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Sustainability in Construction Sector

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Abstract

The concept of “Sustainability” defined for the first time by Brudland Report which is published in 1989 by United Nations of the World Commission on Environment and Development has been placed in the center of several studies and practices. Adaptation of environment and energy policies supporting economic development not threatening natural life, in international community makes states, establishments, institutions and business world and non-governmental organizations and other stakeholders force to act at this way. Eco-friendly and smart buildings are the result of sustainable environment policies in construction sector which is widely responsible for consumption of natural resources and for environment pollution. Sustainable constructions called smart buildings or green buildings are hi-tech buildings with their control and automation systems. For this kind of building design, stakeholders such as architects, engineers, landscape architects, product manufacturers, energy consultants, project managers, building users, and local administrators are working together. The identification of potential threats and opportunities by following these technologies, the selection of appropriate technological capabilities for the company and industry, the acquisition of these technologies from internal or external companies and usage of them are required for strategic management of technology. Firms which make investments on research and development acts (R&D) in the construction industry of the future in the world by using strategic technology management and which can make its power sustainable to compete in the global market will be able to find a place for themselves in the market.

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1. Introduction

Technological developments begun with industrial revolution have brought an idea about that it could become dominant over nature. After World War II, rapid economic development plans have been put into practice in order to

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meet rising needs in urban areas with migration from the country to town, in addition to population explosion. An unplanned urbanization process has begun by putting into practice these development policies not regarding protection of natural environment and adopting the idea about became dominant over nature with technological force. Unplanned urbanization as a result of industrialization has caused reduction in green-field gradually, increase in energy need per capita, consumption of limited natural resources unconsciously and usage petroleum resources intensively. Environmental issues including increase in greenhouse gas emission, global warming, ozone layer depletion and decrease in biodiversity have reached global dimensions as a result of unbalance between production and consumption caused by unlimited production policy of industrial revolution while their impact were feeling on local scale. Environmental issues as a result of current economic development models based on overconsumption of natural resources and destroying life, has downgraded the social wealth and the standards of living to the lowest level of all time.

The worries about rapidly consuming natural resources could fail to satisfy the necessities of mankind and about slowing down or even stopping of community development and economic growth as a result of this insufficiency; one day, have been made a current issue for the first time at Brundtland Report (WCED, 1989) in 1989. Although it has been raised doubts in published years, today states, institutions, organizations, business world, non-governmental organization and other stakeholders have a consensus about the fact that natural resources are limited and human life is under risk in the world. Sustainability concept which can be defined as “meeting the needs and expectations of the present without compromising future generations to meet their own needs and expectations” in the Brundtland Report (WCED, 1989) has been located in common denominator of recommended solutions.

Literature survey method was used as basic research method in this article. Within the scope of this performance, future of “Sustainability” or “Sustainable Development” concepts which has accepted by stakeholders recently and has not denied economic development but has adopted the environmental and energy policies not threatening the natural life, are tried to predict by analyzing the developments both at global scale and in Turkey.

2. Literature Review And Hypotheses

2.1. Sustainability

In general, sustainability means using of natural resources in such an equilibrium condition that they do not reach decay, depletion and unrenewable point and handing down the next generations by developing them. In this context, sustainability seems to be a concept branding to every field ranging from global development policy to usage of energy sources and from production planning to architectural design (Hoşkara, 2007) in our age.

Sustainability, aims to be able to also exist generations in the next century by protecting natural and built environment and taking care of continuity of human beings and natural resources (Osso et. al., 1996). At the same time, sustainability is a multi-dimensional system which aims increase in life quality of all people through healing the conditions of people with disadvantages, making valuable bonds among people by giving importance to cooperation and social benefit, and doing reform in economics fed from these natural resources (Hoşkara, 2007; Oktay, 2005). Concept fundamentally aims providing equilibrium with respect to human, time, and place; in other words, equal allocation of world resources among all nations, living things and future generations.

Sustainability actually foresees a continuous development with changing only our consumption habits without reduction in our present life quality. Being sustainable of this development is also related to a universal solidarity and a democratic and fair allocation. In other words; via sustainable development model it is suggested that total development understanding that aims environmental management, social responsibility, and economic solutions by abandonment from being consumer society. From this perspective, it can be stated that sustainability has three main dimensions/components called environmental, economic, and societal. Interactions among each other of effective parameters of sustainability which are protection of environment, economic progression, and social fair are demonstrated in Fig. 1.

A strategic development can be provided via balanced and consistent synergy of environmental, economic, and social components of sustainability. As ecological and social sustainability cannot present without economic sustainability, it is accepted that social sustainability is a precondition of economic sustainability. These three components should be taken into consideration as inseparable parts of a whole because of their full integrations with each other (HKU Architecture, 2002).

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