Technology

Staying a Step Ahead in the Technology Race

Value creation at Kajima is driven by people and technology. We have deep technological roots. To meet client needs, Kajima brings outstanding employees into an open atmosphere of free thinking and discussion. This is how, as a team, we develop technologies for every new age. Technology and people are inextricably linked. At Kajima, we focus on developing great technologies and great people; it's a winning combination that generates true value.

Kajima has remained the construction technology leader as Japan's economy has grown over time by integrating business strategy and technology strategy. In the civil engineering field, people talk about "Kajima, the railway builder" and "Kajima, the dam builder." In the building engineering field, we're known for our Western-style buildings, skyscrapers, and nuclear power plants. In addition, our revolutionary aseismic technologies have earned an unassailable reputation.

As I see it, Kajima's construction technology platform was laid out early on by two great specialists. One was Dr. Kiyoshi Muto, an internationally renowned earthquake engineering expert who specialized in the field of high-rise construction. The other is Dr. Takuji Kobori, a leading theorist in the field of structural response control. Both of these experts joined Kajima in the position of vice president, and under their strong leadership the Company united to deliver advanced technologies. Continual improvement over the years built the Kajima we know today.

Technology Development: Carrying on the Tradition

Kajima was hired after the Great East Japan Earthquake of 2011 to reinforce the Shinjuku Mitsui Building, and we recently finished. One of the most eye-catching skyscrapers in Tokyo's Shinjuku district, the building was put up way back in 1974. While it was not directly damaged by the 2011 quake, there have still been concerns about the risk posed by long-period ground motion. Answering the call for a safer skyscraper equipped with the most advanced seismic protections available today, Kajima developed an original set of 1,800-ton tuned mass dampers (D^3SKY®) for installation on the roof to counter long-period ground motion.

Ordinary earthquake reinforcements are accomplished by installing multiple damping mechanisms in the lower-floor framework. To reinforce a building while it is occupied is a real challenge, for it must be done without impacting tenants or the building's appearance. Our unique D^3SKY® system solved these challenges and considerably enhanced the building's value. It has received rave reviews as a superior approach to seismic upgrading technology for existing high-rise buildings.

At Kajima, we are proud of our corporate culture, which encourages the kind of free thinking that yields the most rational technologies. We prize the spirit of technical innovation that was born in this corporate culture and fostered by the strong guidance of Dr. Kiyoshi Muto and Dr. Takuji Kobori. We aim to build on this legacy to bring out Kajima's next set of breakthrough technologies for our quest to keep building safer, more sustainable cities. In recent years, markets for construction technologies have diversified, and miniaturization has come with technological progress. To drive further progress in R&D, we will carry forward Kajima's long-standing pioneering spirit and apply it to human resources development.

Kazuo Kojima
Executive Vice President,
Research & Technology Development

Responding to the Times and to Markets

Construction investment in Japan is half of what it was at its peak in the bubble period. Meanwhile, Japan's construction market as a share of GDP is about the same size as in the developed Western countries. The market for newly built properties is mature, so the percentage of investment going to renovations and other aspects of the life cycle has risen. Creatively addressing these structural changes is a top priority.

At Kajima, our construction business covers the entire life cycle of built structures, from upstream to downstream. We take advantage of this by focusing R&D on promising fields to strengthen our business portfolio as well as our competitiveness in the global market. Upstream, we are focusing on improving our original technologies. Midstream, we look to innovate in construction techniques and develop new renovation methods. Downstream, we are working on decommissioning nuclear reactors, including dismantling and final disposal.

Kajima is also strategic about generating investment returns. For example, with the convergence of new technologies—such as information and communications technology (ICT) and the internet of things (IoT)—we have formed technical alliances with R&D organizations and non-construction companies, and look to do joint R&D work with clients, as well.

The Kajima Technical Research Institute established an office in Singapore in September 2013. Capturing this new energy, we will identify the best system to contribute locally and create mechanisms to monitor and satisfy local needs.

Looking to the future, Kajima's task is to develop the next generation of highly skilled human resources while carrying out the technology development needed to drive our mid- to long-term business strategy. This is the key to taking the value we provide to a whole new level.