

## ROLE OF CULTURE IN SUSTAINABLE ARCHITECTURE

Sinem Kultur

*Bahcesehir University, Turkey*

**Keywords:** sustainable architecture, culture, local identity, eco-cultural

### Introduction

“Sustainable architecture” being discussed in a great many publications is a highly controversial issue. In literature, various terminology is referred to express this kind of architecture such as; environmental design in 1970s, green design in 1980s, ecological design in late 1980s and 1990s and lastly sustainable architecture from mid-1990s until today. This proves the existence of an architecture that is building-oriented and has the main concern to be nature-responsive till mid-1990s. On the other hand, sustainable architecture including all the previous architectural approaches as a main heading can be considered as an environmental responsive architectural practice not only from morphological aspects but also with its contribution to social, cultural and economic infrastructure of the region. [1]

UNESCO (United Nations Educational Scientific and Cultural Organization) has coined the term “whole life sustainability” in order to expand the general meaning of sustainable architecture from *designing environmentally friendly buildings* to *architecture incorporating local identity into design process*. [2]

Frampton’s notion of “critical regionalism” seeks to simultaneously address local conditions and contemporary global culture of architecture. In his essay, he underlines the importance of engaging sustainable architecture not only as technique or method, but as a cultural paradigm. [3]

The word “culture” is a determining of a very complicated concept which expresses all of the intellectual activities of a civilization. [4] The culture is; dynamic, expressed through the community as well as the individual, interpreted with each member of the community, shared with groups and transformed to new generation. It involves a system of rules, and also attitudes, values, beliefs and norms. It conveys the sustainability of vitality of the community, and has the potential to change. All these are Matsumoto’s declaration of “culture” in his book “Culture and Psychology”. [5][6]

Aim of this paper is to discuss cultural dimensions of sustainable architecture. In this context, part 1 will introduce eco-cultural architecture from among different kinds of sustainable architecture. Then, part 2 will analyze the architectural practices well-known with their cultural components worldwide as practices adopting eco-cultural logic and part 3 will interpret the sustainable architectural approaches in Turkey considering the local issues.

### Eco-Cultural Logic of Sustainable Architecture

Guy and Farmer [7] classify sustainable architecture under six different categories based on the main logic and methods as: eco-technic, eco-centric, eco-aesthetic, eco-cultural, eco-

medical and eco-social. The competing logics of the sustainable architecture are given as a summary in Table 1. [8] One or more logic can be found in a sustainable architecture according to the main environmental problem.

Definition of “sustainable” for an architecture changes depends on the logic. Eco-technic logic defines sustainable architecture as energy-sufficient architecture placing importance to the development of technology while in eco-centric logic, sustainable architecture is considered to be an architecture that is a part of nature through using natural materials and has zero ecological footprint. Sensuous, stylish and creative qualities make the green architecture as sustainable for eco-aesthetic logic. On the other side, architecture creating “healing environment” and supporting the healthy lifestyle of the people is considered as sustainable within eco-medical logic. Also, there is an eco-social logic defining the architecture that embodies the spirit of the society, freedom and togetherness as sustainable.

The eco-cultural logic highlights the preservation and conservation of the variety of the existing cultural archetypes with a concern for cultural continuity. This logic leads to transformation and reuse of traditional construction techniques, building typologies and settlement patterns for expression of the cultural sustainability. This approach denies universal and technologically based design methodologies that often fail to coincide with the cultural values of a particular place or people. [9]

### **Architectural Practices Adopting Eco-Cultural Logic**

The concern for the cultural sustainability, continuity of space characteristics, use of local materials and proper responses to nature can be seen in regional approaches of the leading architects, Hassan Fathy from Egypt and Charles Correa from India. [10]



Fig. 1: Gournah Village in Egypt by Hassan Fathy [11]

