SUMITOMO MITSUI
CONSTRUCTION CO.,LTD.

Sumitomo Mitsui Construction

Corporate Report 2018

SUMITOMO MITSUI
CONSTRUCTION CO.,LTD.

Contact

Corporate Planning Department, Sumitomo Mitsui Construction Co., Ltd.

2-1-6 Tsukuda, Chuo-ku, Tokyo, 104-0051, Japan
TEL: 81-3-4582-3016 FAX: 81-3-4582-3205
E-MAIL: information@smcon.co.jp
URL: https://www.smcon.co.jp/
Corporate Report online version: https://www.smcon.co.jp/en/investor/

Corporate Principles

Pursuit of Client Satisfaction

We continue to innovate our technologies and cultivate creativity to provide high quality construction works and services in response to the needs and trust of clients and the society.

Enhancement of Shareholder Value

We make sustainable business development by thoroughly efficient management and maintaining profitability to boost the shareholder value along with the corporate value.

Respect for Employees' Vitality

We create an open-minded and rewarding company where the employees can fully exercise their ability and individuality.

Social Emphasis

We practice fair corporate activities and aim to become a good corporate citizen which the society can trust.

Contribution to Global Environment

We constantly seek to be an eco and human friendly contractor and also value harmony between living environment and nature.

Charter of Corporate Conduct

1. We take countermeasures to meet the various demands in construction activities through technology development and design proposal giving full consideration to quality and environment.
2. We strive for improving the corporate value, and at the same time, by actively disclosing fair corporate information to the stakeholders and the society, we try to achieve the highly transparent corporate management.
3. We maintain the employment and develop human resources of employees through long-term perspective, furthermore, we try to set up the corporate which respects human rights and beings.
4. We improve awareness to comply with laws, social norms, international rules and corporate ethics in order to perform fair, transparent and free competition and fair trade.
5. We recognize the demand of contribution to the society's healthy and continuous development, and we promote social contribution activities in order to achieve corporate harmony with the society.
6. We recognize the demand of contribution to the global environment, and we actively work toward to preserve, sustain and improve environment.
7. In case, our activity against this charter occurs, the top management shall work by themselves to solve the case, and execute accountability to the society as well as disciplinary action that applies to both the top management and employee.

Six Priority SDGs

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD

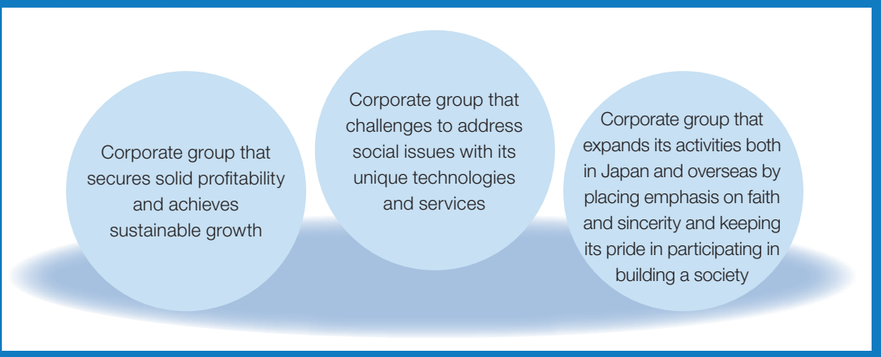
The Sustainable Development Goals (SDGs) were adopted at the United Nations Summit in September 2015, building on the success of the Millennium Development Goals (MDGs) formulated in 2001. Set out in the 2030 Agenda for Sustainable Development, the SDGs are international goals that not only developing countries but also developed countries should work toward from 2016 to 2030.

Editorial Policy

From fiscal 2006, Sumitomo Mitsui Construction issued CSR Reports in order to give a broad outline of its environmental, social and governance (ESG) initiatives, which were not covered in the company's financial statements. Starting from fiscal 2015, Sumitomo Mitsui Construction has instead been issuing a Corporate Report, with additional financial information, including information on operating performance and management strategy as well as business overviews, as a tool for two-way communication with all stakeholders, bringing together overall initiatives for improving corporate value.

- Period Covered: From April 1, 2017 to March 31, 2018 (includes some initiatives conducted before and after the period)
- Scope Covered: Sumitomo Mitsui Construction Co., Ltd. And its consolidated subsidiaries
- Guidelines Referenced: ISO 26000
- Publication Date: November 2018

Group Vision (Aspirations)



Long-term Management Policies for Accomplishing the Vision

I. Enhance manufacturing capability—Commitment to quality and process
II. Create an attractive corporate culture—Workplace environment and corporate culture that enable people to take pleasure in their work
III. Strengthen the competitiveness and profitability of construction business —Win the competition
IV. Build a multilayered earnings base enabling us to respond to changes in the business environment—Unfailingly grab opportunities
V. Promote CSR in management—Fulfill social responsibility

Mid-term Management Plan 2016-2018

Mid- and Long-term Numerical Targets

	Period of the plan (FY2018)	Long-term (FY2025)
Consolidated operating profit on sales	5% or higher	Consistently 5% or higher
Percentage of overseas business	Around 20%	Around 30%
Consolidated capital-to-asset ratio	20% or higher	30% or higher as early as possible

Table of Contents

We Will Strengthen Competitiveness and Create New Corporate Value for Sustainable Growth

Hideo Arai
Representative Director
President & CEO

Celebrating the 15th Anniversary of the Merger

Q. Could you express your views on the 15th anniversary of the merger?

This year marks the 15th anniversary of the merger of the former Mitsui Construction and the former Sumitomo Construction in 2003. Following the merger, we initially found ourselves in a difficult business environment and we caused considerable inconvenience to stakeholders, including shareholders and financial institutions. In the past few years, we finally resolved the business issues that had been lingering for a number of years, including resuming dividend payment, enhancing equity capital, and improving the treatment of employees, and emerged from the stage of rebuilding. I would like to take this opportunity to express my great appreciation for the support from shareholders, partners and all other related parties, which made this possible.

Against this background, defective piling work for a collective housing complex we had constructed in Yokohama City was discovered in the fall of 2015, causing many stakeholders, including the residents, inconvenience and concern. The grave consequences, which brought into question our very existence as a company committed to building infrastructure for people everywhere, were extremely regrettable. Driven by remorse, we got back to basics and revisited our fundamental purpose as a construction company, that is, to provide needed infrastructure that is safe for people to live in. For the subsequent two years, we made concerted efforts to ensure compliance with laws and regulations and secure and improve quality to restore the credibility that we lost due to the defective piling work. In the process, a sense of responsibility toward building infrastructure that will satisfy customers and preventing the recurrence of quality defects spread across the group, which consequently aligned the vectors within the group and helped a new corporate culture take root at Sumitomo Mitsui Construction.

We will develop our unique corporate culture, including the faithfulness and sincerity we inherited from Mitsui Construction and Sumitomo Construction as well as our activities for supreme quality, which support our creditability as a construction company, and consideration for the field, which is something I have continued to say ever since I became president. Leveraging the corporate culture, we will create new value and make it our strength so that we can achieve further evolution and embark on a stage of new growth.

Progress of Mid-term Management Plan 2016-2018

Q. The second year of the Mid-term Management Plan 2016-2018 has ended. What are the results so far and future issues?

Fiscal 2018 is the final year of the current Mid-term Management Plan. The numerical targets set for the final fiscal year are 440 billion yen in sales, operating profit on sales of 5% or higher, a capital-to-asset ratio of 20% or higher, and a dividend payout ratio of 20% or higher. We have steadily maintained operating profit on sales of 5% or higher and achieved the capital-to-asset ratio one year ahead of the plan. We are likely to achieve all the numerical targets. In fiscal 2017, we have marked record high earnings for the main business for the third consecutive year since the merger. We assume that we are developing the business foundation for enhancing our competitiveness and achieving sustainable growth in the construction industry, which will change dramatically.

The current Mid-term Management Plan has two focus themes: reform production system and secure, cultivate and vitalize human resources.

To reform the production system, the Production System Improvement Committee has led efforts that include improving productivity with standardization and industrialization, improving work environments in order to secure human resources, and enhancing the safety management system. Aiming to achieve the supreme quality, we are carrying out activities for quality and safety management, appointing quality and safety auditors to the civil engineering and building construction businesses to ensure that execution process management and quality management, which differ between individual construction sites, are implemented following the specified management procedures, as in other manufacturing industries. In fiscal 2017, more than 2,000 quality audits and patrols were conducted in total for the civil engineering business and the building construction business. We have also put up “Supreme Quality Assurance” banners and distributed helmet stickers at all sites to raise awareness on the ground. As a result of these efforts, I believe that supreme quality activities have been established across the company as something valued by all and as an intangible manifestation of the corporate culture.

Productivity improvement, which compensates for a lack of skilled workers and serves as the basis for future sustainable growth in conditions of labor undersupply, is a major theme that we must continue to work on. Currently, we are promoting the saving of labor and manpower with precasting and using ICT. Given the recent rapid changes in society, we must proactively invest in the development of new technologies by forecasting how the construction industry will change in the future. Through co-creation with experts and companies from various areas, we would like to aggressively and courageously take on challenges in technological development for 10 years from now.

To secure, cultivate and vitalize human resources, we have launched measures to develop the workplace environment and improve employment conditions as the entire industry is facing a severe lack of workers as well as an aging workforce. Meanwhile, we have been aggressively working on the industry-wide issue of work style reforms as an urgent management task. Having formulated the President’s Policy on Work Style Reforms and the Employee Action Guidelines for Shorter Hours in April 2018, we are developing an environment without waste, irregularities and overwork and raising awareness among individual employees. We also developed the Work Style Reform Roadmap last year, setting forth a policy to achieve two days off per week at all sites, in principle, by fiscal 2021. In fiscal 2017, we tested six-day closure per four weeks and eight-day closure per four weeks at designated model sites. This fiscal year, we are promoting closure on the second Saturday every month at all sites, in principle. To promote shorter hours at sites, we must change how we operate. For instance, we are building a system that allows us to even out operations

Numerical Plan

	FY2016 (actual)	FY2017 (actual)	FY2018 (plan)
Sales	**403.9** billion yen	**417.3** billion yen	**440.0** billion-yen level
Operating profit on sales	**6.9**%	**7.3**%	**5**% or higher
Capital-to-asset ratio	**18.8**%	**23.9**%	**20**% or higher
Dividend payout ratio	**14.3**%	**14.1**%	**20**% or higher

across the company by using the cloud to share on-site information between sites, the head office, and branches in order to distribute on-site operations.

We can reduce overtime through raising awareness among individual employees, new technological development, and cooperation across the corporate structure. By considering the human factor and with the concerted efforts of all officers and employees, we will develop pleasant, satisfying workplaces with no overwork.

Source of Value Creation for Sustainable Growth

Q. What are the sources of competitive advantage that Sumitomo Mitsui Construction should maintain to ensure sustainable growth for the coming decades and what are the management resources and organizational capabilities that serve as the foundation?

As the only construction company of the Mitsui Group and the Sumitomo Group since the merger, the SMCC Group has steadily built up a track record. Because of this, the SMCC Group believes it now has a solid presence in the areas of both civil engineering and building construction.

The former Mitsui Construction had strength in residential housing, such as superhigh-rise collective housing. Its proprietary technologies include SQRIM, a method that allows us to quickly execute the construction of each floor in cycles as short as three days. The former Sumitomo Construction had strength in technologies for civil engineering (e.g., bridges), in particular, prestressed concrete (PC), which enables us to maintain the industry's top technologies and execution experiences in Japan. Inheriting these advantages of the two companies and aiming at further growth by maximizing the integration of the advantages, we have continued to build infrastructure for people everywhere.

Together with the integration of the advantages, the integration of civil engineering and building construction is ongoing. For example, precasting technology has been used everywhere from expressways to superhigh-rise collective housing, that is, in a wide variety of areas in both civil engineering and building construction. Its use has achieved simplification and the saving of labor for on-site work while also contributing to quality and safety improvements. To take another example, the civil engineering sector supports underground work at building construction sites, while the building construction sector assists the construction of waterworks facilities at civil engineering sites. Synergies brought about through collaboration between civil engineering and building construction form part of our company's strength.

