

A Future for the Past of Spectacular Desert Vernacular

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Abstract

Desert vernacular architecture is a product of a sustainable building cycle. Desert local inhabitants inherited the traditional way of building from their ancestors developed and then transferred knowledge from one generation to another. This building and cultural cycle is about to disappear in many desert vernacular settlements of the world. Global ambitions and socio-economic developments are some of the factors behind inhabitants' deserting their houses, leaving them to deteriorate or demolishing them to build new houses using industrialized building materials. People are seeking modern living facilities, which respond to needs that their desert vernacular houses sometimes no longer satisfy. Because of these changes, centuries of accumulated tangible and intangible tacit knowledge is being lost.

This paper presents a research in desert vernacular architecture in the Western Desert of Egypt. The aim is to discuss a new methodology for a conservation model for thinking re-vernacular in a contemporary context. A theoretical model first designed as a tool for conserving desert vernacular and for supporting its continued existence. To fulfil this objective, the research investigated the existing knowledge used to design and build desert vernacular architecture in Egypt. The focus was on how to adjust desert vernacular housing to contemporary life-style demands while still preserving the beneficial aspects of traditional vernacular techniques. To benefit from local knowledge, the research applied the theoretical model through a practical house construction in the town of Balat in the Western Desert of Egypt. A physical neo-desert vernacular model house was constructed using a trans-disciplinary participatory action research method that engaged the local community throughout the design and building phase.

In this way, the present research provides a methodology that creates a bridge between sustainable desert vernacular knowledge 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 modelling

Keywords: *Desert vernacular, Participation, Balat, Western Desert, Neo-vernacular*

Introduction

The concern for conserving vernacular has been expanding recently beyond the confines of antiquarian and nostalgic interest in traditional buildings (Brunskill,1985) even though the interest has been latent for long periods. It dates back to 1839, when the expression "vernacular architecture" was first used in England (Wells,1986). Subsequently, vernacular buildings became more than just objects of ethnographic concern for architectural, historic and cultural interests. However, until recently, social science as a field of investigation has neglected vernacular architecture and little concern has been shown for the patterns of human behavior of populations living in vernacular dwellings (Wells,1986).

ICOMOS announced in 1999 that vernacular buildings were a cultural heritage suffering a great risk of decline or disappearance. Despite this warning, important vernacular heritage buildings have increasingly disappeared due to the absence of laws to protect them as well as to the impact of urban culture, which is often seen by the population as the paradigm of progress (Pioto,2005). It was also argued by the Global Heritage Fund that the vernacular heritage is threatened either as a result of urban crawl, from natural disasters such as floods or earthquakes as outside factors, and as a result of changes in users' perspectives of how they want to live.

Communities in the Western Desert of Egypt are facing the same dilemma. The existing and remaining desert vernacular in remote communities and settlements located there are about to vanish because there are limited documentation and listing efforts by local authorities. Traditional desert vernacular settlements are abandoned, deteriorate and/or are demolished intentionally or unintentionally. Inhabitants in desert vernacular dwellings in the Western Desert in Egypt are leaving their houses to deteriorate and move out from their old towns and villages. Others demolish their vernacular dwellings and replace them with concrete skeleton houses.

The issue

In the Egyptian desert oases, it is becoming more and more common every day for inhabitants to demolish their old mud brick vernacular houses and build new concrete houses instead. Such a phenomenon is the main manifestation of the current change in attitudes, perceptions, desires and economic circumstances. Close observation in Balat village has shown that such factors have changed the building typology in contemporary housing there, just as other studies have shown such changes to have affected the Western Desert in general. The new generation on the other hand, expressed a desire to follow the new trends and live in concrete houses regardless of any problems this might entail. The perception that concrete houses are modern and you have to upgrade your living standard is a new cultural norm among youth in Balat affecting their attitudes.

