

# The Race to Build The World: Japanese construction firms take their expertise global

Japanese companies offer unrivalled quality, technology and project durability, and are expanding overseas to help other nations meet their building and infrastructure challenges.

Tokyo's futuristic skyline and the Shinkansen bullet train system are amongst the most iconic symbols of Japan, and a testament to the technological prowess and capabilities of the nation's construction and infrastructure firms.

In its heyday the Japanese construction industry was thriving domestically. In 1989, Japan's construction sector accounted for some 45 trillion yen, or around 15 percent, of the country's entire GDP. The period that followed the real estate crash, known as the "lost decade," saw a steady decline in Japan's construction sector. In 2010, it was worth around 25 trillion yen, and while the sector has shown growth up to 2015, rising to 28 trillion yen, it is still far from the dizzying heights of 1989.

With construction projects related to the Tokyo 2020 Olympics and stimulated by Prime Minister Shinzo Abe's \$61 billion investment plan, the industry should continue to experience moderate growth at home, but the nation's construction firms, like so many others, are eyeing growing opportunities overseas, with a particular focus on Asia.

To maintain its growth momen-

turn, the 45 countries in developing Asia will need to invest \$26 trillion between 2016 and 2030 in infrastructure projects in power, transport, telecommunications and water, according to a report by the Asian Development Bank (ADB) released in March.

In 2015, Prime Minister Shinzo Abe pledged to invest \$110 billion in "quality" infrastructure projects across Asia over five years. In November, following the meeting of U.S. president Donald Trump and Mr. Abe, Japan reiterated its commitment to invest in "high-quality" infrastructure in Asia, in partnership with the United States.

Japan's support of infrastructure projects in Asia is nothing new. For decades, it has offered overseas development assistance (ODA) to its neighbors through organizations like the Japan International Cooperation Agency (JICA).

"Japanese ODA focused on infrastructural development in East and Southeast Asia. Infrastructure was a catalyst for private investment and was a remarkable contributor to the overall economic growth of these countries," says JICA president, Shinichi Kitaoka.



"Infrastructure was key to creating a conducive environment for Japanese manufactures to bring their investment in the region. Without ports, roads, bridges, or water systems, it would have been impossible for these countries to attract private investment."

## From ODA to PPPs

Thanks partly to Japan's initiatives in the region, there has been a shift from a focus on ODA to public and private investment. In the meanwhile, China has become a global superpower and the largest investor in Asian infrastructure. Over the coming years, Japan will compete with China for trillions of dollars-worth of infrastructure contracts.

Japan knows it may not be able to compete with China in terms of quantity, but it is focusing on selling itself as a developer of high-quality infrastructure projects. Japanese

companies assure that their projects may cost more than those of Chinese competitors, but they are built to stand the test of time – requiring less maintenance, which ultimately makes them cheaper in the long term.

"In comparison to China's rapid and large-scale development, Japan aims toward long-term, sustainable and growth-oriented projects with consideration for social and environmental impacts and applying adequate technologies to each country specifically," says Yoshikazu Nomura, President of Nihon Suido Consultants, Ltd. (NSC).

"It is a fact that Japanese firms are facing severe competition, especially with Chinese firms. So far, Japanese firms have believed in their advantage of quality and in the advantage of our life-cycle cost."

NSC has been providing water and environmental consultancy

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services, including water supply, wastewater engineering, sewerage, drainage and sanitation, for ODA projects over the past five decades. The company also participates in consortiums to design, build, finance, and operate and maintain public-private partnership (PPP) projects. As the shift from ODA to public and private investment continues, NSC will leverage on its vast experience and technological know-how to support the development of world-class water and related infrastructure across Asia and beyond.

"The need for water and sewage infrastructure in emerging countries is still high and our technical capabilities will be widely demanded and it is an important role for us to take over infrastructure assets to the next generation properly," says Mr. Nomura.

"We can bring comprehensive engineering consulting services – not only in design and construction supervision, but also in planning and advisory services for any aspect of water infrastructure, by integrating and utilizing sophisticated knowledge and technologies."

Japanese companies have built up decades of unrivalled experience in building resilient, long-lasting and high-quality structures in a nation

prone to natural disasters and with varied climates – experience Japan is willing to share with the world, and particularly with its neighbors in fast-growing Asia.

