

TITLE OF DIPLOMA THESIS

LEED and BIM methodologies: these two constantly evolving methodologies are applied, analyzed and discussed in the construction of the Stavros Niarchos Foundation Cultural Center (SNFCC), the first building in Greece under this scheme.

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ABSTRACT

The concept of sustainable development has been born many years ago and is indissolubly linked to everything that affects the environment, the economy and the society. The construction industry, one of the continually evolving industries, according to the needs of each era, could only be influenced by the principles of sustainable development, both in environmental, social and economic terms. The need for environment-friendly constructions that save energy both during the construction phase and during their operation, for pioneering methods of collecting and reuse of water, for the use of materials that beyond human health do not harm the environment as well, has led to the creation of methods of evaluation of the environmental performance. These are systems that evaluate construction from various environmental perspectives, and reward those whose design, construction and operation are consistent with the principles of sustainable development. This thesis examines the Leadership in Energy and Environmental Design (LEED), one outstanding environmental system of evaluation that was created on the basis of American standards, but has now been expanded and adapted to the needs of most developed countries worldwide. The second half of this thesis analyzes the methodology of Building Information Modeling (BIM), which is used throughout the design, construction and operation of the building by all stakeholders and is aimed at better collaboration and communication, optimal project management and future monitoring. These two constantly evolving methodologies, have been applied for the first time in Greece, in the construction of the Stavros Niarchos Foundation Cultural Center (SNFCC). In the context of this thesis, a questionnaire was made for the implementation of LEED and BIM methodology in the SNFCC and people who worked at the project were asked to participate, in order to draw the appropriate conclusions.

KEYWORDS

Sustainable development, building information modeling, LEED.