

## Role Definition

**Job Title:** Design Systems Analyst – (ARD)

**Reporting to:** Head of Applied Research and Development (“ARD”) on a day to day basis and ultimately to the Head of Technology

## Responsibilities

- Conduct applied research and development in support of the Company’s objectives
- Model, analyse and solve complex, multi-disciplinary design problems
- Research and develop tools and methodologies to enable and generalise the above activities
- Advise and support project teams at all stages of design and construction, particularly through promotion and application of the above tools and methodologies
- Liaise with other support groups to ensure effective development, integration and application of wider Foster + Partners (“F+P”) design systems and processes
- Maintain and advance state of the art knowledge of Computer Aided Design, Engineering and Manufacturing (CAD/CAE/CAM)
- To contribute, or otherwise assist, as required
- Thorough knowledge of and compliance with F+P procedures and standards

## Qualities and Skills required

### Essential

- Able to demonstrate ability to undertake the above responsibilities
- Legally able to work in the country in which the position is based
- Have an Industry recognised diploma or degree in an Architectural, Engineering or Computer Science related field or equivalent relevant experience
- Expert knowledge and awareness of the world of CAD/CAE/CAM/BIM and its potential application within F+P
- Understanding and experience of the processes of design and construction
- Specialist in one or more of the following areas: architecture, structural engineering, building physics, computational design, complex geometry, simulation and optimization, design and data visualisation, human computer interaction, computer graphics, innovative fabrication and construction, ubiquitous computing (including the Internet of Things), cognitive computing and artificial intelligence, interactive application development
- Expert in a range of software supporting the above areas
- Strong programming skills in one or more of the following languages: C#, C, C++, Java, Python, ECMAScript
- Good written, verbal and graphical communication skills
- Able to manage and prioritise tasks and time efficiently and able to work whilst under pressure
- Able to demonstrate initiative and a proactive approach to daily tasks
- Good interpersonal skills and ability to work independently and as part of an effective team
- Able to manage sensitive and confidential information
- Able to build good relationships at all levels, internally and externally

- A flexible and open attitude towards new ways of working and commitment to independent, life long learning

### **Desirable**

- Excellent knowledge of the following CAD applications: Rhino, Grasshopper, Revit, Dynamo, CATIA
- CAD/BIM API development
- Excellent experience of simulation applications such as: EnergyPlus, Radiance, OpenFOAM
  
- Experience of GPU and GPGPU programming, including Vulkan, CUDA, OptiX
- Experience of web development using HTML, CSS, JavaScript
- Experience of mobile application development
- Experience of developing applications using computer game platforms, particularly Unity or Unreal Engine
- Demonstrated experience of research in an academic or industrial setting, including problem formulation, precedent review, testing, evaluation and communication of results
- Experience with database technologies and query languages including relational (SQL), document and/or graph databases.
- Knowledge of UNIX and container / cluster computing technologies (Docker, Kubernetes)

This description reflects 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.