Role summary

The Applied Research + Development team produces cutting-edge technologies, including web applications, to support Architecture, Engineering, Construction and Operations for the built environment. We take these technologies through all stages of the innovation lifecycle, from R+D prototypes through to robust production applications. We are looking for back-end developers to support this mission and deliver industry-leading solutions.

In this position you will help deliver innovative web applications for Architecture, Engineering and Design. We develop a broad variety of application structures including RESTful APIs, real-time web applications and hybrid cloud/on-premise systems.

Back-end developers are required to work in teams alongside front-end developers, graphic designers, and user experience designers to ensure all elements of web creation are consistent. This requires excellent communication and interpersonal skills.

Back-end developers will write code, design solutions for applications and continuously improve functionality. To be successful, you should demonstrate excellent problem-solving skills, high-quality coding skills, and the ability to manage your time efficiently.

Role Definition

Job title: Software Developer (ARD – Back-end Developer)
Reporting to: Head of Applied Research and Development

Responsibilities

• Creating top-quality applications used for Architecture, Engineering, Construction and Operations (AECO) in the built environment
• Collaborating with front-end developers, computational designers, environmental engineers and other domain specialists
• Improving functionality
• Using the most current and appropriate technologies
• Designing and building application layers
• Delivering in support of all stages of application development lifecycle, including tests, CI/CD pipelines and documentation
• Contribute, or otherwise assist, as required
• Equity, diversity & inclusion (EDI) is a core priority. To support and champion the embedding of this focus as a collective workforce responsibility, EDI should be integrated, where relevant, into all workstreams.
• Thorough knowledge of and compliance with F+P procedures and standards

Qualities and Skills required

• Able to demonstrate ability to undertake the above responsibilities
• Degree in computer science, software development, or equivalent experience
• Extensive working knowledge of coding using .NET languages especially ASP.NET Core
• Familiarity with NoSQL databases (Azure Cosmos, MongoDB), SQL servers and object–relational mapping frameworks like Entity Framework Core
• Experience with CI/CD pipelines in Azure DevOps and Microsoft Azure
• Experience with building RESTful APIs
• Ability to scope, implement, test and deploy microservices.
• Experience in deploying complex high-uptime applications.
• Proficiency in integrating with third-party APIs
• Familiarity with common web security threats and threat mitigation. Ability to liaise with colleagues in our IT infrastructure team to ensure best practices.
• Following office-wide standards for coding, user interface and application security
• Legally able to work in the country in which the position is based
• Excellent organisational skills
• Able to manage sensitive and sometimes confidential information
• Self motivated and able to take responsibility
• Able to demonstrate initiative and a proactive approach to daily tasks
• Good interpersonal skills and able to work independently and as part of an effective team
• Flexible attitude
• Able to build good relationships at all levels, internally and externally
• Resilient to cope with conflicting demands, able to prioritise duties and work effectively under pressure.
• Able to work as part of an effective team assisting and supporting team members

Desirable
• Experience with high-performance computing for engineering simulations and mathematical modelling.
• Experience with programming distributed rendering systems or render farm management tools like AWS Deadline
• Experience with persistent HTTP connections using technology including Microsoft SignalR, WebSockets or WebRTC for real-time applications.
• General understanding of CAD/BIM tools and technologies
• Experience with unit testing frameworks like XUnit/Moq or similar
• Working knowledge of Docker, Kubernetes and Helm Charts.
• Knowledge of GraphQL, webhooks and modern API tooling.
• Node.js experience

This description reflects the core activities of the role but is not intended to be all-inclusive and other duties within the group/department may be required in addition to changes in the emphasis of duties as required from time to time. There is a requirement for the post holder to recognise this and adopt a flexible approach to work. Job descriptions will be reviewed regularly and where necessary revised in accordance with organisational needs. Any major changes will be discussed with the post holder.