

BRE Trust Annual Conference

24 January 2019. Kings Place, London

Welcoming the wide range of leading industry figures attending the 2019 BRE Trust Conference, Trust Chairman James Wates said:

“It is vital that the Trust remains relevant to the needs of the industries we support. Our invited speakers will give their perspectives on some of the industry’s current challenges, opportunities and capability gaps, but this event is largely one of open discussion, so we also look forward to hearing from you.”

The single most important driver of investor behaviour

The conference opened with discussions on key issues for clients investing in built assets, and those occupying them.

“Most real-estate-sector driving forces are now market led,” said Alan Somerville, Head of BRE’s Building Performance Group, “it’s the market pulling, rather than government or policy and lawmakers pushing.

“For investors, the *single* most important driver is ESG (Environmental, Social and Governance matters), partly as a response to global issues – such as climate change – but principally because they want the non-financial performance of their investments to be measured, demonstrated and backed up with clear evidence.

“A key way of doing this is by benchmarking performance using GRESB, the ESG benchmark for real assets. Started just a decade ago, every investor of any consequence across the globe will now be signed up and reporting in to GRESB. This reflects investors’ concerns about possible obsolescence, and the strong evidence that more sustainable buildings offer better value, capital and revenue prospects – with less risks and a more stable income.



More than just location, location, location

“The expectations of occupiers have also changed,” said Somerville. “In fact, they see themselves not so much as building occupiers but more as purchasers of a service, and are far more specific about the buildings they will – and will not – use.

“There is much more to their requirements than *location, location, location* these days. If someone, for example, had been talking about health and wellbeing in a commercial meeting five years ago, people might have sniggered. Today issues such as this are on a par with commercial factors. In addition, occupiers are now very protective of their brand reputation. Building owners and developers must therefore be equally conscious of their brands, and those of their buildings, if they are to attract clients.

Using data to drive change

“Many asset owners and developers are now wrestling with the issues of how to deliver projects better, faster and more profitably,” said Somerville. “BRE is a delivery partner of the Construction Innovation Hub, which is part of the Government’s Industrial Strategy Challenge seeking to drive this sort change in construction markets.

“New technologies and the growing availability of data will have big roles to play. Over the last five years real estate owners have been collecting large quantities of data and are now looking at the nitty gritty of how they can use this and technology to improve performance.”

The collection and use of data was an issue highlighted by conference delegates, who felt that while there has been great progress in developing industry standards, the monitoring and recording of actual performance is not as well regulated or high profile – and perhaps in many cases not captured. The question is, how do we ensure that performance data is properly gathered and used in a way that the whole industry can learn from this intelligence?

Making data available

Data is critical to the work of Stuart Chalmers, Head of the BRE Digital team and lead in BRE's Digital Strategy, which puts data and analytics at the heart of built environment decision making. The data work of the team has grown from a Trust funded project to explore ways of opening BRE datasets to the industry, into an integrated part of BRE's Digital offering – sharing data through APIs (Application Programme Interfaces) and collecting information through BRE products in a re-usable format.



“We have been promoting and developing the use of APIs,” said Chalmers (pictured above), “in our Digital Products to share live and relevant data with members of the public, other organisations (such as GRESB) and 3rd party software. Opening access to our data in this way can deliver value to the industry and provide real opportunities for collaboration and innovation. At this event, for example, I’ve met delegates who have already gained access to BREEAM data as a result of this initiative, and others who are thinking of how they can use this data in their own products and tools.”

It's not my problem it's yours!

The issue of collaboration was addressed by Suzannah Nichol, CEO of Build UK which brings together the construction supply chain in collective problem solving. “We can't continue to run an industry with the traditional attitude of ‘it's not my problem it's yours,’” she says, “particularly after this last very difficult year that has led us to question

the financial viability of our sector. If we are going to continue delivering the most amazing construction projects we have to transform our industry.

“The sector *is* already changing,” say Nichol, “there are some great things going on, but only in pockets. Construction is not generally good at sharing data and we keep any great ideas so tied to ourselves that they don't become mainstream.”

Pockets of Passion

Delegates described this phenomenon as ‘pockets of passion’, – examples of good practice scattered throughout country and industry sectors. They argued that the wholesale embracing of these practices was often hindered by a lack of confidence in the industry to take on new techniques. The effective communication of such innovative good practices to the whole industry is critical to them becoming mainstream.