From site investigations and interviews with local inhabitants in Balat, it was deduced that there is a lack of appreciation from dwellers' to the values embedded in their current desert vernacular dwellings. In addition, this response reflects their ambition to look for better living conditions with better life facilities such as proper drainage and feeding systems, which their traditional dwellings sometimes do not fulfill. There is an overwhelming response from dwellers to adopt a new life style. However, entering the stream of urbanization and absorption of westernized concepts has greatly endangered the ethnic desert vernacular in the desert oases in Egypt. Such changes and adaptation without a keen sense or even conscious respect for the values inherent in the regional dwellings affects negatively the tangible and the intangible values embedded in desert vernacular.

The cause and course of these changes need to be understood and documented. It is an urgent need because the above-mentioned problems are leading to a catastrophic transformation

in desert vernacular in the meantime. Unfortunately, this problem is exacerbated by the lack of research into desert vernacular current problems in Egypt specifically.

Every day counts, the current situation requires an effective conservation methodology, scientific solutions and inventive action, which are urgently needed to save desert vernacular identity.

Methodology

This research tries to open a pathway for conserving desert vernacular through both a theoretical and practical conservation model. This research deals with the current desert vernacular problem by investigating, defining and documenting the building knowledge of the desert vernacular that is about to disappear. Then this phase is followed by designing and building a proposed physical house model solution together with the participation of local residents. The design was based on their wish-list and needs and the design tried to solve the current problems they are facing in their vernacular houses which make them tend to move into new houses made from industrialized materials. A case study methodology was used that applied several techniques, including both an action research and a trans-disciplinary approach. These approaches led to the construction of a built model, aiming to be an effective tool in conserving the knowledge of desert vernacular. The methodology is applied in the village of Balat in Dakhla oasis in the Western Desert of Egypt. The approach can be used also as a potential to contribute in other vernacular settlements in similar contexts to the necessary conservation of vernacular heritage.

The theoretical model shows a mean for studying the social organization, community behavior, etc of a desert vernacular community together with its culture, beliefs and other factors that affect the vernacular building outcome, as well as the community life style and shared values. With this model, the architecture and urban formulation are studied together with vernacular building tradition and technology so as to understand the design typology and building know-how process. Central to the approach was the involvement of local building owners, decision makers, builders or craftsmen, etc in defining current problems, local criteria and concerns. Their input was central to developing an understanding of the locals' current needs and future building desires. Moreover, the approach allows the sharing of the local tacit knowledge with researchers and practitioners in the area of conservation. Such sharing results in a mutual work experience between the local community, researchers and practitioners in the action project. In this way, the theoretical model provides a means to benefit from the accumulated desert vernacular knowledge and provides a means to create future solutions through understanding problems encountered in the present.

