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The Latest from Taiwan:
Projects for a Better Life



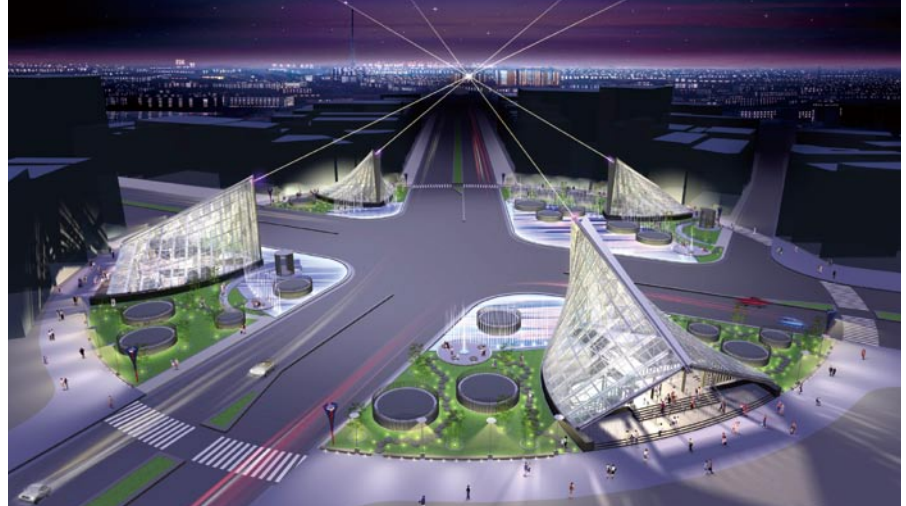
The Latest from Taiwan: Projects for a Better Life

This year will mark 107 years since the opening of Kajima's district office in Taiwan. Kajima has a dual business structure in Taiwan, built around our local subsidiary Chung-Lu Construction Co., Ltd., and the Taiwan District Office. Chung-Lu Construction mainly handles private construction projects, while the Taiwan District Office is in charge of large-scale civil engineering projects often subject to international bidding.

Kajima has been involved in numerous infrastructure construction projects in all areas of Taiwan, and has worked for the development of local society. In this issue, we introduce some of the recent, representative projects being undertaken to develop urban areas of Taiwan.

The Kaohsiung Subway: One of the World's Largest Circular, Continuous Walls

Taiwan's second-largest city of Kaohsiung is one of the world's leading port cities, forming one of the economy's major industrial areas. Two subway lines to serve the area—the north-south Red Line and east-west Orange Line—are currently under construction, and operations are planned for launch in fiscal 2007.



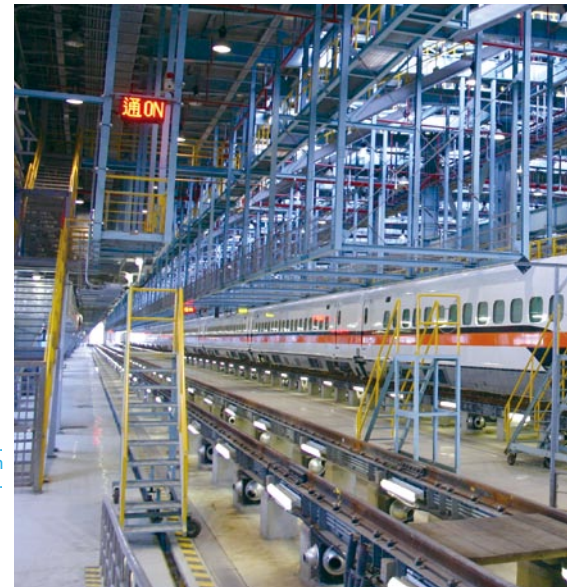
Artist's conception of the completed station. The entranceway has a glass ceiling suggesting the sails of a yacht.