Another of our strengths is having five plants, including plants of group companies, in Japan for the manufacture of precast concrete members that help convert precasting technology into tangible forms. We would like to incorporate technological innovation, such as IoT management and automated transportation, into a series of processes from precast member manufacturing to execution for future automation at precast plants, with the goal of further improving quality and productivity.

Having built a robust execution system for overseas business is another of our strengths. Starting with the entry into the Thai market in 1971, we have operated in Asian countries east of India for many years and built a track record in execution. The relationships and trust that we have built up over the years with contractees and local partners are precious assets. Our overseas business has maintained a profit margin at a level equivalent to that of our domestic business.

Our aforementioned unique corporate culture, including the elements of faithfulness and sincerity, supreme quality, and consideration for the field, is the basis of our in-the-field technological strength and synergies. We must value it as a universal basis for our survival even if the business environment surrounding the construction market changes over the next decade or two.

Direction of Future Growth

Q. Based on its strengths, how will the company grow its business over the long term?

In the construction market in Japan, projects for maintenance and renovation, rather than new construction, are likely to increase. It will be critical for us to further enhance our strength under such circumstances. For instance, in the civil engineering sector, there is a growing need for infrastructure maintenance and renovation, such as reinforcing the quake resistance of bridges and replacing expressway floor slabs. Having an advantage as one of only a few general construction companies that have plants able to manufacture precast concrete members for floor slabs, we will enhance our competitiveness by further accelerating technological development, such as rapid construction for saving labor and manpower and precasting.

The building construction sector also expects expansion of the maintenance and renovation market, covering maintenance, conservation, refurbishment, alteration and extension. As we have constructed production facilities and commercial facilities of the Mitsui Group and the Sumitomo Group, demand for renovating such buildings will be a great asset for us in the future. We will work with affiliates that specialize in renovation to expand the renovation business. Meanwhile, cultural facilities that the pre-merger companies built more than 50 years ago have started aseismic renovation. Taking advantage of the fact that we have an aseismic device manufacturer in our group, we will aggressively work on seismic reinforcement for the continued use of existing buildings.

In addition to our conventional contracting business, we are also promoting projects in renewable energy and PPP/PFI to find new sources of earnings in industries surrounding the construction industry and "stock-based" downstream business. In the area of renewable energy, we engage in sales of our PuKaTTo proprietary floating solar power generation system and power generation using the system. The system can be easily assembled and installed on stable bodies of water such as reservoirs for the efficient generation of power. To expand sales outside of Japan, we established a local corporation in Taiwan in December 2017. Renewable energy is the area where we want to significantly expand our business. In the area of PPP/PFI, we were commissioned to design, construct and maintain, in an integrated manner, public sewerage facilities in Ube City, Yamaguchi Prefecture in 2017. We will step up our efforts in these areas.

As the domestic construction market is expected to shrink, we aim to enhance initiatives in markets outside Japan, particularly Asian markets, and increase overseas business to 30% from about 15% of total business today. In Vietnam, Indonesia, the Philippines and many other countries, we have been involved in development of infrastructure such as roads, bridges, schools and hospitals for Japan's official development assistance (ODA) projects. With the close sharing of information between sales forces in Japan and those outside the country, we would like to increase private sector projects, such as assisting Japanese companies that we have worked with in Japan to enter overseas markets and projects of non-Japanese companies. At the same time, we would like to aggressively expand business in regions other than Asia, starting with our entry into the Tanzanian market in 2016.

To expand overseas business, securing and developing human resources, as well as partnering with local companies, is crucial. The Human Resource Development Center in the Philippines leads our efforts to develop human resources who are capable of managing local projects. We will secure and cultivate management human resources who can promote a growth strategy in overseas business, which includes shifting human resources from Japan to overseas.

For Improving Corporate Value over the Long Term

Q. Investment in growth, including technological development and securing and cultivating human resources, is becoming increasingly important. From the long-term perspective, how will you work on corporate value improvement?

In the past, we focused on enhancing our financial foundation. Having achieved the target capital-to-asset ratio of 20% or higher in the second year of the Mid-term Management Plan, we think it will become important for sustainable growth to balance growth investment, including investment in human resource development such as work style reforms and securing human resources, and investment in technological development with shareholder returns and financial foundation enhancement.

With regard to growth investment, we will balance profitability and social emphasis. In the Long-term Management Policies, we have upheld promotion of CSR in management. Additionally, starting this fiscal year, we are also endeavoring to achieve the six priority goals, which we selected from the sustainable development goals (SDGs). The six SDGs include Goal 11 Sustainable cities and communities, Goal 9 Industry, innovation and infrastructure, and Goal 7 Affordable and clean energy.

Despite concerns over shrinkage of the construction market as well as difficulty in construction worker retention in Japan, the SDGs have reaffirmed for us the significance of the roles that the construction industry should play in addressing social issues. We believe we have a great responsibility to promote value creation by addressing social issues and to make the construction industry an industry that future workers will be proud to be part of, as well as to provide satisfactory workplaces. By proactively working on various SDGs, we want to create an environment that encourages virtuous cycles whereby people involved in our business, including partners, feel satisfied with their jobs and are thus motivated to improve productivity, which consequently improves their treatment and further motivates them.

Based on the assumption that domestic construction investment will decrease in the future, we need to change the business model focusing on construction contracting. We have already operated a business in floating and onshore solar power generation in the area of renewable energy, but it will become important to identify areas where we have worked not at all or not enough and address social issues as part of business operations, by reference to the 169 targets of the SDGs.

With proactive involvement with the SDGs, we hope to help build a sustainable society while improving our own corporate value.

We Are a Comprehensive Construction Company Committed to Building Infrastructure That Improves Safety and Convenience for People Everywhere

As a corporate group responding to diverse needs that change with the times, the SMCC Group is operating business that expands its domain of interest around the world, including improving social infrastructure that supports local development, by taking advantage of its technologies and expertise for building infrastructure that it has acquired in civil engineering and building construction. Through the construction business, the SMCC Group aims to provide value that meets the needs of the times, giving first priority to being creditable with customers.

Domestic Civil Engineering

Our civil engineering business provides optimum technologies for design, execution and maintenance of civil engineering structures that support social infrastructure, such as bridges, tunnels, railways and water and sewage facilities, all of which are indispensable to urban life.

Our strength lies particularly in having the industry's top experience in design and execution in prestressed concrete (PC) bridges. We provide high quality, durable and easy-to-maintain bridges by promoting technological development, including new structural forms or precasting for shorter construction periods and labor-saving execution. We also develop social infrastructure using technologies and expertise supported by our wealth of experience in wide-ranging areas including tunnels, dams, urban civil engineering, rivers, land development and energy facilities.

Domestic Building Construction

Our building construction business creates well-rounded, safe living spaces tailored to the needs of customers in wide-ranging sectors, from collective housing as the core of our business to commercial facilities, distribution warehouses, offices and production facilities in various industries.

As a top runner in collective housing, which has been our focus for many years, we aggressively push forward with the development of technologies and products for high quality and high functionality, and work on new value creation for residents and users in a manner unique to a construction company. We also provide facility maintenance and restructuring that are indispensable to making facilities disaster-resistant or to customers' business development.

Overseas Business

Taking advantage of networks we have built in Asia ahead of others, we support Japanese companies in entering overseas markets and participate in ODA projects in order to play a part in building bases that support the development of international society.

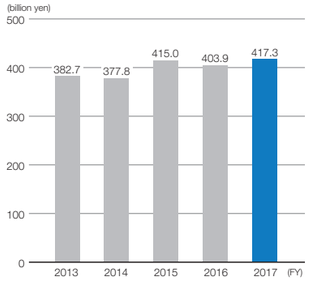
The Neak Loeung Bridge (Cambodia) and the Second Mekong International Bridge (Thailand-Laos) we constructed along the economic corridors crossing Southeast Asia, for instance, have not only eased traffic congestion but also improved the efficiency of transportation networks, contributing to the promotion of local industries and improvement of urban environments. Based on the cutting-edge technologies and optimum process management that we developed in Japan, we will offer proposals that best fit the local environment, share our spirit of being committed to building infrastructure, and operate a construction business that is based on high-level safety management and quality control systems.

Business Innovation & Incubation

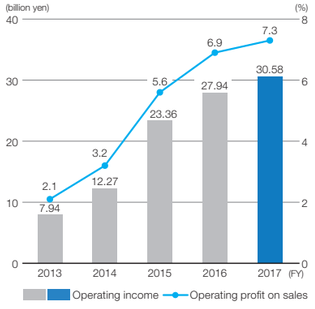
To satisfy diversifying customer needs and address dramatically changing social issues, we take on challenges in new business areas regardless of the conventional areas of business and styles adopted in the broader construction industry.

What we particularly focus on is projects that address social issues, such as participation in the operation of public facilities using private sector expertise, renewable energy using unused land or reservoirs, and mid- to large-scale wooden buildings aimed at the revitalization of domestic forestry and reforestation. We provide various solutions combining our accumulated expertise and new ideas.

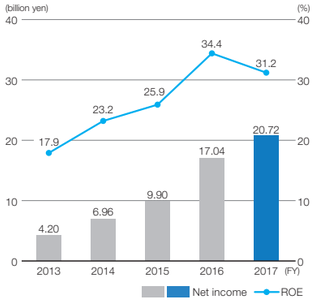
Sales



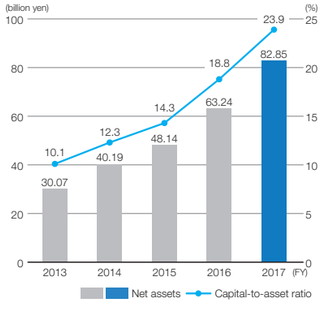
Operating income/operating profit on sales



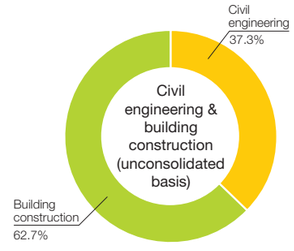
Net income/ROE



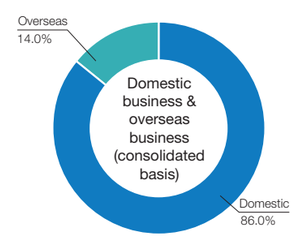
Net assets/capital-to-asset ratio



Percentage in sales



Percentage in sales



Key Projects Completed in Fiscal 2017

Inland Site Development for Toyota/Okazaki Area Middle Zone Land Preparation
(Contractee: Aichi Prefecture)

Jazz Dream Nagashima 5th Phase Floor Increase and Renovation
(Contractees: Mitsui Fudosan Co., Ltd. and Nagashima Resort Co., Ltd.)

Nidec Corporation Nidec Center for Industrial Science 1st Phase Construction
(Contractee: Nidec Corporation)

Brillia The Tower Tokyo Yaesu Avenue
(Contractees: Tokyo Tatemono Co., Ltd. and Mitsubishi Jisho Residence Co., Ltd.)

National Highway No. 45 Kashinai Area Tunnel Work
(Contractee: Ministry of Land, Infrastructure, Transport and Tourism)

Shin-Meishin Expressway Aigawa Bridge (PC Superstructure) Construction
(Contractee: West Nippon Expressway Co., Ltd.)

MOL Magsaysay Maritime Academy Construction
(Contractee: MOL Magsaysay Maritime Academy Inc.)

Lach Huyen International Gateway Port Construction (Road and Bridge)
(Contractee: Ministry of Transport of Vietnam PMU2)

Numerical Plan

	FY2016 (actual)	FY2017 (actual)	FY2018 (plan)
Sales	**403.9** billion yen	**417.3** billion yen	**440.0** billion-yen level
Operating profit on sales	**6.9**%	**7.3**%	**5**% or higher
Capital-to-asset ratio	**18.8**%	**23.9**%	**20**% or higher
Dividend payout ratio	**14.3**%	**14.1**%	**20**% or higher

Fiscal 2017 Overview

Performance in fiscal 2017, the second year of the Mid-term Management Plan 2016-2018, was as follows.

On a consolidated basis, sales were 417.3 billion yen (up 13.4 billion yen from the previous year) due to the progress of high-level projects in hand.

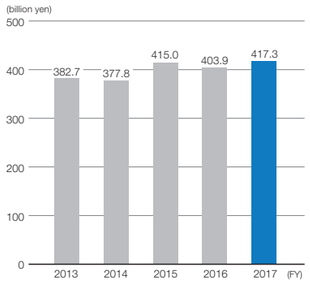
With regard to profits, the gross profit margin of completed work exceeded the previous year for both civil engineering and building construction despite the rising material cost, due to the profitability-oriented order taking policy and productivity improvement efforts.

