


Case Study

Collaborative Research: Knowledge & Information Management in the construction industry



Key Facts

- The Knowledge and Information Management through Life, Grand Challenge project was jointly funded by the Engineering and Physical Sciences Research Council and Innovative Manufacturing Research Centres.
- Balfour Beatty, one of the UK's leading civil engineering contractors and PFI operators, was a principal partner in the project.
- The University of Reading has world class expertise in knowledge management within the construction industry and the challenges it faces.
- The Innovation Construction Research Centre (ICRC) at the University of Reading works with leading players in the UK construction sector in order to encourage the development of a knowledge-based industry responsive to change.
- The project took the form of 'co-production' research whereby academic and industry experts generate new knowledge and technologies in close collaboration. Balfour Beatty was closely involved with the research from its inception.
- The project has helped shape Balfour Beatty's thinking in terms of their knowledge management policy and has directly influenced the way in which knowledge is used and retrieved.

The Partners

The Knowledge and Information Management through Life, Grand Challenge project was jointly funded by the Engineering and Physical Sciences Research Council (EPSRC) and Innovative Manufacturing Research Centres (IMRCs). The collaborative research involved 11 universities and in excess of 40 industry partners, including construction, defence, mechanical engineering and civil aviation.

Balfour Beatty, a global engineering, construction, services and investment group, and a leader in the UK's Private Finance Initiative (PFI) market was one of the principal partners in the project.

The Challenge

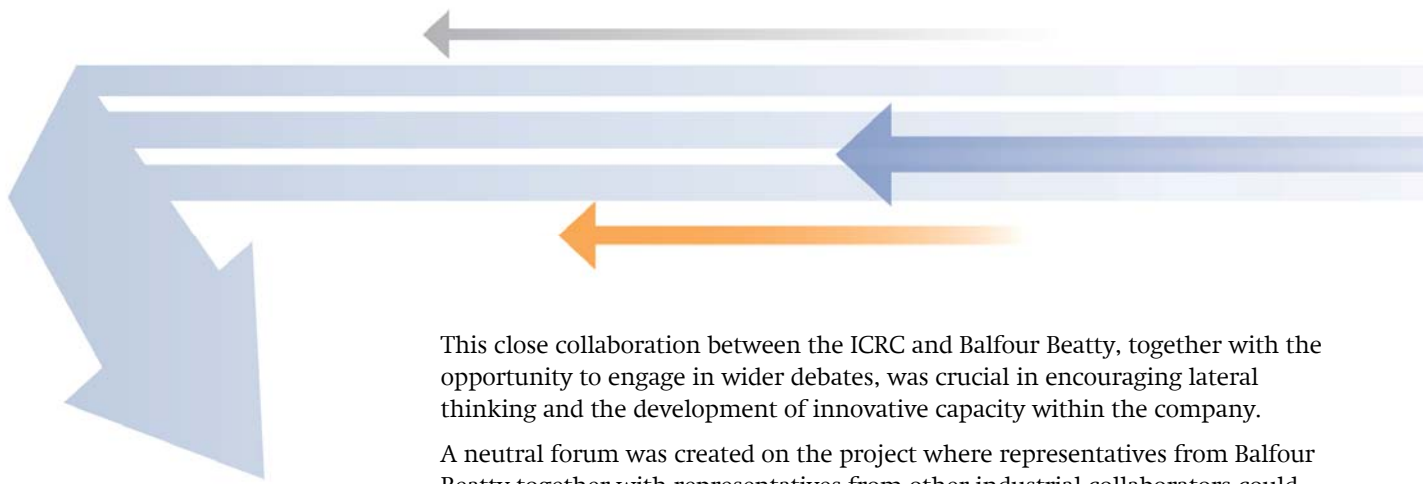
Leading firms within the UK construction sector are increasingly emphasising the shift from product delivery towards the satisfaction of clients' needs through service provision. This shift, which is equally noticeable across other manufacturing sectors, has implications for how organisations manage knowledge and information.

Most large manufacturing companies, particularly in the construction sector, have traditionally operated on the basis of a devolved corporate structure characterised by decentralisation and localised autonomy. In consequence, operating divisions frequently possess their own distinct ways of working, and routines and practices are not as unified as they could be.

This research project sought to identify areas for concern and to generate more efficient and improved knowledge and information management systems for the construction industry.

Solution

The project took the form of 'co-production' research whereby academic and industry experts generate new knowledge and technologies in close collaboration. Balfour Beatty was directly involved in shaping the areas to be investigated: this enabled senior management to explore ideas directly relevant to the business. Hence, academics and practitioners collaboratively engaged in exploring problems, developing potential solutions and generating new ideas, thinking and the development of innovative capacity within the company.



This close collaboration between the ICRC and Balfour Beatty, together with the opportunity to engage in wider debates, was crucial in encouraging lateral thinking and the development of innovative capacity within the company.

A neutral forum was created on the project where representatives from Balfour Beatty together with representatives from other industrial collaborators could interact. This provided the opportunity to nurture ideas and develop more analytical thinking.

Benefits to the Partner

The research offered Balfour Beatty the chance to carry out a self-examination of current strengths and weaknesses, and to benchmark themselves against companies facing similar challenges in the aerospace and defence sectors. As a result of the research project and of this self-analysis, Balfour Beatty has taken steps to become a less compartmentalized business and has adopted a streamlined way of storing and sharing knowledge. One of the key mechanisms for taking the research forward is Balfour Beatty's Innovation Forum which plays a central role in formulating the company's R&D policy.



'Balfour Beatty are now putting their efforts into creating networks and communities of practice as an effective way of knowledge sharing across the business.'

Jeni Giambona

Research Manager, ICRC

Benefits to the University

The Innovation Construction Research Centre (ICRC) at the University of Reading works with leading players in the UK construction sector in order to encourage the development of a knowledge-based industry responsive to change. The insights and experience gained through the research project has had direct impact on this ongoing process.

Moreover, Balfour Beatty has been engaged as an industry partner in the new Technologies for Sustainable Built Environments (TSBE) Industrial Doctorate Centre which is led by the School of Construction Management and Engineering for a prolonged relationship in research and innovation. This will give the University the opportunity to benefit from Balfour Beatty's expertise in the construction and engineering sectors.

University of Reading

The University of Reading is a world-class research-intensive university covering a broad spectrum of disciplines across the Life and Physical Sciences, Arts and Humanities, Social Sciences and Henley Business School. Areas of particular strength include: Climate Systems Science, Preventative and Therapeutic Health Sciences, Sustainable Construction and Environments and Computational Science and Informatics.

The University works with businesses providing support for research and development, as well as access to expertise and equipment to solve business challenges. To find out how you can access the leading minds at the University of Reading please contact our Knowledge Transfer Centre.