Shimizu Corporation: “Innovation revolutionizes sustainable construction in Japan”

Despite forty years of economic growth after World War II, Japan has suffered economic challenges since the 1990’s. Though Japan has significant sources of coal, energy needs are met through large imports of oil, natural gas and other forms of energy, including uranium. By 2010 the country relied primarily on nuclear and imported oil. The 2011 Great East Japan Earthquake and Tsunami that hit Fukushima further challenged the country’s international environmental reputation.

The Challenge

After Fukushima, nuclear reactors have been progressively shut down for safety concerns. As nuclear power had met about 25% of electricity needs, this resulted in severe energy shortages and increased research for sustainable solutions.

Striving to give credence to its corporate vision of *Today’s Work, Tomorrow’s Heritage*, Shimizu recognized the energy risks facing the country and realized that its future depends on the company’s ability to accept the resultant challenges.

The Process

In 2010 the company launched its long-term “Smart Vision 2020” concept with environmental awareness at the core of all business activities. Some of its important goals include the implementation of energy conservation and efficiency technologies, achieving zero-carbon buildings, developing business activities to address the biodiversity issues and ensuring safety in case of natural disasters.

Shimizu invented the ecoBCP-concept, combining energy conservation and eco-technologies with Business Continuity Planning (BCP)

Shimizu’s Smart BEMS (Building Energy Management System) shifts or cuts peak power by combining the control of distributed photovoltaic cells and batteries on the supply side and the control of heating, ventilating, air conditioning (HVAC) and lighting equipment on the demand side.

In 2012 Shimizu launched its innovative ’Shin Kan-tasu’ construction waste management system with the 4R waste management strategy (Refuse – Reduce – Reuse – Recycle) to reduce construction by-products as its cornerstone.

The Result

Major urban development projects employing Shimizu’s ecoBCP technology include: the Zero Energy Building in Yamanashi, the ecoLCP Condo in Tokyo, the Zero Energy Building (NEDO) in Albany, New

York, the Green Township (NEDO) in Malaysia and the Smart Campus in Hangzhou, China. And the market is growing.

The sustainability direction has put increasing, new demands on existing engineers and designers. They had to acquire considerable new and advanced skills in their respective fields, not only to stay abreast with changing technologies, but to remain leaders in the field.

Reputational benefits associated with their sustainable designs and their environmental practices are widespread and highlight the tangible benefits noted above, further strengthening the business case.