Consequently, we have marked record high earnings for the third consecutive year since the merger, with operating income of 30.6 billion yen (up 2.6 billion yen from the previous year) and ordinary income of 28.5 billion yen (up 2.3 billion yen from the previous year). Profit attributable to owners of the parent was 20.7 billion yen (up 3.7 billion yen from the previous year).

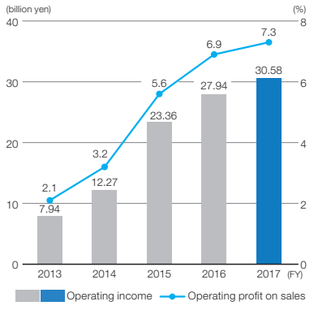
In the performance outlook for fiscal 2018, which we announced in May 2018, we expect consolidated sales of 445.0 billion yen, operating income of 26.0 billion yen, ordinary income of 24.0 billion yen, and profit attributable to owners of the parent of 15.0 billion yen.

Performance

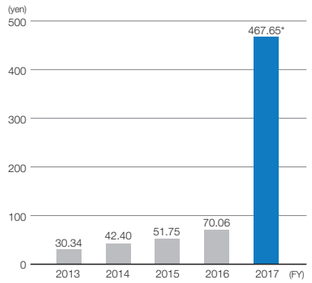
Sales



Operating income/operating profit on sales

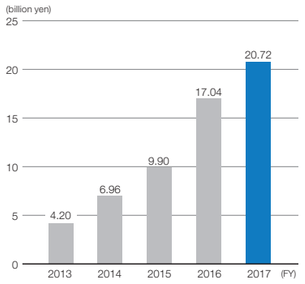


Net assets per share

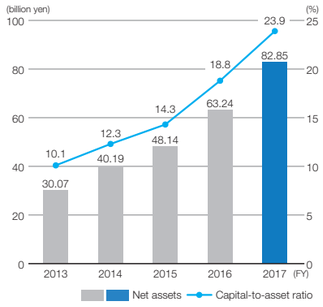


*We carried out stock consolidation, i.e., consolidating five common shares into one, as of October 1, 2017.

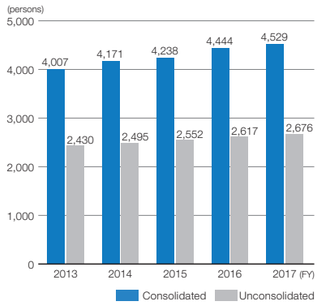
Net income



Net assets/capital-to-asset ratio



Number of employees



Financial Data (consolidated)

(million yen)

	FY2013	FY2014	FY2015	FY2016	FY2017
Operating performance					
Orders received (unconsolidated; reference)	302,131	356,144	351,997	330,555	351,172
Sales	382,724	377,825	414,958	403,908	417,310
Operating income	7,944	12,265	23,364	27,941	30,584
Ordinary income	7,989	11,998	21,801	26,174	28,463
Net income	4,201	6,955	9,902	17,035	20,723
Earnings per share (yen)	5.51	8.59	12.18	20.96	127.48
Return on equity (%)	17.9	23.2	25.9	34.4	31.2
Price earnings ratio (-fold)	19.6	19.3	8.3	5.8	4.9
Operating profit on sales (%)	2.1	3.2	5.6	6.9	7.3
R&D cost	975	1,118	1,380	1,657	2,067
Financial standing					
Total assets	250,716	279,450	293,663	302,152	317,688
Net assets	30,074	40,190	48,136	63,242	82,852
Capital-to-asset ratio (%)	10.1	12.3	14.3	18.8	23.9
Net assets per share (yen)	30.3	42.4	51.8	70.1	467.7*
Dividend per share (yen) (common share)	–	1.0	2.0	3.0	18*
Cash flow					
Operating cash flow	-6,575	14,527	10,742	-3,882	28,279
Investment cash flow	-266	-6,628	805	-1,648	-4,241
Financial cash flow	5,400	3,053	2,168	7,792	-12,576

* We carried out stock consolidation, i.e., consolidating five common shares into one, as of October 1, 2017.

Non-financial Data (unconsolidated)

	FY2013	FY2014	FY2015	FY2016	FY2017
Social data					
No. of employees (consolidated)	4,007	4,171	4,238	4,444	4,529
No. of employees (unconsolidated)	2,430	2,495	2,552	2,617	2,676
Male	2,240	2,285	2,312	2,349	2,390
Female	190	210	240	268	286
No. of newly hired employees	56	79	91	91	93
Female employees on the major career track among all new employees (%)	8.9	15.2	24.2	20.9	17.3
Average age of employees (years old)	46.0	46.2	46.5	46.5	46.4
Average length of service of employees (years)	22.4	22.2	22.2	22.0	21.7
Frequency of safety incidents	0.96	0.48	0.71	0.59	0.49
Environmental data					
Unit of CO_2 emissions (t-CO_2/100 million yen)	21.6	23.7	24.4	23.6	22.3
Construction waste discharged (1,000 tons)	429	500	620	596	751

Overall Picture of Value Creation Stories

Recognize issues

Social issues

Qualitative changes in the construction industry
- Shrinkage of domestic market
- Developing markets with the vigor of the private sector, including PPP and PFI
- Shift from new construction to maintenance and renovation
- Elimination of occupational accidents

Lack of workers
- Declining birthrate, aging population and declining productive population
- Countermeasures against lack of skilled workers

Consistently long working hours
- Work style reforms
- Productivity improvement

New social issues/ growing needs
- Strengthening of the nation
- Measures for aging infrastructure
- Energy/global environmental issues
- Initiatives for globalization
- Public-private partnership

Own issues

Restoring creditability in our execution quality and the public's confidence in us

- Undersupply and aging of workers
- Measures for the decline in experienced employees
- Incomplete in passing on skills and management

New direction in shift away from the conventional subcontracting-based business model

Corporate strategies

Enhance the business model to achieve competitive advantage

Enhance organizational capability

Reform production system

Related activities
- Standardize/industrialize execution
- Secure workers by improving the working environment
- Enhance safety/quality management systems

➡ pp. 17–22

Secure, cultivate and vitalize human resources

Related activities
- Work style reforms
- Promote diversity
- Cultivate human resources
- Raise awareness of human rights
- Promote health and productivity management

➡ pp. 23–26

Expand business areas

Related activities
- Develop and advance technologies and services according to social issues and needs

➡ pp. 39–40

Enhance competitive advantage

Further enhance high-quality high-efficiency services

➡ pp. 27–40

Create value for stakeholders

- Civil engineering business
- Building construction business
- Overseas business
- New business

Aggressively develop technologies

Enhance group-wide cooperation

Customers / Shareholders / Employees / Partners / Society / Global environment

Create value (=address issues)

Improve own value

- Restore creditability
- Improve productivity
- Pass on skills
- Improve the workplace environment/ corporate culture to enable people to take pleasure in their work
- Create a sustainable business portfolio

Improve social value

- Build long-lived, disaster-resistant social infrastructure

- Contribute to productivity improvement with technologies for manpower-saving and mechanized execution

- Secure/cultivate construction workers for social capital improvement

- Address social issues, including energy issue and global warming

- Contribute to economic/social development of emerging/developing countries

SUSTAINABLE DEVELOPMENT GOALS

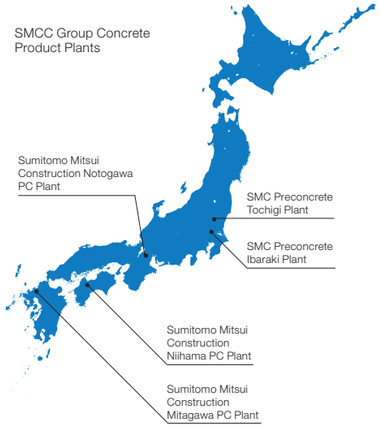
17 GOALS TO TRANSFORM OUR WORLD

Governance supporting strategies of Sumitomo Mitsui Construction and their execution

Technologies that Support Standardization and Industrialization

For Developing and Using Labor- and Manpower-Saving Methods

For labor-saving and industrialization in execution, we focus on the technology for precasting of a concrete skeleton and on production capacity improvement at our plants. To improve productivity in the field, we are aggressively adopting precasting, which involves production of reinforced concrete (RC) members at plants or in production yards and joining the members at the construction site. We are doing this by leveraging the five plants, including plants of group companies, we have in Japan, which is one of our strengths. Intensive production at plants with precasting allows fine-tuned quality control, saves labor in reinforcement placing and formwork in the field under conditions of a worker shortage, and enables workers to perform work in parallel, which is expected to improve productivity. It also enables even unskilled workers to join precast concrete (PCa) members in the field, which saves labor in the field.



Project Operating SQRIM PCa Method Outside Japan

A refinery and petrochemical plant construction project in Malaysia adopted our proprietary PCa technology SQRIM, which we have nurtured in domestic building construction, for concrete pipe rack construction. A technology that enables most of the main structures to be constructed using PCa members produced at plants, SQRIM has been evolved and used in Japan over the years as a method for achieving high quality and high productivity while shortening the construction period.

For the Malaysian plant, according to the plan, 23 large-scale projects will be carried out concurrently at the site, which is not yet connected to utility services and a logistics network. As there is only one concrete plant, creating a high-risk environment, and in light of the status of worker recruitment and other external factors, we proposed SQRIM, which requires little concrete placement in the field, to the contractee, who adopted our proposal. With the no-scaffolding system using aerial platform vehicles, we tripled the speed of construction and got man-hours down to about 38% compared to conventional methods.

Plant (pipe rack) construction in Malaysia

Voice of Project Staff

PCa methods have been used outside Japan, but they generally involve on-site concrete placement. SQRIM, which does not require on-site placement, can achieve stable quality and shorten the construction period even in the challenging construction environments found in Asia. I'm in charge of engineering support to accurately communicate the Japanese technology to local workers.

As operation of SQRIM outside Japan has only just began, I have had difficulties. But I am working with pride and take pleasure in communicating the excellent technology. Every time I give my first presentation on the technology in a new country, I get lots of questions from interested people. That's when I really enjoy the fun part of my work. Japanese technologies value advance arrangements. I see within SQRIM the polite, highly refined spirit of *omotenashi* (hospitality). Taking advantage of being able to introduce this technology that embodies the spirit and passion of Japanese manufacturing from my perspective as a foreigner, I would like to play an active role in a wider world.

Evdon Sicat
Mechanization & Automation Technology Group
Automated Construction Technology & Development Department
Technical & Engineering Service Division

Project Hands-on Camp to Experience Manufacturing from Scratch

As part of measures for the focus themes of reforming the production system and securing, cultivating and vitalizing human resources under the Mid-term Management Plan 2016-2018, in fiscal 2017 we started to provide new employees in the Civil Engineering Division with a hands-on camp where they produce concrete bridge members all by themselves.

Theme

"Keep failure in your heart" or "cultivate resilience by carrying through on a task to the end despite repeated failures" through manufacturing from scratch.

We provide newly recruited engineers who need to improve their knowledge or skills with a hands-on camp where they create a structure from scratch all by themselves. This lets them experience failures, which are unacceptable during on-the-job training, in order to acquire knowledge that they will never forget and to clearly understand their future challenges. The camp also allows them to feel the satisfaction of completing a structure with their peers, despite repeated failures (that is, to experience success) and to nurture resilience as well as a willingness to fearlessly take on new challenges.

