

# Climate resilience and indoor environmental quality

## in buildings occupied by vulnerable populations

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#### BIOGRAPHY

Dr Anna Mavrogianni is an Associate Professor in Sustainable Building and Urban Design at the Institute for Environmental Design and Engineering (IEDE) at the Bartlett Faculty of the Built Environment, University College London (UCL). Anna trained as an architect engineer specialising in building physics and environmental design at the School of Architecture at the National Technical University of Athens and the Bartlett School of Graduate Studies, UCL and has several years of experience in architectural design and environmental consultancy. She is an expert in indoor environmental quality, building energy retrofit and climate change adaptation of the built environment sector, with a focus on overheating and heatwave vulnerability at the building and urban scale. She leads interdisciplinary research in building performance analysis used by policymakers to evaluate impacts of energy efficiency, urban growth and climate change on energy use, carbon emissions, health and wellbeing. She has produced over 100 peer-reviewed publications to date and has contributed to policy reports, including the UK Government's 2017 Climate Change Risk Assessment. She is a Co-Secretary of the International Building Performance Simulation Association-England (IBPSA-England) and an Associate Editor in the Energy and Buildings journal.

#### ABSTRACT

The indoor environment is a key modifier of environmental thermal and air quality exposures, and potentially, magnifier of existing health inequalities and inequities. Ongoing and future anthropogenic climate change will exacerbate climate risks, such as building overheating exposure. Low income communities, individuals that suffer from chronic diseases or social isolation and other vulnerable populations will be disproportionately affected by climate change and air pollution due to limited resources to adapt, cope and recover.

This talk considers monitoring, modelling and survey methods that can be employed to enhance our understanding of indoor overheating risk and poor indoor air quality in buildings occupied by vulnerable individuals, such as homes, care homes and schools. It will also explore methods that allow us to quantify the adaptive capacity and barriers of vulnerable populations to lessen the indoor related health and wellbeing impacts of climate change and air pollution, and the effectiveness of low-carbon mitigation strategies. The talk will draw on findings from past and ongoing research projects, including examples of co-creation through stakeholder engagement, and of research informing policy and practice.