How I do Knowledge Transfer

Prof Peter Walker

Working in Africa, Australia and the UK, Peter Walker has more than two decades of experience working in collaborations between academia and commercial and public sector organisations. He has plenty of sound advice to offer about what makes such collaborations succeed.

In the UK, buildings – in their construction, maintenance and operation – account for about half of the nation’s carbon dioxide emissions. In a response, in 2007 the UK Government introduced the Code for Sustainable Homes (CSH). By 2016, all new homes are to be built to the highest CSH rating (level 6), delivering drastic reductions in carbon emissions compared to 2006 levels. Such reductions can only be achieved by combining various approaches for building construction and operation, such as better insulation, providing air-tightness, and using low energy-consumption devices and renewable energy sources. However, using conventional building materials and techniques the UK construction industry is struggling to meet carbon emission targets cost effectively.

The University of Bath’s BRE Centre in Innovative Construction Materials, with Peter at the head, has a well-established interest in low-carbon and renewable insulation and construction materials made from plant-based components. Hemp-lime products and straw bales, for example, are carbon-neutral or even carbon-negative because they are made from plants that have captured atmospheric carbon during growth. These, and more processed plant-based products, could be widely used in construction, but there is understandable resistance from the construction industry to do so. This stems from the industry’s partial knowledge of the potential and benefits of renewable materials; the lack of encouragement and guidance from a wide range of bodies that support and regulate the industry; and the industry’s risk-averse culture which lacks confidence in seeking innovative solutions. The KTA project seeks to tackle such concerns head on.

The KTA project has seconded a Knowledge Transfer Fellow from BRE to work at the University of Bath for 12 months. Andy Sutton is based in the University’s Innovation Centre, thus establishing a new BRE South West office. During the year Andy will:

- prepare a state-of-the-art report on the use and development of renewable construction materials in the UK
- launch the report at a one-day conference at the University of Bath
- support uptake of technologies by preparing BRE Guidance Notes on the design and use of renewable materials in modern construction
- establish collaborative partnerships with industrial/stakeholder operations in the South-West
- survey stakeholder perceptions’ on the use of renewable materials for construction, and
- host regional workshops and prepare CPD frameworks and materials.

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The impact of our research and development will be more houses being built using sustainable construction techniques that are more energy-efficient and that dramatically reduce carbon dioxide emissions, both in construction and operation.”
Through these activities the KTA seeks to engage with a very wide range of stakeholders, from farmers to regulatory bodies, raising confidence about the use of renewable materials and encouraging their uptake in the design of new properties in the Southwest. The project also aims to strengthen the University and BRE links with the Department of Energy and Climate Change (DECC) and the Department for Environment, Food and Rural Affairs (DEFRA), so helping to influence policy.

We asked Peter what advice he could offer about collaboration, in this KTA project and beyond.

What about your Centre’s relationship with BRE?

BRE grew out of the Civil Service, becoming a limited company in the 1990s owned by the BRE Trust. BRE is a leading centre of excellence. In its consultancy and research it seeks to offer an impartial view in serving the needs of the construction industry.

Our Centre is in many ways a typical HE research centre, with researchers, postdocs, PhD students and technicians. We have a special interest in measuring the performance of sustainable materials in construction. My post is sponsored by BRE, as are several PhD studentships, and our close relationship with that organisation helps us to be better connected to the needs of the construction industry. And it offers an obvious dissemination route for the results of our research, creating better opportunities for knowledge transfer.

What skills are key to being a successful collaborator with industry?

The ability to build and maintain relationships with a wide range of people is vital. You need to have an acute awareness of the views of others. Industry partners are likely to work to shorter time frames and have very different priorities. For example, in the BaleHaus project on campus – a building with walls largely constructed of straw bales – our emphasis is on measuring performance. For the industrial partners it is largely about commercialisation of their product.

You also need to be flexible. A lot can happen in the space of 12 months in the run up to a project. The political complexion of a government can change along with the economic climate, both of which can impact upon you and your industrial partners. You need to be able to build honest relationships and be prepared to negotiate and renegotiate if necessary.

When engaging with industry, in many cases you’ve got to accept some loss of control. But in doing so, the benefits far outweigh any disadvantages.

So, what are the advantages?

A key benefit from collaboration is the intellectual engagement with people who are having to find solutions to real-world problems. You become much more aware of the relevance of your work in meeting the needs of industry. This brings great benefits to both sides.

What about intellectual property?

Sometimes you need to sign a non-disclosure agreement before meeting a potential industrial partner for the first time. It’s important to get contracts signed, addressing IP issues, before a project starts. This can be a surprise to organisations that are not used to working with academics. Small- and medium-sized enterprises (SMEs) can sometimes be distrustful because they fear they have a lot to lose and they do not have the same level of legal expertise and experience to draw upon as larger organisations. Negotiating IP rights can be prolonged, but that should not put you off. There is plenty of legal support at the University to help you defend the University’s interest. Often the IP on new research findings will rest with the University; in some cases the University will have a license arrangement with an industrial partner, benefiting from a share of profits should a collaborative innovation prove successful commercially.

Last word

In your dealings with others you have to be very clear from the start and manage your own and others’ expectations. That’s largely about building relationships and ensuring that neither side are disappointed.