



Mobilising ARCC research to support related programmes: TSB's Design for Future Climate competition

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THE ARCC COORDINATION NETWORK

The performance of UK buildings and infrastructure is critical to our national well-being and the EPSRC is investing heavily in research to inform decisions in these sectors. This includes projects within the Adaptation and Resilience to a Changing Climate (ARCC) programme and the overarching Coordination Network (CN). By engaging researchers and a wide range of stakeholders, the ARCC CN maximises the use of academic outputs to promote the development of a more sustainable built environment. Working with related networks and programmes, including those with a remit to support business activities, to share expertise and research outputs is a key aspect to achieving this.

TSB'S DESIGN FOR FUTURE CLIMATE PROGRAMME

The Technology Strategy Board is the UK's innovation agency. Its goal is to accelerate economic growth by stimulating and supporting business-led innovation. Sponsored by the Department for Business, Innovation and Skills (BIS), the TSB brings together business, research and the public sector, supporting and accelerating the development of products and services to meet market needs, tackle major societal challenges and help build the future economy. Its innovation networks have over 60,000 members.

Adaptation to climate change is not a mainstream requirement for clients of new or retrofitted buildings or part of the normal services provided by designers, engineers and architects. To overcome this market failure in achieving buildings capable of performing well under conditions of climate change, the TSB has invested £5m in helping clients and design teams develop adaptation strategies for new and existing buildings. Design for Future Climate (D4FC), Adapting buildings is the largest programme on climate change adaptation of buildings in the UK. 50 projects (including offices, schools, retail units and hospitals) have been funded in two tranches (2010 and 2011) with TSB resources used to carry out additional design work on current projects to improve sustainability over the commercial lifetime of the building. A wealth of project-based knowledge on understanding effective ways to adapt buildings, when best to implement adaptation measures and how to respond to forthcoming changes in standards and regulations, is being generated to support the broader construction industry and its clients in the future.

[COPSE: Co-incident probabilistic climate change weather data for a sustainable environment](#)

[PROMETHEUS: The use of probabilistic climate data to future proof design decisions in the buildings sector](#)

MOBILISING THE RESEARCH BASE

Several ARCC CN projects focused on developing new methods of using probabilistic UKCP09 climate projections to inform the design of well-adapted and resilient buildings and services. In particular, the COPSE and PROMETHEUS projects developed and applied new methodologies to derive future weather data through to the 2080s in a format suitable for direct use by the building industry.

Given the clear synergies between outputs from across the ARCC CN research base and information needed to inform the TSB D4FC programme, strong links were established early on to the make best use of available expertise and emerging research findings. Experts from the ARCC CN team were involved in the D4FC programme from its inception through membership of its steering group whilst the TSB was invited to present at major ARCC CN events to highlight potential collaborative opportunities. Acting as a focus for ARCC research and building on expert technical knowledge within the team, the CN sat on assessment panels for the D4FC competition, helped rank the applications in order of quality and facilitated sessions at TSB workshops with competition winners to explain relevant academic outputs and to establish direct links with key researchers.

Outputs from both PROMETHEUS and COPSE have been used extensively by architects and consultants working on the D4FC projects. The PROMETHEUS team has, for instance, produced weather files that have been used by 40 of the projects funded under the D4FC and has created future weather predictions for local sites specifically for 8 of them.

FURTHER INFORMATION:

TSB (2011) [Design for future climate: adapting buildings](#)

[D4FC project summaries](#)

W. Gething, & K. Puckett. (2013) [Design for Climate Change](#), RIBA Publications.

CONTACT DETAILS:

COPSE: [Professor Geoff Levermore](#)

PROMETHEUS: [Professor David Coley](#)

D4FC: [Mark Wray](#), Lead Technologist, Low Impact Buildings Platform

ARCC CN: [Roger Street](#)

THE VALUE OF A NETWORK FOCUS TO MOBILISE RESEARCH

Working together, the ARCC CN and TSB have enabled the translation of UKCP09 projections into data and tools which have been used by the building industry to deliver well-adapted commercial projects.

The TSB has benefitted from being able to engage with a single focused source of information on relevant research activities to support their work to extend the commercial viability of UK buildings.

Architects, consultants and other organisations involved in the D4FC projects have benefited from direct access to key researchers and datasets necessary to effectively realise their contractual obligations and which will inform and benefit their business activities and opportunities in the future.

The academic community has benefitted from increased visibility and impact arising from its research and the opportunity to establish working links with stakeholder partners to both share knowledge and provide feedback on project outputs. By building on synergies with a related programme such as the TSB D4FC, the ARCC CN has been able to enhance the overall value and impact of the EPSRC-funded research with clear benefits for the built environment across the UK.

FOR THE FUTURE

Mobilising research by providing a focal point for evidence and knowledge exchange activities has ensured the broader use of ARCC research than would otherwise have been possible. The ARCC CN is seeking opportunities for joint working activities and will continue to share experiences and expertise to enhance the uptake and use of research.

