

## Urban Planning Strategies for Earthen Buildings



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### **Abstract:**

Urban areas are facing increasing climate risks, resource scarcity, and environmental degradation; this situation heightens the need to enhance urban resilience and well-being while reducing life-cycle impacts. Therefore, urban planning which encompasses the integration of earthen structures into materials, buildings, and the urban fabric requires a shift from individual buildings to climate adaptation at the regional scale. It is crucial to strike a balance between these buildings' excellent thermal mass and low carbon footprint and their structural vulnerabilities to moisture and earthquakes. This process involves integrating local earth sourcing, passive thermal mass zoning, and the reduction of water erosion into municipal regulations; earthen structures can replace energy-intensive concrete with high-density, low-carbon environments. Proper planning involves adopting low-rise and compact urban structures, optimizing buildings according to solar orientation, and mandating protective measures such as raised stone foundations and extended roof eaves. Therefore, planning must be carried out with fundamental urban planning strategies in mind.

In this study, current policies and strategies including resource use and circularity at the urban scale, thermal mass and microclimate design, erosion control and water management, and seismic and structural zoning regulations will be examined from the perspective of urban planning strategies, land use structures and land use regulations will be re-examined to determine new building and development policies and these comprehensive development strategies, and solutions will be proposed.

**Keywords:** Earthen Building, Sustainability, Climate Responsiveness, Material Circularity, and Cultural Preservation, Urbanization Policies, Urban Planning Regulations