



Candidate Information

Position:	Precast Concrete Engineer- KTP Associate - Tracey Concrete Ltd
School/Department:	Research and Enterprise
Reference:	23/111427
Closing Date:	Friday 8 December 2023
Salary:	£25,000 - £33,000 per annum. One of the key KTP benefits for graduates is access to a £14,000 training and travel budget over the 30-month project.
Anticipated Interview Date:	Tuesday 19 December 2023
Duration:	Fixed term for 30 months

JOB PURPOSE:

Queen's University Belfast in partnership with Tracey Concrete have an exciting employment opportunity for a graduate to work on a project to create environmentally friendly jacking pipes by integrating innovative technologies and materials that contribute to better performance and carbon footprint neutrality.

Tracey Concrete is one of the largest precast concrete manufacturers in the UK and Ireland. They are a market leader in Concrete Pipes, Perfect Bases, Manhole Rings, Jacking Pipes, Headwalls and Cattle Slats.

This is a unique opportunity for a dynamic and motivated Civil or Structural Engineering graduate to work in Tracey Concrete (in Enniskillen, Co. Fermanagh) on a 30-month collaborative project with School of Natural and Built Environment at Queen's.

The KTP Associate will lead on the delivery of the following key project stages under the guidance of company and academic supervisors:

1. Review of mix design and identification of biochar to be used to develop carbon-negative concrete.
2. Investigation of chemical and physical properties of different types of biochar from local sources to produce negative-carbon concrete.
3. Optimisation of mixes for innovative negative-carbon concrete.
4. Upscale, evaluation and adjustment of optimised concrete mixes and the manufacturing process at the batching plant.
5. Analyse and design the basalt reinforced Jacking pipes using non-linear Finite Element Analysis (NIFEA).
6. Prototype design, construction and testing of novel jacking pipes made with Basalt fibre reinforced polymers (BFRP) and negative-carbon concrete.
7. Expanding the use of biochar and basalt in other products.

MAJOR DUTIES:

1. Plan, manage and coordinate the items of work as laid out in the project plan (project work plan will be provided by Supervisors). Plan day-to-day activity and contribute to the planning and management of the project, approximately 3-6 months in advance.
2. Attend training modules (mandatory and additional job-specific training). This may be local, national, and international. Ensure that all training and development activity is scheduled to ensure that progress on the work plan objectives is not interrupted or delayed.
3. Plan and manage day-to-day resources to ensure the project runs to time and on budget.
4. Coordinate and obtain approval for planned expenditure/allocation of resources with the Management Committee and Steering Group and monitor travel and development budgets and produce a Personal Development Plan which will ensure best use of financial resources.
5. Build relationships with both company and university staff to ensure effective working practices are established.
6. Liaise with company staff daily. Contribute to training of staff in the company and university as required, which may include the supervision of placement students or other staff members as required.

7. Attend and contribute to any appropriate meetings, both in the company and the university as required. Present regular progress reports to members of the Steering and Management Groups and to external audiences.
8. Perform any other additional duties as agreed by the Local Management Committee and Steering Groups to contribute to the development of the company, the university, and the Associate.
9. Establish contacts with additional groups and organisations (other KTP Associates, other university departments, other industrial contacts, and Innovate UK) as required to develop knowledge and understanding and form relationships for future collaboration.
10. Act as an Ambassador for the Knowledge Transfer Partnership Programme.

ESSENTIAL CRITERIA:

1. Hold at least a 2.1 accredited Honours Degree in Civil or Structural Engineering or a closely related discipline.
2. Completion of a module in concrete materials.*
3. Knowledge and/or experience of finite element methods.*
4. Understanding of cement chemistry.*
5. Understanding of Life cycle assessment.*
6. 3 months relevant work experience.*
*may be demonstrated through the completion of a module, student project or placement.
7. Ability to think logically, create solutions and make informed decisions.
8. A high level of numeracy and the ability to interpret data.
9. Good oral, written and presentation skills.
10. High level of IT skills.
11. Self-motivated, capable of working independently, with a drive and ambition to succeed.
12. Ability to work effectively as a member of a group.
13. Enthusiasm for research/project area.
14. Well organised, attention to detail and ability to meet tight deadlines.
15. An interest in staying with the Company. (Associates are normally invited to apply for permanent positions).
16. Ability to take part in Associate management courses (requiring two one-week periods in England).
17. Willing/able to travel throughout the UK and Ireland and abroad, as necessary.
18. Ability to attend work at Tracey Concrete at Old Rossorry, Sligo Road, Enniskillen, BT74 7LF and other work locations as required.

DESIRABLE CRITERIA:

1. Hold, or be about to obtain, a master's degree in Concrete Technology or Structural Engineering.
2. Understanding of characterisation methods such as SEM, XRD, FT-IR, etc.*
3. Understanding of structural design of Jacking pipes.*
*may be demonstrated through the completion of a module, student project or placement.
4. Ability to deliver training and follow-up support to operatives.
5. Ability to influence people effectively.
6. Tenacious and committed to achieving goals.

ADDITIONAL INFORMATION:

Knowledge Transfer Partnerships help forward thinking companies innovate for growth. They do this by connecting organisations who have an innovative idea with the knowledge and expertise to help deliver it. This dynamic three-way partnership formed between an inspired graduate, the university and the company mean that the graduate, known as the KTP Associate, provides the link between an expert academic team and a dynamic organisation. This bridge gives the graduate unique and exceptional access to both world class academic support and experts from within the business.

A KTP provides a fulfilling employment opportunity where you can apply your knowledge to turn a key strategic innovative idea into reality and although the KTP Programme is aimed at recent graduates, any suitable qualified graduate may apply. Each KTP Associate role is a fully salaried job and last between 12 months and three years with approximately 70% of Associates offered employment by the host business at the end of the project. Projects can be in any sector and for businesses of all sizes. Each KTP Associate will have a travel / training budget to provide funding for job-specific training and further professional development. Two, one-week residential management training modules are also included as part of the package.

For all KTP projects, the graduate is employed by the University but contracted to work in the business, under the business' basic terms and conditions including holidays and hours of work. As a member of university staff, KTP Associates can join the University pension scheme, gain access to University resources including the Library and sports facilities. Please note that KTP Associates are not eligible for financial support for relocation from the University.

KTP aims to help businesses improve their competitiveness and productivity through the better use of knowledge, technology and skills held within the UK knowledge base. KTPs are funded by UKRI through Innovate UK with the support of co-funders, including the Scottish Funding Council, Welsh Government, Invest Northern Ireland, Defra and BEIS. Innovate UK manages the KTP Programme and facilitates its delivery through a range of partners including the Knowledge Transfer Network (KTN), Knowledge Bases (in this case, Queen's University Belfast) and Businesses.

More details about the KTP Programme are available at www.ktp-uk.org.

Please note that the Shortlisting Panel cannot make assumptions on your experience or qualifications; it is the responsibility of the applicant to evidence their suitability for the role. As such your Application Form, CV and/or Cover Letter must clearly demonstrate how your Qualifications and Experience meet the Essential Criteria and, where possible, Desirable Criteria, as listed in the Candidate Information Booklet. Please ensure that you address all the criteria in the person specification and provide evidence to support your statements.