THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF ENGINEERING

DEPARTMENT OF MECHANICAL, AEROSPACE AND CIVIL ENGINEERING

STRUCTURAL FIRE ENGINEER (KTP ASSOCIATE)

VACANCY REF: SAE-025968

Salary:	Grade 6 £36,024 to £44,263 per annum, depending on relevant experience
Hours:	Full Time
Duration:	Fixed term from 1 September 2024 until 31 August 2026
Location:	Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:
Name: Professor Yong Wang
Email: yong.wang@manchester.ac.uk

Background

At the University of Manchester, the School of Engineering has been highly active in fire engineering research for many years. It is one of the international leading centres of structural fire engineering research. Research undertaken at the School has contributed to international codified guidance for the fire engineering industry, with the academic supervisors being members of a number of relevant UK and European standards on fire resistant design of structures.

Ashton Fire is a leading, specialist fire safety consultancy comprising fire engineers and fire safety consultants situated across the UK and Ireland. The business is focused on providing fire safety solutions for all types of buildings throughout their lifecycle. The team supports clients by offering fire safety solutions in the planning, design, construction, and / or occupation of buildings. Ashton Fire's services include fire safety engineering in design or during construction, computational fire modelling, fire safety site inspections, fire safety assessments, fire risk assessments, fire door and compartmentation surveys, external wall assessments, and advice related to building safety reform.

MANCHESTER 1824
The University of Manchester

Overall Purpose of the Job

This KTP aims to expand Ashton Fire's business services in structural fire engineering. In order to enhance the competitiveness of the business, this project will focus on specifying fire resistance requirements and developing methods to achieve them for complex and 'high-risk' buildings by developing reliability-based computational tools. Reliability-based and probabilistic assessment of structural fire resistance is at an early stage and not widely applied in the industry. Unlike the commonly used deterministic calculations in Eurocodes, this project offers significant potential to advance knowledge in this field.

The KTP will address limitations in existing fire safety guidance for complex and 'high-risk' buildings. It involves creating a design review process and computational tools to determine structural fire resistance periods tailored to unique building characteristics. The approach includes incorporating reliability-based methods and probabilistic time equivalence to assess potential consequences of fire-induced structural failure.

Working with leading academics in structural fire engineering, this KTP will develop, embed, and exploit advanced expertise in structural fire engineering to support reliability-based, probabilistic assessments within the fire safety sector.

Knowledge Transfer Partnerships (KTP) is Europe's leading programme helping businesses to improve their competiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. Throughout the KTP you will;

- Receive a competitive salary
- Gain excellent experience of managing a high profile project
- Receive formal management training
- Have access to a £4000 professional development and training budget
- Receive mentoring and support from academic staff and industry professionals

Further information on KTP, including case studies, can be found at;
http://www.manchester.ac.uk/collaborate/business-engagement/knowledge-exchange/transfer-partnerships/

Key Responsibilities, Accountabilities or Duties

The range of duties will include:

- Conduct literature review to identify limitations in current practice
- Develop thorough knowledge of structural fire engineering
- Develop in-depth understanding of fire safety engineering practice
- Contribute to the planning of the KTP project & other relevant projects
- Plan own day-to-day research activity within the framework of the agreed programme
- Undertake research to develop a methodology of work for the project
- Develop reliability-based probabilistic computational tools to specify fire resistance

- Apply effective methods of structural fire engineering to achieve fire resistance
- Develop training materials on structural fire engineering
- Conduct training seminars to propagate relevant knowledge of structural fire engineering to Ashton Fire
- Write up results of own research
- Contribute to the production of research reports and publications
- Liaise with knowledge base and business colleagues on routine matters
- Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration
- Actively participate as a member of the KTP project team
- Attend and contribute to relevant meetings
- Deal with problems which may affect the achievement of research objectives and deadlines
- Contribute to decisions affecting the work of the team
- Continue to update knowledge and develop skills
- Assist in the supervision of student projects
- Be a positive member of the Ashton Fire team and promote a professional and enjoyable working environment
- Operate within Ashton Fire's terms and conditions, policies and quality assurance systems
- Ensure records and filing are maintained to ensure Ashton Fire's quality procedures, service levels and contractual requirements are being met
- Ensure that all Health and Safety regulations are strictly complied with and that all protective / safety equipment is fully utilised where required
- Work responsibly and ethically in all areas, and always have the safety of others at the core of what you do
- To communicate effectively (verbally, writing and electronically) to meet the job purpose

Person Specification

Essential;

- PhD in Structural Fire Engineering, or PhD in Fire Engineering with a first degree or MSc in Structural or Civil Engineering, or Experienced Fire Engineer with a relevant degree (or equivalent experience)
- Strong programming ability
- Excellent communication and interpersonal skills
- Excellent time management and organisational skills

- Ability to work independently and as part of a team
- Ability to liaise confidently and effectively with a range of individuals
- Flexible approach to dealing with problems as they arise
- Willingness to learn and develop
- Ability to present in both written and oral publications
- Ability to meet deadlines
- The ability to evaluate complex data

Desirable;

- Specialist knowledge in the discipline fire safety engineering in general and structural fire engineering in particular
- Strong mathematical background in probability and reliability-based computation
- Familiar with finite element analysis tools, e.g., ANSYS, ABACUS, SAFIR
- Familiar with fire modelling tools, e.g., FDS, C-Fast, B-RISK
- A record of journal publication or fire engineering project experience on complex and high risk buildings