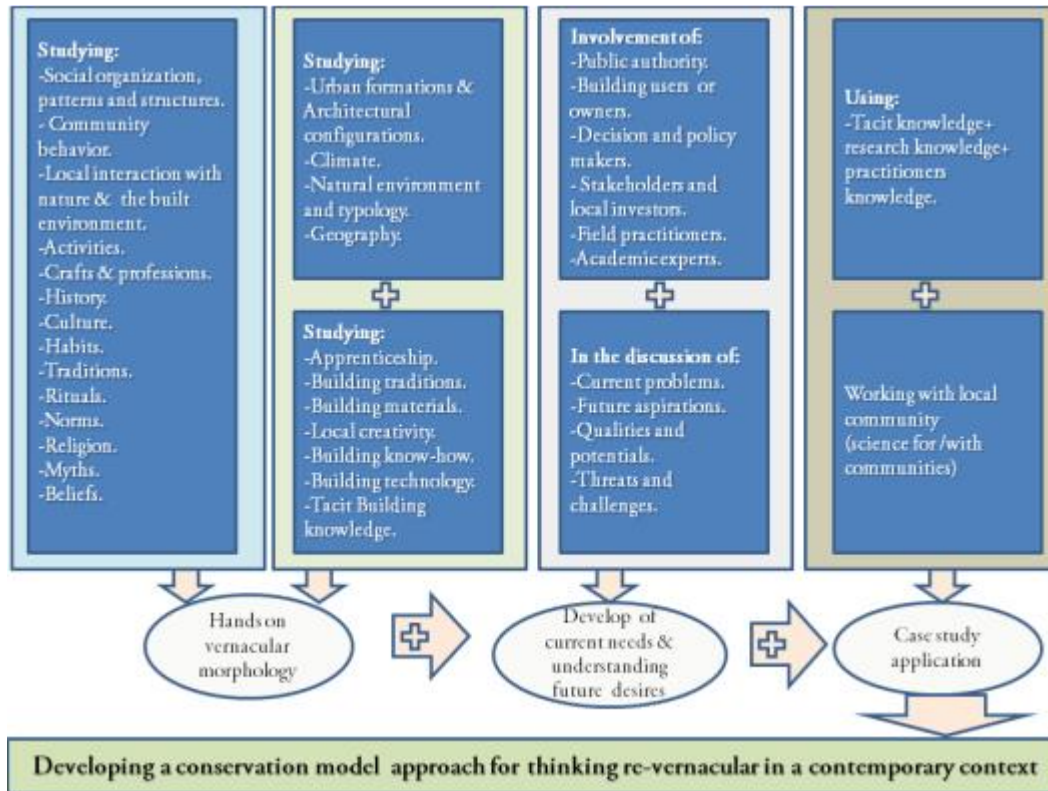


Fig. 1: Diagram outlining the theoretical conservation model

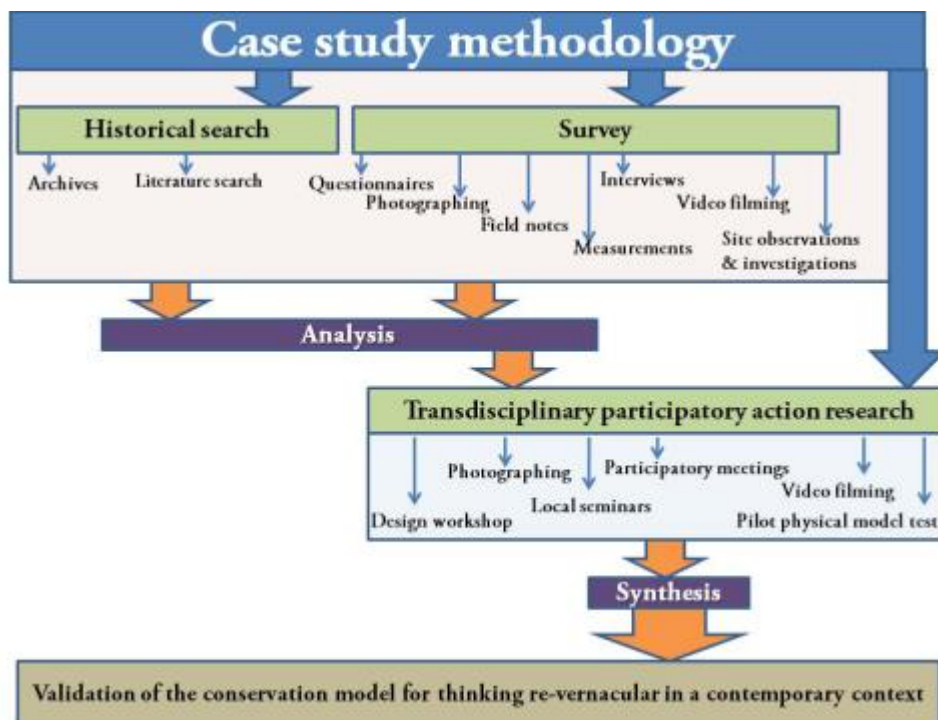


Fig. 2: Diagram showing the methods used in the case study and the tools used in each method.

