Case studies

Typical feature available - on request - for the media

Loughborough University

Centre for Innovative Construction Engineering

The Centre for Innovative Construction Engineering (CICE) is unique. It's the first and (so far) only UK university centre dedicated to the research, innovation and training needs of the industry – providing its mostly pre-30 year old engineering participants with an industry-based doctorate that paves their way for future success in industry innovation leadership. Course participants are each part-funded by a sponsoring construction industry company with whom they work throughout the four-year course.

By sponsoring their own research engineers on a postgraduate Doctor of Engineering (EngD) programme the companies gain access to a exceptional mix of university research thinking and practical support via 'their own' researchers. The four year multidisciplinary course helps its doctorate participants deliver new ways of working, new applications and marketable ideas directly into their sponsoring companies. It also gives the students top-level exposure to senior company management.

The Loughborough EngD programme is notably different to a conventional PhD as it is designed to align research engineers (EngD students) closely to the real needs of industry. Research engineers must be sponsored by a company or industrial partner and are expected to spend 70-80% of their time at the company. It is a process that works effectively for both the engineers and sponsors.

"I qualified as a chartered surveyor," says 29-year old Simon Beatham, "but wanted to move into management. By choosing a research subject involving design and construction management efficiency I have been afforded the opportunity to engage with senior management, not only with my sponsoring company, AMEC, but also within other non-construction organisations. The whole process has expanded my management understanding considerably."

Simon's research into the cultural aspects of change and the alignment of specific management activities with business change objectives work has resulted in an Integrated Business Improvement system which is now helping to drive a change management programme within AMEC.

Matthew Pilgrim has been working on new ways of visually representing and presenting interpreted data in 3D so as to help on-site construction operations, using both hand-held computers and virtual reality methods.

"The work I've done on this course will become a personal showpiece for me," he says, "and it will demonstrate my ability to advise on and model appropriate data tools to suit specific operational purposes."

Lee Bibby saw the Loughborough course as a means to advance his career. As he explains, “I wanted to research new processes to help advance construction project management, in particular the design process. The Loughborough course has given me that opportunity.”

Having originally applied for a place on the CICE degree programme, Lee found his industrial partner was none other than Skanska and his new design management handbook is now being used on a major hospital project supported by a website highlighting good practice.

“Through this course I have not only been able to follow through my research ideas and seen them used in a real industry context, but I have also been able to meet and work with senior managers and directors of the business. This alone has significantly advanced my future career prospects”, says Lee.

Matt Ing’s work on a new non-destructive concrete assessment method to give early indication of corrosion in concrete has resulted in a marketable product which is soon to be marketed jointly by his sponsor Balfour Beatty and Atkins. Following successful trials the marketing plans are now being finalised.

“I studied Civil Engineering at Cardiff University,” says Matt, “and I wanted to continue with university research as well as establish a career within industry. As soon as I heard about it I realised that the Loughborough EngD course would be a good opportunity. Not only has it helped me to pursue the research I wanted to do but to also focus on my future. Through this work I may have established a unique role for myself which will also enable me to continue working on the project.”

It’s not only those taking the research doctorate that benefit from CICE. Their sponsoring companies gain too.

“Once a commitment is made that enables a sponsored research engineer to see through a period of research, then we have to see it through,” explains John Findlay, Director of Engineering at Balfour Beatty’s Specialist Holdings Division. “It means that we may find answers that might not have been resolved in the normal research environment where budgets are sometimes subject to cuts.”

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