

Business Overview and the Sources of Craftsmanship

Sumitomo Mitsui Construction Business and Portfolio

Highly attuned to the needs of a diverse and ever-changing market, our Group applies its technologies and expertise acquired through years in both the civil engineering and building construction businesses, expanding its businesses around the world with the mission of bolstering regional infrastructure that supports local communities.

The project site is core to our construction business. It is there that we plant and nurture the seeds of various business developments, without compromise on safety or quality, and while completing construction on schedule. One example of this is improving productivity through a move to digitalization. Technological development that enhances our competitiveness is not only carried out in research labs but also on project sites, paving the way for the development of new markets that are expected in the future. With project sites as our core, our business is supported by four segments: our domestic civil engineering business, where we will continue focusing on leading technologies such as the construction of PC bridges; our

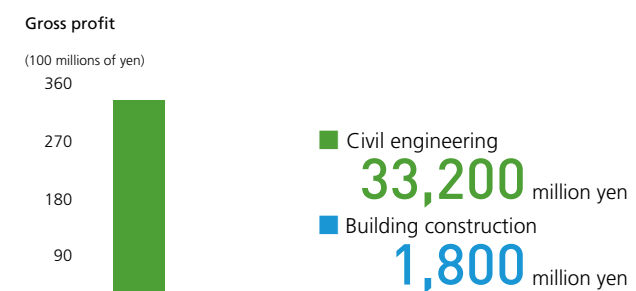
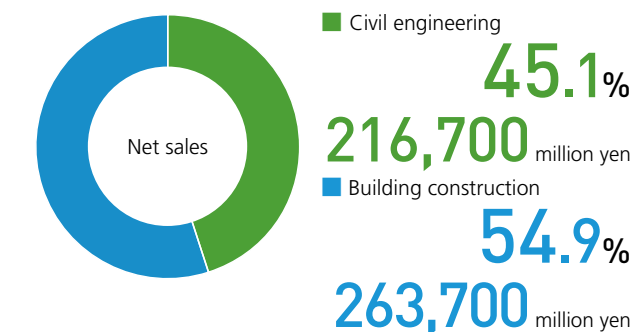
overseas business, which is benefiting from the recovery from the COVID-19 pandemic; our domestic building construction business, where we will continue focusing on improvements in performance, and lastly, our new business & construction peripheral business which is expanding our renewable energy business, to contribute to a decarbonized society.

The source of strength in these businesses lies fundamentally in the technology underpinning craftsmanship and the human resources who pass this on, and in order to respond to changing market needs, we are further honing the technology we have cultivated by leveraging our internal and external networks.

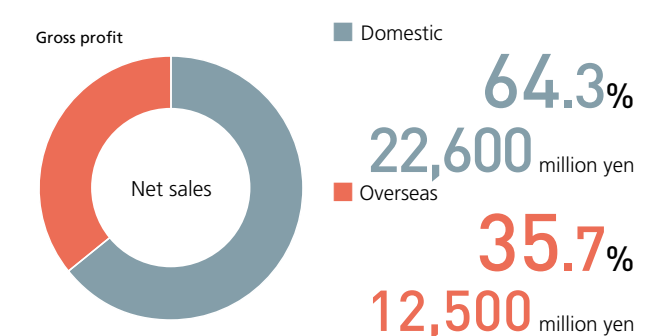
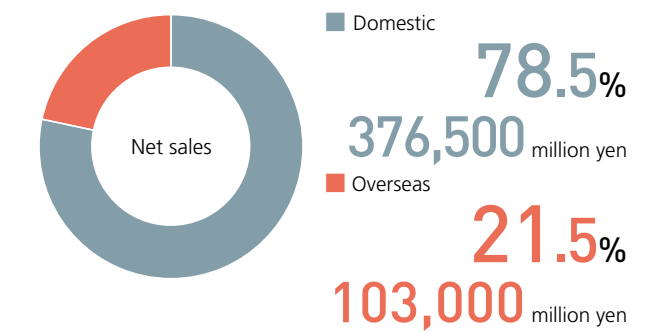
We will continue to develop a business that can grow sustainably, so that we can provide value suited to the new needs of society through craftsmanship, while responding to the trust of our stakeholders, and aiming toward achieving the Vision 2030.

Business Portfolio

FY2023 Performance by Segment (Consolidated)



FY2023 Domestic and Overseas Performance (Consolidated)



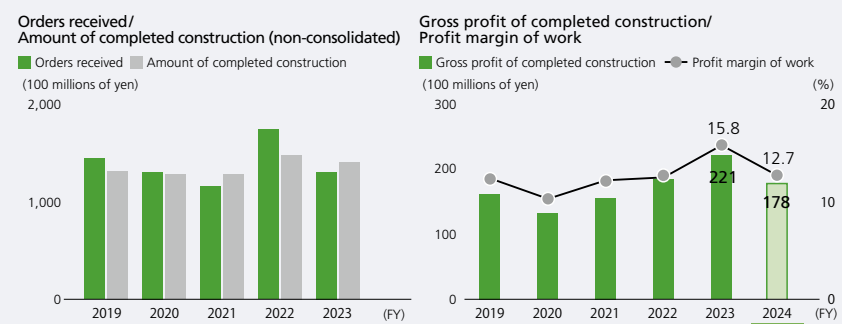
Four Business Areas

Civil Engineering Business

Focusing on PC bridges with industry-leading technology and a proven track record, we are concentrating on large-scale infrastructure renewal projects and carbon-neutral-related business projects.



