



KTP Associate for BIM - based Automated Compliance Checking in Highways Engineering

Reference: 0021-23

Salary: £32,000 per annum with up to £5000 dedicated training budget

Contract Type: Fixed term (30 months)

Basis: Full Time

Job description

This 30-month project takes the form of a [Knowledge Transfer Partnership \(KTP\)](#), which provides you with practical and formal training and the availability of support from experienced mentors from [Arcadis Consulting \(UK\)](#), [Aston University](#) and [Innovate UK](#).

Job Purpose:

This KTP project aims to create a Building Information Modelling (BIM)-based automated health and safety rule and code compliance checking system to improve the health and safety performance and information management of infrastructure engineering design in the construction industry.

Wellbeing, Health and Safety (WH&S) is a key issue in construction, which is recognised as a high-risk industry. The project will automate engineering (highways) design WH&S rule and code compliance checking, document checking, document production and software integration to maximise the benefits of BIM.

The key benefits of this KTP to the business include both commercial and societal benefits:

- ▶ More effective transfer of WH&S data between stakeholders in the construction process due to automation and development of common terminology and data structures
- ▶ Reduced costs in construction e.g., improved sharing of information across teams, less design changes on site, reduced design staff time and reduction in re-work.
- ▶ Improved site WH&S reducing injury / fatality levels and enhanced compliance (less errors) with the codes.

The project will also enable increased digitalisation in the construction industry, building on transformations already in place with the introduction of BIM and other concepts (e.g., Geographic Information Systems (GIS), Digital Twins) and using automated information management processes to gain efficiencies in the design and construction processes.

This role is an exciting opportunity for candidates with a degree (high level 2.1 or above) in either Engineering, Surveying, Architecture and Built Environment, Mathematics, Computer Science, Finance, Economy or Management related disciplines with a good understanding of digital technologies, digital application development process, requirement capturing and analysis, and management and IT systems in the Built Environment. Preferably a Postgraduate with an understanding of BIM, process improvement and digital construction.

Main duties and responsibilities

- ▶ Understanding the priorities and future directions of Arcadis' business and key stakeholders in relation to digital WH&S
- ▶ Developing an in-depth understanding of BIM-based rule-checking methods, techniques and algorithms for WH&S (e.g., predicate logic, ontology-based semantic modelling and decision tables, AI-based Natural Language Processing and visual programming language techniques, tabular detection and extraction algorithms and boundary and adjacency algorithms)
- ▶ Object-oriented programming (e.g., Python, C# or others), BIM application development environment, databases/database management, modelling data for efficient transmission and distributed storage, requirements capturing and analysis
- ▶ Collaborative development of a BIM-based WH&S database and working rule-based checking prototype
- ▶ Standardising and communicating improved processes
- ▶ Facilitating identification and embedding the latest innovations in the field within the company.

Additional responsibilities

- ▶ Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities to develop themselves and support the development of others.
- ▶ Ensure and promote the personal health, safety and wellbeing of staff.
- ▶ Carry out duties in a way which promotes fairness in all matters, and which engenders trust.
- ▶ Promote equality of opportunity and support diversity and inclusion as well as working to support the University's and companies environmental sustainability agenda and practices.

Person specification

	Essential	Method of assessment
Education and qualifications	A degree (high level 2.1 or above) in either Engineering, Surveying, Architecture and Built Environment, Mathematics, Computer Science, Finance, Economy or Management related disciplines.	Application form
Experience	Development of digital applications, particularly BIM-based applications. Design and/or construction management. Work in a commercial environment (including placement year).	Application form and interview
Aptitude and skills	Analytical problem solving and basic statistics Understanding of object-oriented programming in Python, C++ or C# Understanding of BIM application development environment Understanding of databases and database management Understanding of modelling data for efficient transmission and distributed storage.	Application form and interview

	Desirable	Method of assessment
Experience	Requirement capturing and analysis. Knowledge of the Construction (Design and Management) Regulations Risk and WH&S management.	Application form and interview

	Desirable	Method of assessment
	<p>Background knowledge of business particularly in the Built Environment would be an advantage.</p> <p>Experience in working cross-functionally, communicating persuasively and regularly is highly desirable.</p>	

