

GSK Carbon Neutral Laboratory for Sustainable Chemistry

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Abstract:

Traditionally, chemical laboratories are highly energy-intensive and most are operational 24 hours a day due to complex temperature needs for the manufacture and storage of chemicals. The University of Nottingham has partnered with GSK to create the first carbon-neutral laboratory in the world which seeks to reduce the energy and resource use of chemical laboratories.

The GSK Carbon Neutral Laboratory for Sustainable Chemistry (CNL) at the University of Nottingham, was officially opened in February 2017 and the design brief was 'to define an energy resilient workplace to empower scientists to co-create world leading science whilst reducing the environmental impacts of their activity'. Located on the University's award-winning Innovation Park, the CNL provides unrivalled facilities for world-leading chemistry. Designed to inspire and ensure minimal environmental impact this iconic facility will have a zero impact in terms of its carbon footprint over its 25 year lifetime. In terms of architectural and environmental performance the CNL has been awarded both BREEAM 'Outstanding' and LEED Platinum status, making it the most environmentally aware chemistry laboratory in the world, a unique venue dedicated to the demonstration of state-of-the-art sustainable chemistry.



The laboratory is built from natural materials and the energy required to run the laboratory is met by renewable sources such as solar power and sustainable biomass. Excess energy created by the building provides enough carbon credits over 25 years to pay back the carbon used in its construction. The building occupies 4500 square metres over two floors and in addition to laboratory space for around 100 researchers, it contains dedicated instrument rooms, a teaching laboratory for advanced undergraduate classes, and space for a range of outreach activities.

This talk will give more details on how the GSK Carbon Neutral Laboratory for Sustainable Chemistry has been designed to minimise the environmental impact and resource use of a chemistry laboratory.