Miyazaki Prefectural Route 218, Warabenosato Tunnel construction project (Miyazaki Prefecture)



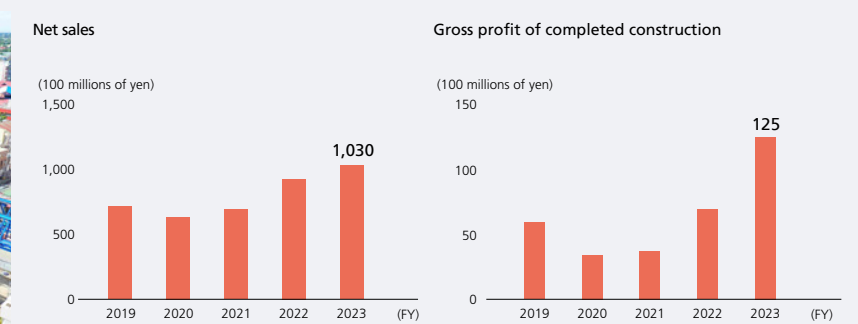
(Note) Includes orders and sales for the Civil Engineering and Building Construction of Overseas Business divisions

Overseas Business

Expand the scale of orders received, a driver of corporate growth, through the aggressive overseas application of our domestic superiority in technological and other areas



North-South Commuter Railway Project (Philippines)

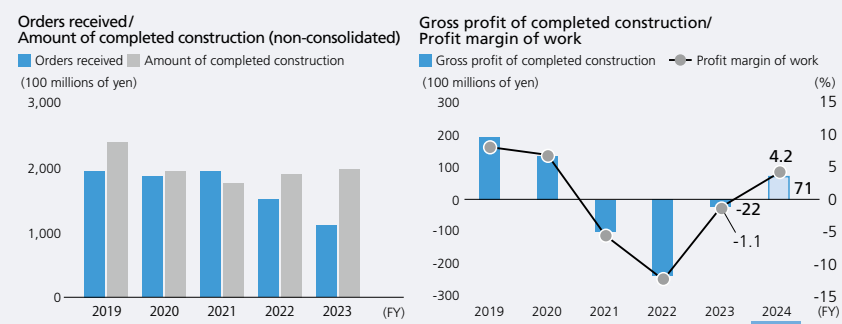


Building Construction Business

We are focusing on the evolution and expansion of PCa technology, while building a system capable of generating stable profits and responding to customer needs.



Type 1 Urban Redevelopment Project in the West Harumi 5-Chome District, Block 5-6 Tower Building



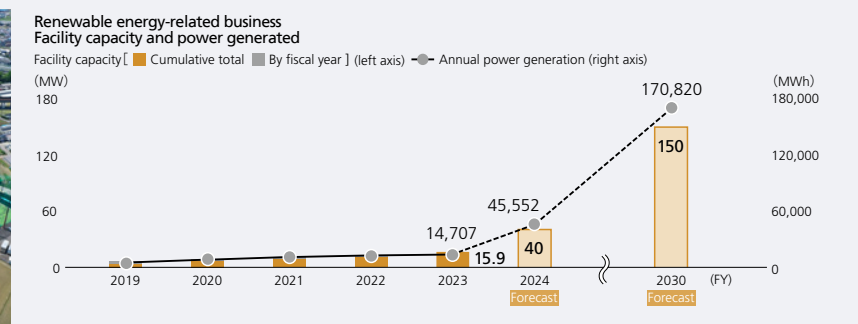
(Note) Includes orders and sales for the Civil Engineering and Building Construction of Overseas Business divisions

New Business & Construction Peripheral Business

Expand the renewable energy business, with a focus on floating solar power generation
Promoting local production for local consumption-type on-site/off-site PPA businesses



Izumisano Nagasaki No.1 and No.2 Floating Solar Power Plants (Osaka Prefecture)



Civil Engineering Business

Site Development Project: Nishio Next-Generation Industrial District
Land Preparation Work (Aichi Prefecture)

FY2023 Results Orders received: **130,600** million yen



Business Overview

FY2023 Results and Mid- to Long-term Policy

In the domestic market, orders for disaster prevention, disaster reduction, national resilience-related construction, and renovation of aging infrastructure have remained strong. Our domestic civil engineering business continued to receive orders and secure high-quality work backlogs. In addition, thanks to the steady progress of several major construction projects, both net sales and profits surpassed the record levels of the previous fiscal year. In our strategy for winning orders in fiscal 2024, we will maintain good performance in technical proposals in the comprehensive evaluation method of bidding and aim to win orders for projects with high productivity and profit margins. In addition, we will continue technology development and DX promotion, and reduce the workload at work sites by supporting work sites through cooperation between head office and branch offices.

Characteristics and Strengths of the Business

Based on our extensive experience, we provide the optimal design and construction technology in the construction and maintenance and renewal of civil engineering structures that support societal infrastructure, such as bridges, tunnels, river improvements, land development, and water supply and sewerage facilities. In the prestressed concrete (PC) bridge sector, we take pride in being one of the industry's leading firms in terms of design and construction achievements. We promote technological development such as new structural forms and construction methods using precast concrete (PCa) to shorten length of projects and streamline constructions. Through these, we can offer high-quality, durable, and easily maintainable bridges.