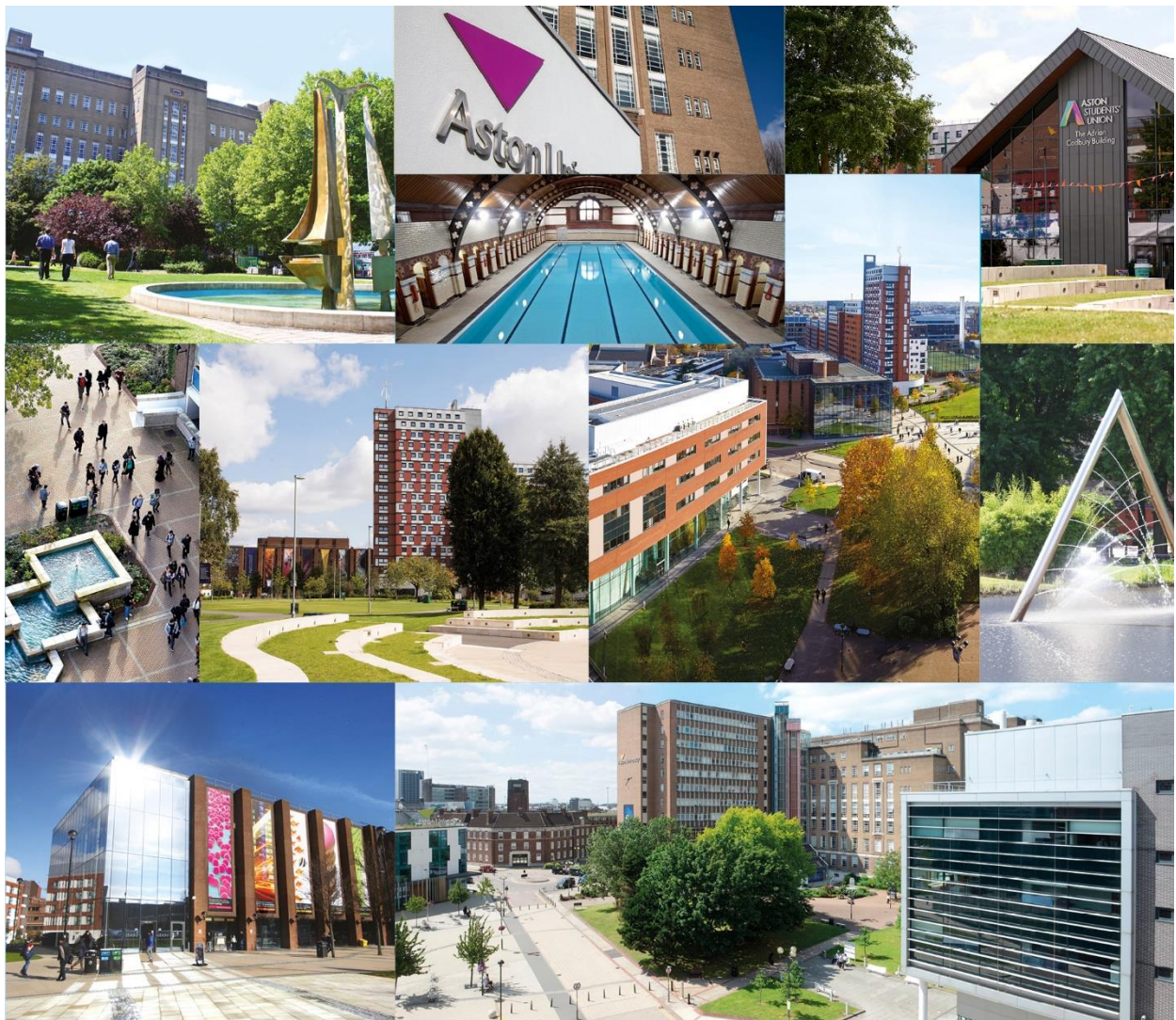
How to apply

You can apply for this role online via our website <https://www2.aston.ac.uk/staff-public/hr/jobs>.

