Climate Action
and
Light Pollution Threat

CliC-PoLi

Streetlight Modelling

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Street light upgrade

Led by Cork County Council, PLEEP South West will upgrade 77,162 public lights across the region's local authorities, Cork County Council, Clare County Council, Kerry County Council, Limerick City & County Council and Waterford City & County Council, as well as Transport Infrastructure Ireland (TII).

Benefits

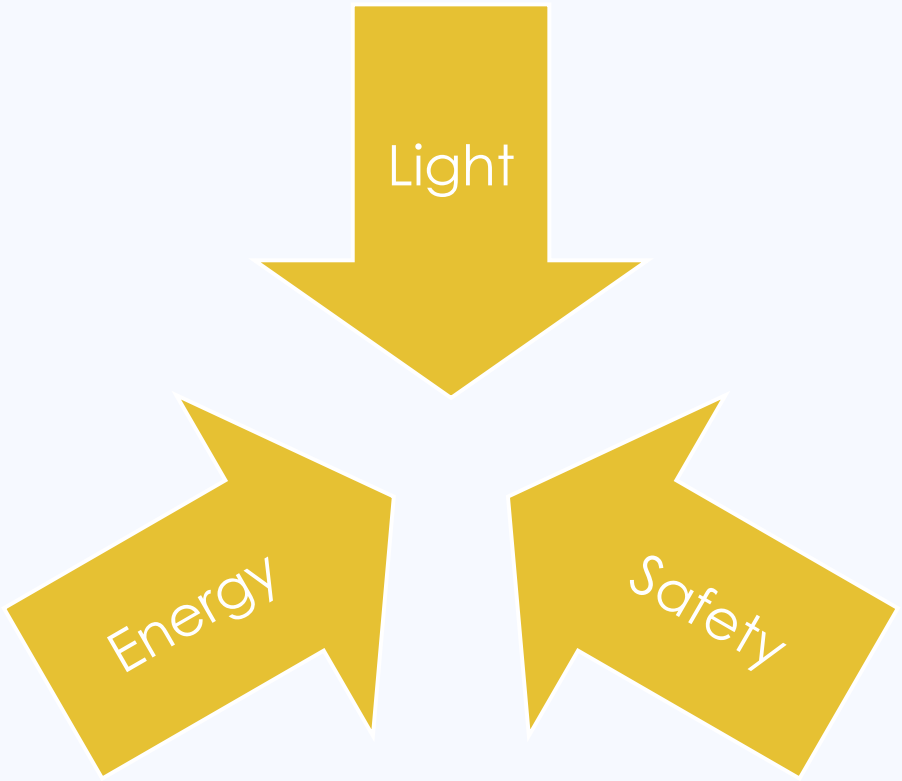
Part of a National Public Lighting Energy Efficiency Project, twenty-one local authorities will collaborate in the upgrading of approximately 220,000 public lights to LED. Once complete, the project is set to reduce CO2 emissions by 22,000 tonnes each year, while saving the local authorities €12m in energy and maintenance costs annually.

