

Dissertation Opportunities

The University of Manchester campus is currently undergoing significant change, including building refurbishments and upgrading. A number of exciting opportunities for student-led projects have arisen out of this process. Currently there are three buildings with sustainability project opportunities—Coupland 3, the Quad buildings, and the Simon Building. If you are a student interested in doing your dissertation work on campus, please take a look at the suggested topics below, and contact us at livinglabs@manchester.ac.uk for more information.

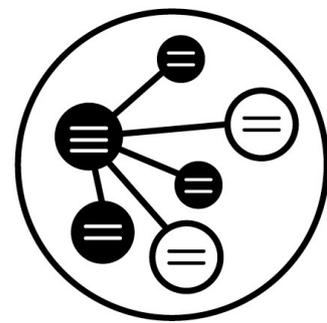


Coupland 3 Building

Work on the Coupland 3 building, which will take place until August 2016, will involve a full refurbishment of three listed buildings, including structural alterations, new building services, renewable energy technology and waste and resource management systems.

Potential Dissertation Topics

- Assessing the performance gap of heritage buildings in relation to energy and carbon emissions at design and operation
- Future climate resilience and adaptability of heritage buildings
- Lifecycle operational and embodied carbon emissions of refurbishment projects
- The challenges and opportunities of integrating low carbon and renewable energy systems within heritage buildings
- Evaluating change in attitudes and behaviour to resource use and waste
- Sustainable transport use and operational effectiveness of measures implemented at the design stage
- Evaluating the effectiveness of waste and resource management systems
- The effectiveness of sustainability standards in existing building refurbishment
- The effectiveness of BREEAM in supporting achievement of university sustainability and carbon targets
- The effectiveness of thermal models for historic, listed buildings



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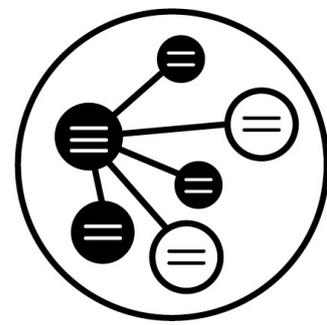


Quad Conservation Project

Work on the historic Quad building, which is scheduled to continue until January 2016, involves the repair and conservation of five listed buildings, façade work including window replacements, in addition to insulation installation and replacement guttering and downpipes. For more information visit: <http://www.estates.manchester.ac.uk/services/capitalprojectsunit/futureprojects/>

Potential Dissertation Topics

- The performance gap between estimated and in-use carbon emission reductions of heritage building improvements
- Post occupation effectiveness and building user responses to refurbishment measures
- Future climate resilience and adaptation risks and benefits of refurbishing historic buildings
- Overheating risks caused by thermal improvements to historic buildings
- Embodied and operational energy and carbon impacts of replacement glazing
- Construction waste and associated environmental impacts in refurbishment
- Impacts of increased thermal efficiency on listed buildings



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Simon Building

Work on the Simon Building, which will continue until Aug/Sept 2015 involves remodelling and partial refurbishment, including a new entrance off Oxford Road, office refurbishments and the creation of a new on site catering facility and a well being centre.

Potential Dissertation Topics

- Operational energy and carbon performance of existing concrete frame buildings
- Resource use impacts of university campus catering facilities
- Waste and recycling impacts of university campus catering facilities
- Future climate resilience of late 1950s buildings and effectiveness of refurbishment
- Embodied carbon impacts of refurbishing concrete frame buildings compared with new construction
- Post occupation effectiveness and building user responses to refurbishment
- Routes to zero carbon existing university buildings
- Effectiveness of sustainable communications in buildings
- Waste and recycling effectiveness during construction
- User perceptions of refurbishment and impact on student experience
- Sustainable materials and supply chain research