



solarcentury

Spitalfields Bishops Square



Background

Bishops Square, developed by Hammerson plc and the Corporation of London, was designed by award-winning architects Foster and Partners. The project partners worked with Solarcentury, who provided specialised PV knowledge and design expertise to develop an optimal, cost-effective solution for the new offices. The PV replaced louvres that were included in the original design, to provide the added benefit of shading to the plant deck area. The offices are to be let to international law firm Allen and Overy who will benefit from a considerable reduction in their energy bills as a result of the PV installation.

Solar Design

High efficiency Sharp monocrystalline photovoltaic (PV) technology was identified by Solarcentury as an ideal method of addressing the energy performance requirements of the project. Sharp monocrystalline modules are particularly suited to applications where large roof areas are available and where both a high power output (kWp) and a high value of energy yield (kWh per kWp installed) is desired. The technology works well in the UK climate and can be easily fitted to metal frames as an effective low cost rooftop mounting solution.

The PV system comprises 82kWp of installed DC power. This capacity is achieved using 444 individual Sharp 185W Modules mounted facing South using a tilted support structure onto the primary steel structure at 13th floor level (above the plant deck).



Display

A solar 'totem' display stands outside the main entrance of the new development to communicate benefits of solar energy to the buildings occupants and passers by. The display illustrates light reaching the PV through a stream of 'photons' which vary speed with increasing light intensity. The reverse of the totem provides information for the community highlighting the importance of clean energy and how PV generates electricity from daylight.

Summary of electricity comparisons

- Generates total electricity for 18 average three-bed houses each year
- Generates enough electricity each year to light an average three-bed house for 90 years
- Generates enough electricity to make over 2 million pieces of toast/over 3 million cups of tea
- Saves over 30 tonnes of CO₂ emissions, a major greenhouse gas, equivalent to over two million party balloons or 18 Olympic swimming pools

Summary of Carbon Dioxide (CO₂) comparisons

- CO2 savings account for 41 trees required to absorb CO2 over 100 years
- To achieve the Kyoto Protocol, the UK is required to reduce CO2 emissions by 12.5% below 1990 levels by 2010. This installation offsets the contribution of 89 UK individuals to this target every year

Date commissioned	2005.04.29
Technology	Solar PV
Installation Type	Flat roof
System size (kWp)	82.5
Forecast electricity generation / year (kWh)	54000
Panel area (m2)	5776
Building integrated	No
CO2 saving / year (kg)	30672
Type of project	Commercial