Applications should be submitted by 23.59 BST on the advertised closing date.
All applicants must complete an application form, along with your CV.

Any CV sent direct to the Recruitment Team and Recruiting Manager will not be accepted.

If you require a manual application form, then please contact the Recruitment Team via jobs@aston.ac.uk.



Contact information

Enquiries about the vacancy:

Name: Dr Tala Kasim

Job Title: Lecturer, Infrastructure and Sustainable Engineering

E-mail: t.kasim@aston.ac.uk

Enquiries about the application process, shortlisting or interviews:

Recruitment Team via jobs@aston.ac.uk or 0121 204 4500.

Additional information

Visit our website <https://www2.aston.ac.uk/staff-public/hr> for full details of our salary scales and benefits Aston University staff enjoy

Salary scales: <https://www2.aston.ac.uk/staff-public/hr/payroll-and-pensions/salary-scales/index>

Benefits: <https://www2.aston.ac.uk/staff-public/hr/Benefits-and-Rewards/index>

Employment of Ex-Offenders: Under the Rehabilitation of Offenders Act 1974, a person with a criminal record is not required to disclose any spent convictions unless the positions they apply for is listed an exception under the act.

Eligibility to work in the UK:

Post-Brexit transition period / EU Settlement Scheme

The post-Brexit transition period ended on 31 December 2020. If you are an EU/EEA citizen and you were a resident in the UK before 31 December 2020, you and your family members (including non-EU citizens need to apply to the EU Settlement Scheme to continue to live, work and study in the UK beyond 30 June 2021. The deadline for applying to the EU settlement scheme is 30 June 2021. You can apply via the Government webpage

<https://www.gov.uk/settled-status-eu-citizens-families>

Irish Nationals do not need to apply for settlement as they retain the right to work in the UK.

New immigration system for EU/EEA and Swiss Nationals who were not resident in the UK before 31 December 2020

A new immigration system has been introduced for people arriving in the UK from EEA countries with effect from 1 January 2021. In addition to those who have always required a visa, EU citizens moving to the UK to work will need to get a visa in advance. You can find more information on the following website. Candidates should check their eligibility to enter or remain in the UK in advance of making any job application via the UKVI website <https://www.gov.uk/browse/visas-immigration/work-visas>. Before applying you should ensure that you meet the requirements, including meeting the English Language requirements. If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful. If you require a visa to work in the UK the most common types of visa are:

Skilled Worker Visa

<https://www.gov.uk/skilled-worker-visa>

Global Talent Visa

If you are a leader or potential leader in one of the following fields, you may be eligible to apply for a Global Talent Visa:

- Academia or Research
- Arts and Culture
- Digital Technology

Please click the following link for further information and to check your eligibility for this visa.

<https://www.gov.uk/global-talent>

Equal Opportunities: Aston University promotes equality and diversity in all aspects of its work. We aim to ensure, through our admissions policies for students, and our staff recruitment and selection processes that we encourage applications from all groups represented in the wider community at a local, national and international level.

The University will endeavour not to discriminate unfairly or illegally, directly or indirectly, against student or potential students, staff or potential staff. This commitment applies to all functions of the University and to any stage of an individual's career.

An Equal Opportunities Monitoring Form is included within the application form. Data you provide on the Equal Opportunities Monitoring Form will be included in a general database, for statistical monitoring purposes, enabling the University to monitor the effectiveness of its Policy, Codes of Practice and Guidelines on Equal Opportunities in Employment. Individuals will not be identified by name.

Data Protection: Your personal data will be processed in compliance with the Data Protection Act 2018 and the General Data Protection Regulation ((EU) 2016/679) ("GDPR"). The University's Data Protection Policy and Privacy Notices, including the Job Applicant Privacy Notice can be found at <https://www2.aston.ac.uk/data-protection>. Your application will only be used to inform the selection process, unless you are successful, in which case it will form the basis of your personal record with the University which will be stored in manual and/or electronic files. Information in statistical form on present and former employees is given to appropriate outside bodies.

Full details of our terms and conditions of service and associated policies and procedures are available online at <https://www2.aston.ac.uk/staff-public/hr/policies>

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gets real.**