New Gournia Village (Fig. 1) is a reinterpretation of a traditional urban and architectural setting by Hassan Fathy who is an early visionary of sustainable architecture. It provides sustainability both in culture through use of local materials and techniques and in environment with its extraordinary sensitivity to climatic problems. It is an outstanding example of the integration of vernacular technology with modern architectural principles. Fathy brought back the use of mud brick (adobe) and with special techniques keep building cooler during the day and warmer during the night. [12] [13]

Fathy believed that architecture was about bridging the gap between new architectural techniques and older techniques. These older techniques are sustainable and energy efficient, helping the villagers to reduce their reliance on modern technologies, which are not only expensive, but have negative effects on their culture and environment.[14]



Fig. 2: Kanchanjunga Apartments in India by Charles Correa [15]

Although it bears a strong resemblance to modern apartment buildings in the West with its concrete construction and large areas of white panels, the garden terraces of Kanchanjunga Apartments are a modern interpretation of “the verandah” in the traditional Indian bungalow. The garden verandah also provides a protection for the high-rise units against the effects of sun and monsoon rains. [16]

### **Interpreting Sustainable Architectural Practices/ Approaches in Turkey**

The most common examples of sustainable architecture in Turkey are residential buildings. These are a broad range of houses including ecological ones that reject contemporary construction methods, harmonize with nature by interpreting the traditional architecture and smart ones that economize energy consumption and are rich in technology.

Sustainable architecture in Turkey, when analyzed within the framework of practices, it can be obviously seen that the concept “sustainability” and its keynotes are not well addressed and understood. In some practices, sustainable buildings are considered as high-tech, self-producing energy, low-energy, passive, energy-efficient, ecologic or smart building. In other saying, the architecture in Turkey deals with the concept from morphological aspects rather than social, cultural, environmental and economic realities of its place.

Indoor and outdoor spaces decorated with green elements, first digging virgin nature than willing to comply with it, ignoring locality in material selection (e.g. using wooden (natural) material), etc. all of them are indicatives of the formal perception of sustainability.[17]

Rapaport defines the cultural elements forming the house as; religion, language, family structure, child raising methods, settlement patterns, land division and land owning systems, nutrition habits, symbolic and traditional systems, status defining methods, social identity, cognitive maps; privacy, intensity, territoriality, behavioral organization in a house, working, business and trades. [18]

Unlike the contemporary architecture, the traditional architecture in Turkey houses the above mentioned local cultural elements as well as the proper approaches considering local climatic and geographic conditions. Therefore, most of the traditional practices in Turkey are in tendency to be regarded as sustainable.

## **Discussions and Conclusion**

Emergence of the concept sustainability concurrently leads to discussions on the methodology of sustainable architecture. A variety of approaches going after different logics for sustainable design appeared, one of which is eco-cultural logic. This logic keynotes the significance of sustainability of the culture to be provided through design in architecture. It argues that the existence of a critical interaction between culture and environment through which they continually redefine each other.

Environmental and cultural sustainability could be achieved through adopting a regional design approach. [19] In regional approach, design regards the climate and topography and intends to sustain the culture of the region through considering the existing pattern of the region, the existing architectural features of the buildings, the existing lifestyles of the inhabitants and the existing cultural issues. In brief, regional design meets the goals of eco-cultural logic of sustainable architecture.

When examining the cases in Turkey, interpretation of the traditional and use of cultural elements in modern ways can be seen as the lacking parts of contemporary architectures intending to be sustainable.

In conclusion, the paper will contribute to comparison of different logics of sustainable architecture. It provides to review sustainable architectural practices worldwide and the remarkable influences of culture on architecture. The paper also enables to discuss the sustainable approaches in Turkey in terms of eco-cultural aspects.

