



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Structural Design of Reinforced Concrete - Restraint of Imposed Strains, Faculty of Engineering & Physical Sciences



Salary: Grade 7 (£33,797 – £40,322 p.a.)

Reference: EPSCV1001

Closing date: 3 November 2019

Fixed-term for 4 years, available from the 1st January 2020

We will consider flexible working arrangements

Research Fellow in Structural Design of Reinforced Concrete – Restraint of Imposed Strains, School of Civil Engineering.

Are you an enthusiastic and experienced researcher in roofing tile material development? Are you looking for a new and exciting challenge as part of an international academic / industry collaboration? Do you want to create building materials that will change our lives?

You will join the Structures research group as a member of research staff and will conduct research on an EPSRC funded project entitled 'Understanding the cracking behaviour of reinforced concrete elements subjected to the restraint of imposed strains.' The work will be conducted under the supervision of [Professor John P Forth](#) and [Dr Nick Nikitas](#), along with [Dr Robert Vollum](#) and [Professor Bassam Izzudin](#) from Imperial College London.

The primary focus of the project is to provide practising engineers with the ability to correctly design RC elements for the restraint of short and long-term imposed strains.

You will be involved in developing physical understanding of behaviour through an experimental study, developing NLFEA models which enable the realistic calculation of crack width in walls, developing a design oriented analytical procedure for the design of crack control reinforcement in walls, and further validation of the resulting procedures by comparison with field data from walls.

You will have a PhD (or equivalent) in structural engineering as well as an excellent honours degree in civil engineering (or equivalent) or a related subject, with very strong understanding of concrete engineering and structures and the ability to carry out nonlinear finite element analysis of concrete structures.

What does the role entail?

As a Research Fellow, your main duties will include:

- To plan and carry out laboratory experiments into restraint induced cracking in reinforced concrete walls;
- To utilise the University of Leeds Structures lab's digital image correlation (DIC) system and process results;



- To collect and interpret experimental results, and to maintain accurate and complete records of all findings;
- To develop nonlinear finite element modelling procedures, and a design oriented analytical procedure;
- To collaborate with internal and external investigators, and participate in the research group meetings;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or equivalent) in structural engineering as well as an excellent honours degree in civil engineering (or equivalent) or a related subject;
- Very strong understanding of concrete engineering and structures;
- Ability to carry out nonlinear finite element analysis of concrete structures;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- A proven track record of peer-reviewed publications in high impact factor journals;



- Excellent written and verbal communication skills including presentation skills;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Proven experience of the ability to interact with PhD students, Masters students and undergraduates in ways that will enhance the student experience in the School;
- Ability to contribute to and develop interdisciplinary collaborative research projects in a broad range of engineering applications.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Professor John P Forth](#), Director of the Neville Centre of Excellence in Cement and Concrete Engineering, School of Civil Engineering

Tel: +44 (0)113 343 2270

Email: J.P.Forth@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [School of Civil Engineering](#).



A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN [Bronze](#) or [Silver](#) Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