Content of hands-on camp

■ Training programs

Thirty-two new employees were divided into eight four-member groups. Each group, modeled on a those at a project site, was tasked with creating a miniature (two-girder) bridge girder, and undertook training programs following the schedule of a site to master the following:

(1) Moderating a morning meeting
(2) Creating a plan drawing
(3) Structural calculation and review of formwork and formwork support
(4) Creating work procedures
(5) Creating a work schedule
(6) Learning quality controls
(7) Daily safety control

■ Hands-on items

- Survey
- From material take off for temporary materials and materials for main construction to material order placement
- Work normally performed by partners, from erecting/dismantling scaffolding, formwork support, and formwork, to joining reinforcement rods, placing skeleton concrete, and providing PC steel with tension
- Safety control with safety patrol of the work area
- Mastering inspection and management of completed part of construction by using ICT

Full view of formwork assembly

Placing concrete

■ Results

- Learned the importance of teamwork and communication
- Felt a sense of accomplishment and satisfaction in manufacturing
- Learned how hard each task is, consideration for workers, and importance and significance of advance planning through hands-on experience
- As a secondary effect, young employees from branches who supported the training programs were reminded that teaching is learning and took themselves to the next level.
- Realized what issues are important in on-site execution management

Full view of completed skeleton concrete placement

Completed two-girder concrete placement

Reform Production System

To be trusted by society and continue to achieve sustainable growth, it is crucial for us to deal with the social issues that surround us, as well as our own issues, and develop a mechanism to continue creating new value. To that end, we are reforming our production system across organizational borders, regardless of stereotypical patterns.

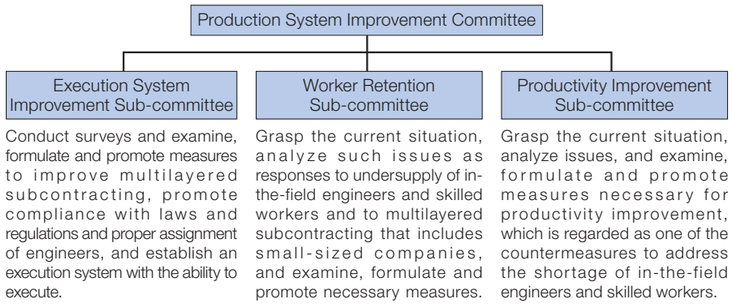
Major Initiatives to Reform the Production System

One of the focus themes of the Mid-term Management Plan 2016-2018 is reforming the production system. Initiatives set under the theme to achieve supreme quality that lives up to our customers' confidence in us are improving productivity with standardization and industrialization, improving the working environments for worker retention, and enhancing the safety management system.

Our goal of supreme quality reflects our aspiration to perform quality control (manufacturing processes) that other manufacturing industries take for granted, which means to unfailingly perform management tasks, including work, quality inspection, recording, and confirmation, according to the predetermined procedures, rather than following conventional practice in the construction industry. As our quality control activities do not permit any compromises in these processes, all officers and employees should continue to improve in-the-field quality with persistence and utmost attention.

To establish supreme quality as Sumitomo Mitsui Construction's common value, intangible asset and corporate culture, we have made helmet stickers and banners and distributed them to all sites. The banners not only feature the message of "Supreme Quality Assurance" but also "Safety First" and the green cross.

System to promote production system reform



Fiscal 2018 Production Control Plan

Basic Production Control Policy
Achieve supreme quality focusing on execution process as early as possible with awareness raising for sustainable growth.

Basic Production Control Targets
○Zero quality defects ○Achieving supreme quality as early as possible

Basic Production Control Plan

1. Preventing quality problems
Priority Measures
(1) Analyzing causes for past cases (human/physical/methodological factors, measures to prevent human errors)
(2) Expanding workable practices and issues pointed out in quality audits and quality safety audits company-wide
(3) Checking key quality-related points in execution process

2. Improving operational efficiency and reducing in-the-field burdens
Priority Measures
(1) Promoting shorter hours for employees
(2) Reducing on-site workloads
(3) Improving efficiency of site operations with ICT
(4) Promoting the Action Plan for Two Days Off per Week (Japan Federation of Construction Contractors)

3. Ensuring legal compliance
Priority Measures
(1) Complying with the Construction Business Act and related laws and regulations
(2) Strengthening guidance to companies that have not taken out social insurance

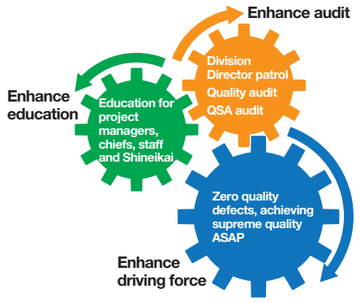
Control Activities for Supreme Quality

For civil engineering we appoint quality safety inspectors (QSIs) and for building construction we appoint quality safety auditors (QSAs). Both are dedicated to site patrol and guidance. They thoroughly perform detailed checking based on data concerning past quality defects and occupational accidents, raise awareness of key control points, perform inspections and provide guidance for improvement to prevent occupational accidents and quality defects in ongoing projects. Meanwhile, the Division Director of the Production Management Division performs patrol functions and the Production Management Division carries out the quality audit. In fiscal 2017, the number of quality audits and patrols at civil engineering and building construction sites reached 2,063. In the Building Construction Division, defects pointed out through the audits and patrols are shared at twice-a-month QSA meetings to ensure shared understanding among QSAs.

We also communicate issues pointed out at meetings and education programs for Shineikai, which are organized by project managers, chiefs and partners. Through these efforts, we aim to achieve zero quality defects and supreme quality as soon as possible.

Patrols and audits conducted in FY2017

Patrol by Production Management Division Director	222
QSI patrol (civil engineering)	864
QSA patrol (building construction)	822
Quality audit by Production Management Division (civil engineering/building construction)	155



Priority Measures

1 Analyzing causes of past cases (human/physical/methodological factors, measures to prevent human errors)
2 Expanding workable practices and matters pointed out in quality audit and QSA audit company-wide
3 Checking key quality-related points in execution process

Production System Improvement Committee Activities in Fiscal 2018

1. Execution System Improvement Sub-committee

1 Promoted compliance with laws and regulations ("Construction Business Act Patrol") (see page 50).
2 Properly assigned engineers.
3 Promoted purchase of social insurance.

2. Worker Retention Sub-committee

1 Promoted the Action Plan for Two Days Off per Week (see page 23).
2 Enhanced cooperation with Shineikai (see page 24).
3 Promoted popularization of the Construction Career Up System (CCUS)[1].

1 A system to accumulate data on construction engineers' in-the-field work experience and qualifications according to the unified rules of the construction industry

3. Productivity Improvement Sub-committee

1 Improved construction work-related productivity with the use of ICT (information and communication technology) (see page 42).
2 Established the use of cloud servers to store data created on-site.
3 Rolled out on-site IT tools using tablet terminals.
4 Mechanized and automated precast production system.

Supreme Quality Assurance banner and Safety First and green cross sheet

VOICE Message from a QSA

Our company's product is our execution process, where "safety first" is the top priority, followed by quality as the second priority and cost as the third. In working on my daily tasks, I recognize that it is the responsibility of QSAs to find, through quality safety audits, budding risks and quality defects that tend to be overlooked in the field, to check and provide guidance in an uncompromising fashion, and to expand practices and measures for preventing the occurrence of similar incidents at other sites.

Akinori Suzuki
Production Management Division

From a Site of Value Creation: Quality Audit of Collective Housing Construction

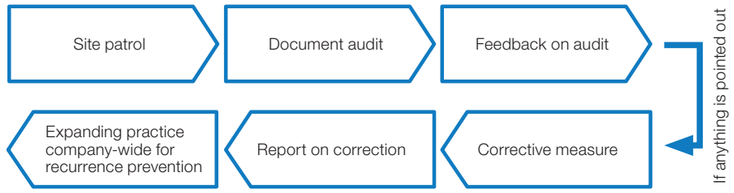
For a building construction project, we have a quality safety audit patrol conducted by a QSA twice a month and a quality audit conducted by the Production Management Division at least twice before completion. Using high-rise collective housing construction as example, we provide an outline of the quality audit as follows.

Quality Audit Overview

A quality audit comprises two phases: site patrol and document audit. In the case of one high-rise collective housing construction project, the audit started with an inspection of bar arrangement on the upper floors, where skeleton work, such as beams, floors and pillars, was underway, then moved on to checking of sash installation and thickness of spray-applied insulation on the middle floors and the interior (wall cloth, flooring) finish on the lower floors.

Subsequent to that, a document audit was conducted in the office. Finally, staff from the Production Management Division gave feedback on the current status of safety and quality control.

When any matter is pointed out during a quality audit, the audited site is expected to promptly correct it and report the correction, and the practice is expanded company-wide to prevent recurrence.




Checking bar arrangement in reinforcement placing


Checking the thickness of spray-applied insulation


Document audit and audit feedback

VOICE In Response to Quality Audit

Toshikazu Okibayashi
Project Manager
Tokyo Building Construction Branch

For builders of collective housing, the mission is to provide end users, who will move into the building and live there for a long time, with a safe and secure living environment. Builders feel proud when all end users are satisfied with the overall building and their own units. To that end, we must make untiring efforts to secure high quality in all the work we do, fully plan its execution before starting the work, and conduct detailed site checks during and after execution.

Building construction technologies are advancing day by day. Within a limited on-site organization, it is difficult to incorporate new technologies, information and reports on quality defects at other sites to improve execution. Conducting such quality audits at project sites all over Japan is crucial in order to apply technologies and information on collective housing construction, which is our key strength, across the entire company. We would like to create collective housing with superior quality by referring to information and feedback obtained through quality audits.

Establishing a Safety Culture

We are improving operational safety by ensuring implementation of the plan-do-check-act (PDCA) cycle in all construction processes from planning to completion in order to eliminate accidents. Additionally, we are reforming our production system, a process that includes the development of labor-saving technology and use of ICT, to reduce possible causes of accidents.

Basic Safety and Health Policy

Under the principle of “zero-accident” infrastructure building, Sumitomo Mitsui Construction aims to protect the lives and health of its workers by providing a safe, healthy and pleasant workplace environment.

1. To eliminate accidents, we observe laws and regulations related to occupational safety and health as well as the Sumitomo Mitsui Construction health rules, and establish workplace rules.
2. To improve operational safety, we ensure the performance of repeated cycles of plan, do, check and act in all processes from planning to completion.
3. To improve the level of safety and health control, we cooperate with partners and carry out voluntary safety and health activities, eliminate or reduce risks and sources of harm, promote worker health, and develop a pleasant workplace environment, with the Sumitomo Mitsui Construction Occupational Safety and Health Management System as the basis of safety and health control.

Basic Safety and Health Targets

Zero deaths, critical injuries and major accidents

Frequency rate: 0.6 or less

Severity rate: 0.02 or less

1. Eliminating accidents through zero risks

(1) Eliminating public accidents (third-party accident, property damage, publicfacility failure)

(2) Eliminating three major types of accidents (falls to the ground and falls to the floor, collapsing and overturning, accidents caused by construction machinery, cranes, etc.)

2. Developing a healthy and pleasant working environment

Priority Measures

1. Eliminating accidents through zero risks

(1) Improving operational safety with continued implementation of plan, do, check and act cycles

(2) Preventing recurring accidents by using accident case studies and complying with rules

(3) Complying with laws and regulations related to each site

(4) Improving the level of safety and health control
(Properly applying the Sumitomo Mitsui Construction Occupational Safety and Health Management System)

2. Developing a healthy and pleasant working environment

(1) Promoting mental and physical health based on work style reforms

(2) Developing a pleasant working environment to promote diversity

(3) Developing a worker-friendly workplace environment by promoting and enhancing the 5S movement (*seiri*, *seiton*, *seiketsu*, *seisou*, *seijitsu*)

(4) Taking early measures for heatstroke by grasping the WBGT (heat index) in summer

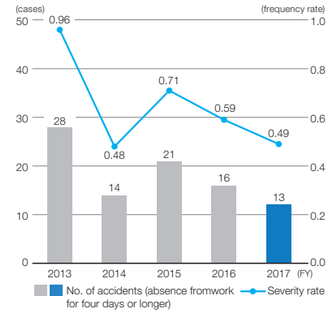
(5) Preventing occupational diseases

Safety Performance

In fiscal 2017, the frequency rate[1] was 0.49, which met the target of 0.6 or less, while the severity rate[2] was 0.31, which did not meet the target of 0.02 or less. There were 13 cases of absence from work for four days or longer: four cases involving a falling object, four cases involving a fall to the ground, three cases involving pinching, and two other cases.

1 The frequency rate represents the frequency of occupational accidents. The rate shows the number of fatal or serious injuries due to occupational accidents per one million hours worked.
2 The severity rate represents the severity of accidents. The rate shows the number of lost workdays per 1,000 hours worked.