In Japan, we are focusing on large-scale rehabilitation (such as floor slab replacement) and new tunnel construction, while overseas, we have been steadily building up a track record of large-scale construction projects such as subways and high-speed railways to gain a competitive edge.

Risks	× Opportunities	➡ Responses to Risks and Opportunities
<ul style="list-style-type: none"> • Tighter overtime regulations and shortage of skilled labor 	<ul style="list-style-type: none"> • Growing need for labor-saving and productivity-enhancing technologies 	<ul style="list-style-type: none"> • Expansion of automation technology (Robotaras® II), DX, next-generation construction system, and the project site support system • Development and expansion of rapid construction and labor-saving technologies using precast concrete technology
<ul style="list-style-type: none"> • Reduced demand for new domestic infrastructure construction 	<ul style="list-style-type: none"> • Expansion of the renewable energy market • Increased demand for maintenance-free technology 	<ul style="list-style-type: none"> • Initiatives for renewable energy and CN projects utilizing our proprietary technologies, such as floating offshore wind turbine foundations and ammonia storage facilities • Development and expansion of high value-added technologies, such as the Dura Series of ultra-durable bridges
<ul style="list-style-type: none"> • Business impact of introducing carbon tax, carbon pricing, etc. 	<ul style="list-style-type: none"> • Expansion of the decarbonization-related demand 	<ul style="list-style-type: none"> • Development and wider application of low-carbon and high-strength materials such as Sustain-Crete®

Strengthening Technology in Growth Markets and Driving Digitalization



Quick-re-Invert Method
(using Messer shield machines)

In response to the expected demand for renewal work, we have developed the Quick-re-Invert method, a quick renewal method for invert sections of tunnels, and recently applied it for the first time to an operating highway. By removing the need for conventional earth retaining methods, this method eliminates the most dangerous work of driving earth retaining piles close to the in-service lanes, thereby improving safety and significantly shortening the process of invert reinforcement work that involves lane restrictions.

In addition, in order to save labor and improve productivity in on-site management, a communication environment was installed in the tunnel pit, safety alerts were provided by large signage, the monitoring system was strengthened by web cameras, and a self-developed rock bolt formwork inspection and measurement system was introduced in response to the need for work style reform.

Challenge of a New Growth Area

We participated in the feasibility assessment of a large-scale commercial floating offshore wind farm in Japan conducted by BW Ideol (France), and confirmed that the construction of a concrete floating foundation is economically feasible and can be completed in a construction period that meets

market expectations. In addition, we are studying and developing technologies to participate in the construction of ammonia storage tanks, which are expected to be a fuel that does not emit CO₂ when burned.

Developing Young Human Resources Who Will Become the New Leaders of the Company

In the Civil Engineering Division, the number of employees between the ages of 35 and 45 is small, while the number of young employees is large, so early training of young employees is an urgent issue. As part of the training program for new employees, training camps have been held since fiscal 2017, where employees are divided into groups to build structures to cultivate their ability to think on their own from planning to construction. In addition, the on-site support group, which has been established at the head office in fiscal 2024, will be responsible for leveling on-site work by providing support mainly at busy sites nationwide and creating an environment in which on-site employees can focus on their core tasks and improve their own skills.



New Employee Training:
Practical Training Camp

Initiatives toward Vision 2030

Although we are entering a society with a declining population, both domestic public investment and overseas construction investment are expected to remain strong. The civil engineering business will continue to be the driving force behind our business performance, and we will continue to win quality contracts in areas where we have an advantage and ensure stable earnings with our high on-site capabilities, while building new pillars in areas where we expect the market to expand, such as carbon neutral-related businesses.

On the other hand, the inability to deploy a sufficient number of our engineers in the field and the polarization of the workforce due to the aging of engineers and the increase in younger employees have made securing human resources and passing on skills a major issue. We will lay the foundation for business expansion by strengthening our on-site support system to create a workplace where employees can demonstrate their skills, and by proactively utilizing external resources such as alliances with other companies and mergers and acquisitions.

Building Construction Business



Business Overview

FY2023 Results and Mid- to Long-term Policy

With regard to construction investment, capital investment in the manufacturing sector has been strong and is expected to continue. In the housing sector, redevelopment projects are spreading across the country, particularly in the Tokyo metropolitan area, and solid investment continues. On the other hand, the construction industry is facing increasing supply constraints due to the implementation of overtime limits from this fiscal year.

In the domestic building construction business, we have restricted new orders in order to prioritize the completion of the order backlog. At the same time, we have thoroughly implemented measures to emphasize profitability, and as a result, profitability at the time of order receipt in fiscal 2023 has improved significantly. Going forward, we will continue to adhere to this policy, restructure our project execution system, and develop marketing activities to win construction projects in line with progress in completing the order backlog in order to improve the level of profit. In addition, to ensure compliance with the overtime limit, we will promote efforts to provide centralized support for in-house sections of on-site management operations.

