



# World Heritage Research

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## Abstract

Desert vernacular architecture has always been the product of a sustainable building cycle. People inherited the traditional way of building from their ancestors and the knowledge was transferred and developed from one generation to another. Inhabitants responded to their environment and climate through trial and error in a way that satisfied their needs and aspirations to create a developing building tradition. This natural and cultural cycle is about to disappear in many desert vernacular settlements of the world, and in Egypt as well. Global ambitions and socio-economic development are some of the factors behind inhabitants' deserting their houses, leaving them to deteriorate or demolishing them to build new houses using industrialized materials. People are seeking modern living facilities which respond to needs that their desert vernacular houses sometimes no longer satisfy. As a result of these changes, centuries of accumulated tangible and intangible tacit knowledge is being lost. The aim of this research is to create a theoretical conservation model for thinking re-vernacular in a contemporary context and to develop a methodology for applying and testing the model. This theoretical model is a tool for conserving desert vernacular and for supporting its continued existence. To fulfill this objective, the research investigated the existing know-how used to design and build desert vernacular architecture in Egypt. The focus was also on how to adjust contemporary desert vernacular housing to contemporary life-style demands while still preserving the beneficial aspects of traditional vernacular techniques. The research applied a practical case study methodology in investigating the town of Balat in the Western Desert of Egypt. In applying the theoretical conservation model, the research developed several survey methods and tools for documenting not only desert vernacular architecture, but also characterizing urban patterns and building know-how in Balat. To benefit from local know-how, a physical neo-desert vernacular model house was constructed using a transdisciplinary participatory action research method that engaged the local community throughout the design and building phase. The physical model house was a tool for investigating the needs of those living in contemporary desert vernacular houses. The model house was constructed based on an understanding of desert vernacular architecture as well as of the urban fabric and building technology. In this way, the present research provides a methodology that creates a bridge between sustainable desert vernacular know-how as used for centuries, and contemporary vernacular housing demands. This approach proposes a new perspective for looking at the future of the traditional and contemporary desert vernacular through conservation by modeling. The methodology developed provides a way to benefit from tangible and intangible vernacular values in contemporary and future houses and to ensure the continuation of the natural desert vernacular architecture. The research has also developed a set of recommendations for continuation of further desert vernacular architecture research. This thesis has potential application for inhabitants of desert vernacular settlements, conservation architects, planners, architects, anthropologists and theorists.

Key words: Architectural conservation, desert vernacular, thinking re-vernacular, transdisciplinarity, participatory action research, neo-desert vernacular, Balat.

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