

What 'Kerpiç' Knows: Material Intelligence and Adaptive Reuse Practices



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ABSTRACT

This paper explores how traditional earthen construction—particularly adobe (kerpiç)—can inform contemporary restoration and adaptive reuse practices. It focuses on the idea that such materials carry a form of *material intelligence*: knowledge embedded in their composition, behaviour, and relationship with climate.

Drawing on the author's experience in heritage restoration projects, including the Palm Garden courtyard complex and the Nicosia Uray Street Transformation Project, the study moves beyond case-based documentation. It reflects on how earthen construction logic—rooted in locality, balance, and environmental responsiveness—can guide restoration approaches, even when earth is not the primary material. This includes, for example, the use of stone in load-bearing walls or timber in roof structures, where similar principles of material compatibility, flexibility, and climatic adaptation can be observed.

Traditional building systems are approached as integrated “recipes,” where each component (soil, water, fibre, stone, timber) performs a specific role. Adobe walls are not only structural elements but also active surfaces—absorbing, releasing, and regulating moisture and temperature. This “breathing” quality points to a form of intelligence that may seem almost magical, yet is grounded in material logic.

Methodologically, the study combines reflective practice with comparative material analysis, using selected projects to explore how traditional material knowledge can inform contemporary interventions. The findings suggest that earthen architecture should be understood not only as a historical technique, but as a living body of knowledge shaped by material intelligence—offering lessons in sensitivity to local conditions, material behaviour, and the ways materials interact and “communicate” within a building system.

Ultimately, the paper argues that adobe (kerpiç) is not only something to preserve, but something to learn from. Beyond performance, it offers insight into how materials can coexist in balanced and responsive ways, providing a conceptual and practical framework for rethinking material relationships in adaptive reuse and restoration.

KEY WORDS:

Earthen architecture, restoration, adaptive reuse, material intelligence, local knowledge