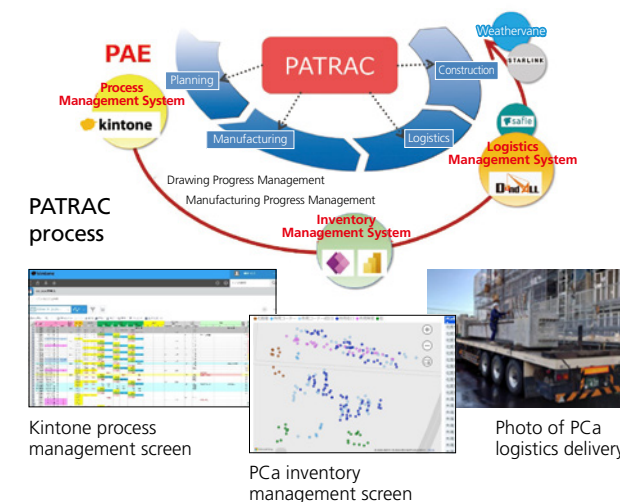
Characteristics and Strengths of the Business

In the housing business, we have an extensive track record in super high-rise residential building using our proprietary SQRIM construction method, which achieves high quality and short construction time. In the super high-rise under construction, we have established and applied precast concrete (PCa) technology, which centrally manages the entire process of component manufacturing, storage, transportation to the site and installation at our Group plants, thereby reducing the amount of manpower required for on-site work.

For warehouses, data centers, and large factories, we use MIC (Mitsui Sumitomo Integrated Composite System), a hybrid steel-frame-reinforced concrete construction method, to provide buildings that are resistant to vibration while providing large spaces.

In addition, we are focusing on ZEB/ZEH construction to achieve carbon neutrality, and have obtained ZEH-M certification for our company's single-employee dormitories, which operate with a zero energy balance.

Promoting Digitalization of Key Technical Areas



For the purpose of efficient centralized management of on-site construction using PCa, an integrated progress management system combining general-purpose ICT cloud services and self-developed functions was introduced to actual projects to manage about 20,000 pieces of PCa products.

The system enables integrated management of tasks that were previously performed individually for PCa works, such as scheduling of structural works, product drawing approval status, manufacturing status, product location coordinates, and transportation reservations, by linking management information for drafting, manufacturing, and construction of PCa works on the cloud. The "system connecting people" using ICT has realized efficient construction management. (Construction production system PAE)

Improving Profitability and Strengthening Risk Management

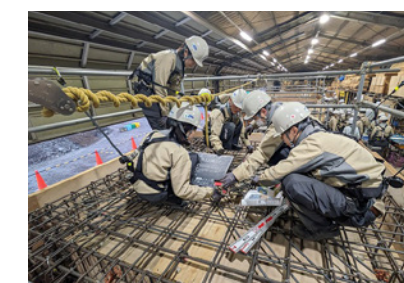
In order to improve the performance of the building construction business, we are thoroughly implementing initiatives to emphasize profitability in new construction orders. We have been working to win orders based on the premise of securing a project execution system that includes subcontractors, and strictly implementing initiative screening and risk management in the initial stages

of initiatives, resulting in a significant improvement in profitability at the time of order receipt in fiscal 2023.

Currently, there is a certain percentage of low-profit projects affected by rising prices and other factors, but we will continue to replace these with high-quality projects by focusing on profitability in accordance with our ability to complete construction.

Efforts for Appropriate Staffing and Training of Young Employees

In order to enable systematic staffing after the construction system shortage is resolved, we have put into operation a "construction engineer staffing system" that systematizes the staffing status of project execution engineers, and we are implementing the appropriate staffing of engineers in all branches. In addition, in order to quickly develop young engineers who can fill the shortage of middle-level employees, we will systematically train young engineers in conjunction with annual training. For design engineers, we have shifted from traditional on-the-job training to intensive training from the first year to promote early development and rotational training to develop independent project supervisors.



New employee training

Risks	×	Opportunities	➡ Responses to Risks and Opportunities
<ul style="list-style-type: none"> Declining numbers of engineers and skilled workers, tight labor supply and demand 		<ul style="list-style-type: none"> Investing in increased resilience, strong capital investment in decarbonization, etc., and continued demand for urban redevelopment Further progress in DX/RX, including AI adoption 	<ul style="list-style-type: none"> Expand the use of precast technology, which enables high quality, short construction time and labor savings Study and investment in automation of PCa materials production Productivity improvement through DX/RX technology
<ul style="list-style-type: none"> Growing demand for decarbonization of construction projects 		<ul style="list-style-type: none"> Growing need for decarbonization on the client/user side 	<ul style="list-style-type: none"> Technology development and commercialization of ZEB/ZEH
<ul style="list-style-type: none"> Rising prices for construction materials 		<ul style="list-style-type: none"> Enhancement of the attractiveness of the construction industry through progress in price shifting throughout the supply chain 	<ul style="list-style-type: none"> Establish contract terms that are flexible in response to price fluctuations Strict cost control in the short term

Initiatives toward Vision 2030

We will improve the efficiency of construction through the integrated progress management system for PCa materials developed and implemented in fiscal 2023. In addition, we will focus on research and development aimed at the future automation of PCa materials production in order to enhance our competitiveness through further efficiency and labor savings, and to promote multi-use and overseas development.

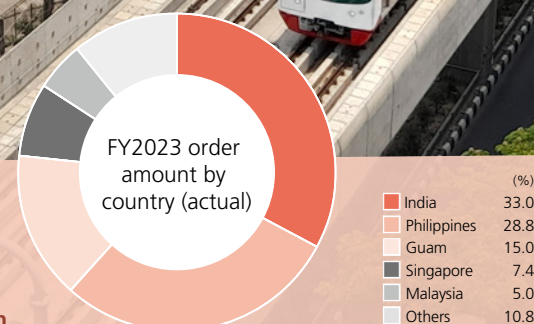
In addition, we will promote the strengthening of

cooperation such as supporting the training of engineers from the companies of our partner company organization, the Shineikai. In addition to decarbonization during construction through the use of green power and other measures, we will also promote decarbonization initiatives such as the conversion of our own SuKkiT series of housing products to ZEH to reduce CO₂ emissions during the operation of the buildings designed and built.

