

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 (Back-End Development)

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
- Legally able to work in the country in which the position is based
- 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
- A keen eye for detail.
- Good problem-solving skills
- 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.