"We have accumulated know-how on the construction of resilient infrastructure systems," Mr. Nomura points out.

"NSC has decades of experience in water-related projects throughout Japan. This experience is widely applicable in emerging countries and we have an abundance of experience around the world."

Another consulting company that has been involved in ODA and has been working in conjunction with the JICA is Chuo Kaihatsu Corporation (CKC), which has been providing professional engineering services since 1948.

"We went abroad with JICA, but currently we are looking for new ways to go abroad, in order to expand our overseas operations. And of course we are looking for PPPs, but maybe in the future, as they are big projects," says president, Ichiro Seko.

"In the past, we were solely focused on expanding our activities internationally. However, presently, only 5 percent of our total revenue of 8 billion yen comes from our over-



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Nihon Suido Consultants, Ltd.

countries, and in the new high-speed railway in India.

At home in Japan, Pacific Consultants is focused on developing "next-generation infrastructure that will support future growth" in response to the nation's aging population. Like most Japanese construction firms, the company is making the inevitable expansion overseas.

"At Pacific Consultants, we adapt our overseas strategy depending on the market at hand. For developing countries, we provide our integrated construction consulting services for the creation and operation of new civil engineering projects," says chairman, Shinichi Hasegawa.

"For advanced nations, we provide our expertise in the maintenance and renewal of old infrastructure in order to enhance the characteristics of existing buildings. I started another overseas entity five years ago, and while it is still small in size, I have great hopes for the future. Our objective is to surpass the \$100 million in overseas sales by 2020; and to become a 100-billion-yen company by 2030."

Echoing NSC's Mr. Nomura, Mr. Hasegawa acknowledges the competition faced in Asia by its lower-priced Chinese competitors, but reiterates that Japan's advantage lies in the quality, sustainability and durability of its infrastructure.

"Chinese corporations are our great competitors. In Ja-

seas projects. Nevertheless, our foreign projects are not stagnating, and we expect a big expansion abroad."

CKC has brought its seismic technology global to other disaster-prone countries. Following the 2008 Sichuan earthquake in China, the company worked with the Chinese government to develop its 'K3 System' to predict and monitor the possibility of other earthquakes.

"The real competitive advantage is not the machine itself but being able to implement, to control and to effectively use this technology, which can monitor all seismic activities from a computer thanks to our transmission devices," explains Mr. Seko.

"Our K3 technology is not only present in China; it has been implemented in Australian, Taiwan and Sri Lanka. In the future, we want to concentrate in implementing this technology in South East Asia, with the help of local partners."

#### Pacific Consultants

Established as a U.S. company in 1951 to support Japan's rebuilding efforts after World War II, Pacific Consultants Co., Ltd. is one of Japan's leading construction consultancy firms and today manages thousands of projects across 29 countries. In Japan the company has worked on some of the nation's most important infrastructure projects, including to Shinkansen high-speed railway. Outside of Japan, the company has been engaged in railway projects in Southeast Asian

## Comprehensive Consulting for Water Infrastructure to the Next Generation



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**Japan Port Consultants**





"We believe that any infrastructural project must provide safety and security, while sustainably supporting the local economy in the long term"

Shinichi Hasegawa, Chairman,  
Pacific Consultants Co., Ltd.

pan, we believe that any infrastructural project must provide safety and security, while sustainably supporting the local economy in the long term. We call it 'smart infrastructure'.

"For any construction project to achieve longevity, quality must be prioritized. In our industry, it is unfair to regard the immediate cost over the long-term return. If one desires to have long-living infrastructure, the price cannot be discounted. At Pacific Consultants, we believe that all construction projects should be of high quality, and pricing should reflect the right cost for the right value."

#### Japan Port Consultants

Japan Port Consultants, Ltd. also has a history that dates back to Japan's post-World War II redevelopment. The company was behind the design and construction of the internationally acclaimed and award-winning Kansai Airport in Osaka, which has been compared to engineering marvels such as the Panama Canal and Hoover Dam.



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"Moving forward, we must place our efforts in developing the construction techniques of the future"

Takashi Tanisho, President,  
Hitachi Zosen Corporation

"We had to develop Kansai airport 5 kilometers (3 miles) away from land. As the airport is literally in the ocean, the building conditions were extremely severe and difficult. Many American peers called the project 'fantastic, but crazy,'" recalls president, Tetsuo Omura.