Overseas Business

Dhaka Urban Transportation Network
Improvement Project CP06 (Bangladesh)

FY2023 Results Orders received: **94,100** million yen



Business Overview

FY2023 Results and Mid- to Long-term Policy

In fiscal 2023, the depreciation of the yen and rising prices resulted in increased costs, destabilizing the business environment and having a significant impact on our overseas operations. Efficiently utilizing limited resources requires “selection and concentration,” and future plans include strengthening the recruitment and education of diverse foreign employees and local staff, as well as enhancing the construction system. Additionally, we will take on challenges in ODA projects, new projects in Africa, construction work ordered by the US military in Japan, and wind power projects, aiming for further growth.

We are expanding overseas based on “Safety and Supreme Quality Assurance” and “Global Identity,” and by combining with “Localization” which is aiming for the autonomy and sustainable growth of each base, we will respond appropriately to the changing overseas business environment.

Characteristics and Strengths of the Business

We started our overseas business in Thailand with a bridge project in 1971, and we have built a history spanning more than 50 years. During this time, we accumulated experience in Japanese ODA projects, learned the customs and cultures of each country, deployed Japan’s advanced technologies, and established organizational structures. Currently, we are working on a super-large railway project in the Philippines, and carrying out direct management of construction using Japan’s high-quality technology. In India, we are proposing optimal construction designs and methods to many private clients, and are carrying out a range of construction projects. These projects in Southeast and South Asia see the participation of multinational employees, and we are enhancing and passing on technology.

We will continue to provide Japanese technology and promote global human resource development, while creating an environment in which employees with diverse backgrounds can thrive.

Risks

- Changes in the political, economic, legal, and exchange rate environments of expansion countries, especially geopolitical risks originating from Russia and China
- Natural disasters, weather changes, and infectious diseases unique to each country where we operate

- Control and education in organizations with multinational, multilingual, and diverse cultures



Opportunities

- Track records and experience in sites, subsidiaries, and local companies in each country where we operate

- The internal mobility of employees to facilitate leverage of technical expertise established by the Japan’s division in overseas construction
- The effectiveness of the activities of the Human Resources Development Center (HDC), which operates in five locations worldwide, with the aim of nurturing global talent and promoting the appointment of outstanding local employees as management executives



Responses to Risks and Opportunities

- Deepening the understanding of business in each country where we operate. Enabling the provision of better services

- Collaboration with local partners allows the creation of business models better suited to local areas

Sales Development in Response to Risks and Opportunities

Since the 1970s, we have built a network and track record as local companies in the Asia region, and we are utilizing that information to increase orders. In March 2022, we acquired Antara Koh Private Limited, with whom we are sharing markets and technologies while moving forward with multiple construction projects. We

will continue to work on collaborative projects to enhance acquisition synergies, and to expand our business domains. Additionally, we are promoting D&I activities in various Asian countries centering around HDC Japan, aiming to establish a rational project execution organization and thus achieve our goals.

The Active Participation of Foreign National Employees in Supporting Business Globalization

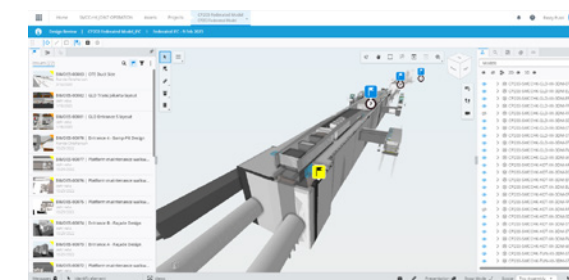


Training at HDC Philippines

In order to accelerate our growth, we are emphasizing the development of human resources who work in overseas businesses, aiming to strengthen the autonomy and networking capabilities of each base. The optimal allocation of outstanding human resources and the construction of a robust network are the keys to successful globalization. In developing global talent, we certify and appoint foreign local employees suitable for managerial positions as “Management Members (MM).” We are also training “Operation Members (OM)” to support managers, and “International Members (IM)” who have the skills to work cross-nationally. These members play an essential role in demonstrating leadership, and in realizing our company’s vision locally. MM, OM, and IM collaborate to strengthen the network between bases and further promote global expansion.

BIM Initiatives in ODA Infrastructure Development Projects

In the construction of the subway station and shield tunnel at Jakarta Mass Rapid Transit Project CP203 in Indonesia, the introduction of BIM has been a prerequisite. The use of BIM allows unification of the process from design to maintenance management using 3D models, enabling sharing among all stakeholders. During the design stage, this enables 2D drawing output and interference checks, as well as 4D simulations and safety management during the construction stage. Problems can be identified and resolved during the maintenance and management stage. Based on our experience of using BIM, we are considering using foreign BIM operators remotely in Japanese projects.



