

## CRITICAL SYSTEMS

Facebook Luleå Phase 2, Sweden

Daniel Jagger, Graduate Engineer, talks about his experience working in the critical systems team.

*"We are all guilty of taking for granted the vast network of information, conversations, memories and applications available at a seemingly endless supply. We would never expect the lights to go out in our hospitals, even if there was a power cut nearby. We would be incensed if we couldn't log into our favourite search engine, online store or social network. In fact we have been so well served by critical systems engineers that we expect uninterrupted access to many different services, all of which require an extremely sophisticated engineering infrastructure to make this possible."*

A mission critical system is defined as something which cannot fail, if it were to do so it could result in serious consequences. The systems we design will operate for 24 a day, 365 days a year with no interruption. If you could imagine how long a car would last if you were never to stop driving, this might give some perspective on the scope of the challenge involved here. Within Cundall's critical systems team you will work primarily on data centre projects. These are mainly for top industry clients across the world, these will be a combination of new designs or progressions from previous phases for others. We also get involved in some research work, producing academic style reports and studies within the field of data centre design.

This involves considerable engineering challenges. As a critical systems engineer you will be required to develop your technical understanding of engineering systems to a high level. You will need to understand how your design will operate under a variety of different scenarios, how it impacts other disciplines, how it will be maintained and how efficiently it will operate. You will find that you not only need an in depth understanding of your own discipline, you will quickly develop knowledge of others and learn how they interface. Working on high budget projects allows you to implement high quality solutions and the speed of the industry means that you are likely to see the fruits of your labour not too long after completing the design.

It doesn't stop at the technical, there is a considerable commercial aspect to the role. You will be working on large projects, these involve many stakeholders such as architects, contractors, manufacturers and other consultants who you will need to communicate with throughout both the design and construction process. The role involves heavy client input, often from clients who have in depth engineering knowledge themselves. You need to be flexible and innovative, the design process is often very iterative which you will need to respond to at a surprisingly fast pace.

Chartered status is very useful to achieve within the critical systems team. You are more likely to be given key responsibilities with a CEng qualification as the chartered status will help to portray you as both technically and commercially competent. In addition to this it will also give you a structure for your learning during the early years of your career, this should be something you are working towards from your first day if you want to get the most out of your experience.

You can expect opportunities to travel, most of our projects are scattered across Europe, you will have the opportunity to spend time at these locations, getting valuable site experience to supplement the office design work experience where you will oversee your designs coming to life.

Cundall is well established in the data centre industry and operates at the cutting edge of design. The role involves a fast pace of work and at times a great deal of it.

There is always a role for talented electrical and mechanical engineers within the critical systems team, you will have the chance to develop your knowledge and experience at an accelerated pace, whilst contributing to one of the most exciting and dynamic evolutions in the technology industry to date.



**DANIEL JAGGER**

Joined 2015

Building Services Graduate Engineer