

# Energy Resilience in the Built Environment Centre for Doctoral Training (ERBE CDT)

## Call for Project Proposals for 2021 Cohort

The [‘Energy Resilience in the Built Environment’ \(ERBE\) CDT](#) represents an exciting partnership between [MaREI \(Ireland\)](#), [University College London \(UK\)](#), and the [University of Loughborough \(UK\)](#) that is funded through the SFI-EPSRC ‘Centres for Doctoral Training’ (CDT) Programme. The CDT will provide students with a deep understanding of buildings, low and zero carbon technologies and the socio-technical context.

We are currently seeking proposals for PhD Projects for the **2021 cohort** of ERBE students.

### What should the Proposal Include

The proposal must clearly demonstrate **alignment to one or more of the ERBE Themes**; Flexibility & Resilience, Technology & System Performance and Comfort, Health & Well-being. Furthermore, the strengths that MaREI brings to the CDT in addition to research strength in buildings, are world-class expertise in renewable and industrial energy and an energy systems perspective. Further information on ERBE and the Project Areas can be found here: <https://erbecdt.ac.uk/>

The ERBE CDT is a partnership between MaREI & UCL and Loughborough University in the UK and there is a co-supervision requirement for all projects. However, this co-supervision does not have to be confirmed for the proposal to be submitted.

### How to Apply

Please use the attached template to submit your project proposal to Aoife Dunne, ERBE CDT Programme Manager to [aoife.dunne@ucc.ie](mailto:aoife.dunne@ucc.ie) by **Friday 8<sup>th</sup> January 2021**. The Call for Students will open on 18<sup>th</sup> January 2021 with the aim of having all 2021 ERBE students in place for September 2021.

Please note that all ERBE CDT Supervisors must meet the **Funded Investigator (FI) criteria** as outlined by SFI prior to allocation of budgets. If you are not already an SFI approved FI then this process must be completed before budgets are released to your institution.

### Next Steps

Following the 8<sup>th</sup> January 2021 deadline, all submitted project proposals will be included in the Call for prospective students. In their application for this PhD position, prospective students will be asked to rank their order of preference of the submitted proposals along with submitting a research motivation statement outlining their suitability to this PhD programme **and** their preferred proposal. A successful project will be a combination of a robust project proposal with a strong suitable candidate.

The number of projects awarded will be at the discretion of the ERBE Management Team. It is our intention to award a maximum of 4 positions for the 2021 academic year.

## ERBE CDT Programme

The ERBE CDT PhD Programme will provide the knowledge, research and transferable skills to enable outstanding graduates from physics to social sciences to pursue research in one of three themes:

1. **Flexibility and resilience:** the interaction between buildings, both domestic and non-domestic, and the whole energy system, through new generation, storage, and energy efficiency technology, enabled by smart control systems and new business models.
2. **Technology and system performance:** demand reduction and decarbonisation of the built environment and its utilisation through design, construction methods, technological innovation, cyber-physical monitoring and control systems and regulation.
3. **Comfort, health and well-being:** building, energy, and ICT systems that create productive and efficient work and operational environments and affordable, clean, safe homes.

It is a hugely valuable and coveted PhD position with significant investment for training & collaborative opportunities across the partner institutions.

## List of all [Current ERBE Projects](#)

- Retrofitting of Existing Buildings to Reduce Energy Consumption While Also Improving Comfort, Health and Wellbeing
- Optimising Demand Side Response in Smart Grid Applications
- Adaptive Building Fabric as a Cyberphysical System for Energy Efficient Buildings
- Extending the Cooling and Aeration Potential of Single-Sided Ventilation Strategies using a Novel Airflow Guiding Profile for Slotted Architectural Louvres
- Making Building Stock Energy Analysis Robust
- A monitoring tool for techno-economic analysis of current and next-generation sustainable cooling technologies within Irish data centres
- A multiple-objectives framework to design and manufacture modular systems for residential building retrofits
- Integration of multiple Pinch Analysis (PA) techniques (Total site, Power, area wide and CO2 emission reduction PA etc) to enable a community level circular economy
- Methodologies to use energy-efficient retrofits to achieve adaptive homes that provide healthy and comfortable indoor environments with effective delivery
- Societal engagement methods focussing on improving the resilience of low income households
- Developing effective policy responses to address energy poverty and increase energy justice.

## ERBE CDT Management Team

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|---------------------------------|-------------------|
| ➤ Prof Brian Ó'Gallachoir (UCC) | Director          |
| ➤ Dr. Dominic O'Sullivan (UCC)  | Vice-Director     |
| ➤ Dr. Jamie Goggins (NUIG)      | Academic Manager  |
| ➤ Aoife Dunne (UCC)             | Programme Manager |