Fully funded PhD opportunity and stipend. Application deadline 22nd July 2018.

Application numbers are envisaged to be high please submit asap. Interviews will be scheduled to occur on 23rd/24th/25th July. The deadline for this PhD opportunity have been extended beyond the 16th July as advertised in other ERDF IIIP PhD opportunities.

Project Title - Reimagining residential design: Integrating sensor technology into residential design, software and app development with a focus on measures of occupant wellbeing.

Background

The PhD project forms part of the Intensive Industrial Innovation Programme (IIIP) funded by the European Regional Development Fund. Northumbria University is collaborating in the IIIP, with Durham, Newcastle and Teesside Universities. The IIIP Programme aims to encourage a culture of innovation that benefits business, leading to greater export opportunities and increased graduate employment, particularly in science and engineering.

The Programme will enable small and medium-sized enterprises (SMEs) to develop new products and services. Each Northumbria University PhD funded with the IIIP will exclusively support the research and development needs of an SME partner located in the Northumberland and Tyne & Wear Area, working in regionally important sectors.

To meet the requirements of the ERDF funding, the PhD students will need to keep timesheets and at least 51% of their time must be on-site at Northumbria University. The remainder is likely to be spent with the SME. The SME for this PhD project is Ryder Architecture.

Ryder Architecture are an international architects based in Newcastle upon Tyne with offices in Glasgow, Liverpool, London, Vancouver and Hong Kong. Ryder have developed an international network of like minded businesses who form the Ryder Alliance, alliance members are coming together to undertake a collective 24 month research and design project beginning in Oct 2018 that utilises the expertise across the alliance to develop a distinct and original new concept in residential mass housing. The project entails designing and manufacturing a new residential house type, one that is designed wholly around user wellbeing and supporting occupant wellbeing. It is envisaged the new house type will utilise next generation offsite construction techniques.

A large part of this project is the need to reimagine the integration of technology in homes and neighbourhoods of the future. The PhD candidate will play a key role in this projects success. It is expected that their work will contribute towards the national discussion on mass housing and
bring about wider policy change and design guidelines and standards for the design of mass housing in the UK and Europe.

**PhD Project description**

The PhD candidate will enable Ryder to up-cycle existing knowledge in the business and promote their existing knowledge base and expertise in the area of residential design and smart homes, wellbeing and offsite construction. This opportunity will require the candidate to have expertise in computer programming, sensor technology, software development and app development. The funded PhD will form a pivotal part of a small team at Ryder working on sensor technology and the development of the final house type while liaising with the rest of the practice and the wider alliance members. The team and PhD researcher will have to develop new approaches and work with the construction technologists to ensure any solutions are compatible with new offsite construction techniques. The additional research expertise and capacity will also enable the candidate to work on app and software development that will visualise and enable user interaction with the sensor data collected.

**Eligibility**

The PhD candidate must have experience in computer programming and software, app development.

The PhD candidate will successfully:

1. Work with Ryder to capture their existing knowledge and expertise in the area.
2. Work with wellbeing specialists on measures of wellbeing and wellbeing metrics.
3. Identify cost effective sensor technology that enables data to be collected on occupant wellbeing.
4. Work with design teams to integrate the identified sensor technology into the newly designed residential house type taking into account the prefabricated nature of the final product and offsite construction techniques, and future proofing where possible.
5. Develop software/app that acts as a user interface to manage the collected data and interface with embedded smart systems within the building design that may also be required to operate building components.
6. Working with the BIM Academy ensure that the data collected can be imported into the Building Information Model.
7. Working with inhouse team ensure that software is packaged to a proof of concept level.

The PhD candidate will be expected to continue developing knowledge in:

1. Use of sensor technology in architecture, smart cities and residential neighbourhoods.
2. Wellbeing metrics and measures.
3. Use of sensor technology in relation to wellbeing and residential wellbeing.
4. Building Information Modelling.
Please note additional eligibility requirements:
• The IIIP PhD funding is available to Home and EU students only.
• Academic excellence of the proposed student i.e. 2.1 (or equivalent GPA from non-UK universities; or a Masters, or APEL evidence of suitable practitioner achievement)
• Applicants cannot apply for this funding if currently engaged in Doctoral study at Northumbria University or elsewhere.

Deadline for applications: 5pm 22nd July 2018. The deadline for this PhD opportunity have been extended beyond the 16th July as advertised in other ERDF IIIP PhD opportunities. It is envisaged application numbers will be high please send applications through as soon as possible.

How to apply

To apply, please send the following information to oliver.g.f.jones@northumbria.ac.uk by the deadline:
• A covering letter, clearly indicating the title of the studentship project you are applying for and that you meet the eligibility criteria.
• A current CV – maximum 2 pages.
• Contact details for two referees – including postal and email address
• Transcripts – candidates should supply clear and legible transcripts of their previous qualifications onsite or skype interviews will be arranged to take place between 23rd and 25th July 2018.

Start Date: 1st October 2018

This is a fully funded position and stipend for 3 years. Successful candidates will receive an annual stipend inline with UKRI guidance: The national annual minimum doctoral stipend for 2018/19 is currently £14,777. The minimum stipend will increase in line with the GDP deflator and this remains the start-point for determining minimum stipend levels. Stipend and PhD funding will be for 3 years.

Northumbria University takes pride in, and values, the quality and diversity of our staff. We welcome applications from all members of the community. The University holds an Athena SWAN Bronze award in recognition of our commitment to improving employment practices for the advancement of gender equality and is a member of the Euraxess network, which delivers information and support to professional researchers.