Title: Flood Resilient Bridge Modelling and Design

Type of award  PhD Research Studentship

Department  Civil Engineering

Eligibility  Home / EU / Overseas

Start date  1 October 2020

PhD Topic Background/Description
Transport systems are responsible for moving people and goods, delivering services and ensuring connection within and among urban areas. Flood events are the most frequent cause of damage to infrastructure compared to any other natural hazard. Bridges located over waterways are particularly prone to failure during flood events and constitute one of the current research priorities. Many of the strategic bridges are not designed to cope with the current increasing pressures of a changing climate, and their frequency of use has outstripped their design specification.

This project tackles the challenge of improving bridge resilience to floods by investigating how hydrodynamic forces damage bridges and disrupt their functionality. The research draws on risk-based principles to re-think infrastructure and to support the near future of our cities through resilient measures against flooding events (e.g. retrofitting). The project will be tailored to the candidate’s interest, and may also include aspects of: smart bridges, sensoring and monitoring, network analysis, climate change. Results will be accessible to local stakeholders, providing a series of risk-based information to inform decision-making. The candidate will be expected to conduct work with industrial and academic partners and should have excellent interpersonal skills.

The PhD project is affiliated to https://gtr.ukri.org/projects?ref=EP%2FR00742X%2F1

Further Particulars

Candidate Requirements
Candidates should possess either a 1st; high 2:1 honours; or Master’s degree in Engineering, Mathematics, Geotechnics, Computing or a related discipline and should be interested in civil engineering and infrastructure resilience.

Experience in computing skills (MATLAB, Python or R) is required. Previous experience in conducting modelling research would be an advantage but not essential. A recognised English language qualification is required if English is not your first language at Profile E

Further information about English language requirements and profile levels.

Please note the successful applicant must be able to fund their studies.
Informal enquiries
For informal enquiries, please email Dr Maria Pregnolato, maria.pregnolato@bristol.ac.uk

For general enquiries, please email came-pgr-admissions@bristol.ac.uk

Application Details
To apply for this studentship, submit a PhD application using our online application system [www.bristol.ac.uk/pg-howtoapply]

Please select PhD Civil Engineering on the Programme Choice page and enter details of the studentship when prompted in the Funding and Research Details sections of the form with the name of the supervisor.

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