For the construction of the Kaohsiung subway, Kajima proposed a circular continuous wall construction method for the Formosa Boulevard station, where the two lines intersect. This plan involves using the shape of the intersection to construct one of the world's largest circular, continuous walls, with an inside diameter of 140 meters (460 feet), and with other structures built inside of it. This is the first intersection in a major city for which this method has been adopted. In addition to the Formosa Boulevard project, a joint venture company is constructing an open-cut tunnel and shield tunnel along sections of the Orange and Red lines that extend out from the circular station. The drilling

has now been completed, and the structural elements are being put in place.

The Taiwan High Speed Rail Depot: Yenchao Main Workshop

The Taiwan High Speed Rail, linking Taipei and Kaohsiung (345 kilometers, or 214 miles) in as little as 90 minutes,



View of the train control room. The design of the train cars is based on Japan's Nozomi Shinkansen.



Construction on the intersection is proceeding on schedule.

will begin operations soon. The main depot for the line was completed in an area approximately 20 kilometers (12.5 miles) north of Kaohsiung, a suburban area surrounded by sugarcane fields.

The construction of the Taiwan High Speed Rail that uses the high-speed



Groundbreaking for the switchyard was delayed by a full year, with the Taiwanese authorities wanting to house trains in the building within one year, making for an extremely short construction period.

The largest section, the train maintenance yard, is 140 meters (460 feet) wide and 350 meters (1,150 feet) long, with a total floor space of 54,200 square meters (595,000 square feet). For a massive switchyard such as this, Kajima completed the foundation in four months, and for the last month worked around the clock to finish on time. The new rail line has made it easier to travel to the cities of western Taiwan, and substantially improved the convenience of pleasure and business travel.



rail system of Japan's Shinkansen was plagued by bumps and detours, such as the shift from the EU style of train used in France and Germany to the Japanese Shinkansen system.

Elevations

Hung Sheng Tiipao Condominium: The Most Luxurious Condominium in Taiwan

Renai Road is considered to be the most beautiful in all of Taipei. Kajima has completed a luxury condominium considered to be the finest in Taiwan, a city with numerous prime residential districts where government officials and other VIPs come and go, located between the Taipei and national government offices.

The structure consists of six high-rise towers, two each that are 18 stories, 23 stories and 28 stories tall, facing each other to right and left, and surrounding a low-rise “club building.” The building incorporates elements of the traditional Chinese tradition of feng shui, and is positioned to suggest an image of the throne of the Chinese emperors, where fame, fortune and virtue converge.

The largest earthquake in Taiwan’s history, with a magnitude of 7.6, struck central Taiwan in 1999, causing a significant number of casualties.

View of the entire condominium complex



The condominium features a Chinese-style interior.



Drawing on the lessons of this event, more earthquake-resistant buildings have been constructed. This condominium contains a total of 608 seismic control devices installed along the support pillars and beams of each tower.

Exterior walls of stone and marble floors provide a luxurious feel to the building. All of the towers are designed with one unit per floor, with each unit offering floor space of 500 to 800 square meters (5,500 to 8,800 square feet). The units are purchased as skeletons, so that the interior construction can be completed according to each buyer’s style and preference. This is definitely the birth of a high-grade, luxury residence.

The Toppan CFI (Taiwan) Factory: Support for High-Tech Industry

During the 1990s, Taiwan was known as the “Silicon Valley of Asia” due to the concentration of production facilities for computer parts and other components, but in recent years production has shifted to such high-tech industries as semiconductors



and liquid crystal displays (LCDs). Toppan Printing Co., Ltd., which holds approximately half of the global share of the external sales market for color filters, has jointly established Toppan CFI (Taiwan) Co., Ltd. with the Corporation Group and other companies. This new company planned to build one of the world’s largest color filter manufacturing plants in the Tainan Technology Industrial Park in the outskirts of the city of Tainan, which Kajima completed in May of last year.

Kajima has been involved in the construction of numerous other production plants, providing support for the increasingly fierce competition between Japanese companies, whose emergence in the region has been remarkable, and that of local corporations.



