Where China is headed

Japan's technological capability supports the development of giant China

KITADA Akiko
Economic Journalist
Business Consultant

Current state of Japanese-affiliated general contractors in China

Chinese civil engineering and building technology has advanced in recent years. Taking a familiar example, highway paving has moved on from the conventional concrete to asphalt. In bridge technology, the 35.66 km Runyang Yangtze River Highway Bridge between Yangzhou and Zhenjiang in Jiangsu Province was opened to traffic on April 30 this year; it is of the largest scale and highest technical level in China. The geological survey, design, construction and management were all carried out by China itself, demonstrating the highest level of bridge technology to the outside world.

Background factors behind China's rapid technological progress, which is marked by infrastructure on the world's largest scale taking advantage of continued double-digit growth, are the introduction of technology from abroad and the rising level of domestic technology through absorption of imported technology.

Junior engineers aged between 30 and 40 with experience accumulated in Japan and Western countries have returned to their country of origin as the Olympics and EXPO approach. Using technology and methods acquired overseas, they are taking orders for high-rise buildings and convention centers one after another. Many of the buildings by this new generation are of completely novel design.

Many Japanese general contractors have already made inroads into the Chinese market, where a construction boom is underway. As China joined the World Trade Organization (WTO) in October 2003, laws concerning the subsidiaries of foreign construction companies in China were established, allowing general contractors to take orders directly from a client instead of taking contracts from project based consortium. The application process has also been simplified. However, the Chinese government maintains various limits to protect domestic companies. (Tables 1 and 2) It is still difficult for foreign firms to directly participate in large projects or those of national importance.

Table 1 Standards for establishment of Chinese construction companies

Class	Scope within which contract work is permitted	Capital stock	No. of employees (No. of engineers)
Special Class	No limit (only Chinese construction companies)	Over 300 million yuan (about 4 billion yen)	Over 300 (Over 200)
Class 1	• Contract amount not more than 5 times capital stock • Buildings not taller than 40 stories or no more than 200,000 m^2 in floor area	Over 50 million yuan (about 650 million yen)	Over 300 (Over 200)
Class 2	• Contract amount not more than 5 times capital stock • Buildings not taller than 28 stories or no more than 120,000 m^2 in floor area	Over 20 million yuan (about 260 million yen)	Over 150 (Over 100)
Class 3	• Contract amount not more than 5 times capital stock • Buildings not taller than 14 stories or no more than 60,000 m^2 in floor area	Over 6 million yuan (about 78.5 million yen)	Over 50 (Over 30)

Note: These ratings are as of May 20, 2005.

Table 2 Scale of contract works by road, bridge and tunnel construction companies

Class	Scope of contract work	Details of contract work	Remarks (Note)
Special Class	All classes	Roads, bridges and tunnels	No limit
Class 1	Less than 5 times capital stock	Roads	Each class
		Bridges	Each class
		Tunnels	Not longer than 3,000 m
Class 2	Less than 5 times capital stock	Roads	Not greater than Class 1
		Bridges	Less than 100 m per span
		Tunnels	Not longer than 1,000 m
Class 3	Less than 5 times capital stock	Roads	Not greater than Class 2
		Bridges	Less than 40 m per span
		-	(Bridges not longer than 500 m)

Particularly in the civil engineering field, even if a foreign firm desires to become involved in a big public works project ordered by the Chinese government , the unit cost is too low. Further, many negotiations are still carried out behind the scenes (bid-rigging, bribery and connections) and the details of negotiations are completely hidden. The risk of undertaking public works in China is the same as in other countries and there are quite a number of deficit-ridden companies. It is no joke when they say that the only people to make money are the foremen who abuse workers with low wages on site and the people in charge who take kickbacks from subcontractors.

Entertainment of owners after receipt of an order and payoffs to owners are rampant in the building field, too. Projects often suffer from troubles such as the following, therefore proving unprofitable and carrying high risk: bid-rigging without technological grounding; commencement without a solid plan even though the order has been received; multiple changes to the project plan during the work; and termination of construction work due to a shortage of funds.

Photo 1 Urban area with construction boom (Shanghai)

The result is that the most profitable and stable orders for Japanese-affiliated general contractors are those received from Japanese companies. With Japanese companies rushing to expand into the Chinese market, the number of orders from Japanese companies is not small. For example, even in the area around Guangzhou in Guangdong Province, the big three Japanese auto makers (Toyota Motor Corp., Nissan Motor Co., Ltd. and Honda Motor Co., Ltd.) and related suppliers are constructing production facilities at a rapid pace. However, the general contractors cannot rely on business from Japanese companies forever. Chinese general contractors, who undertake contracts at about half the price of Japanese-affiliated general contractors, are appearing like mushrooms. In addition to offering low prices, Chinese general contractors have strong connections with local governments that issue building permits. They can obtain construction permits in an inconceivably short time. While a resident manager of a major general contractor deplores the acquisition of Japanese customers by Chinese general contractors, the easygoing trusting relationship between Japanese businesses is in the process of breaking down.

Where China is headed

Japan's technological capabilities supporting China

As mentioned above, Japanese-affiliated general contractors face an uphill battle in the difficult Chinese environment. On the other hand, there is no doubt that the high standard of Japanese civil engineering and building technology provides indispensable support for China's current economic growth. Special technology for the design and improvement of infrastructure, including urban planning, environmental protection, energy saving, sewerage systems, railroad engineering and power generation, will not be implemented smoothly without Japan's technological capabilities despite China's own efforts. Power shortages, environmental disruption, flood control, transportation infrastructure are all issues that China naturally faces as a result of rapid development. However, these are all fields in which China is behind and relies on technology from abroad.

Plans for Chinese cities and for bridges and highways are drawn up by government-affiliated design institutes independently of construction companies. As a result, Chinese general contractors do not develop expertise in these areas. In contrast, Japanese general contractors operating within Japan carry out development, design and technical research functions. With respect to the non-physical aspects of construction, Japanese general contractors are far ahead of their Chinese equivalents.

In the design field, the major Japanese general contractors are being joined in the Chinese market by small- and medium-sized engineering companies, who are feeling the limitations of a Japanese market that has run out of steam due to economic depression. In constructing the skyscrapers, major facilities and convention centers required for the approaching Olympics and EXPO events, Japanese technology will be essential given the complexity of the projects. Japanese-affiliated general contractors and Japanese engineers are commonly seen at construction sites.

Japan-China relations are now at their worst since the normalization of diplomatic relations. Aside from government speculation, public anti-Japan sentiment in China, including the problem with the introduction of the Shinkansen, makes it difficult for the Japanese companies to obtain orders for public works. However, the Chinese government maintains a rationalism with respect to the country's prosperity and is realistic about considering economic issues as separate from political ones. As former Chinese leader Deng Xiaoping said, "No matter if it is a white cat or a black cat; as long as it catches mice, it is a good cat." This is the Chinese utilitarian approach.

In a Chinese market of intensifying competition, Japanese civil engineering and building technology is of greatest importance to China, and there is a desire to introduce and absorb it. This technology will support the development of the Chinese giant. It is a challenge for Japan's future development in China to determine the degree that it can contribute technologically without being tossed about by politics.