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## Green Architecture in clinical centres with an approach to Iranian sustainable vernacular architecture (Kashan City)

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### Abstract

For its unique features, the green architecture holds a special place among the architecture experts. Since vernacular Iranian architecture possesses all the sustainability factors, in the beginning of this article through descriptive methods and based on the findings of field research and academic studies we inspect and analyze the Iranian architecture in hot and dry climates specifically Kashan city. In the end while understanding and scrutinizing the principles of green architecture in clinical centres, a suitable design for green architecture in these buildings based on Iranian vernacular architecture using modern technologies will be concluded.

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### 1. Introduction

One of the main reasons of the expansion and importance of sustainable development in architecture is that construction and in general built environment designers affect their surrounding environment directly. Environmental effects of every new building are very evident and when urban houses replace a green area and or a residential tower shadows the surrounding houses you can easily criticize the built environment's designing method.[1] Therefore, designer's attention towards sustainability issues in architecture and creating an approach where buildings are designed in the most proficient and aesthetic manner and meanwhile imposing the least possible harm on the environment have been one of the major issues in architecture designing.

Rogers writes about sustainable design in design Architecture and says: in sustainable design we are

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looking for realizing the human's current needs without compromising the natural resources and leaving them for future generations. This process should be compatible with social and economic principles and pay close attention to energy consumption and ecological effects of the buildings and cities. The factors which we need to consider for these purposes are: low energy; suitable compatibility and proper usage of the resources. [2]

Green architecture, a termed entitled to the architectures which dedicate great importance to the environment, is one of the characteristics of the sustainable design in which environmental sustainability is more important. [3]

they created aesthetic structures. They created these environmentally suitable structures with empirical knowledge and this unstoppable endeavour continued until technology and industry were introduced. After the changes of industrial age, modern life raised its head and the different needs of people transformed the pattern of construction in Iran.

It seems that in the age of advancement and evolution new structures with new materials were built which were not in concordance with the environment and as a result they were not as strong and moreover, due to the building techniques and in order to overcome the unfavourable climates more fossilized energies (non-renewable energies) were consumed. [4]

Due to the rich history of traditional architecture in Iran, scholars and experts need to analyze the positive features of the past architecture (not just imitate them) and make an attempt in order to build environmentally compatible structures using the new construction materials and advanced technologies.

Clinical centres require greater attention and due to the nature of their existence, the role they play in preserving health in societies and the everyday need for building and developing these structures in developing countries, innovation and compatibility with the surrounding environment is very important. In order to achieve the goals following issues are discussed in this article:

- Analyzing the features of Iranian vernacular architecture in hot and dry climate (Kashan city).
- Identifying the characteristics of green clinical centers
- The methods of applying Iranian vernacular architecture in clinical centers using modern technologies based on green architecture criterion

## 1. Architecture of hot and dry climate in Iran

### 1.1. climate categorization in Iran:

Iran is divided into four major climates:

- the coast of Khazar sea (temperate and wet climates)
- the coast of Persian gulf and Oman sea (hot and wet climates)
- mountainous areas (cold climates)
- plateau desserts (hot and dry climates)[5]

Considering that the average raining in Iran is a lot lower than other parts of the world and as a result weather in most parts of the country is hot and dry[6], hence in this article we analyze the architecture sustainability in hot and dry climates specifically Kashan city.

#### 1.1.1. Hot and dry climate specifications in Iran (Kashan city):

- hot and dry weather in summer, cold and dry weather in winter
- low raining
- very low weather wetness
- very low plant cover
- too much day and night temperature difference

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