



**PHILIPS**



Case study

Lighting

Education

Case Study

# Imperial College London's Department of Chemistry Building

Location: Imperial College London

Philips Lighting: PowerBalance LED luminaires, SmartForm LED luminaires, Gondola LED luminaires, GreenSpace recessed downlighters



## Fast Facts

**Customer**  
Imperial College London

**Location**  
London

**Philips Products**  
[PowerBalance LED luminaires](#), [SmartForm LED luminaires](#), [Gondola LED luminaires](#), [GreenSpace recessed downlighters](#)

**Services Provided**  
Lighting Survey, Installation Services, Project Management



### Solution

Philips Lighting carried out a full survey of the Department of Chemistry building and recommended that all T12 and T8 fluorescent fittings were replaced on a point-for-point basis with LED luminaires, many of which are dimmable.

PowerBalance LED luminaires have been installed in offices and small laboratory areas, with suspended SmartForm LED luminaires in larger laboratories and ceiling-mounted SmartForm in stairways and landings. Both ceiling-mounted and wall-mounted Gondola LED luminaires have also been used in stairways. GreenSpace recessed downlighters are providing low energy lighting in corridors and meeting areas on each floor.

All of the LED luminaires used in the project have a 4000K colour temperature to ensure consistency throughout the building.

It was decided that the existing T5 fluorescent fittings offered an acceptable level of efficiency and would not be replaced. Overall, the installed electrical load has been reduced by more than 50kW.

Switching to dimmable LED luminaires also means increased controllability and further energy savings beyond those achieved by reducing the installed load alone.

For example, in areas where the point for point replacement would have resulted in higher light levels than previously, these luminaires have been dimmed to 75-80% of full light output. If higher light levels are required in these areas the light outputs can be increased locally via Philips OccuSwitch controllers.

As many of the spaces within the building are reconfigured on a regular basis the introduction of local controls has introduced a high level of flexibility, enabling adjustment of light levels locally - including daylight dimming in areas close to windows.

Imperial College London will also see a reduction in maintenance costs due to the longer life of the LED light sources, compared to the older T12 and T8 fluorescent lamps. This will also minimise disruption in those areas with high ceilings where access to the light fittings requires specialist equipment.

### LED lighting delivers energy-saving reaction

In upgrading its lighting to LED luminaires, Imperial College London's Department of Chemistry building has achieved a significant reduction in both energy consumption and carbon emissions, as well as reducing maintenance overheads.

#### Background

The College has an ongoing programme of energy and carbon reduction measures, looking at every aspect of energy consumption. As the Department of Chemistry building was using a large number of T12 and T8

fluorescent light fittings there was an opportunity to save energy while also reducing lifecycle costs.

The project aimed to harness recent developments in LED lighting to save energy and to showcase the benefits of LED technology with a view to potentially rolling out LEDs to other areas. "LED lighting technology has been developing rapidly and now offers a number of advantages over lighting that uses more traditional light sources," explained Imperial College London Energy Manager Andrew Caldwell. "These benefits include significantly higher energy efficiency, improved controllability and greatly extended lamp life," he added.



**“ LED lighting technology has been developing rapidly and now offers a number of advantages over lighting that uses more traditional light sources.”**

**Andrew Caldwell**  
Energy Manager, Imperial College London

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