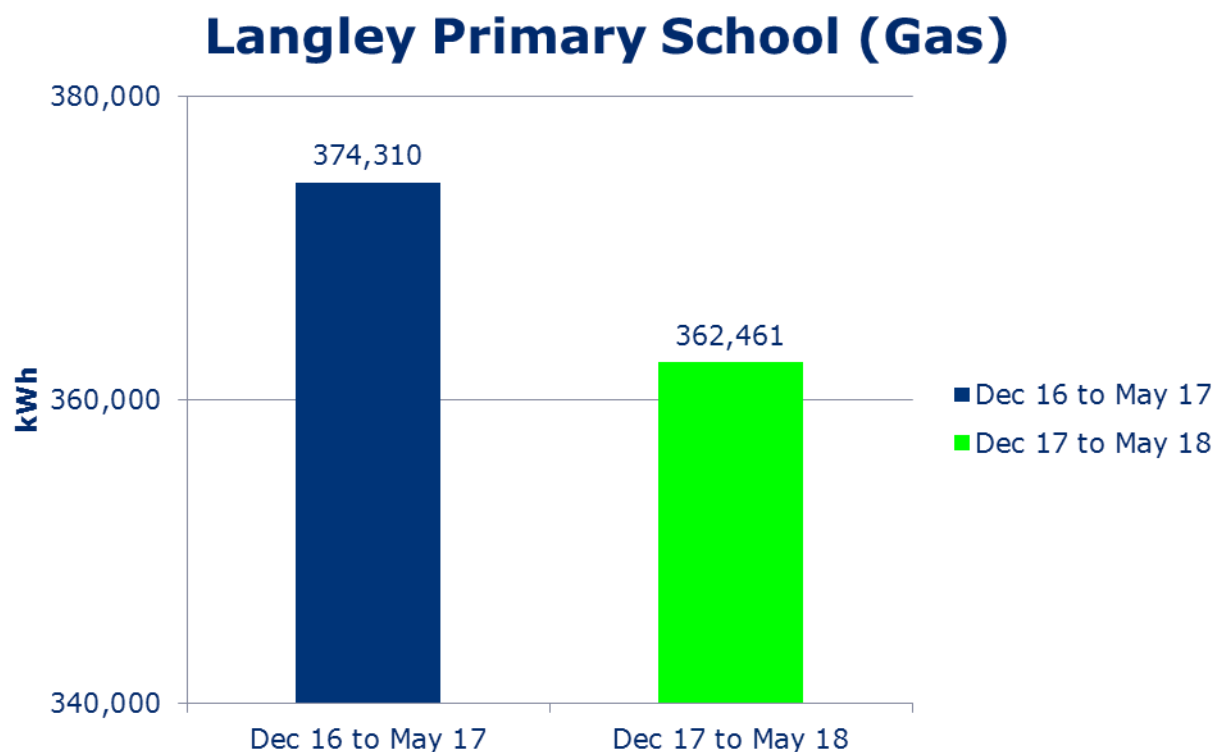
Energy - looking at GAS AMR



Difference 7,830 kWh
Saving £205.34
28% drop

Energy – Results Gas

➤ Langley Primary School



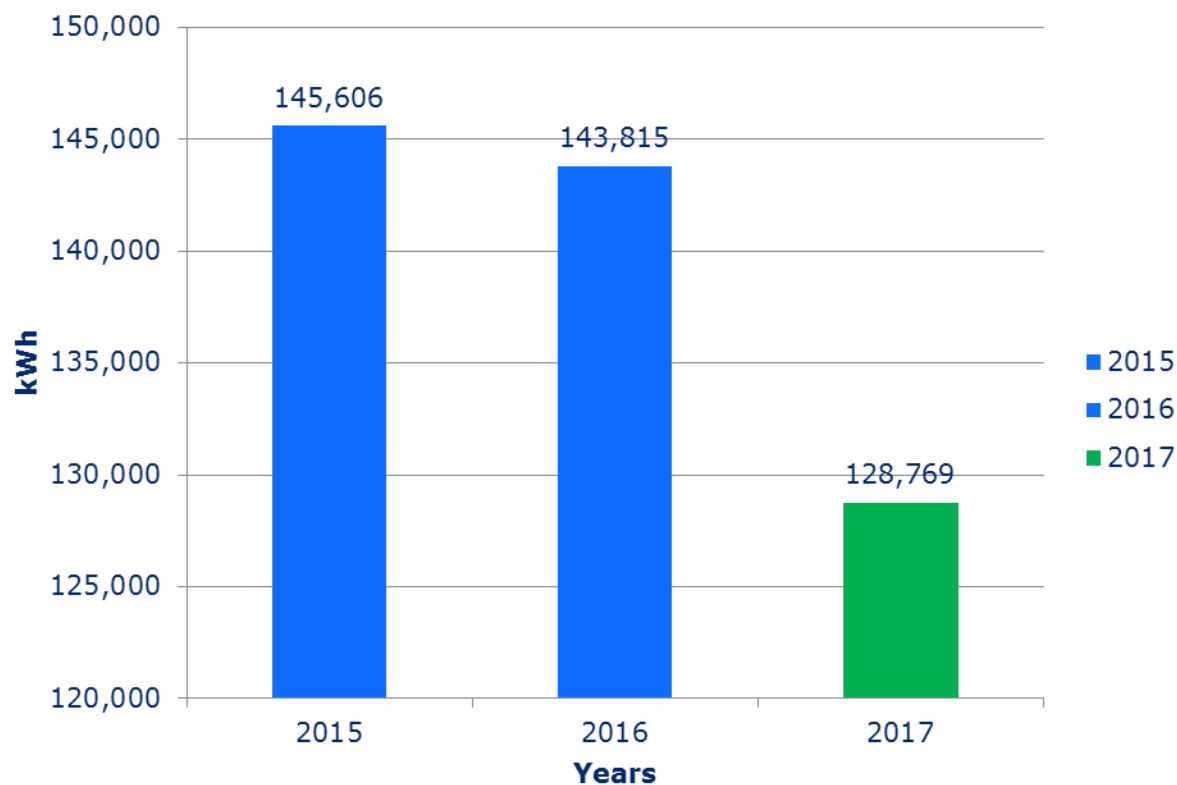
**-3%
down**

Over a 6 month period only

Energy – Electric Results

➤ Langley Primary School

Electric Consumption 2015 - 2017



**13%
down**

**16,837
kWh
down**

Energy – Future Plans

- **Hall** - LED lights for the hall to replace 14 fluorescents
- **Plastic curtains** on external doors as identified in the audit
- **Infants** - lights to LED/s

Photo of old hall lights



Sunshine Room



Sunshine Room

Overall Results

	Number	Watts	Total Watts	Type	Number	Watts	Type	Total Watts
CAR PARK EXTERNAL	8	250	2000	sodium metal halide	8	50	LED	400
ADMIN OFFICE	3	70	210	5FT FLOURSCENTS	3	15	LED	45
CORRIDOR	5	80	400	5FT FLOURSCENTS	3	15	LED	45
STAIRS OPP HALL	3	70	210	5FT FLOURSCENTS	3	15	LED BATTERN	45
LIBRARY STAIRS	2	36	72	2D FLOURSCENTS	2	15	LED CIRCULAR	30
STAIRS BY HALL	2	36	72	2D FLOURSCENTS	2	15	LED CIRCULAR	30
MUSIC	9	80	720	5FT FLOURSCENTS	5	15	LED BATTERN	75
KITCHEN	20	40	800	HALOGEN SPOTS	19	5	LED SPOTS	95
LIBRARY	9	80	720	5FT FLOURSCENTS	5	15	LED	75
Total	61	742	5204		50	160		840
Total Cost								£1,995.95

	FROM	TO	REDUCED BY %
NUMBER OF LIGHTS	61	50	16%
NUMBER OF WATTS	5240	840	78%