The newly built Toppan CFI (Taiwan) factory

Taiwan has deep-rooted ties with Japan in Asia. Younger Taiwanese are interested in Japanese trends and other cultural aspects. Kajima will continue to support the remarkable development of Taiwan through a variety of infrastructure projects.

Kajima around the World

From Algeria

The Largest Social Infrastructure Project Undertaken by Japanese Firms: Construction of a 1,200-Kilometer Expressway

A consortium of five companies (Kajima Corporation, Taisei Corporation, Nishimatsu Construction Co., Ltd., Hazama Corporation, and Itochu Corporation) was formally awarded a contract in September 2006 by the National Highway Agency of Algeria's Public Works Ministry for an expressway construction project worth approximately 341 billion dinars (¥540 billion).

The entire construction project is an expressway approximately 1,200 kilometers (740 miles) in length, stretching across Algeria from east to west. Construction is divided into three sections, of which the eastern 400-kilometer (250-mile) section will be handled by the consortium, with Kajima as the representative firm. The advanced technological capabilities of the Japanese consortium were highly rated during international bidding held in January 2006, including the construction proposal that took account of the earthquake-prone nature of Algeria, and the rapid construction plan utilizing global positioning systems (GPS) and other types of information technology.

The eastern section of the highway to be built by the consortium is a six-lane stretch of road (three lanes in either direction), extending 400 kilometers (250 miles) from the Tunisian border. The length is roughly equivalent to that of the Tomei Expressway, which crosses Japan. Each of the construction companies will build the structures for the expressway, which includes approximately 20 interchanges and 14 tunnels. Construction began in September of this year, and will take approximately 40 months, with completion expected in December 2009.

Algeria had experienced political turmoil at one time, but since the latter half of the 1990s the government has stabilized the security situation through strengthening of anti-terrorist measures and other initiatives, sought to resolve domestic issues by introducing a series of democratic processes, and made proactive diplomatic initiatives toward other countries. As a result, Algeria is a rapidly rising international presence in the Maghreb (countries of northwest Africa including Libya, Tunisia, Algeria, and Morocco).

The recent rise in energy prices, such as for oil and natural gas, has led to a rapid recovery in Algeria's economy and finances, which the government is actively putting toward such social infrastructure projects as transportation. The expressway now being built, when combined with the additional segments, will provide a link from the country's border with Tunisia to that with Morocco, forming a core transportation and distribution network for Algeria, and contributing significantly to its economic development.



From the United States

Hawaiian Dredging Construction Company Achieves World Record on Pearl Harbor Navy Project

The Hawaiian Dredging Construction Company, owned by Kajima U.S.A. Inc. since 2002, is Hawaii's oldest (at 106 years) and largest general contractor, with wide-ranging expertise including high-rise buildings, housing, retail centers, highways, bridges, waterfront, and industrial work. In 2005, an extraordinary project was presented by the U.S. Navy that would challenge our capabilities and ultimately result in an engineering world record.

The Navy needed to upgrade its housing facilities and infrastructure on Ford Island, a small island located in the middle of Pearl Harbor. Design included two new high power lines that would carry 46 kV over 1,525 meters (5,000 linear feet) from the harbor shore to the island's substation. Given Pearl Harbor's restrictions, they would be installed within the substratum under the harbor. The 1,540-meter (5,045-foot) distance would double the previous record for Horizontal Directional Drilling (HDD) with high power lines.



Casing in midair

Hawaiian Dredging's Project Manager Creighton Chang explained, "This project posed big challenges and risks. We had to horizontally drill two 36-inch (90-centimeter) diameter bores and then pull 24-inch (60-centimeter) steel casing containing six polyethylene conduits through each bore and over this tremendous distance—5,045 feet (1,540 meters). And the bore holes had to be drilled 45 feet (14 meters) below the channel floor at minus 90 feet (27 meters) elevation."

The unusual project required a strong team, and one was assembled with American Electric Company, Ltd. from Hawaii and Laney Directional Drilling Company located in Humble, Texas.

