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Impact of Tree Locations and Arrangements on Outdoor Microclimates and Human Thermal Comfort in an Urban Residential Environment

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Highlights:

- Tree shade benefits are important for residential outdoor thermal environment.
- ENVI-met was used to evaluate the climate benefits from different tree layouts.
- Equal interval tree layouts offer the largest cooling benefits to neighborhoods.
- Findings provide guidelines to effectively arrange trees for cooling.

Abstract

Trees serve as a valuable asset in the urban built environment. In an arid city like Phoenix, trees are one of the primary urban green infrastructures to ameliorate extreme heat stress. Because of

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