Table 1: The competing logics of sustainable architecture [8]

<b>Logic</b>	<b>Image of space</b>	<b>Source of environmental knowledge</b>	<b>Building image</b>	<b>Technologies</b>	<b>Idealized concept of place</b>
<b>Eco-technic</b>	global context macrophysical	technorational scientific	commercial modern future- oriented	integrated energy efficient high-tech intelligent	Integration of global environmental concerns into conventional building design strategies - Urban vision of the compact and dense city
<b>Eco-centric</b>	fragile microbiotic	systemic ecology metaphysical holism	polluter parasitic consumer	autonomous renewable recycled intermediate	Harmony with nature through decentralized, autonomous buildings with limited ecological footprints - Ensuring the stability, integrity and "flourishing of global and local diversity
<b>Eco-aesthetic</b>	alienating antropocentric	sensual postmodern science	iconic architectural New Age	pragmatic new non-linear organic	Universally reconstructed in the light of new ecologically knowledge and transforming our-consciousness of nature
<b>Eco-cultural</b>	Cultural context regional	phenomenology cultural ecology	authentic harmonious typological	local low-tech commonplace vernacular	Learning to "dwell" through buildings adapted to local and bioregional physical and cultural characteristics
<b>Eco-medical</b>	polluted hazardous	medical clinical ecology	healthy living caring	passive non- toxic natural tactile	A natural and tactile environment which ensures the health, well-being and quality of life for individuals
<b>Eco-social</b>	social context hierarchical	sociology social ecology	democratic home individual	flexible participatory appropriate locally managed	Reconciliation of individual and community in socially cohesive manner through decentralized "organic", nonhierarchical and participatory communities



## References

- [1] Durmuş Arsan, Z. Türkiye’de Sürdürülebilir Mimari. *Mimarlık*, Vol. 340, pp. 21-30, 2008.
- [2] Tocher, I. *Review: Not quite Vegemite: An architectural resistance to the icon.* <http://www.vam.ac.uk/content/journals/research-journal/issue-03/review-not-quite-vegemite-an-architectural-resistance-to-the-icon/> (20.03.2012).
- [3] McMinn, J. and Polo, M. Sustainable Architecture as A Cultural Project. *Proceedings of the Conference on World Sustainable Building*, pp.4537-4544, Tokyo, Japan, 27-29 September 2005.
- [4] İncedayı, D. Sürdürülebilirliğin Kültürel Boyutu. *Sürdürülebilirlik: Kent ve Mimarlık*, Bülten 51, pp. 30-35, 2007.
- [5] Ayalp, N. Cultural Identity and Place Identity in House Environment. *2nd International Conference on Arts and Culture*, pp. 64-69, Montreux, Switzerland, 2011.
- [6] Matsumoto D.R. and Juang, L. *Culture and Psychology*. Wadsworth Publishing, San Francisco, 2003.
- [7] Guy, S. and Farmer, G. Reinterpreting Sustainable Architecture: The Place of Technology. *Journal of Architectural Education*, Vol. 54, No. 3, pp. 140-148, 2001.
- [8] Ryan, A. Competing Logics of Sustainable Architecture in a New Zealand Competition. <http://www.cmsl.co.nz/assets/sm/5939/61/2.PN062Ryan.pdf> (18.03.2012).
- [9] Guy and Farmer, op.cit.
- [10] Ibid.
- [11] UNESCO WHC. *Safeguarding Project of Hassan Fathy’s New Gourna Village.* <http://whc.unesco.org/en/activities/637/> (20.03.2012).
- [12] Ibid.
- [13] Schoeman, A. *Hassan Fathy: An Early Visionary of Sustainable Architecture.* <http://www.theinnovationdiaries.com/2613/hassan-fathy-an-early-visionary-of-sustainable-architecture/> (20.03.2012).
- [14] Ibid.
- [15] Ibid.
- [16] Pagnotta, B. *AD Classics: Kanchanjunga Apartments / Charles Correa.* <http://www.archdaily.com/151844/ad-classics-kanchanjunga-apartments-charles-correa/> (20.03.2012).
- [17] Durmuş Arsan, op.cit.
- [18] Rapoport, A. *House, Form and Culture*. Prentice Hall, 1969.
- [19] Sezer, M. *Housing as a Sustainable Architecture in Turkey/ A Research on TOKI Housing*. Master of Science Thesis, METU, Ankara, 2009.