

Fully-funded 4-year PhD Project at Loughborough University – Passive Heat Exchanges in Natural Ventilation

Project Title	Passive Heat Exchanges in Natural Ventilation
Supervisor(s)	Prof Malcolm Cook
Project Description	<p>Natural ventilation is now well established as a low energy cooling and ventilation strategy in both residential and non-residential buildings. However, in temperate climates where there is a significant heating season, the low driving forces responsible for natural ventilation means it is difficult to recover heat, making it a challenging strategy for zero carbon solutions. This project will use a combination of numerical modelling and laboratory-based experiments to develop and test a passive heat exchanger.</p> <p>You will also use advanced, state-of-the-art computational fluid dynamics (CFD) software to model a range of passive heat exchanger designs. The computational models will be validated using experiments conducted in our purpose-built, fully instrumented facility. You will receive dedicated technician support to undertake further development of the facility where appropriate.</p> <p>This PhD will produce new modelling methods and design guidelines for passive heat exchangers which will include sizing of such devices and predictions of their likely performance. In addition, you will be expected to lead on authoring high quality outputs in leading journals in the field.</p>