

An Urban Climate Design Framework for More Thermally-Comfortable and Equitable Communities

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1 ABSTRACT

Over the past 150 years, societies have been excellent at designing cities that produce extreme and dangerous thermal conditions. Extreme heat and cold kill more U.S. residents than all other weather related phenomena combined. Yet, these hazards do more than kill. They disrupt residents' routines, steal income through high energy costs, degrade quality of life, and create challenges for urban sustainability and resilience. The design professions must move toward a more comprehensive way to design better urban climates to support more sustainable and resilient communities. This study reviews the history of urban climate as a theme of landscape architecture research journals using a systematic review method. The review measures the existing landscape architecture against 1) social, 2) ecological, and 3) technological dimensions of city design. Based on the outcomes of the review, this paper then discusses the concept of Urban Climate Design (UCD). UCD is a comprehensive planning and design approach to intentionally reshape our urban atmosphere for more thermally-comfortable and equitable communities. From the search, I discuss a series of UCD recommendations addressing each of these three dimensions to move landscape architecture toward design processes for creating more thermally-comfortable and equitable communities.

1.1 Keywords

Urban climate, extreme temperatures, sustainability, adaptation, resilience