As Chang noted, "Horizontal directional drilling is a fascinating process. First, a pilot hole is drilled to establish the profile. The pilot boring bit is tracked and surveyed using a magnetic guidance system, Tru-Tracker®. Next, a reamer bit is attached and pulled back through the pilot hole to enlarge it—the 9-inch (23-centimeter) diameter pilot hole was enlarged first to 24 inches (60 centimeters) and then to 36 inches (90 centimeters) with a second reamer run. The last steps include cleaning out the reamed hole with drilling fluid, extending a pipe string to attach to the steel casing, and finally pulling the casing with its bundled conduits through the 'bore hole.'"

Phase 1 started in May 2005, and Phase 2 in September 2005. The 46-kV cables were installed after the conduits were terminated into the new manholes, and the job was officially completed on May 23, 2006—another successful project and a new world record in the books.

From Singapore

City Square Mall Project Awarded to Kajima Overseas Asia

City Developments Limited (CDL), one of the leading real estate developers in Singapore, has awarded Kajima Overseas Asia (KOA) the contract for construction of City Square Mall. This shopping center will have a total floor space of 109,878 square meters (1,183,000 square feet), four underground and nine aboveground levels, with a podium from the sixth floor. It will be one of the central properties in CDL's portfolio of commercial facilities.

CDL consistently aims for high-quality, high-value-added development, while maintaining a strict stance with regard to environmental considerations and safety. The Singapore government's Building and Construction

Authority (BCA) has also recognized the company's diligence, presenting it with the Green Mark Gold^{PLUS} Award. One of the projects that led to this award is the St. Regis Hotel and Residences, another KOA contract now under construction.

City Square Mall will serve the residents of City Square Residences, an adjacent residential complex also developed by CDL, as well as neighboring communities, and is expected to transform the area. KOA is keenly aware of the importance of this project, and is being exceptionally mindful of quality, safety, and environmental management. Construction is scheduled for completion in June 2009.



Rendering of the completed building (exterior)

From Japan

Wings to the Future: Construction of the Summit Wind Power KASHIMA Wind Farm

The COP3 (third session of the Conference of the Parties to the U.N. Framework Convention on Climate Change), commonly known as the Kyoto Protocol, was enacted to reduce greenhouse gases as a means of preventing global warming. In Japan, the host nation for the conference, the use of wind power—the most effective form of renewable energy—is steadily increasing. Kajima, which has been involved in the construction of about 100 wind turbines, has now completed the Summit Wind Power KASHIMA at a site approximately 45 minutes from Narita Airport, or two hours from Tokyo. Trial operations are now being conducted.

This is the first engineering, procurement and construction (EPC) contract Kajima has received for a wind farm, covering all aspects of the project.

The wind turbines, 78 meters (255 feet) tall, are 2,000kW units manufactured by Gamesa Eolica, S.A. in Spain. The rotors have a diameter of 80 meters (262 feet), a size larger than the wingspan of the latest jumbo jets. At their highest point, the blades reach 118 meters (390 feet), equivalent to a 30-story building. The blades and nacelles (power generators) of wind turbines were imported from Spain, and the towers from South Korea, brought in through the port of Kashima. They were transported to the site after midnight, using a specially designed trailer. The wind turbines were erected using a crawler crane with a lifting capacity of 450 metric tons, to which the 75-ton nacelles and 44-ton blades were installed.

This new wind farm has 10 wind turbines, located in and around a coastal industrial area in Kashima City, Ibaraki Prefecture. Due to the limited available sites, wind turbines have been constructed on various land areas such



The wind farm seen from the waterfront

as an embankment made of the slag from steel mills, a surfer's beach, and baseball fields. The project was realized with the cooperation of a number of landowners in the area.

The wind farm will generate 42 GWh of electricity annually, sufficient to power 12,000 typical, four-person households. Commercial operation is planned to begin in February 2007, and the facility is expected to become a new landmark for this industrial area.



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