3D models: arrangement of dump trucks

Initiatives toward Vision 2030

We will continue to strengthen our efforts to achieve “Safety and Supreme Quality Assurance” in our overseas operations, and to further harmonize our corporate governance policies, “Global Identity” and “Localization,” and ensure that each of our bases and sites can grow independently and sustainably. We will also strengthen our organizations in each country to respond to the rapid changes in the world in a timely and appropriate manner. Currently, we are focusing on business development in the

Southeast and South Asia regions, but we will not rapidly expand there; instead, we will aim to further develop in countries where we can leverage our strengths, and focus on building corporate structures. Furthermore, we will work to improve the education system for Japanese and foreign employees, and ensure that our knowledge and technology is passed on so that they can perform their tasks with pride, thereby building a strong organizational structure.

New Business & Construction Peripheral Business



**+One
Challenge**
未来へ踏み出す第一歩

Number of entries

FY2023

92

FY2024

67

Business Overview

FY2023 Results and Mid- to Long-term Policy

In fiscal 2023, we worked on 1) creating new and construction peripheral businesses, 2) expanding renewable energy (RE) businesses, and 3) developing decarbonization-related technologies and services.

In creating new and construction peripheral businesses, in our initiatives to manufacture and sell bio-toilets we took the first step toward commercialization by selling monitoring units in the market prior to general sales. Additionally, two projects were selected from the “Plus One Challenge” internal idea submission system open to all employees, and we have started working toward their commercialization. In the renewable energy sector, we generated approximately 310 million yen in revenue from the operation of eight solar power plants. Furthermore, as a new floating solar power generation business, in March 2024 we completed our first on-site PPA project utilizing a regulating reservoir within our premises, and this has commenced power generation. In this way, we have

steadily achieved results, primarily in the creation of new and construction peripheral businesses and the renewable energy sector.

For fiscal 2024, in the renewable energy generation business, we have been actively pursuing PPA projects in agricultural reservoirs which are seeing a rapid increase in demand, and have been continuing developing and verifying new floating and mooring systems suitable for deep dams, strong winds, and offshore locations, along with developing floats for heavy snow regions, with the aim of expanding appropriate locations. In the future, we aim to expand the scope of our floating solar power generation and target a power generation capacity of 40 MW by fiscal 2024 and 150 MW by fiscal 2030, in line with the 2050 Carbon Neutral Roadmap.

Additionally, we are aiming to start general sales of bio-toilets within fiscal 2024, and will continue to work on the development of new businesses contributing to a sustainable society.

Risks



Opportunities



Responses to Risks and Opportunities

- Deterioration of business viability due to a decrease in electricity selling prices
- Reduction in installation support such as subsidies, etc.
- Expansion of opposition from nearby and local government location regulations
- Securing and nurturing talents for business development

- Adequate subsidies for PPA, etc.
- Active support for low-environmental-impact floating solar power generation
- Promotion of renewable energy generation in untapped areas of local governments and businesses (locally produced and consumed)

- Active utilization of subsidies to secure business viability
- Realization of locally produced and consumed renewable energy businesses with water surfaces owned by local governments and companies

Creation of New Businesses

Implementation of “Plus One Challenge” Internal Idea Submission System

As one of the specific measures to “take on challenges in growth areas”—one of the basic policies of the Mid-term Management Plan 2022–2024—last year we launched the internal idea submission system “Plus One Challenge” to proactively create business ideas for generating new revenue sources. This system aims to create a corporate culture that promotes “new challenges” for the growth of our company, and this fiscal year we are conducting the second round calls for ideas.

Among the new business ideas proposed last financial year, two passed the final selection, and starting this period, business creation initiatives are being pursued by the Business Creation Division. Through this system, we aim to create new businesses that contribute to solving social issues.

Development of Water Circulation Bio-toilet “SMilet”™

Our company has developed the Water Circulation Bio-toilet “SMilet”™, a flush toilet that does not require connection to water or sewage systems, or pumping by vacuum trucks. Even in situations where no water or sewage infrastructure is in place, such as during disasters, in nature parks, or at project sites, given a power source it is possible to create a “comfortable toilet environment, anytime, anywhere.” Additionally, this is a water circulation bio-toilet comprising a flush toilet, wastewater treatment tank, water storage tank, and evaporation processing tank, which is easy to install and move, and it meets the standard specifications for “Comfortable Toilets” by the Ministry of Land, Infrastructure, Transport, and Tourism.

Through the deployment of SMilet, we hope to contribute to people’s “smiles” at times of disasters, and on project sites where we are seeing increased diversity.

Renewable Energy Business

We focus on floating solar power generation which has a low environmental impact, given that it does not require land preparation or deforestation, and small hydropower generation utilizing rivers and existing dams. In addition to the floating solar power plants that have already started operating under the electricity fixed-price purchase system (FIT), new floating solar power plants began generating last year with two off-site PPA projects and one on-site PPA project, all of which are currently running smoothly. Although there are no small-scale hydropower plants in operation yet, we have several projects for which preliminary design and flow measurement stages are progressing smoothly, and we are awaiting the start of the business.



On-site PPA model
(floating solar power generation business on
regulating reservoir within factory premises)

Initiatives toward Vision 2030

By implementing the following initiatives and creating new revenue sources from peripheral businesses, we will achieve a transformation of our business portfolio.