According to Yin, a case study methodology should comprise an all-encompassing methods; that is, it should outline the logic of design as well as provide a strategy for using data collection

techniques and specify specific approaches to data analysis. Inclusion of such aspects ensures that a case study methodology is not limited to data collection or a design feature alone (Yin,2009). As mentioned, a dual method was chosen for applying the case study methodology, the study was carried out in an early, theoretical phase followed by a practical phase. Both together provided an answer to the research problem.

The Theoretical Phase

The theoretical phase is considered the descriptive explanatory phase of the methodology, in which first a literature search was carried out followed by analysis of the material collected on the history of the area. Tools such as questionnaires and interviews with local inhabitants, together with expert evaluation forms were used to collect information for problem definition. An analytical site study was carried out through investigation, observations and documentation of building materials, building techniques, climate features, environmental adaptations, inhabitants' social habits, traditions and inhabitants new demands. The most important foci of this phase are:

- Identification of the research questions and determining the crucial main research problems, using content analysis of the Egyptian desert vernacular in the Western Desert oases and its basic features, with a focus on the case study in Balat village in Dakhla oasis.
- Investigation and observation to determine which desert vernacular architectural and urban aspects should be described and analyzed.
- Analysis, evaluation and synthesis of the selected aspects of the basic desert vernacular like architecture, urban formation, structural details etc. followed by an in-depth study of Balat village: the case study area.
- Investigation to identify the inhabitants' future housing needs in order to generate a "wish list" based on earlier research problem identification.
- The practical phase

The practical phase is an exploratory part of the study. Site investigations and direct observations were particularly important tools in this phase, since, as Yin states, direct observations serve as source of data collection activities and a source of evidence in a case study (Yin, 2009). Tools such as extensive questionnaires were used, accompanied by analysis of observations and findings regarding using local resources, climate adaptation, and building technology, In addition to some lab tests for traditional building materials, properties were done to assess the durability of materials for use in the model building phase. Together with local seminars, design workshops, meetings with participants, as well as photographing and video filming.

Outcomes

The research contributed in developing an approach for increasing our understanding and know-how about desert vernacular, using extensive architectural and urban documentation for a case study of an abandoned desert settlement in Egypt (Balat village). Laser scanning and measuring technique was applied for documentation, thus helping to develop this method as a measurement tool, something which is needed today for research and for the effective detailed documentation of desert vernacular.



Fig. 3: Laser scanning measurements used as experimental measuring tool in Balat. One can get accurate measurements for vernacular buildings compared to manual sketches.

Source: Author

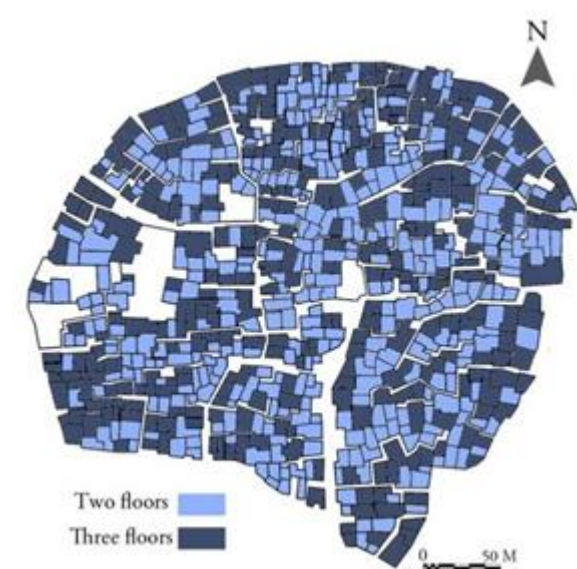


Fig. 4: Sample for an edited map for building heights in Balat - one of the survey tools for documentation tools.

