

Energy Efficient Buildings in Tehran by Reviewing High-Tech Methods and Vernacular Architecture Principles

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Abstract : Energy resources are reachable and affordable in Iran, thus surplus access to fossil fuels besides high level of economic growth leads to serious environmental critical such as pollutants and greenhouse gases in the atmosphere, increase in average degrease and lack of water sources specially in Tehran as a capital city of Iran. As building sector consumes a huge portion of energy, taking actions towards alternative sources of energy as well as conserving non-renewable energy resources and architectural energy saving methods are the fundamental basis for achieving sustainability's goals. This study tries to explore implantation of both high technologies and traditional issues for reduction of energy demands in buildings of Tehran and introduce some factors and instructions for achieving this purpose. Green and energy efficient buildings such as ZEBs make it possible to preserve natural resources for the next generations by reducing pollution and increasing ecosystem self-recovery. However ZEB is not widely spread in Iran because of its low economic efficiency, it is not viable for a private entrepreneur without the governmental supports. Therefore executing of Architectural Energy Efficiency can be a better option. It is necessary to experience a substructure expansion with respect to traditional residential building style. Renewable energies and passive design which are the substantial part of the history of architecture in Iran can be regenerated and employed as an essential part of designing energy efficient buildings.

Keywords : architectural energy efficiency, passive design, renewable energies, zero energy buildings

Conference Title : ICEESD 2016 : International Conference on Energy, Environment and Sustainable Development

Conference Location : Paris, France

Conference Dates : January 21-22, 2016