- 1) Accumulating assets (equivalent to 150 MW in terms of solar power) in the renewable energy generation business (floating solar power, small hydropower, biogas), thus achieving a multilayered profit structure.
- 2) Expanding peripheral businesses that utilize our core competencies and management resources (sales of Sustain-Crete® products, bio-toilet sales business, etc.)
- 3) Developing decarbonization-related technologies business (achieving early market entry through alliances)
- 4) Securing human resources and building an ecosystem that will continuously generate innovations and implement new technologies in society

The Market Environment and Addressing Challenges by Utilizing Technologies

Utilizing Technology in Civil Engineering

► Recognition of the Market Environment

Updating and repairing highways has become an urgent issue for social infrastructure. Constraints on areas and periods in which construction is possible make this renewal work more difficult. Our company has performed large-scale deck slab replacement renewal work on major highways across Japan such as the Tomei Expressway, the Meishin Expressway, and the Chugoku Expressway. We need to leverage our experience and track record in this in order to carry out this construction work more safely and efficiently.

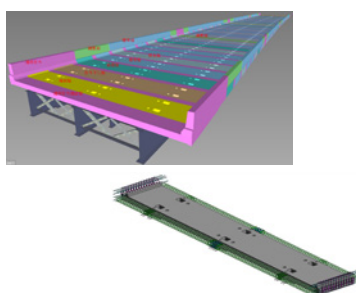
► Examples of Using Our Technology

Robotaras® II



We are utilizing Robotaras® II automated rebar assembly system in actual operations. By automating work for about 85% of the total weight of rebars, we have achieved a threefold improvement in productivity. The system automatically stops the equipment if a person or object enters the safety fence during operation.

SMC-Slab



Importing information entered into a general-purpose spreadsheet software into CAD software makes it possible to create structural dimension drawings automatically. This has reduced the time for drawing revisions, fine-tuning, and repetitive review tasks to one-third of previously.

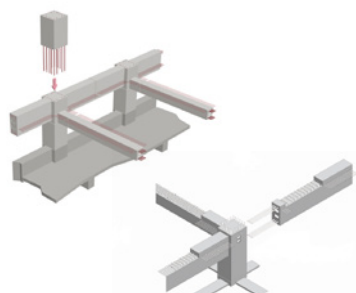
Utilizing Technology in Building Construction

► Recognition of the Market Environment

While domestic construction orders for the Japan Federation of Construction Contractors remained strong in fiscal 2023, there were increased supply-side risks and constraints including rising prices for construction materials, a decline in skilled workers, and soaring labor costs. From April 2024, appropriate construction schedules in response to overtime work limits are expected to prolong the construction periods. This requires a high-productivity construction system that does not rely solely on on-site work.

► Examples of Using Our Technology

SQRIM method / SQRIM-H method



This method, in which the structural frame is made of precast concrete (PCa) fabricated at a factory and assembled on-site is less susceptible to the effects of weather and surrounding environments, and is suitable for high-quality management. Precasting all column and beam components and minimizing the amount of concrete poured on-site allows for both high quality and improved construction speeds.

DOC method / Hi-DOC method



The Hi-DOC method, a system construction method, achieves short construction periods and mass production when combined with the SQRIM method. Dividing the construction floor into multiple zones and completing the same process in each zone in one day means construction can be completed in a 3-day cycle per floor.

Utilizing Decarbonization Technology

► Recognition of the Market Environment

With the aim of achieving a decarbonized society, we need to consider not only the materials and fuels used in construction, but also how we can reduce the energy used during the building's operational phase. Effective materials that contribute to decarbonization include low-carbon concrete and wood, which stores carbon.

We are actively introducing energy-saving and energy-generating technologies in buildings to promote ZEB/ZEH, and are working on floating solar power generation utilizing existing water surfaces. The potential for power generation in domestic reservoirs is high, in particular for agricultural ponds, where we expect to see effects such as preventing water temperature increases, preventing evaporation, and suppressing algae. Additionally, after installation, constant remote monitoring using surveillance cameras and the installation of water level gauges and anemometers also contribute to enhancing resilience during disasters.

For energy-generating technologies other than solar power, we are focusing on biogas power generation from chicken manure, which is produced at a rate of approximately 13 million tons per year in Japan, and we are working toward the first domestic practical application of this technology.

► Examples of Using Our Technology

Wooden structure roof truss



NX Budokan (Tokyo)

We actively promote decarbonization by utilizing wood, a store of carbon. The structure supporting the roof of the building adopts a large-span framework made of domestic timber, with a wooden lattice structure. This design evokes the delicacy and warmth of the traditional Japanese kumiko latticework.

Single-occupancy ZEH apartments



Taishi Dormitory (Ehime Prefecture)

Our Shikoku branch's Taishi Dormitory is an environmentally conscious dormitory facility, achieving the first Net-Zero-Energy House Mansion (ZEH-M) in the general contractor industry. This reduces running costs through efficient energy storage and heat retention, and is expected to recoup costs over 15 years of actual use.

Offshore floating solar power generation



Offshore floating solar power generation facility (Tokyo)

We have developed our own floating solar power generation system, and are currently developing a new system that can be used on the ocean and in deep dam lakes. This technology has been selected by the Tokyo Metropolitan Government for the 2022 Tokyo Bay eSG Project's pilot, and we are participating in the demonstration project. Currently, design and construction of the floating and mooring system has been completed, and in April 2024 we started various measurements and demonstrations.