Source: Author

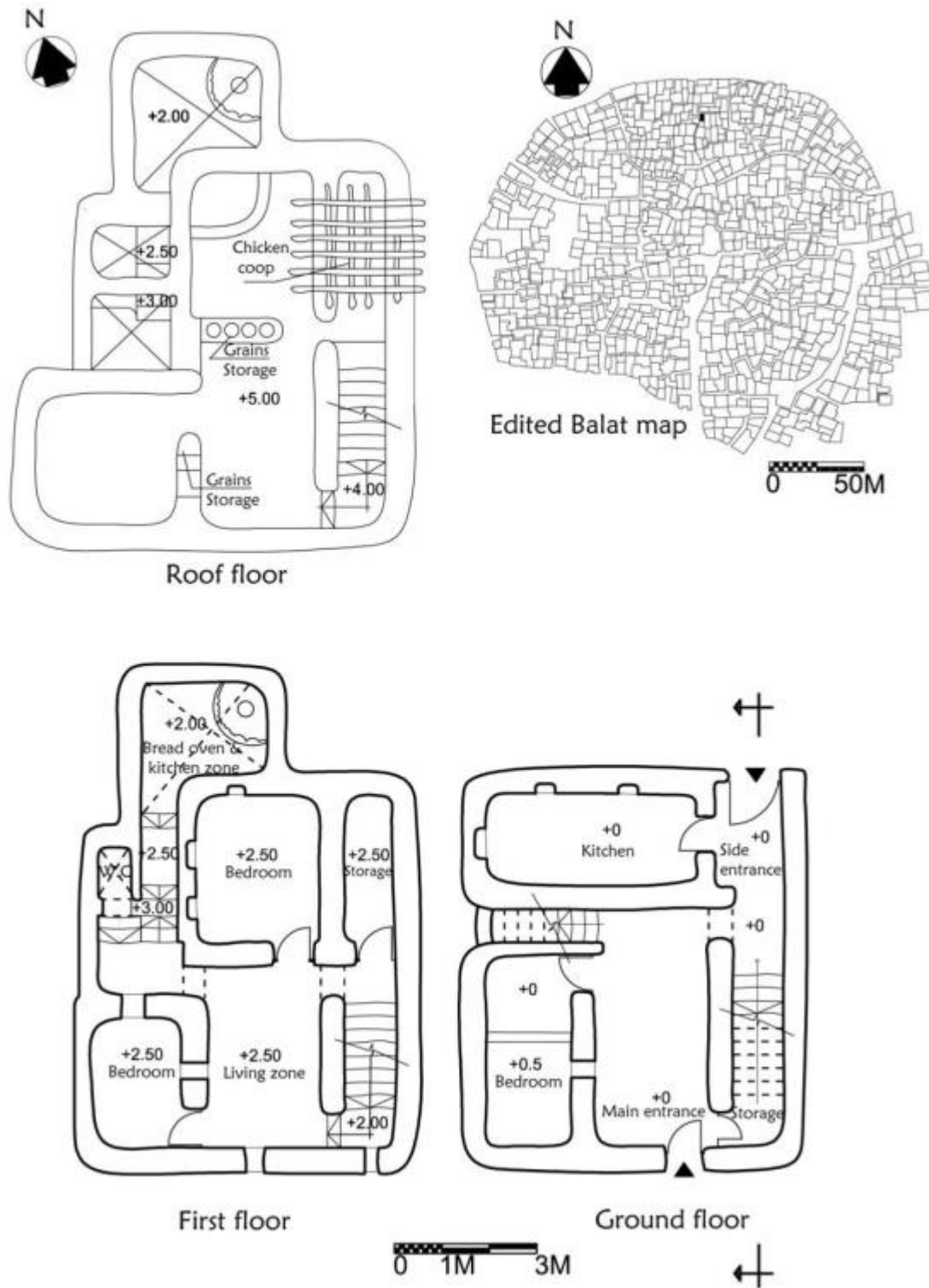


Fig. 5: Example for manual architectural documentation for one of the houses in Balat
Source: author

This research demonstrates clearly the applicability of the physical model in offering tangible steps for conserving desert vernacular know-how through re-thinking vernacular way of building. It provides a practical tool for helping desert inhabitants adapt their contemporary

