



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Railway Geotechnics, School of Civil Engineering



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

Reference: EPSCV1005

Closing date: 02 January 2020

Fixed term for 3 years

We will consider flexible working arrangements

Research Fellow in Railway Geotechnics

School of Civil Engineering

Are you an ambitious researcher looking for your next challenge? Do you have an established background in the area of geotechnical engineering? Do you want to further your career in one of the UKs leading research intensive Universities?

The University has a large breadth of railway research expertise and is currently developing a new [Institute](#) for High Speed Railway and Systems Integration. A highlight of the new institute includes significant investment to develop a world leading railway track and earthworks test facility. This facility will allow for full-scale track-embankment structures to be constructed and tested under realistic, yet accelerated, high speed train loading. Therefore many years' worth of train passages can be simulated in a matter of days, thus replicating long-term track behaviour. Your role will involve developing numerical models of track and embankment stability, and validating them using the new testing facility.

You will have a PhD (or close to completion) in a topic closely aligned with geotechnical engineering, with strong knowledge and understanding of earthwork stability analysis, and strong coding ability, ideally using Matlab.

What does the role entail?

As a Research Fellow your main duties will include:

- Developing finite element models of earthwork stability using both commercial software and writing your own using matlab;
- Designing and leading novel railway geotechnics research using a new full-scale testing laboratory;
- Executing existing in-house numerical models to analyse the stress patterns created during train passage;
- Assisting in the management of a team of PhD students also working on related railway geotechnics problems;
- Interpreting and manipulating datasets collected from physical tests (e.g. ground investigation data);
- Tracking progress of all work-packages and producing progress reports;
- Communicating research results through publication, conference presentations and active participation in international scientific networks;



- Preparing papers for publication in leading international journals and independently writing reports;
- Working both independently and also as part of a team of researchers, engaging in knowledge-transfer activities where appropriate;
- 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.

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 close to completion) in a topic closely aligned with geotechnical engineering;
- Strong knowledge and understanding of earthwork stability analysis;
- Strong coding ability, ideally using Matlab;
- Excellent understanding and experience of the finite element method;
- Excellent analytical skills, with the ability to interpret and manipulate data;
- Excellent interpersonal and networking skills;
- Good communication skills including the ability to present research results;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of railway or transportation geotechnics;
- Experience of performing physical geotechnical testing;
- Experience of foundation design;
- A track record of publications.

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:

[Dr David Connolly](#), Institute for High Speed Rail and Systems Integration.

Tel: +44 (0) 113 3431990

Email: d.connolly@leeds.ac.uk

Additional information

Faculty and School Information

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

A diverse workforce

The Faculty of Engineering is proud to have been awarded the [Athena Swan 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.

