THE BRIEF

Calon Associates Ltd is a Runcorn-based SME specialising in products for advanced lighting controls, smart building controls and connectivity solutions. They design, develop and supply a range of lighting, forecourt and building controls for the commercial, retail, transportation and education sectors. The company offers a niche range of flexible and configurable products in the form of 'building blocks' that can be combined and configured in many different ways to serve a very wide range of application use cases.

The British Standards 5266-1 set out a strict code of practice to ensure buildings have a safe and sufficient emergency lighting network on site. The purpose of this is to allow building occupants to safely exit in the event of an emergency. However, research indicates that companies and building owners are apprehensive about implementing these practices adequately and/or avoiding adhering to them. Negligence can result in serious accidents, injury, or financial and criminal implications.

One of the challenges discussed is that Calon identified a need to address the above and develop a system that can aggregate emergency light test records from various resources, either a large number of buildings or different parts of very large buildings.

Regularly testing emergency lights and keeping records of test results are required by law in the UK for building owners and operators. Typical systems to do so are limited in scope to a single building or a part of a building. The system that Calon want to develop would, for example, allow an organisation such as a university to demonstrate compliance with the regulations across all the different buildings it occupies, and the data will be accessible in the cloud according to various criteria. This will enhance the competitiveness of Calon in the lighting control market.

THE APPROACH

The CW4.0 team at LJMU developed a bespoke action plan for supporting Calon to prioritise tasks and the mechanisms to embrace digital technology. Phase I of the support engaged undergraduate final-year students in Computer Science and Mathematics to help Calon shape the challenge into achievable deliverables, with a focus on developing an online application that can receive logs of emergency lighting test records and faults, store this information in a database and provide a means for users to visualise the data.

THE BENEFITS

The L6 student project identified how available web technologies could help Calon develop a system which enabled their customers to comply with the legislation through fault recognition and data visualisation tools to gain a competitive edge.

This was accomplished through a series of informal interviews with Calon to understand their system requirements and business domain through MoSCoW requirements prioritisation. This led to the development of a suitable software system from these requirements through a series of UML diagramming and database design techniques, implementing the solution in an agile development environment.