Statistical Evaluation of Value Engineering Criteria's in Sustainable Building Projects

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Abstract

Sustainable buildings reflect the interest rising of Urbanism sectors in issues of economic development, optimal utilization of natural resources and greater reliance on "renewable" sources of energy. The objective of the research is to identify and Diagnosis the priority of alternatives to sustainable projects with the of relative importance and to review the value engineering indicators in building and the possibility of applying sustainable building standards such as British Standards (BREEAM), US Standards (LEED), Pearl Rating System and Green Pyramid Assessment System. The research is based on four axes. The first axis is the foundations of architectural design to serve the optimum use of the available resources. The second axis is based on the methods of producing building materials with optimum use of natural resources; Third axis: The sustainable use of the building to achieve conservation of the environment using economical sources of energy, waste recycling and maintenance of the building according to the required specifications. The fourth axis, which means Using renewable energies to provide the building with the energy it needs. The literature and researches in the field of research work were reviewed, which included the concept of applying value engineering method in the sustainable buildings and the most important areas of their applications during the stages of completion of the project and what are the basic considerations that should be provided in the construction projects, Which represents the practical aspect in relation to the various stages of the field study, which includes aspects related to the field survey, through the preparation and Configure of questionnaires derived from the theoretical study and interviews and also focused on the indicators and areas of applications during the stages of the project (pre-construction stage, implementation stage, A maintenance and operation, post construction phase (end of the age of the building) and what are the basic considerations that must be provided in the construction projects. The research provided this results: The Sustainable Buildings Projects location Selection Index is The most important indicators of value engineering for sustainable buildings where relative importance of it is 72%, according to the

respondents' answers, conversely the architectural index, with its relative importance of 55%, while the electromechanical index was 68% and the constructional index by 65%. And the development of a waste management program during the process of construction and operation so that this program achieves the minimum recycling and the use of new alternatives to building materials drawing on what has been developed within other areas in the development of the construction industry.