



THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■

LSE Marshall Building

Key sustainability features



#SustainableLSE



Marshall Building: Sustainability key facts

300m²

of biodiverse area through trees and vegetation on roof and terraces

30%

reduction for embodied carbon achieved in the concrete frame

44.5 tonnes

of waste minimized by using a screed lorry and computerized measuring system

75.47%

Targeted overall score for BREEAM at post-construction (Excellent)

100%

renewable energy on site during the whole of construction

115kg

of plastic waste saved through Newton recycling scheme which saved 132 kgCO₂ emissions

1.5 million

litres of water saved due to 9 waterless urinals in site accommodation

57 tonnes

of timber was recycled and reused through Community Wood Recycling

Certifications and construction innovations

- **BREEAM 'In Design'**
Achieved BREEAM 'Excellent' In Design
- **2019 BREEAM award**
Short-listed for the 'Best Public Sector (design-stage)' category
- **BREEAM 'Post Construction'**
Targeting 'Excellent' Post Construction Rating, criteria score 75%
- **Reduced Embodied Carbon design**
Innovative 'concrete tree' columns: 30% reduction in embodied carbon, 50% less reinforced steel bars and 20% less concrete
- **Construction material, air pollution and carbon savings**
A software controlled 'screed pump lorry' saved 44.5 tonnes of waste and cut 75 lorry deliveries: reducing air pollution and saving 300kgCO₂e of carbon
- **Improving construction and air quality**
MACE worked with air quality monitoring company EMSOL, Sustainable Futures Society Students, LSE Sustainability and LSE Geography and Environment Academics to monitor and adjust concrete lorries, improving air quality during construction



Energy and Heating

- **Energy performance**
Energy Performance Certificate (EPC) rating of B, Actual Building Emission of 19.4 kgCO₂/m²/year; beating industry standard of 21.9 kgCO₂/m²/year
- **Renewable Energy**
Powered by 100% renewable energy (wind, solar sources) in line with all LSE's campus and halls of residences
- **Building features lowering energy consumption**
 - Optimised natural lighting by design throughout the building, reducing solar gain and artificial lighting
 - Windows which can be opened in academic offices, allowing enhanced fresh air and summer cooling
 - Solid sections of the façade that remain permanently shielded from the sun, reducing solar gain. Blinds installed for privacy and glare control, which will not interfere with ventilation
 - Exposed concrete throughout the building to absorb heat gains during the day

- Night-time purging of the building to remove heat from the rooms ready for the next day's use
- Naturally ventilated Ground floor 'Grand Hall' with opening vents at the top of the Atrium to relieve high temperature build up
- Fully metered building of gas and electricity allowing energy monitoring and regulation
- Heat recovery provision in lecture theatre ventilation systems

Waste and Recycling

- **Full building provision**
Waste and Recycling has been designed into the building enabling full building provision of LSE's waste streams
- **Community Wood Recycling**
57 tonnes of wood was reused and recycled via social enterprise Community Wood Recycling, 20 tonnes of which in DIY projects and other uses, developing carpentry skills for the long term unemployed

Water

- **Water fountains**
Provision throughout the building to encourage use of reusable water bottles
- **Sustainable Urban Drainage (SUDs)**
Roof planters designed to minimise surface water run-off, part of SUDs
- **Waterless urinals**
During 2.5 years of construction saved 1,477,440 litres of water

Biodiversity

- **Tree planting**
New native trees planted on roof terraces and pedestrianised zone habitats
- **Rooftop planters**
Pollinator supporting planting for butterflies, bumble, and LSE's own bees!

Transport

- **Supporting cyclists**
An additional 194 cycle parking spaces, 6 showers and 48 lockers for cyclists boosting sustainable 'active travel'
- **Pedestrianisation of Portugal Street**
Supporting walking and cycling, underpinning wellbeing and the environment to reclaim the street for the LSE community