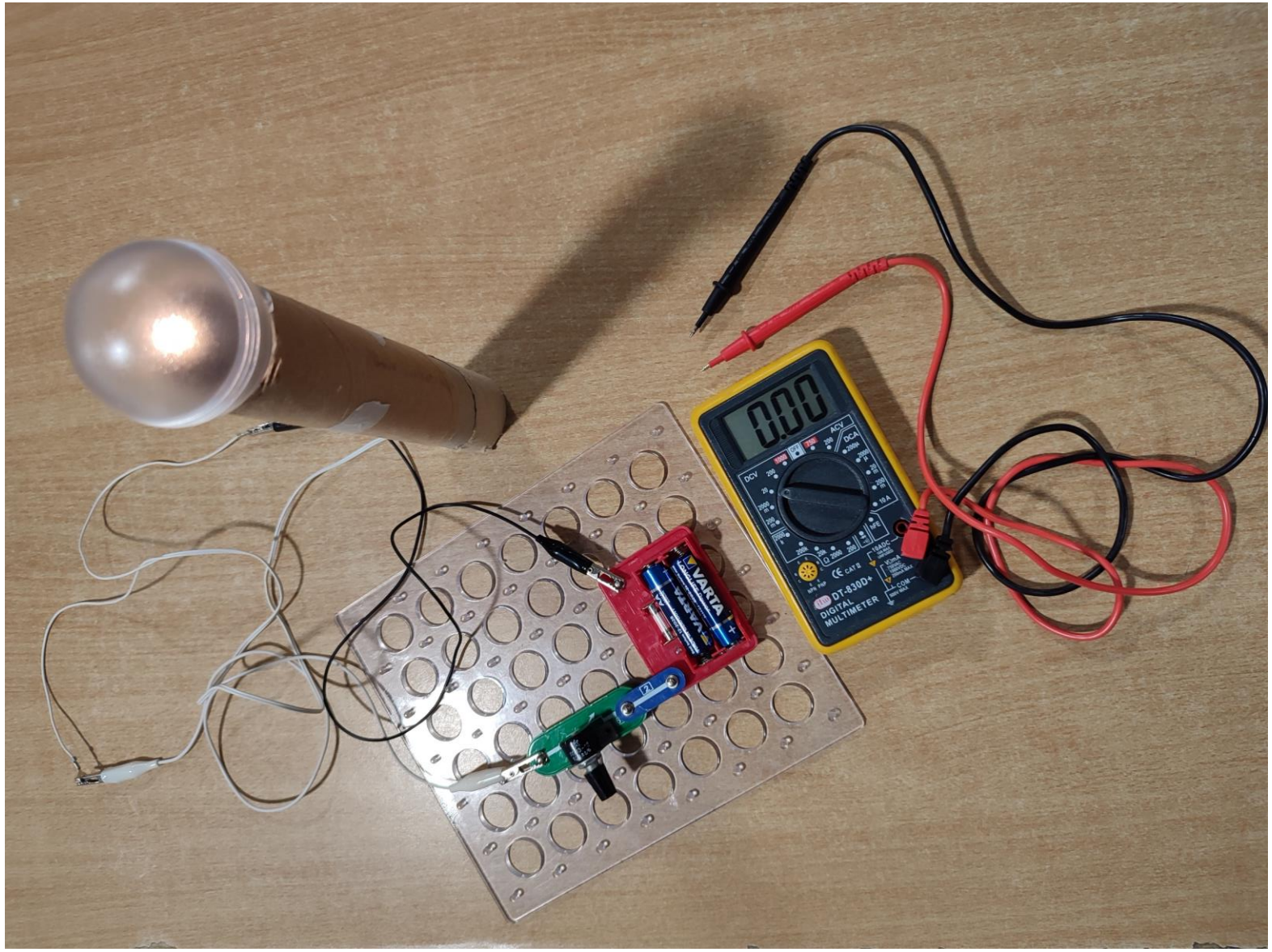
ROYAL borough of GREENWICH

- **Street light upgrade**
- The Council has secured a £11.5 million loan from The Mayor of London's Energy Efficiency Fund (MEEF) to replace all its 20,000 traditional street lights with modern LED equivalents – saving £1million a year in energy and maintenance costs.

- **Benefits**
- We will save 6,770,589 kWh per year, reducing our street lighting energy consumption by 74 per cent and saving around £1million
- We will reduce our CO2 consumption by 2,080 tonnes per year - the equivalent of driving a medium sized car from Greenwich to Edinburgh and back 9,000 times


