

# Features

## A Heritage Reaching back over 120 Years

Penta-Ocean Construction has a corporate heritage going back 120 years to its foundation under the name Mizuno-Gumi in Kure City, Hiroshima Prefecture. Soon after the war ended, our initial marine civil engineering business significantly expanded into land civil engineering and building construction. With our century-old expertise, we have evolved into a unique general contractor distinguished by our work in coastal and waterfront areas and overseas ventures. Inheriting Mizuno-Gumi's enterprising spirit, we strive to make a further leap towards the future.

### The First 100 Years: From Marine Civil Engineering to Land Civil Engineering, Building Construction, and Further Expansion Overseas

During the Meiji Era's efflorescence of national modernization, Mizuno-Gumi undertook multiple port and harbor engineering projects and gained public recognition as a premier marine engineering company. After World War II, Mizuno-Gumi focused on port and harbor development works, taking on land reclamation projects in coastal and waterfront areas. We were also one of the first Japanese construction companies to establish a foothold overseas.

In the 1960s, the Egyptian government awarded us a contract for Suez Canal expansion and reconstruction works. Even after multiple decades, this spirit of embracing arduous challenges under adverse conditions remains deeply ingrained in our corporate DNA. In 1964, we relocated our head office from Hiroshima Prefecture to Tokyo. The company name was changed to Goyo-Kensetsu Co., Ltd. in 1967. After multiple mergers and acquisitions with Sakai Construction Co., Ltd. and Jin Industrial Co., Ltd., we reinforced our Land Civil Engineering Unit and expanded our business bases nationwide.

From the 1970s, we participated in numerous nation-building projects in Singapore, while establishing an outstanding track record in large-scale construction both in Japan and overseas. From the late 1970s, we strived to bolster our Building Construction Unit to bring about our present-day business structure, in which there is a balanced contribution of profits from each of our three units: Domestic Civil, Building Construction and International Business.

### Our Centenary Onward: Becoming a Global No.1 General Contractor in Coastal and Waterfront Areas

After 1996, our 100<sup>th</sup> anniversary milestone, overseas contracts have grown steadily. Since Singapore's foundation, its government has taken proactive initiatives to expand its territory, and Penta-Ocean Construction's share in land expansion work totals 10% of the country's reclaimed land. In our domestic ventures, we have increased our involvement in national-level projects including construction of D-Runway at Tokyo International Airport, container terminals, and the Tokyo Bay Aqua-Line.

The extensive efforts that we put into the Building Construction Unit from the late 1960s have resulted in tremendous success starting in the 1990s. Today, we have constructed a substantial variety of structures including a logistics facility, a ballpark with over 30,000 seats, and a multi-functional complex centering on a high-rise building. Overseas, we have undertaken the construction of high-rise buildings and large public facilities both in Singapore and Hong Kong.

With the advent of a new era marked by our 120<sup>th</sup> anniversary, Penta-Ocean Construction is still pervaded by the pioneering spirit that governed our predecessor, Mizuno-Gumi. Underpinned by our 120-year tradition and expertise, we, as a No.1 contractor in coastal and waterfront areas, will make our best endeavors to enhance our three business units to contribute to society through the construction of high-quality infrastructures.



Cutter suction dredger "Suez"



Replacement of cutter heads



Since its foundation as Mizuno-Gumi, Penta-Ocean Construction has expanded its business horizons through various endeavors. While embarking on overseas ventures well in advance of our competitors, and undertaking domestic ventures in land civil engineering including the construction of tunnels and subways, we have preserved in our corporate DNA a vigorous spirit for taking on new challenges. Having taken all obstacles and setbacks in our stride, we have a strong conviction that we can further enhance our contribution to society both in Japan and overseas.

## Phase IV

Evolution and advancement

2000



Completion of Esplanade-Theatres on the Bay, Singapore (2002)



Self-propelling trailing suction hopper dredger, "QUEEN OF PENTA-OCEAN", (currently ANDROMEDA V) put into commission in Singapore (1999)



Completion of Kogouchi Tunnel of New Tomei Expressway (2005)

2010



Completion of MAZDA Zoom-Zoom Stadium Hiroshima (2009)



Opening of D-Runway of Tokyo International Airport (2010)



Completion of ION Orchard, and the Orchard Residence, in Singapore (2010)

2020



Completion of a large-scale self-propelled multi-purpose working vessel, "CP-5001" (2012)



Completion of a self-propelled cutter suction dredger, "CASSIOPEIA V" (2014)



Completion of new city hall for Kure City (2015)

Contract awarded for consecutive construction of large-scale hospitals in Singapore (2014,2016)

