Research Assistant – Embodied Carbon of Buildings
(Fixed Term Contract for 15 months)

Edinburgh Napier UNIVERSITY

Role Description

Grade & Salary:	Grade 4, £25,728 - £30,688 per annum
Campus Location:	Merchiston, Edinburgh
Line Manager:	Dr Francesco Pomponi
Line Management Responsibility for:	N/A
Role Summary:	The purpose for this role is to support Edinburgh Napier's excellence in research by contributing to the success of the EPSRC funded project "Getting the numbers right and getting the right numbers: quantifying the embodied carbon of building structures" (EP/R01468X/1) led by Dr Francesco Pomponi. This role will support the goals and objectives of the research project, which has a long-term aim to allow the UK to monitor and mitigate its building-related carbon emissions and progress effectively towards its mid-century carbon targets. Specifically, the project seeks to answer the following two questions: - How do different materials affect the whole life carbon emissions of building structures – all other things being equal? - What are the whole life carbon emissions of building structures for different building types in the UK? Overall, the project will establish the embodied carbon of building structures for different building types and different structural materials to produce realistic and reliable numbers as well as design guidelines to facilitate a quicker and wider transition to a low-carbon built environment. The role holder will assist with grant administration and the writing of reports for funding bodies. S/he will also be required to attend meetings with the industrial partners and contribute to the preparation and writing up of results for academic publications.

Main Duties and Responsibilities

➢	Delivery against the research plan and project objectives.
➢	Reports and regular communication to supervisor and research team.
➢	Undertake primary data collection from the industrial partners. Primary data will be in the form of buildings structures for the different structural materials (i.e. concrete, steel, timber, composite construction, and load-bearing masonry - where appropriate) across different building types.
➢	Seek and explore other potential partners, which could contribute to primary data from within the construction industry in Scotland and the UK.

➢	Collect primary data for embodied and life cycle carbon assessments of building structures.
➢	Develop parametric models from the collected data to add variables that can influence the whole life embodied carbon.
➢	Undertake a full-factorial parametric study of the building models developed, and analyse data through a sensitivity and uncertainty analysis (e.g. stochastic modelling) to produce accurate and reliable numbers.
➢	Evaluate through machine learning the predictive power of existing machine learning algorithms to estimate the embodied carbon of building structures in the UK.
➢	Maintain links with the project partners and develop new industrial collaboration to support both the technical and impact agenda of the project.
➢	Write up research work for presentation and journal publication and attend relevant national and international conferences to disseminate the project's findings.
➢	Liaise with colleagues and students within the University and from the wider network of Universities in Scotland to build internal and external networks for the exchange of information and to form relationships for future collaboration.
➢	Actively participate in the organisation of one Symposium which will gather key players from industry and academia across the UK.
➢	Contribute to the preparation of follow-on bids for sustained research funding.
➢	Any other duties as may be reasonably assigned by the line manager.
➢	Be responsible for ensuring that the information and records processed (received, created, used, stored, destroyed) on behalf of the University are managed in compliance with ALL applicable legislation, codes and policies e.g. Data Protection, Information Security and Records Management.

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Person Specification

Attributes	Essential Requirements	Desirable Requirements
Education/Qualification	Undergraduate Honours or postgraduate degree in relevant subject areas of Civil Engineering/ Built Environment and cognate disciplines	Doctorate in Civil Engineering/Built Environment, Environmental sciences and cognate disciplines
Experience	Experience of working in the fields of embodied carbon and/or life cycle assessment. Experience of using common software tools such as SimaPro, OpenLCA and equivalent.	Experience of working in a research environment. Experience of publishing research findings in academic peer-reviewed journals. Experience of multi-disciplinary working. Experience with programming languages for applied research, e.g. MATLAB, Python
Skills/Personal Requirements	Ability to work in partnership with others to achieve challenging goals and react positively to change. Experience of managing own workload and meeting	Ability to present complex information effectively to a range of audiences.

	deadlines and ability to constantly update knowledge. Excellent organisation, prioritisation and time management skills. Excellent interpersonal skills, with ability to work in a team and on own initiative. Excellent written, verbal and presentation communication skills. Excellent IT skills including knowledge and experience of Microsoft Office.	Ability to write complex reports and papers accurately and clearly. Ability to communicate research orally, to individuals and groups, with impact.

- *Essential Selection Criteria* are mandatory requirements for a post-holder. If a potential candidate does not evidence all of these requirements in their application form they do not meet the essential criteria of the role and, therefore, will not be short-listed for interview.