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The impact of sustainability trends on housing design identity of Arab cities

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Abstract Previous researches and investigations on the area of green cities and sustainable architecture lack the study and analysis of the impact of sustainability principles applications on the city image. At this point, a critical question is raised; to what extent the architectural identity of the city could be influenced by the adoption of the different sustainability trends? This question represents the main research question that the paper will address. The adopted sustainability trends vary in their forms and contents. Some trends employed sustainability principles inspired from the vernacular architecture, which not only give a tested and reliable model, but also enhances socio-cultural and economic values of the local community. Another trends employed sustainability principles that are based on the most modern and advanced technology which expresses the culture of globalization. While a third trend integrates both of the two trends to introduce a contemporary interpretation of the vernacular thought within the framework of modern advancements trying to bridge the gap between the local and the global. From this point of view, this paper focuses on two key issues; firstly: study and analysis of the mentioned sustainability trends in housing design, secondly: assessing and analyzing the impact of these trends on shaping the identity of the Arab city.

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Introduction

Planning and designing green cities has been one of the most significant interests for planners and architects. Yet, most of the efforts that were carried out at both the theoretical and practical levels focused on the applications of sustainability principles rather than the impact of such application on the city image and its architectural identity.

The crisis of architectural identity is a global dilemma. This crisis emerged as a result of the phenomenon of globalization.

In this sense, Albrow points out the dilemma that non-western societies face due to the devastated invasion of

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the western culture to the local societies and its negative impact on local cultures [1]. Roxana Waterson emphasizes the same dilemma as a result of the application of western norms to address the problems of other regions instead of dealing with the local needs [2].

The local–global conflict as a manifestation of high modernity results in transformations in self-identity. This fact is workable in the case of architectural identity. High modernity resulted in great and extensive changes that affected the local societies. These changes are related to the establishment of social connections of very wide scope. Accordingly, localities and state organizations are affected negatively. These changes and impacts are reflected on architecture and resulted in deepening the identity crisis. This discussion emphasizes that the local–global conflict and its consequences, dominance of western thought and high modernity, have the major role in the identity crisis. We can look at Berlin as an example of the identity dilemma in western cities. In his book “Capital Dilemma”, Michael Wise indicates that the German Government decision to move its seat from Bonn to Berlin by the year 2000 has set off a remarkable debate concerning the character of the appropriate official architecture to express the national identity of unified Germany [3]. In contemporary Arab architecture, do we face a crisis of identity? The review of thoughts and writings in this context demonstrates that there is an agreement among scholars and theorists regarding the crisis of identity that we have been facing for decades.

Methodology

This research attempts to answer the following key question: to what extent the architectural identity of the Arab city could be influenced by the adoption of the sustainability trends?

To answer the research question, the research methodology will rely on:

- Review of related literature on the concept of sustainable development and green cities ending up with an identification of sustainability principles that influence the emergence of sustainability trends in housing design in the Arab city.
- Documentary analysis of the emerged sustainability trends in the region through analyzing and assessing a number of sustainable projects in the Arab cities to explore the impact of these trends on the architectural identity of the city

Identity of Arab city: the current situation

Arab cities have suffered major setbacks since the beginning of the 18th century, and clearly, by early in the last century, these cities have been denied their own identity due to the occupation by other cultures. Arab cities have passed through four phases as follows:

1. Development that resulted from foreign interventions during the 19th century.
2. Development that resulted from technology transfer influenced by industrialization.
3. Development that resulted from the fast rural–urban migration after the 2nd World War.

4. Development that resulted from the sudden inflow of oil wealth during the 1970s.

This brief view helps us in understanding reasons for the historical and cultural detachment that the Arab cities witnessed. This detachment played the major role in leading to the current crisis in Arab architecture.

Many scholars have dealt with the current situation in Arab architecture. Khalid Asfour discusses the impact of inappropriate imported trends. He claims that a process of “cutting and pasting” was introduced as a cultural mechanism. The process involves cutting ideas from its original cultural field, the European, and pasting them with their logic in the new Arabian field [4]. The imported ideas and theories should be revised before employing them in the new context. Not all the good ideas in a specific context are appropriate for a different one, especially if these ideas are related to social, cultural, and climatic considerations as in the case of architectural thought. The essence of the architectural work is the creativity, so the absence of this factor evacuates the architecture of its meaning. Udo Kultermann underlines the phenomenon of copy and paste in Arab architecture as he indicates that the majority of new buildings in the Arab States remain within the vocabulary of western architecture [5].

Sustainability: principles & approaches

The last two decades have brought significant changes to the architectural profession. In the wake of traumatic escalation in energy prices, shortages, blackouts, embargoes, and war, along with heightened concerns over pollution, resource depletion, environmental degradation and climate change, awareness of the environmental impact of our work as building design professionals has dramatically increased [6]. Architects with vision have come to understand that it is no longer the goal of good design to simply create a building that is esthetically pleasing. Buildings of the future must be environmentally responsive as well.

As the case is with most developing countries, contemporary buildings in the Arab cities are not considered as climate-responsive. Excessive use of glass and concrete and heavy reliance on mechanical space conditioning is a common feature. It is imperative that architects in the Arab world start designing climate adaptive, energy efficient buildings. Designing sustainable buildings has become a great challenge that faces architects nowadays. Since the building industry started to move toward the promotion of sustainable building in the late half of the 1980s various techniques and approaches took place by architects worldwide [7].

At this point it is important to indicate that this research will not focus on discussing and analyzing the sustainability concept, as the main concern is to discuss and analyze the emerged sustainability trends in the Arab city at the level of housing design. To do so, we need to explain the main sustainability principles in architecture.

Review of the related literature unfolds that principles of sustainable development have three main dimensions. Firstly; the economic dimension which was based on the principle of increasing the welfare of society through the optimum utilization of natural and human resources. Secondly; the social dimension which refers to the relationship among human

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