CliC-PoLi


Light
Energy
Safety


VARTA
DT-830D+
DIGITAL
MULTIMETER

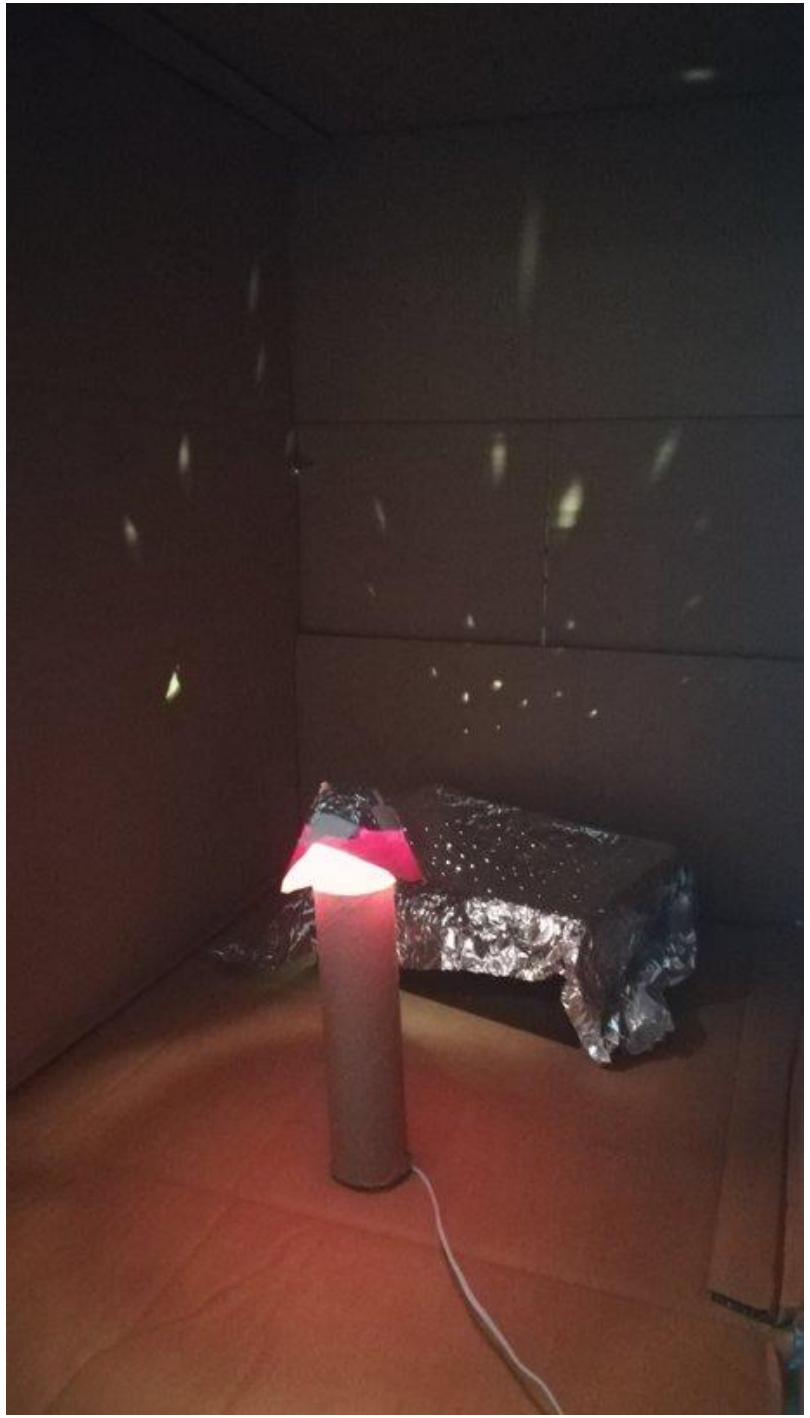
Connect the circuit to light the lamp.

Measure the light level from the lamp.

- how does light level change if you move the detector above or below the lamp?
- how does light level vary with distance from the lamp?

Measure the voltage across and current through the lamp with the multimeter.

Calculate the power used by the lamp (current x voltage)

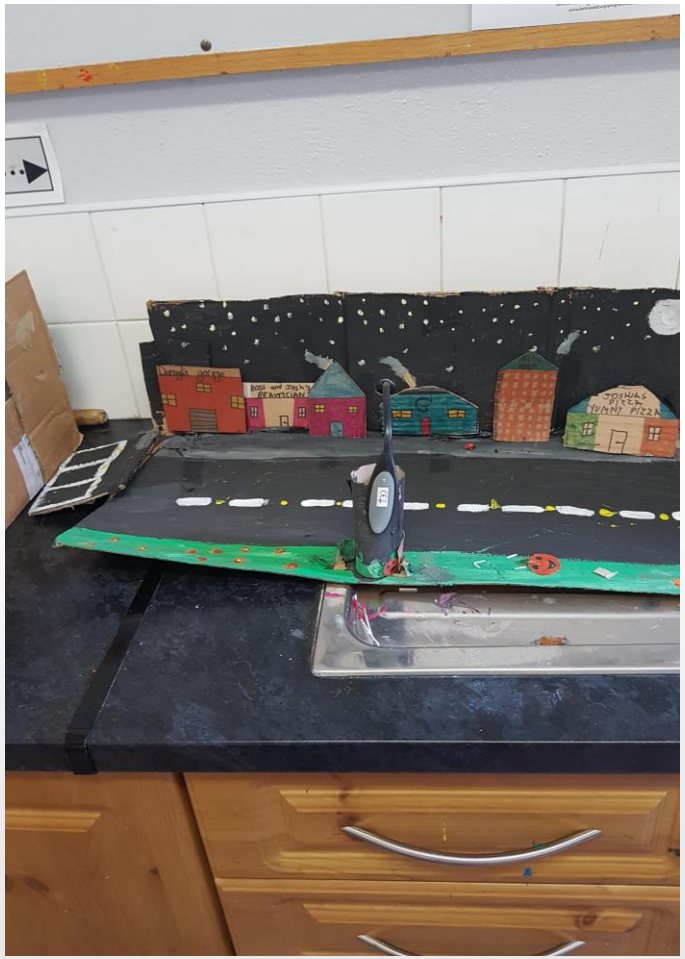


Design a shield for the lamp

How does the light level change? Is there more light on the ground, where it is needed?

