Job Description

Job title	Research Associate in Information for Industrial Resource Efficiency
Department/School	Mechanical Engineering
Job family	Education and Research
Grade	7
Reporting to	Dr Rick Lupton
Responsible for	Day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students
Location	University of Bath premises

Background and context
The Department of Mechanical Engineering at the University of Bath wishes to appoint a full-time Research Associate to work on an EPSRC-funded Programme Grant called *UK FIRES* involving six universities. The Programme aims to embed Resource Efficiency in UK Industrial Strategy, thereby achieving cuts in industrial carbon emissions at the same time as strengthening the UK construction and manufacturing sectors.

Job purpose
The Research Associate will support this exciting new research project through their skills in data analysis and modelling. They will be instrumental in developing new data analysis and modelling techniques, and using them to collect, integrate and present data on how we produce and use physical resources (energy, materials, water, etc), thereby providing key information and insight in support of a transformation in the sustainability of UK construction and manufacturing.

Main duties and responsibilities	
	Responsible to Dr Rick Lupton for the following main duties:
1	Develop and test new techniques for reconciling, interpolating and visualising imperfect data to infer a coherent view of how resources flow through different systems, with associated uncertainty.

2	Working with researchers at the University of Oxford: Explore how semantic data integration technologies can improve access to key data on physical resource use; and apply these tools to create a “Physical Resources Observatory” system to provide open and reliable evidence in support of the wider Research Programme goals.
3	Contribute to the study of applied problems and challenges that arise through work in the Living Lab of industrial partners to the Programme.
4	Write up results of research and contribute to the publication of results in reports and high-quality peer-reviewed academic literature.
5	Disseminate results of the research project through presenting at academic- and industry-focused conferences and meetings.
6	Manage the project effectively by timetabling and meeting project milestones, participating regularly in group meetings, and preparing and delivering presentations to the project team, research and industry collaborators, external stakeholders or funders.
7	Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge, where appropriate.
8	Continually update knowledge and understanding in field or specialism to inform research activity.
9	Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants.
10	Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required.
	You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.

Person Specification

Criteria	Essential	Desirable
Qualifications		
A PhD degree in subject area of direct relevance for the project, or equivalent significant relevant experience and professional qualification	√	
Experience/Knowledge		
Significant depth and breadth of specialist knowledge to contribute to the research programme (in data analysis, computer science, data science, scientific modelling, or other relevant areas)	√	
Demonstrated potential to publish in high quality, peer reviewed journals	√	
Post doctoral experience		√
Knowledge and experience of wider issues around resource use, manufacturing, construction, or environmental issues.		√
Skills		
Ability to prepare research proposals, to conduct individual research work and to disseminate results		√
Ability to organise and prioritise own workload to meet required deadlines	√	
Ability to work effectively in interdisciplinary teams	√	
Proficient presentation and communication skills (e.g. in publishing and presenting research to a range of audiences, training and outreach activities).	√	
Ability to setup, program and test software/scripts for data analysis and modelling	√	
Attributes		
Enthusiastic and self-motivated	√	
Commitment to working within professional and ethical codes of conduct and safe working practices	√	
Shows versatility, innovation and the ability to develop creative solutions	√	
Commitment to excellence in research	√	
Equally confident working independently or in interdisciplinary teams.	√	