



Loughborough
University

MSc Low Energy Building Services Engineering

School of Architecture, Building and Civil
Engineering

Dr. Mahroo Eftekhari

Programme Director of MSc Low Energy Building Services Engineering

Accolades



**1ST IN THE UK FOR
BUILDING**

THE TIMES AND SUNDAY TIMES GOOD
UNIVERSITY GUIDE 2021



**TOP 10 IN THE UK FOR
CIVIL ENGINEERING**

THE GUARDIAN UNIVERSITY GUIDE 2021

Accreditations

The programme is accredited by leading professional institutions, including:

- Chartered Institution of Building Services Engineers (CIBSE)
- Energy Institute (EI)

This is a step towards becoming a Chartered Engineer (CEng)



Research areas

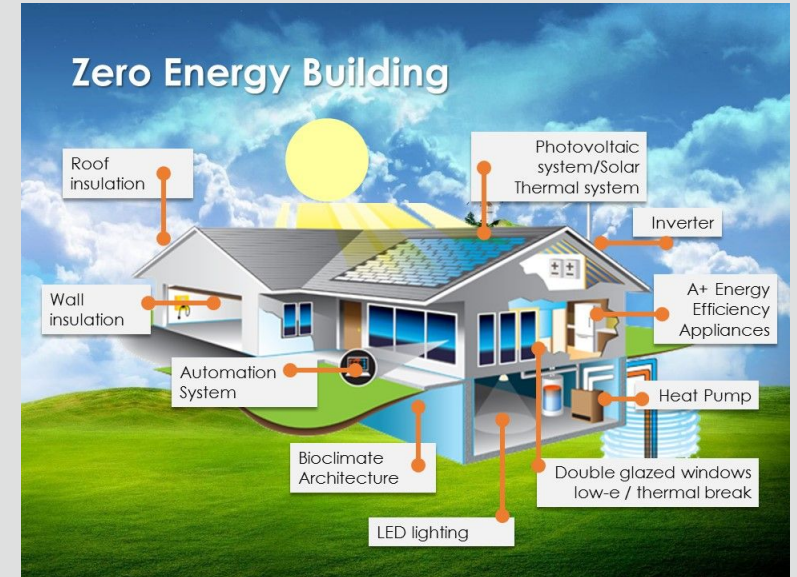
- Zero energy buildings
- Low energy HVAC control systems
- Digital Twins of buildings
- Renewable systems in buildings
- Application of evolutionary algorithms in the model-based optimum design and control of buildings
- Computer simulation of natural ventilation and thermal comfort modelling
- Numerical modelling/analysis methods and advanced façade manufacture (3DCP)



Research projects

Typical MSc research dissertation topics:

- Data-Driven Modelling For Intelligent Buildings
- Zero Energy Educational Buildings in Cold Climate
- Digital Twin of an Accommodation Building
- Investigating HVAC Pipe Networks Performance
- Exploring Sustainable Urban Design in Kuwait Through BIM
- Determining the Thermal Properties of 3D Printed Concrete
- Predicting Thermal Comfort Using Thermal Imaging Technology
- Impact of Batteries & Electric Vehicles on Domestic Energy Demand



Our academics

- International experts in building services, simulation, control and BIM
- Experts in CFD, BEMS, big data, digital simulation
- Fellow of CIBSE
- Member of ASHRAE
- President of UK ASHRAE Midlands Chapter
- ASHRAE Region XIV: Regional Vice Chair Chapter Technology Transfer Committee
- International Journal Editorial board

Facilities

Our 3,000m² open-plan laboratory includes 3D concrete printing, geotechnics, strength of materials, hydraulics, structures, surveying, public health and building services engineering laboratories along with support workshops.



Programme introduction

- **Strong links with industry:** awards, prizes and placement opportunities, good employment prospects after graduation
- **Prizes:** AECOM, Hays Construction, Energy Institute, Cundall, Hilson Moran, Pick Everard
- **Placements:** Cundall, Pick Everard, Anderson Green, Hilson Moran

AECOM



**PICK
EVERARD**

CUNDALL

H | M HILSON
MORAN

Anderson
Green | building
services
consultants

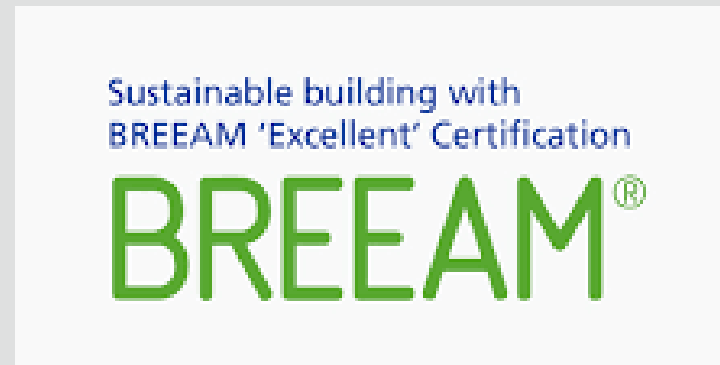
HAYS Recruiting experts
worldwide

Programme structure and assessment

- 8 taught modules: 15 credits each (Total: 120 credits)
- One research dissertation: 60 credits
- Lectures are delivered 4h/week for one semester (11 weeks)
- Additional qualifications:

Building Research Energy Environmental Assessment

Methodology (BREEAM) and HVAC CPD certificates



Teaching methods

- Lectures/Tutorials
- Seminars
- Practical sessions
- Independent study
- Group work
- Workshops
- Site Visits
- Supervision



Our students

ASHRAE Competition Winners

Our MSc Low Energy Building Services Engineering students achieved first place in the Integrated Sustainable Building Design category and visited **Orlando** on 1st February 2020 to receive their award.



Career prospects

Our graduates have gone on to have successful careers with notable companies, including:



Foster + Partners

**MORGAN
SINDALL**

**PICK
EVERARD**

ATKINS

AECOM

SKANSKA

ARUP

Our graduates





Loughborough
University

Thank you

Further information

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