Safety performance (FY2013–2017)



Secure, Cultivate and Vitalize Human Resources

The greatest asset in the construction business is human resources (human assets). The development of a working environment and corporate culture where all people involved with the SMCC Group enjoy their work and are motivated to work hard leads to the improvement of corporate value. Therefore, under the Mid-term Management Plan 2016-2018, we are launching measures to improve the working environment and treatment of employees, while at the same time formulating and implementing measures to promote work style diversity and workforce diversity and cultivate global human resources who will play active roles in our future overseas business for securing, cultivating and vitalizing human resources.

Work Style Reforms

As the working-age population decreases, the shortage of workers is becoming an increasingly serious issue in many industries. Additionally, the construction industry is facing other diverse issues that need to be resolved, including the aging of workers and long working hours. To address these issues, we must work on both work style reforms and productivity improvement at the same time. For the issue of the shortage of workers, it is imperative to promote diversity hiring, including the recruitment of women and elderly persons, and to improve individual productivity. If the obstacle of long working hours is rectified to improve work-life balance, women, the elderly and a more diverse range of people can enter the workforce, which will lead to productivity improvement.

In April 2018, we formulated the President's Policy on Work Style Reforms and the Employee Action Guidelines for Shorter Hours to urge employees to achieve results in terms of shorter hours and to raise their awareness as part of efforts to tackle issues involved in work style reform, including employee working hours across the company.

As for the mid-term direction, we set the goal of achieving two days off per week at all sites[1] by raising employee awareness and improving operations and efficiency and of building a system for the application of the upper limit of overtime in the Sumitomo Mitsui Construction Action Program (established in April 2018), and drew up the Work Style Reform Roadmap towards 2021.

1 Two days off per week: Closing construction sites twice a week

Poster on closure on the second Saturday

Sumitomo Mitsui Construction President's Policy on Work Style Reforms

To achieve sustainable corporate growth and cultivate creative employees for the future, Sumitomo Mitsui Construction will promote the development of an environment where diverse employees can feel satisfied with their jobs and have greater awareness.

- Development of the environment
  Building a mechanism to eliminate waste, irregularities and overwork, and developing a system for productivity improvement
- Awareness raising
  Encouraging employees to make time to achieve and continue their personal development for the future

The company promotes work style reforms in accordance with the President's Policy on Work Style Reforms, while employees aim to achieve shorter hours based on the Employee Action Guidelines for Shorter Hours.

Employee Action Guidelines for Shorter Hours

Employees of Sumitomo Mitsui Construction work while being conscious of goal, time and team to achieve shorter hours.

Sumitomo Mitsui Construction Action Program

Target

Achieve two days off per week[1] at all sites by raising employee awareness and improving operations and efficiency. Build a system for the application of the upper limit of overtime.

Work Style Reform Roadmap: Action items (excluding sites where application is difficult[2])

FY2017	FY2018	FY2019	FY2020	FY2021
Test six-day closure per four weeks and eight-day closure per four weeks at designated model sites	Implement five-day or longer closure per four weeks at new project sites	Implement six-day or longer closure per four weeks at new project sites		Implement eight-day or longer closure per four weeks at new project sites
	All sites are closed on the second Saturday of every month, in principle.	All sites are closed on the second and fourth Saturday of every month, in principle.		All sites are closed on Saturdays and Sundays, in principle.

1 Two days off per week: Closing construction sites twice a week (JFCC)
2 Sites where application is difficult: Sites where introduction of two days off per week is difficult, including construction sites with special circumstances, such as disaster relief or stadiums for the Tokyo Olympic and Paralympic Games, or project sites for which the contract was concluded before March 2018 and for which the construction period is fixed (JFCC)

Developing Systems for Diverse Work Styles

In response to the needs of individual employees with diverse values, we will enhance systems to provide them with workplace environments that allow them to balance their work and personal life and continue to work in a healthy and secure manner, and will distribute the Work-Life Balance Handbook covering issues related to child-rearing and caring for family members.

Diverse Work Styles and Programs for Different Lifestyles

- Satellite office program
- Shorter hours/limited days program (for employees who are rehired after reaching the retirement age)
- Childcare and family care leave system
- Paid leave entitlements by the hour

Cooperation with Sumitomo Mitsui Construction Shineikai

A shortage and aging of workers, long working hours, and other issues facing the construction industry cannot be resolved by our company alone but only through concerted efforts with partners. To address these issues, we are cooperating with Shineikai, organizations comprised of our partners.

In the construction sector, there is a concern over the declining number of young workers entering the industry. As an initiative to help the construction industry retain its share of workers, the Tokyo Civil Engineering Branch Shineikai has provided an opportunity for high school students to visit construction sites and undertake work experience since fiscal 2016.

Meanwhile, in fiscal 2017, we held 20 opinion exchange meetings with branch Shineikai on initiatives for two days off per week, the purchasing of social insurance, and worker retention.

VOICE Message from Shineikai Association Chairman

Shineikai are deepening their cooperation with Sumitomo Mitsui Construction in regard to worker retention, work style reforms, and in-the-field productivity improvement. With regard to work style reforms, we first conducted a survey with Shineikai members to grasp the actual situation of each job classification to ensure future implementation of six-day closure per four weeks. While young workers wanted days off, mid-career and veteran workers were more eager to work and earn money. Due to increasing media coverage of work style reforms and our effort to publicize the matter in training programs, more and more people will wish to take days off at a faster rate. However, it is crucial to eliminate concerns over consequences of taking days off, such as in relation to income. Through Shineikai activities, I would like to improve awareness around taking days off and controlling overtime while communicating with workers and considering actual situations in the field.

Ken Odagiri
Chairman
Shineikai Association

Initiatives for Diversity

Promotion Framework

In December 2014, we established the Diversity Committee and its sub-organization, the Female Empowerment Working Group. Having a strong corporate commitment and making efforts to change employees' awareness, we are proactively promoting women, foreign nationals, senior employees and employees with disabilities and developing a corporate culture that allows a diverse range of people to make active contributions.

Employment status
(unconsolidated; as of March 31, 2018)

	No. of employees	Average age	Length of service
Overall	2,676	46.42	21.78
Male	2,390	47.28	22.55
Female	286	39.19	15.41

Promoting the Employment of Older Workers

In accordance with the Act on Stabilization of Employment of Elderly Persons, we established a continued employment program for employees who have reached the age of retirement (60 years old). In fiscal 2017, 67 employees out of 73 who reached the retirement age used the system and are now working in frontline positions. Starting fiscal 2018, to encourage older workers to play active roles and provide them with satisfying jobs, we introduced personnel evaluation for employees using the continued employment program to put in place a well-modulated treatment structure.

Employment of People with Disabilities

In April 1, 2018, the statutory rate with regard to the employment of people with disabilities was raised to 2.2%. As of June 1, 2018, our employment of people with disabilities was 2.1%, falling short of the statutory rate. In light of the purpose of the laws and regulations, as well as the increase of the statutory rate to 2.3% by April 2021, we will proactively employ disabled workers and support their retention.

Systematic Recruitment of Foreign Nationals

We systematically hire foreign students studying in Japan as part of our regular recruitment process. These recruits are actively working as engineers in and outside Japan, and are expected to be a significant part of the workforce. We are also improving the personnel system for foreign national employees and providing opportunities for business Japanese training when necessary.

Promoting Female Empowerment

In April 2016, we developed a three-year action plan based on the Female Empowerment Promotion Act. In the two years from the formulation of the plan, the number of female managers increased from 12 to 18, while eight female employees were promoted from the minor career path to the major career path under the employee classification change system.

Our efforts to proactively promote female empowerment also include provision of regular training programs for female empowerment, launch of Aozora Komachi activities[1] in and outside the company by female employees, and cooperation with outside organizations that promote female empowerment.

1 Aozora Komachi activities: Activities carried out by female employees of Sumitomo Mitsui Construction for female empowerment

Training programs for female empowerment

- Career training and business training for female employees (minor career path)
- Career training for female leader candidates
- Training for managers who have female subordinates
- Diversity training for managers

General Employer Action Plan based on the Female Empowerment Promotion Act

Period of the plan: 3 years from April 1, 2016 to March 31, 2019
Target 1: Ensure that female employees on the major career track account for 20% or more of all new employees. Double the number of female employees engaged in technical work, compared with the April 2014 figure.
Target 2: Reduce average overtime by 15%.
Target 3: Double the number of female managers to 24 from today's 12.

Participation in Diversity-related Symposium

Yoshio Nagamoto
Representative Director
Executive Vice President

In February 2018, the Oita Alliance Diversity Conference, in which Sumitomo Mitsui Construction has participated as a partner organization, hosted the Oita University Diversity Research Environment Initiative (index type) Kick-off Symposium. Under the theme of "enabling female researchers and engineers to succeed and play active roles," the symposium featured lectures and a panel discussion that included Executive Vice President Nagamoto, who chairs our Diversity Committee, as one of the panelists. The executive vice president introduced the Kensetsu Komachi activities and initiatives for developing female leaders at Sumitomo Mitsui Construction, and exchanged opinions with representatives of other participating organizations on diversity promotion, the significance of gender equality, and ideal alliances.

Initiatives to Improve Fair Treatment

As part of activities to create an attractive corporate culture, we are steadfastly promoting measures to improve the working conditions of employees and build a well-modulated personnel system and structure.

Fair Personnel Evaluation

We fairly evaluate the efforts and achievements of employees, and reflect the evaluation results in their treatment. Employees are evaluated as to their achievement of their targets set through employee-supervisor interviews, and get feedback on the evaluation results so that they are motivated to work toward higher targets. We aim to enhance internal communication through such feedback so that the company will become a more open organization. Also, in determining treatment, unlike in the past, when seniority was the sole consideration, we now value ability and results to ensure that motivation is enhanced and that evaluation is fair and equitable.

Implementing Self-Reporting System

Each year, we collect information from individual employees on what they desire in terms of their current or future duties and workplace and their career development, and use the information to ensure personnel are assigned and promoted to appropriate positions.

Employee Classification Change System

We have put in place a system that allows employees who satisfy certain requirements to change their classification, for instance, from major career path (place of work can be anywhere across Japan) to major career path (place of work is limited to a region) or vice versa, or from minor career path to major career path (place of work can be anywhere across Japan or is limited to a region).

We review the system to raise the upper age limit and add eligibility requirements while promoting the proactive use of the system.

President's Award

Every year, to improve employee morale we recognize employees who have conducted excellent activities in light of the objectives of the Corporate Principles in the areas of construction, sales, design, technology and the environment by presenting them with a President's Award.

Promoting Health and Productivity Management

To be a company where employees can work in a healthy manner, we have worked on health and productivity management since fiscal 2016. Japan's Ministry of Economy, Trade and Industry has introduced the Certified Health & Productivity Management Organization Recognition Program, a system to select and certify excellent companies working on health and productivity management, and Sumitomo Mitsui Construction was certified as one of the FY2018 recognized organizations.

In fiscal 2017, we introduced the ferritin/TIBC test for determining hidden anemia to our regular health examination, launched a campaign to subsidize the cost of outpatient smoking cessation treatment, created a health promotion handbook and distributed it to employees, and provided an e-learning program on health promotion. Going forward, we will create virtuous cycles whereby company-wide efforts for health and productivity management improve working styles and workplace environments, which thereby promotes employees' health and consequently improves productivity and corporate performance.

Certification as Health & Productivity Management Organization

Health promotion handbook

VOICE Message from Head Office Business Support Center Director

(From left) Ms. Sato (nurse), Director Orimoto (Business Support Center), Ms. Hirokawa and Ms. Hayashi (nurses)

The average age of our employees as of the end of March 2018 is 47.2 years old for men, 39.1 for women, and 46.4 overall, which indicates that our workforce is aging. Reasons for us to promote health and productivity management include the increase in health risks in connection with the aging of employees and the need to strengthen mental health measures in light of the stresses of contemporary life. Poor physical or mental health not only makes individual employees unhappy but leads to a decline in operational efficiency and productivity. Therefore, the company is working on employee health promotion, recognizing it as an important management issue.

Employees may feel reassured if a nurse is available for consultation when they have health concerns. Currently, nurses are not assigned to all offices, but we will start to make aggressive efforts, in fiscal 2018, to do so. We will also ask nurses to visit project sites as much as possible to directly interview employees working outside the office. Eventually, we will develop a system for company-wide health promotion through cooperation among nurses at all offices.

