

From Principles to Practice: Operational Tools for Climate Justice in Urban Planning and Design

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Abstract Recent scholarship increasingly positions urban climate justice as a guiding framework for spatial interventions, emphasizing its application to diverse urban contexts. This perspective advances understanding of procedural, distributive, recognitional, and restorative justice and explores their translation into practices of urban planning, design, and architecture. Within this discourse, the Planning, Urban Design, and Architecture for Climate Action chapter of the Third Assessment Report on Climate Change and Cities (ARC3.3), coordinated by the Urban Climate Change Research Network (UCCRN), examines strategies for embedding environmental and climate justice in urban development. It introduces evolving definitions and practices while outlining pathways for implementing climate-resilient design that integrates principles of recognition, rights, responsibilities, equity, and fairness in decision-making.

Building on ARC3.3 findings, this study draws on experiential evidence from Urban Climate Design Workshops (UDCWs)—a participatory methodology initiated by UCCRN to foster climate action through knowledge exchange, co-production, and collaborative planning. Central to this approach is the UDCW Facilitation Toolkit, which operationalizes climate justice concepts via participatory design processes. Applied in different geographical and institutional contexts, the toolkit enables multi-actor engagement, collective learning, and integration of local and scientific knowledge. Case studies from Naples and Thessaloniki illustrate its capacity to spatialize community priorities, uncover tacit knowledge, and situate justice concerns within local socio-spatial dynamics. Used alongside the UDCW Simulation Toolkit, which quantifies climate impacts (e.g., heat stress, flooding) and co-benefits, this approach addresses core justice dimensions: procedural justice through inclusive participation, distributive justice via prioritization of interventions, recognitional justice by exposing vulnerabilities and amplifying marginalized voices, and restorative justice through community-driven solutions and equitable urban imaginaries. Collectively, these tools offer actionable pathways for embedding climate justice in urban planning and design, advancing both resilience and equity.