

Civil
Engineering
BusinessRedefining Value
for a New EraTamiharuru
TashiroRepresentative Director,
Executive Vice President

Since I was appointed an executive vice president in 2010, Kajima's civil engineering business has bounced back from a time of stagnation, driven by an upswing in contracts for construction projects in Japan, our main source of business. However, we expect overall market demand in Japan to contract in the next five years with fewer projects related to reconstruction in disaster-stricken areas and the 2020 Tokyo Olympic and Paralympic Games. We will address this by steadily increasing the profitability of Kajima's construction operations in Japan, while continuing to improve the work environment at construction sites. Meanwhile, we will build a business model that positions us to enter new markets, including those outside the country. These are the key goals I have set for the civil engineering business.

Determining What Makes Structures and Technologies Worth Paying For

At Kajima, we have had cause recently to reconsider our confidence that the structures we build and the techniques we use to build them are sure to satisfy clients. A contract for construction work involves doing the actual work required to build the structure, based on the design document and following work process and quality requirements. In doing all this, construction management methods and quality control techniques chosen by Kajima are applied until the building is handed over to the client.

When I reflect on this process, I wonder if a project is really finished when we feel the satisfaction of completing construction according to the standards we ourselves set. Rather, shouldn't we be measuring success by how we met the expectations of the client and the needs of the users?

It is obvious that everything should start by understanding and responding to actual client needs. We should never be satisfied with ourselves just for offering high-quality, high-value-added construction based on our own standards. Instead, all of us at Kajima need to keep reconsidering how to prove to clients that the value of the structures we build and our unique approach to construction management are clearly worth paying for.

In the same way, this approach applies to our technical development. Regrettably, Kajima has introduced fewer industry-leading technologies in recent years than before, so we are faced with the challenges of getting back to the roots of Kajima innovation and renewing our commitment to doing creative work. I am determined to ensure that we make every effort at this, always focusing on our clients' needs and demonstrating to them that Kajima offers greater value that is worth paying for. In this process, the key will be restructuring the civil engineering business by broadening its portfolio so that we can more effectively meet today's diversifying needs. Now is the time for Kajima to pave the way to a new era.

Improving Productivity to Promote Safety

Over the past decade, labor productivity has improved by about 20% across manufacturing industries in Japan. The construction industry, however, has seen little improvement. Moreover, with Japan's aging population, young workers have been in short supply. Securing enough workers is going to be an urgent and serious challenge.

There have been calls to improve productivity in the construction industry for many years, but progress has been relatively slow, because cutting costs has been the primary goal. Due to this, the trend has been to focus on construction site costs per project constructed. But the time has come for this viewpoint to change. Using precast materials, automation, and information technology are among the solutions often proposed nowadays, but rather than paying too much attention to improving efficiency by cutting costs and shortening construction times, we must turn our attention to actual working conditions at construction sites, particularly the shortage of workers, in order to improve productivity.

It is not normal to have construction workers work around the clock or give up their days off, except in emergencies caused by events like typhoons or earthquakes. If we are to raise productivity, we must also reduce the risk of construction accidents by addressing labor shortages, ensuring workers are given an appropriate number of days off, and reducing the amount of work and number of hours put in onsite. The construction industry has a relatively high number of accidents, and more of them are fatal. Making substantial improvements at construction sites, including ensuring enough time off for workers, is a compelling goal. Recruiting more women to the industry is another crucial challenge.

We recognize the synergies we can realize by improving productivity, enhancing working conditions at construction sites, and improving safety, and we will pursue all these efforts with determination. Needless to say, better productivity also increases profitability.

Expanding into More Business Domains

Meanwhile, we are also striving to create diverse business models for the Kajima Group as a whole, aiming to build an organization that can respond effectively to market changes. We are diversifying our business portfolio to include new construction management methods and private finance initiatives. In addition, we are improving the Group's capabilities across a broader range of businesses by adding more operational and maintenance management to our design and construction work. These steps will diversify revenue and profit sources while generating synergies.

