

SUSTAINABLE HOUSING DESIGN IN SHIRAZ

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requirements for the award of the degree of
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ABSTRACT

Sustainable development is one of the most important issues which mankind is faced with these days. Using natural energy, not only lead us to save the Earth and protect the environment, but also will save the energy for future generation. To have a sustainable development, sustainable design is a necessity, and since the construction sections use the most energy in the Earth, planning for a sustainable design in construction would be one of the sustainability aims. Because people spend their most time in their houses, and housing -which is an important sector in construction- waste lots of energy, sustainable design for housing plays an important role in sustainable development.

In this thesis, sustainable housing design for Shiraz houses is identified. In the first step the concept of sustainable design and sustainable housing design are revealed and then, the characteristics of sustainable housing design are explained based on previous works and researches. Forward these works, same thesis for sustainable design in Putrajaya is modified and its methodology is analyzed. Total characteristics and modifications of Shiraz and Shiraz houses are explained in next step, and then the analysis based on the sustainable design characteristics is started. Each objective is analyzed based on each house condition and the results are determined.

The results show that, the best orientation for a house in Shiraz is East-West direction, which the length of a house faces North and South to gain the most solar lighting. Houses with large area of green spaces have a better situation toward preventing solar heating and prevailing wind, while roof shelters also help windows to prevent these harmful natural sources. The best form acting, that could prevent to lose less energy in the night and gain less energy in the day, is square housing form, which with having shading facades could prevent solar heat and prevailing wind.

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