

Climate Emergency Collaboration Challenge

“Building capacity for zero and low carbon innovation in construction and the built environment”

Despite significant investments made to-date in energy efficiency measures, renewables and low carbon technologies, more needs to be done to close the ‘performance gap’ between ambition and reality in public sector construction and the building management.

The University of Edinburgh in collaboration with a number of industry partners* successfully secured funding from the [Scottish Funding Council](#) to address this by targeting systemic challenges in the design and delivery of building projects pre-construction, and in building management post-occupation.

The project was [officially launched](#) on 5 March 2020 by Mr Ivan McKee, Scotland’s Minister for Trade, Investment and Innovation.

The project’s ambition is to help create a step-change in emissions reductions from public sector construction and built environment up to 2045 by improving how building projects are designed, managed and implemented through early-stage decisions and better on-going management of building performance.

The overarching aims as follows:

- **Establish Effective Partnerships** - establish a genuine and sustained partnership between industry, academia and policy to collaboratively deliver accelerated emission reductions from 2020 to 2045;
- **Identify High Value Continuous Improvement Opportunities** - identify barriers to change and co-develop future-focussed, risk-based solutions to drive down emissions across construction lifecycle;
- **Create a living laboratory for Innovate Digital Tools** – test emerging digital technologies with leading industry partners and demonstrate the value to all stakeholders of advanced data analysis, modelling and simulation.
- **Capacity Building for Effective Procurement**- increase HE/FE capacity to meet design energy performance targets and maintain low-emissions throughout operational build lifetime by producing sector focused guidelines and specifications to enhance construction procurement;
- **Dissemination of Knowledge** - deliver a programme of wider stakeholder communications and engagement to maximise opportunities for wider uptake of solutions developed during the project.

Progress to date

Two well-attended workshops explored the opportunities and the challenges to embed zero and low carbon outcomes into key phases of a construction project both from the client perspective and from that of the contractor. Topics discussed included the importance of the business case, early and long-term engagement, budget and whole life costing, skills and knowledge and the role of value engineering. Forthcoming workshops this autumn will bring the client and contractor together with industry and academic expertise, to build on this intelligence and to ‘co-design’ the changes needed to the current process and how they can be implemented.

The 'living lab' element of the project is looking to demonstrate the business benefits of investing in advanced energy modelling and the adoption of enhanced levels of analytics at all stages of the building lifecycle. This aims to inform the transition to zero carbon and to provide benchmarks and processes that can be shared and adopted by higher and further education sector peers as well as other public sector organisations. With Covid 19 significantly affecting access to university buildings, this programme of work has been subject to delay. However, with lockdown easing, this work is now re-invigorated. Findings from the 'living lab' will inform and support solutions proposed by the 'co-design' workshops.

Tier 1 contractors plus organisations such as [Architecture and Design Scotland](#) are playing a key role to ensure that pragmatic solutions are proposed as a way forward.

Communication of Findings

A series of dissemination workshops will be delivered to present key project findings and to promote achievements to a wide range of audiences. This will maximise opportunities for the wider takeup of solutions developed during the project.

SSN will keep you updated on this project but if you would like further information please contact jenny.fausset@ed.ac.uk

***Industry Partners**

Scottish Futures Trust

Zero Waste Scotland

EAUC (Alliance for Sustainability Leadership in Education)

AUDE (Association of University Directors of Estates)

APUC (Advanced Procurement for Universities and Colleges)

IES (Integrated Environmental Solutions)

Schneider Electric

CSIC (Construction Scotland Innovation Centre)

Robertson Construction