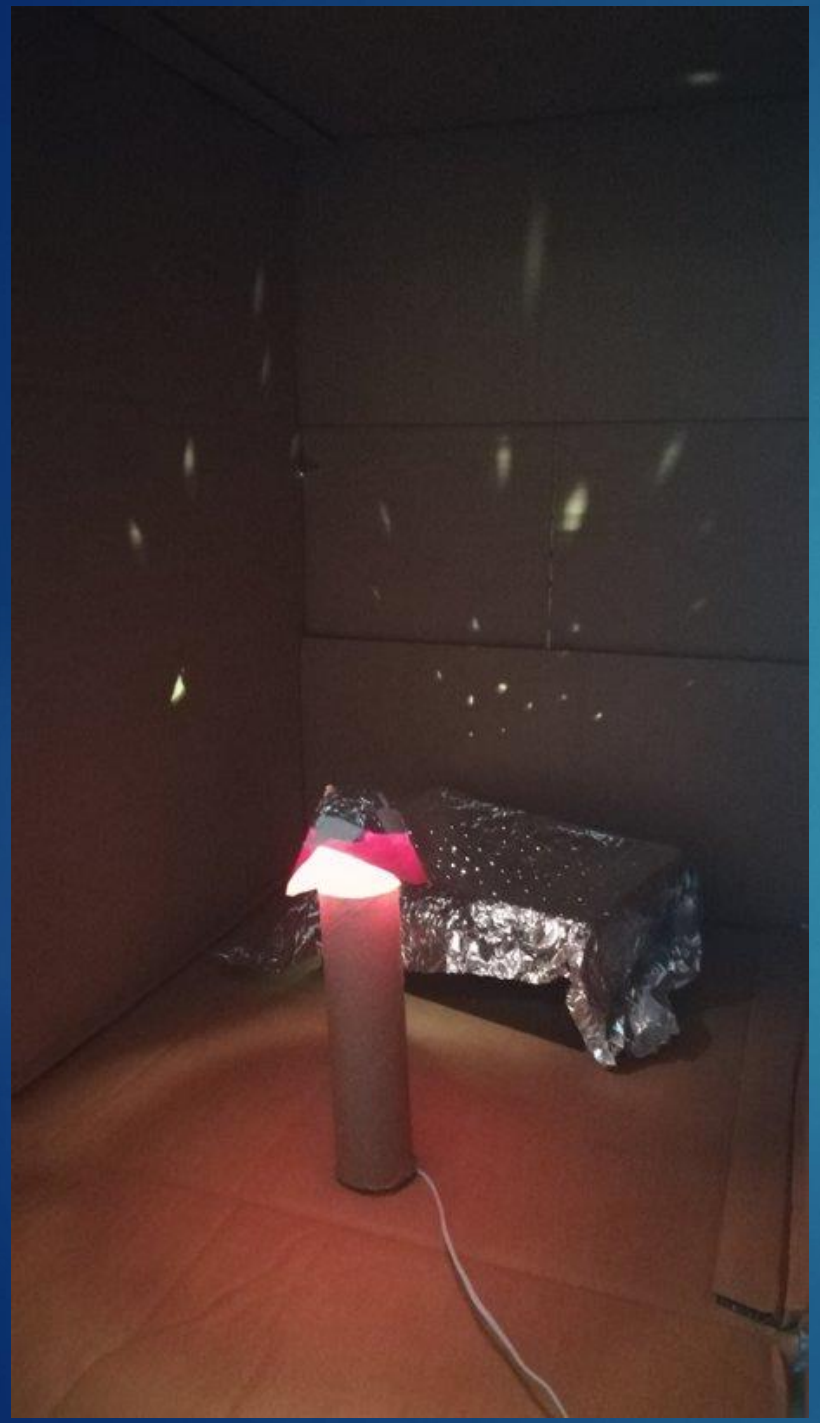
If the light level has increased, then reduce the current in the circuit, (this will turn down the brightness).

Determine the new power used by the lamp.




1Metre long.


1Metre long.



Optional: make a star box (foil with holes, with a light source inside)

Compare how many “stars” can be seen with / without the light shield.

Thank you!

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