"Kansai airport is built at a level where the depth of the sea reaches 30 meters while being far away from land. We are very proud of this project as it is the proof of the uniqueness of Japanese technology."

JPC has been involved in ODA port projects abroad. Moving forward, the company wants to draw on its 57-year track record of developing port and harbor facilities in Japan to provide high-quality consulting services for overseas private port projects.

"Japan is a small island nation with severe natural conditions, such as earthquake, tsunamis and difficult land on which to build. We have had no choice but to develop the necessary expertise to construct dense and highly technological projects. This know-how in density and in dealing with natural disasters is a strength we wish to bring to the world."

#### Sumitomo Electric

While water, ports and rail infrastructure is important for Asia's development, so too, of course, is electricity. Owing to its capability of material development, Sumitomo Electric has developed the world's best-in-class high-voltage, direct current (HVDC) cable and converter technology.

Last year a joint venture between Sumitomo and Siemens was awarded a contract in India to build a high-voltage direct current HVDC transmission system. This will be India's first HVDC link featuring

a state-of-the-art VSC technology transmission link and will support the Indian government's vision of "24/7 power for all".

"As our HVDC technology is characterized by low loss for long-distance power transmission, it will be utilized to connect regions and nations alike," says president, Osamu Inoue. "We have also achieved a world record for the most powerful HVDC XLPE cable systems."

On a continuous quest to find innovative solutions to the world's power demands, Sumitomo has gone on to develop high-temperature-resistant and eco-friendly DC-XLPE (cross-linked polyethylene) cables, which will meet the various transmission needs that are expected to increase in the future, particularly in Asia.

"Our DC-XLPE cable can be operated at a high temperature at 90°C (194°F), compared to the 70°C of our competitors. In warm areas such as Asia, this technology provides answers to climatic issues, reduces investment burden and enhances transmission capacity," explains Mr. Inoue.

"Throughout its history, Sumitomo Electric has always been a

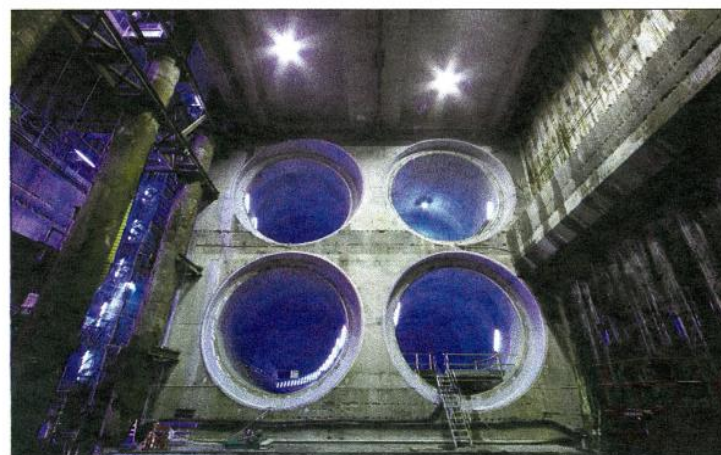
pioneer in material development and power cable innovation. We were the first in the world to develop numerous era-defining power cables and we will further expand our business to meet the demand of modern societies."

Meeting the energy demands of a modern society is also the focus of Hitachi Zosen, a company which is among the world's leading experts in the generation of energy from waste.

"More than ten years ago, we started to enhance the productivity of our energy-from-waste plants and our power generator systems. And now, we have started to incorporate AI technology into our operations," says president, Takashi Tanisho, who believes that all Japan's construction firms must adopt new technologies such as AI and robotics moving forward.

"We must increase our productivity through the use of innovative technologies, such as robotics and AI," he says.

"We must place our efforts in developing the construction techniques of the future. Today is the time to create the growth foundations for tomorrow."



## Bringing Japanese Expertise to The World

We are Pacific Consultants, the leading Japanese construction consulting firm, specialized in the development of safe, sustainable and prosperous infrastructure for the future of humanity. Throughout our 67 years of history, we have accumulated an acute knowledge in 29 construction related fields and we completed 4,400 projects per year in more than 100 regions internationally.

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