PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Architecture
Supervisors	Principle supervisor: Dr Marco Cimillo (XJTLU, Architecture) UoL supervisor: Dr David Chow (University of Liverpool, Architecture) Co-supervisor: Dr Hyung-Chun (XJTLU, Urban Planning and Design)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Large-scale rapid energy modelling of buildings 大规模快速建筑能耗模拟
Contact	Please email marco.cimillo@xjtlu.edu.cn (XJTLU principal supervisor) and copy doctoralstudies@xjtlu.edu.cn with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Architecture, Building Engineering, Environmental Design or other closely related fields. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, or an equivalent qualification, if the first language is not English. Knowledge of Chinese is an advantage but not a requirement. This position is open to all qualified candidates irrespective of nationality.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 80,000 per annum) and provides a monthly stipend of 3500 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. The scholarship holder is expected to carry out the major part of his or her research at XJTLU in Suzhou, China. However,

he or she is eligible for a research study visit to the University of Liverpool of up to three months, if this is required by the project.

Project Description:

Supervisory team

The PhD supervisory team will be composed by: Dr Marco Cimillo (XJTLU-Architecture) as Principle Supervisor at XJTLU; Dr David Chow, (UoL-Architecture) as UoL supervisor; Dr Hyung-Chun (XJTLU-Urban Planning and Design), as co-supervisor.

Context

The doctoral research is related to the broader project titled "Developing an energy building stock model for Jiangsu Province", carried out by an international and multidisciplinary research team, but will constitute an independent piece of research. Energy modelling of existing buildings has a number of applications, which include energy efficiency and sustainability diagnosis, assessment and certification, retrofit design, development and configuration of advanced control systems, smart city and smart grid applications, building stock simulation to inform policy making. Thus, the need for rapid yet accurate and reliable methodologies for data collection and model building and calibration. Research in this area is been carried out in both academia and industry and is likely to be further intensified in the near future.
This proposal aims at the investigation of large-scale rapid energy modelling, and at the development of innovative methodologies to combine the potential of drones, 3D photo-modelling, thermal imaging and GIS (geographic information system). Due to its multidisciplinary nature, the research will be carried out in collaboration between the departments of Architecture and Urban Planning and Design.

PhD Research

The research is concerned with the development of a methodology envisioning the use of GIS to both retrieve inputs (such as building footprint, height, use, year of construction) to the energy model, and to map simulation results. Drone-based 3D photo modelling and infrared imaging will provide the model with the missing information to complete geometry and thermal characteristics of the buildings' envelope. The combination of the data will be supported by background research, including direct survey, on building typologies, energy codes, common building practices and standards, climate and microclimate factors in the relevant geographical area. Such background research is also an essential part of the above-mentioned ongoing project and one of the several possible synergies through which the work of the PhD student will be supported and facilitated.

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

http://www.xjtlu.edu.cn/en/admissions/phd/entry-requirements.html

http://www.xjtlu.edu.cn/en/admissions/phd/feesscholarships.html

How to Apply:

Interested applicants are advised to email marco.cimillo@xjtlu.edu.cn (XJTLU principal supervisor's email address) the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school transcripts in both Chinese and English (for international students, only the English version is required)
- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)

Informal enquiries may be addressed to Dr Marco Cimillo (marco.cimillo@xjtlu.edu.cn), whose personal profile is linked at http://www.xjtlu.edu.cn/en/departments/academic-departments/architecture/staff/marco-cimillo