Cutting through the noise

“Our industry is fantastic at issuing reports – but who is reading them?” asks Nichol. “Our whole world has changed in the way it communicates and construction has to follow suit. People now source their information and read on screen – this has to be delivered in a short, sharp and engaging way to stand a chance of having any impact.

“At the moment there is just too much ‘noise’ in the industry – a confusing mass of representational and research groups and organisations producing disparate information. Companies with problems to solve don't know where to turn in all this noise, and end up adding to it by trying to answer their questions themselves.

Industry's best kept secret?

“BRE has a great opportunity to cut through the noise,” said Nichol, “particularly with the development of the Construction Innovation Hub – and position itself as one of the key organisations to turn to for those needing to plug their knowledge gaps in anything related to construction knowledge, innovation, research and testing.

“But BRE is currently one of the industry's best kept secrets, a key partner and resource to those who know it, but little known to much of the wider sector. To fully capitalise on all the great things that BRE does, these must be concisely communicated with clarity to an audience that will not respond to lengthy reports and guidance notes. BRE must

become part of the mainstream – one of the first ports of call for all with construction questions.”



BRE should be one of the industry's first ports of call for knowledge, innovation and research information.

Charlene Clear, BRE's Manager for New Homes, Communities and BREEAM, said "I think it is fair to say that although BRE has always looked to engage with the wider industry, it is only in the last couple of years that we have given our full attention to the sort of intelligent thinking that will help us to do this properly and develop it to the maximum.

"For example, I spend lot of time talking to our stakeholders, understanding their needs and challenges, and helping them to understand us, our products and services, and how they can get the most from working with us. But our stakeholder groups also offer an important opportunity to carry these messages to a much wider audience through their contacts in the industry. There are, for instance, 10,000 qualified BREEAM assessors that are already promoting the benefits of BREEAM all round the world."

On the cusp of a change

Director of the BRE Academy, Pauline Treatto, believes that in one aspect in particular, BRE is on the cusp of a major break-through in the way it communicates its capabilities to the industry and wider built environment sectors.

"The Academy has been delivering training for many years and three years ago invested in a digital training platform. In the first six months this achieved significant growth, providing training for 9000 students in 42 countries. However this growth trailed off in the face of a barrier in the industry in the form of a lack of knowledge and understanding of digital channels and their capabilities.

"Many companies think they don't have the infrastructure to deliver digital training, but digital delivery is hugely flexible and can use many different media. Once this barrier has been overcome, the opportunities are vast – Forbes predicts that by 2025 digital education will be mainstream and globally worth \$300 billion a year.

"With its high quality courses (many based on BRE research and knowledge), digital platform, learning management system and wide range of partners, the Academy has the critical mass and outreach to take full advantage of this market – and to widely disseminate BRE capabilities in accessible formats."

Showing what can be done

Tim Embley described to the conference how Costain has made fundamental changes to enhance its business and secure its future – a few of his comments are briefly outlined here.

Ten years ago Embley joined Costain as its Innovation and Knowledge Manager. "I joined a contracting organisation," he said, "led by a chief executive with a very clear ambition of what he wanted to do in terms of turning the organisation into a services provider. That clarity has allowed us to do different things with our business, including developing research programmes that have helped us to serve our clients better and improve people's lives.

"My work in developing innovation in the Group has been made easier by Costain's clear strategy to serve clients in three markets – transportation, energy and water – and by the inspiration provided by leaders in our own and other industry sectors. My first role was to understand the value of research in our business – on a visit to Rolls Royce I saw engineers working next to scientists and resolved to drive this approach in our industry.

"This led to a business model with research at its heart, looking 50 years ahead to ensure we understand how to sustain our business. Critical to shaping our future is a programme of PhD research studentships and our partnerships with 30 universities across the UK. Our research group is divided into three parts:

Transport – allowing Costain to understand how new transport systems are going to work,

Green energy – working with our clients to address the critical issues around decarbonisation,

Intelligent infrastructure – helping clients to understand how their infrastructure is performing.

“Another issue we have recognised is the need for greater automation in our business. We are making growing use of robots in many different forms, and they are starting to deliver increased productivity. Currently, for example, we’ve got robots on contracts completing basic tasks – allowing the team to be focused on high value activities.

