

Abdulazeez Rotimi | University of West London, UK

STUDENT PROFILE



Abdulazeez Rotimi

Course

PhD in Civil Engineering

Year completed

2018

Title of thesis

Impact of the Uses of Various Technologies on the Thermal Performance and Energy Efficiency of UK Hotel Buildings: Application to Hilton Hotels in the UK

The complex and wide-ranging effects of global warming as a result of anthropogenic climate change are now widely acknowledged. Generally, global warming major mitigation strategies are geared towards reduction of greenhouse gases emission especially carbon dioxide (CO₂). This has resulted to the formulation of several measures to ensure cleaner sustainable energy sources and efficiency in all facets of human lives. The United Kingdom is one of the leading countries taking bold steps towards reducing CO₂ emissions and has an ambitious target of reducing emissions by 80% by 2050. To achieve this goal, the government has put a great deal of attention towards ensuring energy efficiency in buildings (residential and commercial) as they are responsible for at least 47% of overall CO₂ emissions.

In the UK research has focused on improving the thermal performance and efficiency of dwellings because they account for most of the existing buildings and statistics have shown that they consume more energy. Commercial buildings account for a sizeable proportion of this building energy consumption and this trend will probably continue to increase.

Abdulazeez's research evaluated the impact of various energy efficiency measures and technologies on the thermal and energy performance of UK hotel buildings. Using 'whole building' dynamic simulation software Abdulazeez examined Hilton hotels with a focus on the knock-on effects that energy efficiency technologies have on the overall energy performance and efficiency of UK hotels, either installed individually or in various combinations.

The study employed a quantitative research approach underpinned by the thermal analysis simulation of various case study hotel buildings to address the supposition that dynamic climatic conditions; building energy consumption estimates; building energy efficiency improvement strategies, and building thermal behaviour can be appropriately simulated to enhance the energy efficiency of commercial buildings and abate the unfavourable effects of global climate change.

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Supervisors:

Dr Ali Bahadori-Jahromi and Dr Anastasia Mylona

Dr Ali Bahadori-Jahromi is Associate Professor in Civil Engineering, University of West London

Dr Anastasia Mylona, is Head of Research, Chartered Institution of Building Services Engineers (CIBSE).