



Building a better future: An exploration of beliefs about climate change and perceived need for adaptation within the building industry

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ABSTRACT

The present research explored beliefs about climate change among an important yet relatively understudied population: representatives of the building industry. We also assessed the perceived adequacy of current climate-related actions within the industry and the perceived need for developing new practices. The results of a survey administered within a large engineering firm suggest a fairly high level of concern about climate issues within this sector: participants perceived climate change to be an important issue, current practices to be inadequate, and a need to develop new ways of addressing climate change. Despite this, there was notable and consequential variability in how participants thought about climate change. Higher levels of seniority were associated with greater satisfaction with current practices, and the belief that climate change was a natural rather than man-made phenomena was associated with a reduced support for the idea that changes to current practices were necessary. In addition, when thinking about climate relevant actions (whether current practices or the alternatives) participants focussed almost exclusively on mitigation rather than adaptation. The implications of these patterns for innovation around climate change within the building industry are discussed.

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1. Introduction

The aim of the present research was to explore how understandings of climate change relate to the perceived need for responsive action. Although a number of studies have investigated this issue among the general public, the novel aspect of the present research was to focus on an important, yet relatively understudied population: representatives of the building industry. For a number of reasons, climate change is a significant issue for the building industry [1]. First, climate change has real consequences for the longevity and utility of buildings, including private homes, workplaces, and public buildings like schools. Indeed, these consequences are already being seen in dramatic climatic events like flash floods, and other events like periods of overheating during summer, which can have serious implications for human health [2]. Second, many buildings in the UK and elsewhere were designed before issues of climate change became a commonplace concern. The energy inefficiency of these buildings contributes significantly to the carbon emissions that cause climate change.

Finally, although new buildings are now being designed with climate in mind, the extent to which this is considered it is usually with respect to making buildings more energy efficient and thus mitigating against climate change. The full range of possible climate changes receives less attention, making adaptive measures hard to implement. Specifically, modelling of the ability of building designs to withstand local climates in the places they will be built is currently based on test reference years (TRY) and design summer years (DSY). These test reference years are based on historical observations of weather and do not take into account the variety of future scenarios that are possible under climate change predictions. As a result, new buildings are essentially being designed to withstand climatic conditions that are already out of date and that are expected to change further into the future [3,4]. More generally, much has been written about how the buildings sector needs to mitigate against climate change, and whole academic journals are dedicated to energy efficiency in buildings, or renewables in general. However, the likely impact of climate change on buildings, and the need to design buildings that will be resilient to future climate, is less discussed within the industry despite it being an obvious and immediate challenge.

Against this backdrop, it would seem important to explore motivations within the building industry to engage with climate change and to re-evaluate current practices in light of future

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