Enhance Competitive Advantage

With Consideration for the Field, We Are United and Working on Production System Reform toward a New Growth Stage

Hiroshi Mashiko
Director
Senior Managing Executive Officer
Division Director
Civil Engineering Division

	Recognize issues	Address issues
Social issues	● Measures for aging infrastructure	● Aggressively promote initiatives, primarily for expressways, water and sewerage facilities, and energy facilities. ● Enhance joint initiatives between civil engineering and building construction and cross-industrial cooperation.
	● Lack of workers due to declining birth rate and aging population	● i-Construction and i-Bridge with the use of ICT and CIM for saving labor and manpower
Our issues	● Quality assurance and safety control	● Enhance supreme quality assurance initiatives with QSI activity.
	● Establishing profitable system	● Make all-out effort to secure profit when receiving orders and reduce cost when bidding. ● Assign human resources through cooperation between Head Office and branches.
	● Cultivate human resources for the future	● Introduce education on professional practice and build a career development plan. ● Carry out systematic rotation for the field, design and engineering sectors.
	● Productivity improvement	● Promote mechanization, streamlining of execution and structure, and precasting.

Enhance organizational capability

For productivity improvement, we are promoting precasting of concrete members, prefabrication of reinforcement rods, and saving labor in the field with ICT use. We will also accelerate investment in technological development and human resource development.

Enhance competitive advantage

Leveraging our strength as an all-rounder balancing work for bridges, tunnels, shielding and civil engineering, as well as balancing civil engineering with building construction, we are receiving increasing orders for large projects integrating civil engineering and building construction as well as for large-scale projects involving various elements, such as bridges, tunnels and civil engineering.

Create value for stakeholders

As measures for aging infrastructure, we are aggressively promoting initiatives, primarily for expressways, water and sewerage facilities, and energy facilities. We are also addressing the issue of a shortage of workers caused by the declining birth rate and aging population.

Business Environment

In the short term, projects for restoration following the Great East Japan Earthquake are likely to decrease, but projects related to the Tokyo Olympic and Paralympic Games are in the final stage toward 2020. After 2020, there will be continued investment in strengthening the nation, including enhancing measures for an anticipated Nankai Trough earthquake, measures for water damage caused by torrential rain, and disaster reduction or mitigation measures, such as developing emergency roads. There will also be investment in large projects, such as Chuo Shinkansen construction, and in renewable energy and other energy-related areas.

In the mid- to long-term, the market is expected to undergo dramatic changes as new construction projects in Japan will decrease while maintenance and renovation of social infrastructure, including roads, water and sewerage facilities, and energy facilities, will substantially increase.

Under these circumstances, the business environment remains under severe strain due to the labor shortage, so the entire construction industry must work on work style reforms, productivity improvement, and human resource development. With the establishment of two days off per week, work styles, including those in the field, are likely to change significantly. It is imperative to proactively invest in technological development such as mechanization and robotization with the advancement of IoT and AI technology.

Fiscal 2017 Overview

Civil engineering results in and outside Japan in fiscal 2017 were:

Orders received	125.8 billion yen (up 6.6 billion yen year-on-year)
Amount of completed work	117.8 billion yen (down 1.9 billion yen year-on-year)
Gross profit on completed work	18.4 billion yen (up 0.6 billion yen year-on-year)
Profit margin of work	15.6% (previous year: 14.9%)

Key construction orders received include the 80th Section of the Tamagawa Pump Station construction project, the Hokkaido Shinkansen Line Sairei Tunnel, and Package 2 of the Kelani River bridge construction project.

Thanks to the improved profitability of large-scale construction projects, we secured profit considerably exceeding that of the previous year.

Enhancing Competitive Advantage in Existing Areas

Japan's first prestressed concrete (PC) road bridge was constructed around 65 years ago. With the widespread use of the Dywidag method—which we introduced ahead of others—the length, as well as the number, of PC bridges increased dramatically. Since then, we have driven the industry forward with a commitment to world-first technologies and have maintained our position as No. 1 in terms of technologies and construction experience in the area of PC bridges in Japan.

As Sumitomo Mitsui Construction is an all-rounder balancing work for tunnels, shielding, and civil engineering, as well as balancing civil engineering with building construction, we are receiving increasing orders for large projects integrating civil engineering and building construction. The unit of work order placement is becoming larger, and the number of projects involving multiple elements, such as bridges, tunnels and civil engineering, is increasing. The increase in orders received can be attributed to our comprehensive strength.

In terms of floor slab replacement for expressway bridges, demand for which has been rapidly increasing in recent years, we are gaining increasing experience with the Chugoku Expressway Shimo-kumatanigaya Bridge and other projects, leveraging our advantage as one of only a few general construction companies that have plants able to manufacture precast concrete members for floor slabs. We are also differentiating ourselves by the mechanization of floor slab replacement.

We are the only construction company both in the Mitsui Group and the Sumitomo Group, two well-known Japanese corporate groups. Cross-industrial cooperation with other group companies gives us a tremendous advantage when entering a new market.

To further enhance and use these advantages, we are promoting precasting of concrete members, prefabrication of reinforcement rods, and in-the-field labor saving with ICT. We are accelerating, more than ever before, investment in human resource development for worker retention as well as investment in technological development for productivity improvement.

Expanding Business Areas

The areas we are aggressively enhancing and focusing on include large-scale refurbishment of expressways, water and sewerage facility refurbishment, and large projects such as the Chuo Shinkansen.

For large-scale expressway refurbishment, we received a total of three orders, including the Tomei Expressway (Specified Refurbishment) floor slab replacement for the section between the Susono Interchange and Numazu Interchange (fiscal 2017). We will further enhance our competitiveness by securing the advantages we have built and through cross-industrial cooperation. We will also accelerate technological development, such as rapid construction and precasting to save labor and manpower, and carry out investment and organization building for further cost reduction and productivity improvement.

As for water and sewerage facility refurbishment, in fiscal 2017 we received an order for a large project developed under the DBO[1] model based on the Act on Promotion of Private Finance Initiatives (PFI). We established a dedicated section under sales to promote efforts to integrate civil engineering and building construction and enhance cooperation with machinery and electric manufacturers.

In such new business areas, we will promote the assignment of young employees in order to develop project managers in cross-industrial consortiums. For the shift to growing overseas markets, we need to transfer engineers to overseas locations. For this, we will promote young employees from a long-term perspective and aggressively hire foreign nationals.

1 DBO: A system in which a PFI operator is commissioned to design, build and operate facilities while the public sector procures the funding and owns the facilities.

Enhance Organizational Capability

Technological Advantage

Ever since prestressed concrete technology was introduced to Japan, Sumitomo Mitsui Construction has developed related technologies, including precasting for bridges and various methods for rapid construction. We are improving operational productivity in response to the shortage of skilled workers, which is a society-wide issue, and contributing to building high-quality, durable infrastructure.

To take the example of rapid construction of the bridge superstructure, we are aggressively using precast segments of various shapes to install girders (superstructures). Currently, large-scale projects in overseas countries pushing ahead with rapid infrastructure development are adopting epoch-making rapid construction using precast segments. Execution methods using precast members have also proved effective for securing the safety of work in high places.

PC superstructure construction adopting precast U-girder segments

Operational Process Pursuing Supreme Quality

The Civil Engineering Division assigns quality safety inspectors (QSIs) dedicated to site patrol and guidance to prevent quality defects and occupational accidents for projects under execution. The number of quality audits and patrols performed at civil engineering sites in fiscal 2017 reached 864.

With a focus on bridges, the Bridge Quality Committee carries out activities to improve element technology specific to each of the planning, design, execution and maintenance phases, with the goal of improving quality with regard to the entire lifespan of the bridge.

Use of ICT in Design, Execution and Maintenance

The use of ICT in the production process has dramatically improved the efficiency of management work in the field. One example of this is our “AR-based surface finish control system,” which enables us to control the surface shape of concrete floor slabs in concrete placement in the field. The system renders the results of measurement, which is performed while concrete is being poured, as a 3D data image and superimposes the image on the image of the project site using augmented reality (AR) technology for visualization. It allows us to improve the evenness of the finished surface as we are working on it.

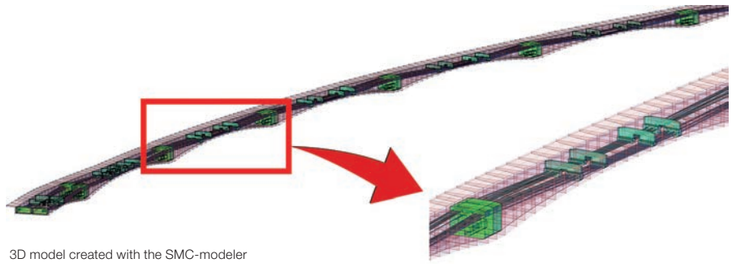
For the construction of prestressed concrete bridges that have complex shapes, we are using the SMC-modeler, our proprietary system to efficiently create highly accurate 3D drawings of bridge models at the design stage. The system allows us to superimpose a 3D model for the entire project site onto the project site landscape at the exact position, as measured with a drone, so that we can quickly and unfailingly identify any conflict with local geography and structures.

Cultivating Excellent Skilled Workers

While robust construction investment is likely to continue in line with infrastructure improvement aimed at strengthening the nation, preventing and mitigating disasters, and renewing aging infrastructure, the development of excellent skilled workers is a big issue.

To establish the SMCC brand with regard to bridge construction as one of our key business areas, the Civil Engineering Division certifies foremen with outstanding skills in overall execution and leadership as “Bridge Meister.” Certified foremen are expected to train young technicians who will lead the PC industry in the future and to pass on their skills to the next generation.

In parallel with human resource development, we are working on work style reforms. We are stepping up efforts to introduce two days off per week in the field, reduce working hours, and enhance work-life balance. As part of our efforts, we will aggressively introduce new technologies, such as IoT and AI, and invest in technological development, such as mechanization, robotization and efficient design programs.



3D model created with the SMC-modeler

Results of Value Creation

Financial/Non-financial KPIs

	FY2013	FY2014	FY2015	FY2016	FY2017
Orders received (billion yen)	134.6	151.9	122.6	119.2	125.8
Amount of completed work (billion yen)	88.5	96.0	123.1	119.7	117.8
Gross profit of completed work (billion yen)	7.2	12.1	15.9	17.8	18.4
Profit margin of work	8.1	12.6	12.9	14.9	15.6
No. of engineers[1]	815	806	810	811	803
Construction waste final landfill	1.7	1.3	1.2	1.3	1.3
Unit of CO_2 emissions (ton-CO_2 per 0.1 billion yen)	42.2	43.0	43.7	42.6	40.8

1 Holders of civil engineering qualifications subject to evaluation under the Business Evaluation System

Project Ube City Public Sewerage Tamagawa Pump Station

■ Contractee:
Ube City (Yamaguchi Prefecture)

■ Project period:
Design and construction period
From October 2017 to November 2025
Maintenance period
April 2024 to March 2044

■ Project members:
Sumitomo Mitsui Construction Co., Ltd. (project representative), Kubota Corporation, Toshiba Infrastructure Systems & Solutions Corporation, Nihon Suiko Sekkei Co., Ltd., and Kubota Environmental Service Co., Ltd.

Sumitomo Mitsui Construction started a project for the development of a combined pump station having the function to drain sewage water and rainwater. This was the first project in Japan undertaken based on the design-build-operate (DBO) model.

The public sewerage system of Ube City in Yamaguchi Prefecture has been in use for nearly 70 years, so the pump stations and sewer culverts are aging. In 2017, Ube City, as the facility owner, commissioned a private-sector consortium, represented by Sumitomo Mitsui Construction, to demolish two old pump stations, the Sakaegawa Pump Station (put in service in 1957) and the Unoshima Pump Station (put in service in 1967), and design, build and maintain the Tamagawa Pump Station, which consolidates the functions of the former two in an integrated manner.

The project is expected to reduce business costs and provide a high-quality public service with the use of private sector technologies and expertise. Sumitomo Mitsui Construction is promoting smooth operations as the representative of the consortium, with the goal of proper maintenance of social infrastructure.

