

## **Role Definition**

**Job Title:** Software Developer (Applied R+D – Back-end Developer)

**Reporting to:** Head of Applied Research and Development

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.

## **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

## **Qualities and Skills required**

### **Essential**

- 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
- Able to manage sensitive and confidential information
- A keen eye for detail.
- Good problem-solving skills
- Excellent verbal and written communication skills
- Good interpersonal skills

**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