Moving forward, we will go beyond conventional approaches to pursue both depth and breadth in our business by taking advantage of our expertise in the real estate development business, leveraging the collective strength of our group companies, and setting up new businesses in the environmental field.

Beyond Japan, we are examining how we can leverage our position to win construction projects in other countries, drawing on the broad range of experiences we have had so far, including our mistakes. Given the much greater range of projects internationally, we recognize the need to closely monitor the risks involved. Civil engineering construction projects are especially prone to environment-related risks, including natural disasters, unpredictable weather, and unknown topographic and geological features, so we will always bear these factors in mind.

People's needs are increasingly sophisticated and society is changing faster than ever. In this constantly evolving world, Kajima's most important competitive advantage is its human resources. Leaving conventional ideas behind, together we will take on new challenges with the enterprising spirit we inherited from our hard-working predecessors and the profound sense of humility we feel as we re-engineer the natural world.

FY 2014 Performance

In the fiscal year ended March 31, 2015, revenues in the civil engineering business declined 7.5% to ¥276.4 billion. The business posted an operating loss of ¥15.5 billion, mainly due to declining profits at construction projects outside Japan.

Contract awards both in and outside Japan totaled ¥339.9 billion, staying high as in the previous fiscal year. About 60% of these contracts were awarded by central and local governments in Japan. Leveraging its competitive advantages to win more orders, Kajima intends to continue developing technologies targeting major projects, including construction related to the 2020 Tokyo Olympic and Paralympic Games and the new Linear Chuo Shinkansen Line coming to Japan.

One of the goals of Kajima's new medium-term business plan is to revitalize and reinforce core construction operations. To this end, the Company is flexibly assigning personnel as the market shifts, establishing a sounder construction work system, and working to raise productivity. The business plan will leverage Kajima's recent development of an automated system for dam construction, as well as the Group's competitive advantages, to reinforce and expand the business portfolio.

Kajima is creatively applying the full gamut of its original construction management methods to redevelop the disaster-stricken town of Onagawa in Miyagi Prefecture. Further, it is actively examining the feasibility of participating in public-private partnerships (PPPs) and private finance initiatives (PFIs) outside of its existing construction contracting business. Diversifying business models so that the Company is prepared for the changing times involves more than changing the makeup of existing businesses—it also means selectively entering new business areas by initiating environmentally oriented projects and enhancing Kajima's presence in the energy sector.

To develop civil engineers, the Company conducts training programs designed to ensure employees acquire the skills required of engineers at Kajima. In their first five years with the Company, employees undergo continuous training—both on-the-job training in their workplaces and classroom training using case studies from actual construction projects. The Company also uses a job rotation system that gives employees experience in a broad range of operations, including design, construction, and construction cost estimation work. While continuing with these activities in fiscal 2015, the Company also enhanced its training system with the addition of a new program designed especially for female employees.



The Project for Rehabilitation of a Trunk Road in Ethiopia.



Redevelopment work at the Tsuruta Dam in Japan.

Reconstruction work along the coast of Rikuzentakata in Japan.

Major projects completed

- Ishinomaki disaster waste disposal facility
- Northbound section of the Central Circular Shinagawa Route Shield Tunnel
- Civil engineering work for a new section of the Kyogoku Power Plant

Major project in process

- Reconstruction work in the town of Onagawa, Japan

Major contracts awarded

- North Tomei section of the southbound tunnel of the Tokyo Outer Ring Road
- Road construction in the Shirai area of the National Highway Route 45
- Reconstruction of the Nagayasuguchi Dam from fiscal 2014 to 2018

TOPICS

Project

Entire Tokyo Metropolitan Expressway Central Circular Route Now Open

Central Circular Shinagawa Route Shield Tunnel Northbound Section Construction Office, Gotanda Entrance/Exit Construction Office, and Ohashi Junction Construction Office, Tokyo Civil Engineering Branch