Value Creation Stories

Enhance Competitive Advantage

Domestic Building Construction

Path for Stable Growth—Taking on Challenges without Fear of Changes to Stride Forward and Continue to Evolve

Yoshitaka Mimori
Representative Director
Executive Vice President
Division Director
Building Construction Division

	Recognize issues	Address issues
Social issues	● Shortage of construction engineers and skilled workers	● Shorten the construction period with precasting, and save labor and simplify in-the-field work with member prefabrication. ● Promote ICT and closure of project sites on Saturdays.
	● Large-scale earthquake disasters	● Enhance initiatives in the area of aseismic renovation.
Our issues	● Future shrinkage of domestic housing construction market due to population decrease	● Enhance initiatives in the area of non-residential building, e.g., production facilities and commercial facilities. ● Enhance initiatives in public works. ● Expand the business area of renovation.
	● Quality assurance and safety control	● Secure quality by expanding production at plants. ● Secure safety with execution in compliance with work procedures.
	● Establishing profitable system	● Secure profit when receiving orders. ● Enhance cooperation with partners.
	● Productivity improvement	● Promote introduction of ICT and precasting.

Enhance organizational capability

For productivity improvement, we are promoting precasting of concrete members, prefabrication of reinforcement rods, and saving labor in the field with ICT use. We will also accelerate investment in technological development and human resource development.

Enhance competitive advantage

- We will accumulate experience in superhigh-rise collective housing construction with industrialization methods that leverage our strength, namely, having concrete plants within the SMCC Group that are able to manufacture precast members.
- As the only construction company in both the Mitsui Group and the Sumitomo Group, we have built many production facilities and commercial facilities of group companies.

Create value for stakeholders

- We will refine our proprietary technologies, such as precasting, to shorten the construction period and improve quality so that we can achieve earlier delivery and start of service.
- We will make efforts to extend the life of buildings with seismic reinforcement by leveraging our strength of having an aseismic device manufacturer in our group.

Business Environment

The business environment of building construction continued to be solid from the previous year. Despite underlying risk factors, such as rising material prices and a shortage of workers, we expect that extensive redevelopment in the Greater Tokyo area will continue, including for facilities related to the Tokyo Olympic and Paralympic Games, private-sector capital investment due to favorable corporate earnings, and construction and renovation of hotels due to inbound tourism demand in both urban and rural areas. The current favorable market environment is likely to last until around 2020.

In the mid- to long-term, we expect that urbanization and further concentration in large cities will continue, resulting in continued building construction demand for redevelopment in the Greater Tokyo area, while housing construction will decline due to the shrinking population.

Additionally, the shortage of construction engineers and skilled workers is becoming increasingly severe. It is imperative to expedite work style reforms and initiatives for productivity improvement.

Fiscal 2017 Overview

Building construction results in and outside Japan on an unconsolidated basis in fiscal 2017 were:

Orders received	225.4 billion yen (up 14.0 billion yen year-on-year)
Amount of completed work	198.3 billion yen (up 12.3 billion yen year-on-year)
Gross profit on completed work	21.7 billion yen (up 2.5 billion yen year-on-year)
Profit margin of work	11.0% (previous year: 10.3%)

Key construction orders received include the Konami Creative Center Ginza construction project, the Landport Higashi-narashino (tentative name) construction project, and Building A construction for the collective housing project at Ebina Station (tentative name).

In terms of order intake, we substantially increased the number of orders received as a result of enhanced efforts in the areas of government facilities and general non-residential building construction, in addition to our core area of superhigh-rise collective housing. The profit margin of work improved to 11.0%, up 0.7 points from the previous year, due to continued efforts for profitability-oriented order taking.

Enhancing Competitive Advantage in Existing Areas

To Be a Leading Company in Precasting

We have been building up a track record in the area of superhigh-rise collective housing ever since our pioneering work in the design and construction of the first such project, Suncity Building D, completed in 1979. Currently, we are further accumulating experience with our proprietary technology SQRIM by leveraging our strength of having SMCC Group concrete plants able to manufacture precast members. SQRIM is an all-precast-concrete method that does not involve in-the-field concrete placement for main structures. It allows for the rapid construction of each floor in cycles as short as three days to substantially reduce the overall construction period. We will launch SQRIM outside Japan and apply it to not just housing but also other purposes. For further quality and productivity improvement, we are pushing ahead with automation, including IoT management and automated transportation, at precast plants to more efficiently carry out a series of processes from manufacturing of precast members to construction. We are accelerating initiatives to be a leading company in precasting, which includes already-started R&D efforts for automated construction of superhigh-rise collective housing.

Expanding Business Areas

As the only construction company in both the Mitsui Group and the Sumitomo Group, we have built many of the groups' production and commercial facilities. In the building construction market, the category of maintenance and renovation, covering maintenance, conservation, refurbishment, alteration and extension, is expected to expand. As production facilities and commercial facilities must be renovated to update their functionality, we will derive further sales in the future as the builder of such facilities. We will work with affiliates that specialize in renovation to expand our renovation business, including the large-scale refurbishment of the many superhigh-rise residential buildings we have built.

In the market category of building renovation, seismic reinforcement is another big market and technology. In recent years, we were tasked with the seismic retrofitting of the Yamanashi Culture Hall, designed by renowned architect Kenzo Tange, and our work received an outstanding seismic reinforcement award from the Japan Building Disaster Prevention Association. Currently, we are working on seismic reinforcement and renovation of another historic building, the Tsuyama Cultural Center, the building for which we received our first BCS Award, which is given in recognition of iconic buildings in Japan. Having an aseismic device manufacturer in our group gives us an advantage. By leveraging this strength, we will aggressively work on seismic reinforcement for the continued use of existing buildings.

Enhancing Initiatives in General Building Construction

In fiscal 2017, construction of non-residential buildings, including office buildings, hotels, hospitals, distribution warehouses, plants, commercial facilities and cultural facilities, accounted for about 70% of our sales in domestic building construction.

Sumitomo Fudosan Onarimon Tower, which has 22 aboveground floors, two underground floors and two penthouse floors and has adopted an aseismic structure for the middle floors, is a superhigh-rise office building connected to a subway station.

The Celestine Kyoto Gion, located in a picturesque historical district in Kyoto, combines Kyoto's traditional hip-and-gable (*Irimoya*) roof style with contemporary architecture to harmonize with the streetscape.

We will further enhance initiatives in general building construction like these projects.

The Celestine Kyoto Gion

Enhance Organizational Capability

Operational Process Pursuing Supreme Quality

The Building Construction Division assigns quality safety auditors (QSAs) dedicated to site patrol and guidance. To establish the Sumitomo Mitsui Construction brand as the top runner in collective housing, we promote activities of the Quality and Functional Housing Committee.

Enhancing Cooperation with Partners

We are enhancing our partnership with Shineikai, organized by partners across Japan. By sharing project information from the initial stage of a project and setting a schedule for construction early on, we enable partners to smooth out operations and deploy skilled workers in a planned manner. Additionally, by conducting planning with partners from the start, we can improve efficiency in execution planning and processes and strengthen cost competitiveness. We will further deepen cooperative initiatives.

Work Style Reforms

In March 2017, we created a sheet that each project site is expected to use to develop measures for work style reforms and two days off per week, and to report the progress of the measures, with the aim of raising awareness among project managers and members. This fiscal year, each project site is using the sheet to develop its policy for shorter working hours at the site and is promoting individual initiatives. Successful practices will be expanded company-wide.

Enhancing ICT Use

As a substantial shortage of construction engineers and skilled workers is expected in the future, productivity improvement, paired with work style reforms, is an urgent issue. To improve efficiency in execution management, we are introducing tablet terminals that use dedicated application software to all ongoing projects. This has enabled construction engineers to work more efficiently by shortening the time required for bar arrangement inspection and quality control documentation, and by reducing travel time by allowing engineers to view construction drawings, hold videoconferences, use the cloud to share data, exchange emails, and check the schedule on the spot. We are also using Building Information Modeling (BIM), which is expected to dramatically improve productivity by enabling the central management of design and execution data during the production process for the construction of structures based on 3D data.

To facilitate front-loading efforts in design and construction projects with BIM, we are conducting demonstrations using BIM in individual projects to verify actions for future robotized construction and automated construction. We are also considering using BIM for building maintenance with a view to proposing building management or services to business owners.

We will improve efficiency in execution management with in-the-field quality control by linking tablet terminals with BIM for further productivity improvement.

The Ibaraki Plant of our affiliate SMC Preconcrete is carrying out initiatives to improve operations by improving the internal environment of the plant for future automation and nonattendance at precast concrete (PCa) plants.

Empowering Female Engineers

We have 72 female engineers working in our sales, design, construction and research departments under the Building Construction Division. In ongoing projects, Kensetsu Komachi teams, mainly comprising female engineers, are formed. These teams are registered with the Japan Federation of Construction Contractors (JFCC) and conduct all-women site patrols to work on improvement from the female perspective in order to promote diversity at construction sites.

Site patrol by Kensetsu Komachi

Cultivating Young Engineers

For skills, quality and safety improvement, the Building Construction Division provides primarily young engineers below the job grade of upper-level chief with eight in-house group training programs. In the education program for first-year construction engineers, we provide an opportunity for hands-on training in which they build actual concrete skeletons by carrying out all steps from planning to construction all by themselves. As they learn the importance and difficulties of execution by hand, they improve their understanding of what the job of execution management engineer entails.

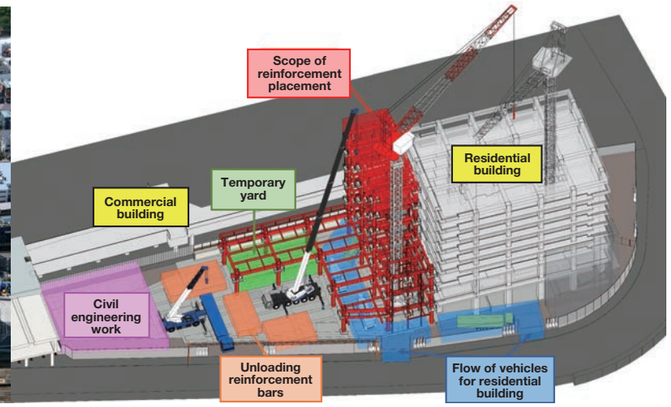
Results of Value Creation

Financial/Non-financial KPIs

	FY2013	FY2014	FY2015	FY2016	FY2017
Orders received (billion yen)	167.6	204.2	229.4	211.4	225.4
Amount of completed work (billion yen)	192.1	188.1	197.7	186.0	198.3
Gross profit of completed work (billion yen)	5.1	5.4	12.4	19.2	21.7
Profit margin of work	2.6	2.8	6.3	10.3	11.0
No. of engineers[1]	936	945	937	924	914
Construction waste final landfill	4.3	4.0	3.2	2.5	2.1
Unit of CO_2 emissions (ton-CO_2 per 0.1 billion yen)	12.1	13.8	13.9	13.4	12.5

1 Holders of building construction qualifications subject to evaluation under the Business Evaluation System

Project **Case of Precasting and ICT Use (Hachioji Planning Project, Tokyo Building Construction Branch)**



In this project, we are constructing a 26-floor residential building and a six-floor commercial building on a site to the south of Hachioji Station on the JR line.

For the aboveground skeleton work for the residential building, we adopted precasting combining our proprietary SQRIM and SQRIM H methods to construct one floor, divided into two zones, in four days to shorten the construction period.

For steel structure erection for the commercial building, we used BIM. By using BIM in meetings with parties related to the project, we could visualize execution procedures rendered as 3D data images. Thanks to image sharing, we reduced the time for discussions, improved work efficiency, improved safety, and facilitated execution.

Hiroyuki Yuri
Project Manager
Tokyo Building
Construction Branch

Enhance Competitive Advantage

We Are Implementing Human, Organizational and Strategic Initiatives for a Future Leap Forward

Junichi Iwaki
Managing Executive Officer
Division Director
Global Division

	Recognize issues	Address issues
Social issues	● Economic development of developing countries	● Participate in ODA projects and put infrastructure into service early by shortening the construction period. ● Promote localization of construction work. ● Pass on skills to local staff.
	● Global warming	● Launch sales of floating solar power generation system.
Our issues	● Shortage of personnel for overseas operations	● Transfer personnel from Japan to overseas in a planned manner. ● Cultivate local staff.
	● Intensifying competition with Japanese general construction companies	● Enhance systems for cooperation with local partner companies.