Chicken manure biogas technology



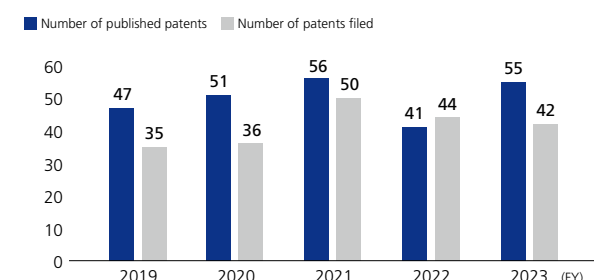
Chicken manure biogas technology demonstration plant (Tochigi Prefecture)

We have been selected by the Ministry of the Environment's "Regional Co-Creation and Sectoral Cross-Sectional Carbon Neutral Technology Development and Demonstration" project, and are continuing to construct a demonstration plant with a partner poultry business based around the theme of "developing an energy recovery technology using egg-laying chicken manure as the sole raw material," with the objective of establishing the technology by fiscal 2025.

The Source of Our Craftsmanship / Proprietary Technologies Supporting Our Strengths

We participate in urban development through civil engineering structures such as bridges, roads and tunnels that support people's daily lives, and structures such as buildings, condominiums and commercial facilities that support affluent lifestyles. Since our founding, we have maintained the spirit of boldly taking on the challenge of creating unprecedented products. We will continue to challenge "Japan's first" and "world's first" technologies and work to provide "new value" in the future.

Changes in the Number of Our Proprietary Patents



Our Key Proprietary Technologies

Civil Engineering	Large scale renewal (deck slab replacement)	SMartD®, precision shockwave demolition method Sustain-Joint®, precast deck slab jointing method SMC-Slab, a deck slab replacement design support program
	Productivity improvement on construction sites	Column Head SPER construction method, ultra-rapid installation of column heads Girder-type Compact Wagon, a mobile work vehicle for cantilevered erection SMC-Smart Measure®, a bridge formwork inspection and measurement system Quick-re-Invert of the SMC-Tunneling Series
	Longer life and greater durability	Dura-Bridge®, ultra-durable bridges
Building Construction	Achieving a decarbonized society (energy saving technology)	ZEH-M
	Earthquake disaster prevention technology	Swing vibration control system SQRIM-H (Sumitomo Mitsui Quick RC Integration-Horizontal) construction method
Common to Civil Engineering and Building Construction	Achieving a decarbonized society (Scope 3 emissions reduction)	Sustain-Crete®, an environmentally friendly concrete Sustain-Geo™, a sustainable soil improvement material
	Productivity improvement on construction sites	Precast concrete (PCa) technology in general Robotaras® II, automated rebar assembly system PATRAC®, next-generation PCa production management system Raku Camera®, real-time automatic reinforcement form inspection system Lock bolt placement interval measurement system
New Business & Construction Peripheral	Use of renewable energy	Floating solar power generation Use of hydrogen steam boiler for curing during PCa production SMilet™, water circulation bio-toilet

Recent Technological Developments to Meet Client Expectations and Solve Social Problems

Column Head SPER Construction Method

Hollow shape PCa parts of the same size as the piers (substructure) are placed on top of the piers, and concrete is poured to construct the column heads after the rebar and PC are assembled. This eliminates the need for large brackets as in the conventional method. The use of PCa parts with embedded rebar reduces the amount of bar arrangement and formwork required on site, thereby reducing labor and risks from working at height, providing improved productivity and safety.



Dura-Bridge®

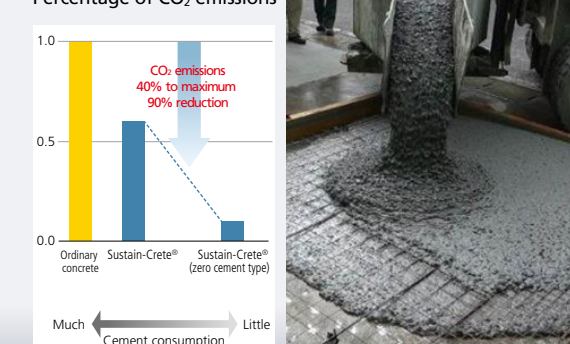
Developed to make bridge structures maintenance-free, the ultra-durable bridge (Dura-Bridge®) uses aramid FRP rods, a non-corrosive material, instead of rebar and PC steel to achieve durability far superior to that of conventional PC bridges. In 2020, it was used for the first time as a mainline highway bridge for the Bessodani Bridge on the Tokushima Expressway. The lifecycle CO₂ emissions can be reduced by 55% compared to conventional concrete bridges, and is expected to be applied as one of the decarbonization technologies in the future. The high durability of renewal floor slabs (Dura-Slab®) and wall balustrade (Dura-Barrier®) has also been applied to actual structures and is expected to become more widespread.



Sustain-Crete®

We have developed and are promoting the use of Sustain-Crete®, an environmentally friendly concrete that reduces CO₂ emissions by 40% to a maximum of 90%. It has already been applied to the Sustain-Joint method, a method of joining precast PC deck slabs, and the Sustain-WALL Zero® non-structural material. We will continue to develop further applications and promote the use of Sustain-Crete® for PCa parts produced in our Group companies' precast plants.

Percentage of CO₂ emissions



RFID Tag Integrated Spacer

Spacers with integrated RFID tags are embedded in PCa products to enable reading of unique number information. The tag is tuned to the UHF band and can communicate up to a distance of approximately 2 meters. The spacer is also uniquely shaped to maintain sensitivity. The introduction of this technology into next-generation PCa production management system PATRAC® will enable centralized production control from the factory to the project site, contributing to instant information sharing, prevention of misdelivery, and labor-saving management.