“wish list” in developing housing with a more authentic manifestation of their desert vernacular. Findings from using such a model can help to raise awareness, pride and thus sense of belonging of people in remote desert settlements, which is an effective tool for keeping the know-how alive and that is a way for its conservation. Furthermore, the flexibility and modernity of this model designing and building process will enable its application as a general tool for conservation of vernacular know-how in other vernacular settlements. The process does not focus only on vernacular as a past heritage that should be conserved, but at the future demands and applicability of vernacular settlements through solving current problems.



Fig. 6: The physical model-house design process with locals through modeling focus group workshop.

Source: Author



Fig. 7: During participatory meetings discussing current problems within local's current vernacular houses and suggesting environmental solutions.

Source: Author

Discussion

The focus in this discussion is on the applied two approaches, the action research approach and the trans-disciplinary approach. The trans-disciplinary was the main approach used in building the physical model. Its use ensured that the physical model was appropriately constructed through community participation, where inhabitants together with local authorities and stakeholders were involved in the building process. The action research approach was used as an effective tool in engaging locals in the design and building process to end the theoretical research into a real tangible result.

Applying transdisciplinary participatory action research gave an opportunity in the present study to bring together scientific research with the everyday experience of field practitioners, engineers, the local authorities, local investors, local NGOs and small local business owners together with members of the local community in Balat. All were given a chance through their participation to define problems and express their views on the future of the town. The main concern was to empower local inhabitants. They were encouraged to contribute their ideas so that the method process could incorporate their specific cultural and traditional beliefs together with rituals; that is, the main concern of this phase was to include their sense of belonging to their community.

The neo-desert vernacular model passed through 10 phases. During planning and construction, all ten phases of application of the model were completed, thus fulfilling the primary aim of the research. The project thus allowed the locals to share their experience of using the vernacular building tradition while making adaptations to solve current problems. One of the advantages of this phase of building the neo-desert vernacular model house is the opportunity to allow the young both to participate in and to see the vernacular traditional techniques. It provided a chance to show what the seniors could give from the past and what the youth could create for the future. It was also a chance to revitalize the concept of co-operation among family members and neighbors. For example, the group that participated in the wall construction phase were from the same family and they asked their neighbors and close friends to come and participate. This is how it used to be in the old days in Balat.



Fig. 8: The physical neo-desert vernacular model house during different work phases.

Source: Author

Conclusions

This research describes the challenge in the conservation of the desert vernacular and shows the strong relations between the tangible and the intangible aspects of desert vernacular. Through site documentation, the approach proposed enables the rediscovery of empirical knowledge about the desert vernacular that inherited from countless generations over the years.

The focus of the research is on helping the local desert inhabitants by giving them practical guidance on how to solve their current problems with simple tools, just as they used to do in old days. The proposed conservation model will help resolve problems facing the future of desert vernacular heritage buildings. Moreover, it provides inexpensive, environmentally friendly housing with modern life facilities in traditional terms. Finally it is important to note that efforts to preserve this building tradition are not only aimed at conservation of the visually striking desert vernacular heritage; the challenge is to maintain the identity of these desert communities, a challenge which the physical model succeeded in meeting traditional vernacular values with contemporary modern life styles.

Conservation is not just preserving vernacular buildings by freezing them as museums for the coming generations. The spectacular feature of vernacular is its continuous loop of development of building traditions. The process should continue and not stopped at its present limit. Although the new generations have tended to leave the vernacular towns and villages to build with concrete, it is still possible to revive the concept of building with the desert vernacular traditional know-how. I argue that it is time to start revitalizing the old techniques before they vanish forever. Seniors still have the cumulative knowledge of different aspects of building. The use and application of vernacular knowledge needs to become a more urgent topic of discussion, and new methodological approaches, combining tools from different disciplines, should be developed to assist housing research today to support desert vernacular in the future.

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