



# SE 24 SUSTAINABLE ENERGY



## LED lighting for Southwark Schools


Southwark School Climate Network

19 October 2022



# 1. Introduction to LED lighting

- In most schools, LEDs will be replacing fluorescent lighting (CFLs); the lower wattage means reduced electricity use and hence financial savings.
- LEDs typically save c. 20-30% in electricity consumption vs. fluorescent lighting

BRIGHTNESS IN LUMENS		220+	400+	700+	900+	1300+
	STANDARD	25W	40W	60W	75W	100W
	HALOGEN	18W	28W	42W	53W	70W
	CFL	6W	9W	12W	15W	20W
	LED	4W	6W	10W	13W	18W



## 2. The benefits of LEDs in schools

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- Reduce your carbon emissions
- Save money on your energy bills
- Zero up-front cost
- Create a healthier, more productive environment for your staff, students and visitors







### 3. Our completed LED projects

- During 2021, in partnership with SELCE, we completed two LED projects in Southwark schools, one primary and one secondary, belonging to The Charter Schools Educational Trust (TCSET). LCEF capital grants covered one-third of the total cost and SE24 raised the remainder of the cost.
- We just completed an LED installation project at Goodrich Community Primary School, London SE22, with one-third of the capital cost (£10,900) financed by an LCEF grant.

Project	Dimensions	Est. bill savings	CO2 savings
North Dulwich	c. 1,750 lamps/fittings	c. £7,000/a	24 t CO <sub>2</sub> /a
Charles Dickens	c. 140 lamps/fittings	c. £1,000/a	6 t CO <sub>2</sub> /a
Goodrich	c. 465 lamps/fittings	> £15,000*	12 t CO <sub>2</sub> /a

\* Reflecting today's high electricity prices

- We are in the process of completing in-depth LED feasibility surveys at three more Southwark primary schools, funded by an LCEF grant.



## 4. LED pre-feasibility in Southwark schools

- SE24 has lead responsibility for this project and we continue to work in partnership with SELCE, who are delivering similar pre-feasibility projects with other London Councils.
- The main objectives of our LCEF-funded project are as follows:
  - Work with Southwark Council officers to engage new LED sites in the Borough.
  - Undertake pre-feasibility studies for LED installation In **up to six sites** across Southwark.
  - Initial site visits/meetings (we envisage perhaps 1-2 hours at each of the 6 sites).
  - Prepare a short report/database of projects to be taken to the full feasibility stage in a subsequent project, which would involve a full/detailed lighting survey.
- Our aim is to install more LED lighting in Southwark in subsequent projects, to make significant bill savings at a time of rapidly rising electricity prices.



## 5. How can we participate?

- Southwark Council has been contacting schools in the Borough, inviting them to participate.
- There are still several places available within the GLA funded project.
- The first step is to complete a short [online form](#) collecting basic information about building, lighting consumption, and site users.
- We will then arrange a short site visit (typically 1-2 hours, depending on the size of the school).
- We are keen to engage some older pupils (years 5-6) in those site visits, where possible.
- If pre-feasibility can be completed by early November, we see scope to apply for follow-up project grants via the GLA's LCEF round 6 (expected to launch later that month).
- Any questions?



# LED lighting for Southwark Schools: reference materials



**SE**  **24 SUSTAINABLE ENERGY**





## Introduction to Sustainable Energy 24 (SE24)

- Not-for-profit Community Benefit Society based in London SE24, founded 2015.
- We have 7 solar installations (of which 3 in Southwark schools) and 3 completed LED projects (all in Southwark schools).
- Our LED projects are delivered in partnership with South East London Community Energy (SELCE), who have completed 2 further LED projects in other Boroughs.
- LED installation is contracted out on a competitive basis, to reputable installers with relevant community project experience.
- We have 100 established investors and are confident of raising the necessary capital for installation projects. We raised around £240k in 2021, for example.
- We also benefit from external grant funding (especially from the GLA/LCEF).
- We allocate any financial surplus to our Community Fund (£7,000 disbursed to date) for climate education and support for local residents in fuel poverty.
- <https://se24.co.uk/>





# What is an LED lamp?





# The benefits of LED lighting

## Opportunity for reduction

### Benefits of upgrading to LED: Practical examples

Figure 23: Warehouse & production saving potential  
(Operating cost per fitting per year)

	400W Metal Halide
	£385
	220W T5 Fluorescent
	£212
	150W LED
	£131


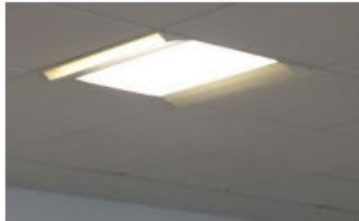

Based on a single luminaire of the wattage stated; electricity costs of 10p per unit; ballast losses of 10% for discharge and fluorescent and continuous operation 365 days per year.

Figure 24: Office saving potential: 5 Foot Strip Lights  
(Operating cost per fitting per year)

	2x58W SS T8
	£50
	2x49W HF T5
	£39
	48W LED
	£20

Based on a single luminaire of the wattage stated; electricity costs of 12p per unit; ballast losses of 20% for T8 lighting and 10% for T5 lighting, operation 5 days per week 12 hours per day.

Figure 25: Office saving potential: 2 Foot Square Grids  
(Operating cost per fitting per year)

	4x18W T8
	£32
	3x14W T5
	£17
	30W LED
	£11