“A further initiative to foster innovation is that of ‘unlocking the ecosystem’. The UK is awash with start-up technology companies and many others with great ideas. Costain has initiatives to find and foster these capabilities, and is also working closely with client groups that are taking a lead in unlocking innovation.

“For instance, Costain has just completed a significant project called London Bridge Train Station to improve journeys to and through London. On the station concourse we are engaging end users to generate innovative ideas for future stations, and how we can improve customer experience. The Innovation Hub allows clients to present major challenges, and the rail industry to collaborate and develop new ideas which will go into new stations in the future. The technology road mapping will assist the transformation and acceleration of innovation into engineering systems.”

The delegates have their say

Our conference delegates represented a wide range of built environment sectors, including contractor, client/owner, manufacturer/product supplier, consultant, researcher and educator. Throughout the day they provided their thoughts – via a conference app – on issues such as the key knowledge, skills, resources and challenges facing the industry. A small selection of their comments is summarised here.

Data sharing in a more open industry

Delegates echoed the views of conference participants on the need for a more open and sharing culture in the industry. Suggestions included the redefining of contracting models to advocate collaborative, open, transparent and long-term relationships where joint learning and continuous improvement are at the core.



The need for post-construction evaluation tools to detect issues with built assets was also raised – along with the open availability of resulting data to allow the performance of different buildings to be compared. It would also help to have a central point for collating information on the issues needing consideration, such as what clients are looking for, what is working (e.g. good design decisions) and what isn’t. Complementing this should be a more effective system for getting validated, collective information out to the industry so we can learn more quickly and deal with systemic issues.

Other suggestions included a set of anonymised live building performance dashboards. The view was also expressed that BRE could play a greater role in making anonymised buildings and infrastructure data available.

Skills and training

We must have the skills needed to embrace digital and modern methods of construction (MMC) techniques, particularly in view of the potential loss of EU construction professionals following BREXIT, and the competition we face from other sectors in attracting digital talent.

But delegates also cautioned about the risk, in the drive to digital and MMC, of de-skilling the sector. While there is no doubt that these tools/skills could help address quality and productivity challenges, there is a growing reliance on digital methods and tools telling us what to do – which younger generations tend to take for granted – rather than us having the skills and knowledge to ask the right questions at the right time.

Competence in construction skills and an understanding of construction processes and teamwork is needed, but the UK lacks professional training programmes in construction for all basic trades. Strong vocational education and recognised qualifications through apprenticeships would help.

Challenges and resource needs

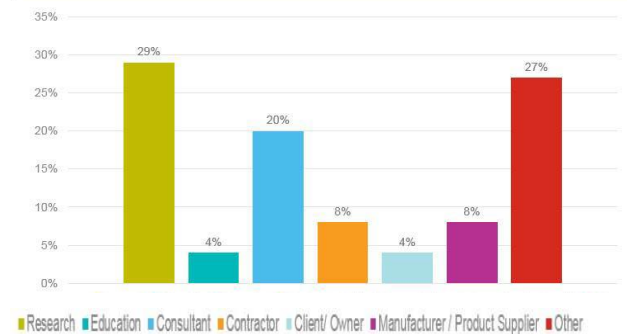
The information gap – a key challenge lies in delivering complicated information from the design team, which increasingly uses digital tools, to construction sites with largely unreformed delivery approaches – “While designers use BIM, builders will barely use hard copy 2D drawings,” said one delegate. We must get the right information in the right usable format to site – “If BIM is the way forward, everybody should be using it!” Example schemes that have successfully integrated digital and cutting-edge technology throughout should be recognised and highlighted.

Keeping faith with MMC – we need to make a manufactured/modular building approach work (and keep industry faith) in a volatile economic and political environment.

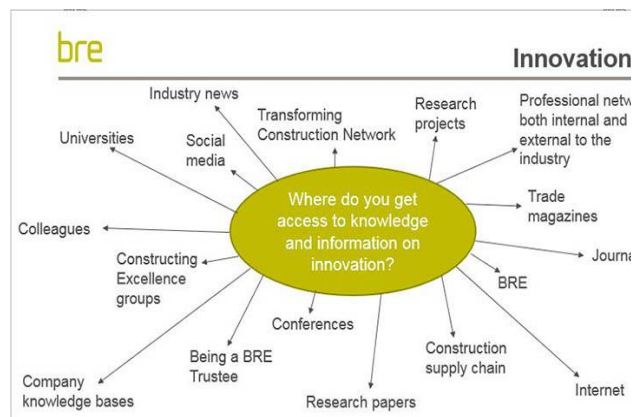
Other issues raised included the need for:

- better cost-benefit analysis tools for all aspects of building or infrastructure projects,
- making greater use and reaping the benefits of automation and robotics,
- centralised innovation funding – innovation funding for a sector the size of construction is very low and a barrier to progress. A centralised funding pot and simple bid and fund process, which de-risks uptake of innovations by tier ones, would be a valuable resource.

bre Delegate profile - supply chain position



The conference delegates represented a wide range of construction industry sectors.



