



Funded PhD Studentship

A joint PhD Studentship between the School of Civil Engineering and Geosciences and the School of Architecture, Planning and Landscape, Newcastle University

The Schools are pleased to offer a funded studentship for doctoral research to begin in January 2012 or soon after.

Studentship (APL 12): PhD on Spatial Energy Modelling for Cities

Newcastle University has a very strong track record of sustainability related research in the built environment ([NiRES](#)). As part of our on-going commitment to this area, Newcastle University has funded an exciting PhD opportunity at the inter-disciplinary cutting edge of Civil Engineering and Architecture and Planning with support from industry and the public sector.

We are seeking a very bright and energetic individual to work on a PhD on the area of city carbon and energy modelling. The eventual PhD candidate will be expected to develop models of Newcastle to facilitate the creation of spatially referenced carbon scenarios at multiple-scales and different timeframes. Specifically, in the first year, the successful applicant will: i) incorporate a bottom-up carbon modelling framework for the domestic stock to [CarbonRouteMap](#) GIS database and, ii) evaluate best practice projects that have utilised tools to spatially reference heating, cooling and power demand profiles at building level, before and after retrofit measures have been applied, as to inform City Council officers of future capabilities that Newcastle could require to inform delivery models. Years 2 and 3 the PhD is expected to be focussed on the concept of: Total Retrofit: domestic & non-domestic sector and other infrastructures; optimisation strategies for multi-year and multi-scale planning; heat mapping techniques and new GIS capabilities.

This work builds on an existing partnership between Newcastle City Council (NCC) and Newcastle University so the selected candidate will be working with real-world policy constraints and will be expected to liaise with NCC officers involved in the development and implementation of low carbon projects and Industry (e.g. energy consultancies and energy providers. We have secured source code access to state-of-the art modelling software from a leading [energy consultancy](#)).

This studentship is University-funded and is offered for a three year period. The total award value is £18,865 p.a. This will cover fees (£4,275 p.a.), stipend (£13,590 p.a.), and some research expenses (£1,000 p.a.). It is available to applicants of any nationality but please note that higher fees apply for applicants from non-EU countries: see

<http://wwwstage.ncl.ac.uk/postgraduate/research/subjects/architecture/courses/282>

Applications should include a covering letter, a brief, edited portfolio of work, a statement of research interests, a CV and the names of two academic referees. Application should be **submitted by email** to Marian Kyte, Postgraduate Research Secretary (marian.kyte@ncl.ac.uk) by no later than **15th of January 2012**. Please indicate clearly the above reference number in your letter/email header.

Informal enquiries (by email or phone) should be directed to contact Dr Carlos Calderon (from Architecture, Planning and Landscape. Carlos.calderon@ncl.ac.uk . Telf 0191 2226025) and Phil James (from Civil Engineering and Geosciences. philip.james@newcastle.ac.uk)

Skills Requirement

Must have: the successful candidate should be interested in a research career and PhD; Hold a Bachelors degree in a suitable field (Engineering, Geography, Environment, Mathematics, Physics, and Spatial Sciences); Be numerically minded; Be computer literate; Have good communication skills;

Desired: Masters in suitable discipline; Experience of statistics; Experience of working with Energy models; Experience in working with GIS; Experience in computer programming.