At present, the Tokyo Metropolitan area has three ring-shaped expressway systems: the Ken-O Expressway, Tokyo Gaikan Expressway, and Tokyo Metropolitan Expressway Central Circular Route. Situated between the inner and outer routes, the Central Circular Route fully opened in March 2015. A Kajima joint-venture firm was responsible for constructing several sections of two ultra-long shield tunnels about eight kilometers in length that connect the Oi Junction and Ohashi Junction. This included the construction of the underground Gotanda entrance/exit, in which a pipe roof arch technique was utilized to shorten construction times.

The opening of the Central Circular Route improved the Tokyo Expressway system and halved the time needed to drive from Shinjuku to Haneda Airport to about 20 minutes. The expressway is an important piece of infrastructure for improving urban transport in time for the 2020 Tokyo Olympic and Paralympic Games, and it is also expected to enable faster road transportation to disaster prevention facilities across a wider area in the metropolitan region.



A ceremony was held in March 2015 for the opening of the Yamate Tunnel, the longest road tunnel in Japan.

Person

Aiming to Become a Project Manager That Keeps Everyone Satisfied

Takeshi Sasaki

Deputy Section Chief of Construction, Seibu Oizumi-gakuen Joint-Venture Project Office, Tokyo Civil Engineering Branch

After joining Kajima, I worked on bridges and shield tunnels at the Civil Engineering Design Division. Later, I was involved in the construction of the Tokyo Metro Fukutoshin Subway Line at Shibuya Station in Tokyo. Now, I am working on a project to construct a multi-level road and railway crossing spanning about 2.4 kilometers on the Seibu Ikebukuro Train Line between Nerima Takanodai Station and Oizumi-gakuen Station.

Fifteen years have now passed since I joined Kajima. While the construction industry has been the subject of increasing public scrutiny in recent years,

I hope to contribute to society through public works projects, and I am working hard every day to be a first-rate civil engineer who can benefit the people around me. At the busiest times, I tend to focus just on how to get things done, rather than why I'm doing them. To counter this, I try to follow the "people first, numbers second" principle in my daily work, and to remember that the only thing I can ultimately change is myself. As Kajima people work alongside staff from our subcontractors, I want to be an engineer that everyone really wants to work with. Looking ahead, my aim is to become a project manager that keeps everyone on the site satisfied.



"My extensive experience made me who I am today, and I am looking forward to being appointed as a project manager."

Group company

Taking on the Challenge of Creating New Value

Kajima Road Co., Ltd.

Kajima Road is focused on the challenge of creating new value, aiming to build comfortable environments for people and ensure that the earth's ecosystems thrive. Based on this mission, and as a member of the Kajima Group, Kajima Road carries out diverse operations in construction and civil works projects, including roads, expressways, bridges, airport runways, automobile test courses, and paved areas at harbors, dams, and water reservoirs. It also manufactures and sells asphalt mixtures.

In Kajima's civil engineering and construction projects, Kajima Road performs specialized roadwork and also outsources work as a prime contractor. Beyond its core roadwork business, the company engages in construction work utilizing the small-caliber steel pipe pile method, which has an excellent reputation for outstanding efficiency and environmental

friendliness. It also carries out soil purification work and participates in private finance initiatives. All of these activities help to maintain the extensive infrastructure needed for people's everyday lifestyles. Kajima Road also has subsidiaries in Thailand and Vietnam which assist Japanese companies building new factories in those countries.

To meet today's needs for road and infrastructure maintenance, Kajima Road applies its technical and construction capabilities to projects involving maintenance and upgrades of aging social capital as well as infrastructure for preventing and mitigating the effects of large-scale disasters.



Roadwork between the Sagami-hara-ai-kawa Interchange and Sagami-hara Interchange on the Ken-O Expressway.