CITIES IN A CHANGING WORLD: QUESTIONS OF CULTURE, CLIMATE AND DESIGN

Paper / Proposal Title:
Searching for “Goldilocks” (Just Right!): Interdisciplinary approaches to defining the regional climate character of cities.

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Abstract (300 words):
Toowoomba is Australia’s “17th largest city and second largest inland city.” It is currently home to approximately 134000 people and experiencing rapid population growth. Adjacent to its emerging urban centre, the region is defined by a strong agricultural history and is affected by the brunt of climate change and disasters including bushfires and flooding. The Local Government, Toowoomba Regional Council, has recently joined climate resilient councils in Queensland and have situated a study of the region’s unique climate as central to their current planning review scheme.

Climate, as defined by planning instruments and building legislation, is only concerned with energy efficiency and not the broader impact of climate to our cities and regions. This study reinforces that climate is more than temperature and relative humidity; it informs lifestyle, culture and a sense of place as well as vernacular styles of architecture (pre-air-conditioning) and therefore heritage and city character. In the study of Toowoomba’s warm temperate climate as part of the recent planning scheme review, presented in this paper, legislated definitions of climate are consistently problematic.
For architectural design to be responsive to climate character as a variable condition across a region, interdisciplinary investigations that draw upon accurate, fine-grained climate data must be more widely adopted. This is particularly relevant where planning schemes and building legislation fail to adequately define a region’s climate.

The quality and coverage of the weather and climate data that is currently incorporated into building codes results in zoning maps that are able to inform general approaches to energy efficient design. Global Resiliency Dialogue, an international initiative founded in July 2019 to identify strategies for the identification of future risk and integration of accurate climate science within building codes. This is a particular challenge for countries with diverse geographical landscape and climate variability.

In this study, we outline an interdisciplinary methodology developed for the Warm Temperate Climate Study and Design Guideline project commissioned by the Toowoomba Regional Council. The project team included architects, a climate scientist and urbanist. This paper examines an interdisciplinary approach to building design to reveal the value of such collaborations in light of climate change. Combining climate science with building science and design confirmed local anecdotal knowledge about the region. The study demonstrates how Toowoomba is positioned as a resilient regional centre according to climate projections.

• Author(s) Biography (200 words each):

Dr. Liz Brogden is a lecturer at the Queensland University of Technology with a background in architecture. Her research investigates transdisciplinary approaches to design and the integration of sustainable development, climate change adaptation and disaster resilience within design education and practice. The impact of this research lies beyond higher education, seeking to support transitional societal change with regard to both physical built environments as well as community-embedded knowledge and behaviours. Liz is active on Climate Action and Sustainability committees for the Australian Institute of Architects at both state and national levels.

Kirsty Volz is a lecturer in architecture and interior architecture at the Queensland University of Technology. She trained in both interior design and architecture. In 2014, she co-found design and architecture practice Toussaint and Volz with her partner David Toussaint. Prior to this, she spent 15 years working for some of Australia’s leading architecture and engineering firms on significant cultural, civic and major infrastructure projects. She is a PhD candidate at the University of Queensland and her research has been published in several books and international journals on critical histories and theories of architecture.