2000

Adoption of the Kyoto Protocol (1997)  
Nagano Olympic Winter Games (1998)

September 11 attacks, USA (2001)

Iraq War(2003)

"EXPO 2005 Aichi", Japan World Exposition(2005)

2010

Bankruptcy of Lehman Brothers (2008)

Great East Japan Earthquake (2011)

2020

Implementation of "Abenomics", Prime Minister Abe's economic stimulus package (2013)

## Features

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# A Challenge to Large-Scale Projects



### D-Runway of Tokyo International Airport (Haneda Airport), Tokyo Metropolitan

Construction Period: March 2005 to August 2010  
(Construction work commenced in October 2010)

With significant growth in demand for aviation to and from Tokyo, Tokyo International Airport's limited airfield capacity had become a major constraint. Upon completion of D-Runway, the annual number of takeoff and landing slots increased from 300,000 to 410,000. The new runway alleviates the congestion of domestic flights and accommodates long-haul international flights, giving the additional value to the airport as the second "hub" airport in greater Tokyo. We constructed the 518-meter seawall and land reclamation of the head of runway, including the taxiway bridge. The works were a series of complex processes as it required utmost care for not interfering with the operation of the existing runways or navigation of vessels passing through the Tokyo Bay. D-Runway was successfully constructed as a result of continuous pursuit for safety and efforts to reduce the economic impact.



### New City Hall of Kure City, Hiroshima Prefecture

Construction Period: September 2013 to December 2015

As nationwide measures are taken to enhance the earthquake-resistant structure of public buildings such as municipality halls and schools, the new city hall of Kure City was designed and built with cutting-edge technology securing the maximum earthquake resistance of the structure. The former city hall was built over a half century ago and had been assessed, and it was found that it had a high risk of collapsing under an earthquake of intensity 6 or worse, and its reconstruction became a public demand. The new hall features barrier-free access and conference rooms equipped with hearing aids, providing universal design to the public.

We will introduce major large-scale projects in the preceding ten years, including the construction of Runway D of Tokyo International Airport (Haneda Airport), whose value as an “international hub airport” has improved, and a complex building on Orchard Road, a central sightseeing spot in Singapore. Penta-Ocean Construction will keep contributing to the development of society by constructing high-quality social infrastructure, based on the sure technology we have nurtured over the past 120 years.

## Self-propelled Cutter Suction With Automatic Dredging Control “Cassiopeia V”

Construction Period: September 2011 to August 2014

With remarkable economic growth in South-East Asia, the development needs for ports and harbors to support foreign trade are enormous. The cutter suction dredger\* “Cassiopeia V” was built to meet such needs. Penta-Ocean’s expertise and European technology were integrated to build this state-of-the-art vessel, with a dredging capacity of 8,000 kw, approximately 1.4 times larger than the capacity of the largest cutter suction dredger in Japan (5,880 kw). The “Cassiopeia V” is the first large cutter suction dredger with a self-propelling function that is expected to make substantial contributions globally in distant waters.

\*Vessels equipped with a rotating cutter head to cut hard soil or rock into fragments and the dredging pumps to suck the cut soil.



Cutter head



Propulsion engine that can swivel in any direction

## ION Orchard and the Orchard Residences (Singapore)

Construction Period: July 2006 - August 2010

Ion Orchard and the Orchard Residences features a lofty 56-storey luxurious residential tower measuring 218 meters high. It was built as part of the large-scale urban redevelopment planning of the Orchard shopping belt. This new landmark is located in Orchard Road, the busiest shopping district of Singapore. Besides attracting attention, it is highly recognized as integrated commercial facilities by locals and tourists.



## Current Missions

### ▶ Human Resource Development Initiatives

#### Promoting Diversity

We established a “Diversity Promotion Office” within our human resources division in April 2016. Both in Japan and overseas, we strive to secure various human resources including female engineers. We endeavor to instill the awareness of diversity into all employees by providing training programs and enlightenment workshops. Enhancing normalization for physically challenged employees is one example. We are creating a working environment in which anyone can flourish regardless of age, gender, nationality, ethnicity and physical disabilities.



### ▶ New Business Initiatives

#### Civil Engineering 2020 Business Development Division

We established a “Civil Engineering 2020 Business Development Division” to develop and manage new lines of business, aiming to exert a synergistic effect with our core business as a general contractor. Part of this new office’s scope is our subsidiary, JAIWAT, which manufactures and distributes mud modifiers made from paper sludge. The modifier’s name “Watoru”, derived from the words “water” and “toru”, which means “absorb” in Japanese, are widely used in building construction nowadays.