Delegates were asked where they currently go for information on innovation.



Suggestions for future learning content or innovation awareness topics?

- BRE should have an objective, informed view on the effect of procurement strategies on the performance of the construction sector
- Modular asset design at consultant stage for factory built assets, not off site, that is a house in a field with a roof over it.
- Blue green infrastructure with perhaps landscape institute involvement including NHBC and insurers regarding innovation understanding risk and resilience.
- Cloud based infrastructure data management performance outcomes against design security of data and access of data for occupants
- Infrastructure asset management
- Comfort, thermal, noise, visual.
- UN Sustainable Development goals as an overarching approach to what BRE delivers - encompasses all that has been discussed today
- Intergenerational housing design
- Balancing building lifecycles vs the environmental impact when the building is initially constructed
- BRE could inform procurement routes which share these requirements with suppliers and asset owners alike.
- Broken links between challenge owners and innovators.

The day's final question asked delegates to consider future learning needs.

The BRE Trust perspective

The BRE Trust's Executive Director, Deborah Pullen, introduced the final presentation of the day with a brief film marking nearly 100 years of BRE achievements and more than 20 years of the BRE Trust.

Looking to the future she said, "The BRE Trust will build on its successes over the last 20 years by partnering with other organisations who can help us to deliver positive and demonstrable social impacts, using the outputs from our research and education programmes.

"A primary focus for us will be on demonstrating and validating potential solutions to many of the challenges highlighted today, and on collecting and sharing the resulting data – an issue frequently raised during the conference – to support the increased uptake of innovation and technology. Our now extensive and growing international outreach and connections will maximise the value of this data and knowledge across a wide climatic and economic spectrum.

"As part of the drive for greater openness and collaboration in our industry, the BRE Trust needs to be clear on the specific support it can provide to the sectors which manufacture and operate physical assets in the built environment. To maximise the impact of the Trust's resources we will focus its programmes on the three key themes outlined below."

Health, safety and wellbeing of building users, including issues such as:

- the quality of lighting, acoustics and heating provision and their impacts on health and wellbeing in the home and workplace, including the health, safety, societal and financial costs of poor housing,
- building design that prioritises vulnerable people, such as the elderly and those living with dementia, and extends their ability to live independently,
- design that enhances the workplace, such as the people-focused biophilic approach,
- innovations and technologies that improve construction site safety, enhance security and fire safety measures, and ensure the ethical sourcing of products and the wellbeing of all those in supply chains.

Affordability of sustainable construction materials and of efficiently performing built assets:

Materials – accessible and renewable materials that meet building performance requirements and extend asset life and value. The Trust is providing guidance on materials selection and use, and on innovative construction methods that meet both climatic and economic needs.

Assets – monitoring and control systems that ensure buildings perform for the people and businesses occupying them, and reduce running costs. Validating working buildings in real time and analysing data to improve our understanding of current performance is a key priority.

Resilience to changing conditions and needs, involving issues such as:

Extreme weather – the mitigation of flooding impacts in the UK and abroad through demonstrating novel barrier and water extraction products, and optimised designs to reduce damage and speed up the recovery of livelihoods.

Adaptable structures/communities – the use of novel joining and assembly systems and installation methods to support effective change of use and rapid construction – demonstrating innovative approaches and validating their performance.

A vital catalyst

In his concluding remarks James Wates welcomed this focus on the key areas. "It's easy to fall into the trap of trying to address too many issues and not really achieving much," he said, "and far better to focus clearly on what you are doing and do it really well. This is a key driver of the BRE Trust, which has made an enormous contribution to the construction sector through its investments over the last 20 years. The Trust will continue to be a vital catalyst for creative thinking and innovation, and for long-term improvements in our industry."