

Ways to benefit from the Environmental Design legacies of Jordan's heritage homes interior spaces

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Abstract

The geographical nature of the Hashemite Kingdom of Jordan is characterized by its great diversity of different types of environments and climatic conditions, in addition to its great richness and diversity of cultural legacies that are clearly visible in the design of the interior spaces of Jordanian heritage houses. That architectural heritage is one of the most important in preserving the special features and cultural differences of peoples and states. With the growing interest in environmental components in the design, it was found that many of the old designs carried with them a lot of components and treatments that exploited or employed the available environmental elements in providing the highest levels of comfort in designing houses. As a prelude to review and preview the chosen models of residential buildings, this study will monitor the green design and the concept of green architecture and green buildings and its bases, in order to identify the suitability of the interior design of these buildings with the green architecture.

Search problem: Jordanian heritage houses are considered cultural and architectural legacies in Jordan, and as a result of their neglect and lack of care, they are threatened to lose their Jordanian Arab heritage identity and their cultural and historical value, in addition to their maintenance to preserve them, attention must be paid to their documentation and studies must be done to benefit from them in designing modern environmental houses.

Research objective: Documenting the internal spaces of Jordanian heritage buildings, accordingly to the internal spaces elements functional values and the climatic treatment, to highlight their functional, aesthetic values, and psychological positive impact on the visitors and use them to improve the society culture, by showing the effects of natural factors, on the shape and the design of internal spaces.

Research hypothesis: By providing knowledge of heritage buildings, and knowing how to preserve and maintain them, it will lead to knowing how to deal with them more efficiently and effectively.

Research methodology: The research followed the descriptive and analytical approach, where it relied on a general description of some heritage buildings in the Hashemite Kingdom of Jordan and then an accurate description of the research sample buildings, and an accurate analysis of the study sample buildings to identify their internal spaces and climate treatments.

Research Subject: The research relies on monitoring and analyzing the similarities and differences between heritage houses in some areas of the Hashemite Kingdom of Jordan and their internal spaces, to reach the most important points that must be revived and preserved, and making a list with proposals for ways to restore and preserve them.

Green or environmentally friendly buildings, which is one of the most important modern trends in Architectural Design which is interested in the relationship between buildings and the environment, which we need in house designing.

The three levels Features of green buildings:

Environmental level - public health level - construction resources economy

According to this level, we will see the importance of green architecture in preserving the environment and energy in all stages associated with buildings from construction to use and ending with residence, we find that the design depends on the local building materials available in the surrounding environment, the use of natural and renewable energies, and rationalization in their consumption. Energy rationalization in buildings is more important than achieving communication principles: energy rationalization in buildings relies on non-renewable sources to preserve the depleted energy sources and increase the life of the surplus, thereby achieving continuous development; secondly, to preserve the environment from pollution: since electricity generating for buildings and their various services is linked to the combustion of fossil fuels, which leads to the emission of large amounts of pollutants; thirdly, energy rationalization significantly reduces the bills paid by individuals; and, at the national economy level, it creates more investment opportunities.

Analysis of the interior spaces of some Jordanian heritage buildings

A- Dar Al-Saraya (Irbid city): the building was planned by what is known as the Arab House - an open courtyard where a set of halls and medium-sized rooms are distributed on its sides, and the facilities of the house, where the access is possible through the main distributor, which is located immediately after the main door, on the left side of the distributor there is a door to the reception room, and on the right of the distributor there are rooms used as stores and a stone staircase leading to the second floor, where the second floor consists of 16 medium-sized rooms connected by a wide corridor overlooking the open courtyard.

B- Beit Abu Jaber (Salt City): the architectural style of the ground floor is a traditional architectural style that was prevalent in the area, in that time period, where it consists of several rooms of different sizes, walls thickness are between 60 cm and 100 cm, and doors are arched. The first floor included three wings in each main room, and the second floor, consists of three courtyards lead to the rest rooms one of these rooms are large with marble floor, the roof is decorated with wood, and the walls thickness is 30 cm.

By careful analysis we find that the heritage residential houses in Jordan are similar, in terms of planning methods, and the materials used in their construction, despite the different areas, for political, social or economic considerations, which is characterized by its simplicity, and the planning of these houses based on the architectural style known as the house with a central open courtyard, it performs its function as a hub for movement and communication for all house facilities, in addition to its function in providing lighting and ventilation.

The use of building materials that are compatible with the local environment, which is characterized by sustainability, resulting in thermal comfort for the user, by achieving more thermal stability that does not required the use of mechanical conditioning, which reduces energy consumption, saves cost and does not cause a negative impact on the environment.

The use of water and plant elements and thickening the walls result in reducing the air temperature, increasing humidity, increasing shading in the courtyard, and treatment of acoustic pollution in the spaces.

Hence, it is clear to us that we must increase the interest in heritage houses and it must be maintained periodically, understanding heritage in its architectural, social and economic dimensions will lead us to create a present that is compatible with the requirements of the era, plus preserving the elements of civilization, in addition to leaving a cultural legacy for future generations. What we found from this research is that what our ancestors did with the design methods and the technologies available to them at the time, is what we are currently looking for in our designs for coexistence, and is indeed the optimal use of our facilities and to control our available energy capacity.

The search ends with the following results:

1. The Hashemite Kingdom of Jordan has heritage architectural buildings prepared as residential houses, that follows the methods of planning and architecture of the Arab House.
2. Heritage residential houses in Jordan are similar in terms of planning methods and the materials used in their construction, despite their different spaces, for political, social or economic considerations, and are characterized by its simplicity.
3. The layout of these houses is based on the architectural style known as the house with a central open courtyard, which functions as a hub for movement and connection of all the house facilities, in addition to its function in providing lighting and ventilation for the house rooms.
4. The result of using building materials that are compatible with the local environment, which is characterized by sustainability, has led to thermal comfort for humans, by achieving more thermal stability that doesn't require the use of mechanical conditioning, which reduced energy consumption, saves cost and does not cause a negative impact on the environment.
5. The use of water and plant elements reduced the air temperature, increased humidity and increased shading in the courtyard, which had a positive impact on the house, its residents and the environment.
6. The increased thickness of the walls, the presence of courtyards and Gardens led to the treatment of acoustic pollution in the houses voids.

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