Enhance organizational capability

- We are substantially shortening the construction period by aggressively introducing precasting, which has been developed in Japan primarily by the Civil Engineering Division.
- While transferring personnel from Japan to countries overseas, we are cultivating local staff and promoting localization to enhance the execution system outside Japan.
- We are enhancing and improving the execution system focusing on safety, quality and profitability to cope with the expansion of business areas and the increase in the amount of construction work.
- We have started sales of the floating solar power generation system in Taiwan.

Enhance competitive advantage

We are increasing order intake and building a robust execution system based on years of local business activities and the trust earned from contractees and local partners thanks to our wealth of construction experience.

Create value for stakeholders

- We are contributing to the economic development of emerging economy countries by putting infrastructure into service early through rapid construction.
- We are helping local staff and partner companies improve their skills base.
- We are contributing to addressing global warming with the use of renewable energy.

Business Environment

Asian countries, the main arena of our operations outside Japan, remain on track to achieve economic growth despite the occasional impact of global events. Various infrastructure projects are ongoing across Asia, and voracious investment for further development is expected to continue.

In particular, India, which accounts for around 25% of our orders received outside Japan, and Bangladesh, from which we received an order for an urban rapid-transit railway construction project in May 2018, have been achieving remarkable economic growth in recent years and are likely to continue to invest in construction.

In Sri Lanka, a market we reentered for the first time in eight years in 2017, hotels, office buildings, stores, housing and other buildings and infrastructure have been developed with the stabilization of the domestic situation following the end of the civil war in 2009. The amount of investment in construction is rising sharply.

In Myanmar, where we are engaged in a project to expand the facilities of Yangon Technological University, democratic government was established in 2015, and expectations are high for economic development in conjunction with economic liberalization and for construction investment required for the economic development.

In countries in Southeast Asia, the development of expressways and rapid-transit railways is active in anticipation of economic effects of transportation infrastructure development. In fact, Sumitomo Mitsui Construction is currently constructing Vietnam's first urban railway, Indonesia's first subway, and Bangladesh's urban rapid-transit railway, among others. Japan, through both its public and private sector, is promoting the export of infrastructure systems as a priority measure, so we expect future expansion of these markets.

Fiscal 2017 Overview

Overseas business[1] results in fiscal 2017 were:

Orders received .....68.9 billion yen
(up 20.2 billion yen year-on-year)

Amount of completed work .....58.5 billion yen
(down 0.9 billion yen year-on-year)

Gross profit on completed work .....6.1 billion yen
(down 0.6 billion yen year-on-year)

Profit margin of work 10.4%
(previous year: 11.4%)

Key construction orders received include Package 2 of the Kelani River bridge construction project and Package 1 of the Hanoi City Ring Road No. 3 construction project (Mai Dich-South Thang Long Section).

1 Including local subsidiaries

Enhancing Competitive Advantage in Existing Areas

Starting with the entry into the Thai market in 1971, we have carried out sales operations in Asian countries east of India for many years and built a track record in construction. We have worked on construction backed by both technologies we have sophisticated in Japan and our commitment to quality, which receives a high level of recognition from our contractees and local people. Moreover, our execution system, which includes partners who are indispensable for execution, and the relationships of trust that we have built with local companies with whom we have partnered in joint ventures are precious assets.

With the prospect of the future shrinkage of the construction market in Japan, our Japanese peers are entering overseas markets in quick succession. Sumitomo Mitsui Construction is further enhancing the relationships of trust we have built to increase order intake, enhance the execution system, and strengthen the foundation for execution.

Expanding Sales Area

In the past, Southeast Asian countries had high levels of country risk due to conflicts, internal power struggles and political instability. In recent years, however, such uncertainties have faded and these countries are targets of ODA projects and overseas capital investment, resulting in the expansion of new markets. Sumitomo Mitsui Construction has established sales offices in Cambodia (in 2010), Myanmar (2013) and Malaysia (2014), and is making efforts to expand its sales areas, including order intake in Sri Lanka and Bangladesh. In Africa, we are engaged in construction in Tanzania with a view to expanding business on the continent in the future. In Taiwan, we established a local subsidiary in 2017 to engage in sales of our floating solar power generation system.

Enhancing Organizational Capability

Technological Advantage

In large-scale projects in countries overseas where rapid infrastructure development is ongoing, we are introducing epoch-making rapid execution using precast segments, a process we have nurtured in Japan. By substantially shortening the construction period, we can put infrastructure into service early, which contributes to the economic growth of the countries involved. In the past, we aggressively applied the execution method to civil engineering bridge construction work. We have also started all-precast execution in plant construction projects in the area of building construction.

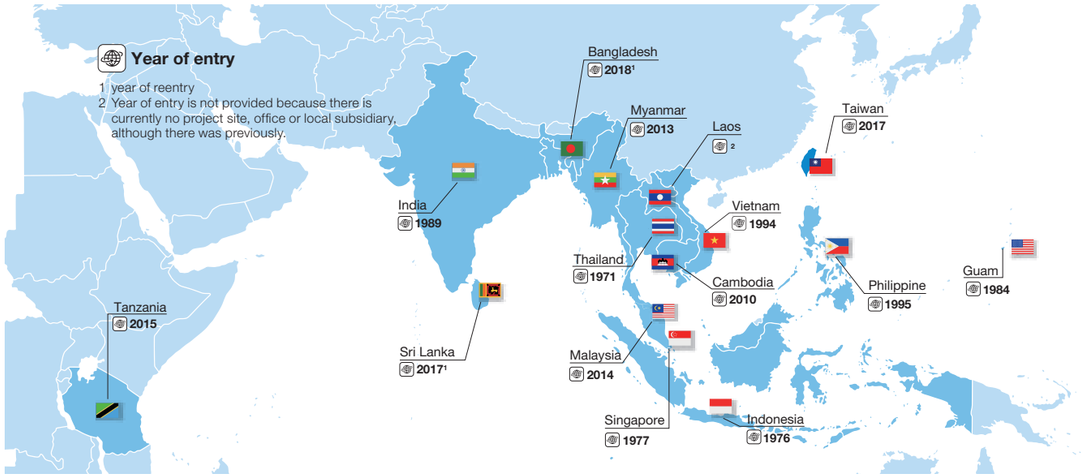
Lach Huyen International Port construction (road and bridge) using precast segment span-by-span method

Developing Global Human Resources

To expand sales areas outside Japan, we must urgently train local staff as well as Japanese staff. To cultivate, secure and retain local employees outside Japan, we established the Human Resource Development Center (HDC) in the Philippines in 2016. The HDC is not only providing education for local employees who work at locations outside Japan but is also developing personnel systems that enable local employees to work globally.

For Japanese staff, we are also stepping up our efforts to cultivate global human resources, including providing programs for study abroad (at companies or at universities) and short-term study abroad (language training and internship), as well as opportunities to work overseas on a rotating basis.

Expanding Business Areas



Ongoing projects

Location	People's Republic of Bangladesh
Project name	Dhaka Urban Transportation Development Project MRT Line 6 Section CP6
Contractee	Dhaka Mass Transit Company
	In this project for construction of a 20 km elevated railway in Dhaka City, we are in charge of constructing four station buildings, including the southern terminal station, and a 4.9 km elevated track.

Location	Socialist Republic of Vietnam
Project name	Ho Chi Minh City Urban Railway Line 1 Construction Project (Ben Thanh-Suoi Tien Section) Package 1a
Contractee	Ho Chi Minh City Management Authority for Urban Railways
	For Vietnam's first urban railway construction project, we are building the terminal station, Ben Thanh, and a track tunnel (total extension: 750 m).

Location	Socialist Republic of Vietnam
Project name	North-South Expressway Construction Project (Ben Luc-Long Thanh Section) Package J3 Phuoc Khanh Bridge and Approach Bridge
Contractee	Vietnam Expressway Corporation
	For the North-South Expressway Construction Project, we received an order for the J3 section, following the order received for the J2 section. For the new section, we are in charge of 7.9 km out of the entire extension of 11 km.

Location	United Republic of Tanzania
Project name	The Project for Improvement of Tazara Intersection
Contractee	Tanzania National Road Agency
	The project is to construct Tanzania's first flyover at the Tazara Intersection, which is the site of the worst traffic congestion in the city of Dar es Salaam.

Location	Malaysia
Project name	Refinery and Petrochemical Plant Construction Project
Contractee	(Anonymous)
	We adopted SQRIM using precast members for the first time in a project outside Japan and tripled the rate of construction productivity.

Location	Republic of Indonesia
Project name	Jakarta MRT Construction Project CP106 Section
Contractee	PT Mass Rapid Transit Jakarta
	In the project to build Indonesia's first subway system, we are constructing two subway station buildings and a shield tunnel connecting the two stations.

Results of Value Creation

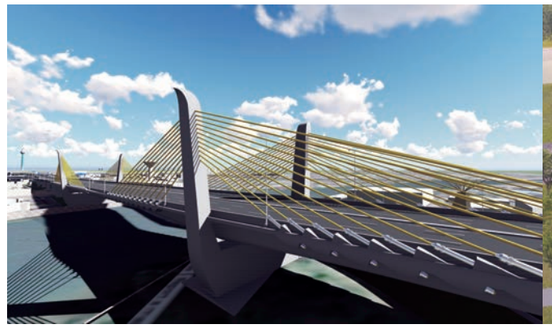
Financial KPIs

	FY2013	FY2014	FY2015	FY2016	FY2017
Orders received (billion yen)	84.0	58.8	77.1	48.7	68.9
Amount of completed work (billion yen)	75.5	65.7	65.0	59.4	58.5
Gross profit on completed work (billion yen)	6.8	3.2	5.9	6.7	6.1

Sales by country (billion yen)

	FY2017
India	14.3
Vietnam	9.4
Indonesia	8.3
Philippines	6.8
Other regions	19.7
Overseas total	58.5

Project **Entry into Sri Lanka**



Kelani River Bridge Construction Project Package 2

The Project for the Establishment of Research and Training Complex at the Faculty of Agriculture, University of Jaffna (Courtesy of Japan International Cooperation Agency [JICA])

Sumitomo Mitsui Construction first entered the market of the Democratic Socialist Republic of Sri Lanka in 1978. After constructing numerous buildings, including the Parliament Building, schools and hospitals, as ODA projects as well as private sector plants, warehouses and office buildings during the 1980s and 1990s, we withdrew from the country due to the expanding civil war.

The conflict lasted over 25 years, ending in 2009, and Sri Lanka is currently in the stage of full-scale growth. The Japanese government is promoting private sector investment in the country and aggressively promoting transportation infrastructure development to sustain its economic growth, as well as the development of agricultural and fishing communities to prevent economic disparities and promote rural development. Under these circumstances, Sumitomo Mitsui Construction received two orders for ODA projects in Sri Lanka from the Japanese government and reentered the Sri Lankan market for the first time in eight years in 2017.

With the two orders, we aim to rebuild the execution system to win and undertake various types of ODA construction projects in the areas of civil engineering and building construction and to undertake construction of production facilities of Japanese companies entering Sri Lanka, the number of which is likely to increase, with the goal of creating another stable market in South Asia and contributing to the economic development of Sri Lanka.

Enhance Competitive Advantage

We Aim to Create Business that Resonates with the Future

Satoru Miyake
Managing Executive Officer
Division Director
Business Innovation & Incubation Division

Business Operations of the Business Innovation & Incubation Division

As we explore new business, we can find opportunities to win contracts to address customers' potential issues as well as address social issues identified by the SDGs with our integrated capability. We aim to build a mechanism for new consumption in new areas, which differs from the conventional competitive environment, and rebuild business models by incorporating our comprehensive ability to address issues into the mechanism.

Business that our division develops is based on the creation of a new mechanism in areas where customers are yet to exist or where we must create demand among customers who may be looking forward to such business models. The current business model of general contracting is based on relationships with numerous partners. Having the ability to bring together diverse elements to organize the industrial structure in an integrated manner is our strength, and is something that is not found in other industries.

It is expected that business targeting the SDGs will become active. However, one-off transactions related to a single theme are insufficient. Society expects multiple and complex solutions for social issues.

In our effort to develop new business, we aim to create business that resonates with the future, while developing win-win relationships with diverse business players.

	Recognize issues	Address issues
Social issues	● Building a sustainable society ● Efficient development and operation of basic infrastructure in Japan amid adverse financial situation and population decrease	● Create business that addresses issues identified by SDGs. ● Participate in PPP/PFI.
Our issues	● Shortage of human resources required for new business models	● Hire mid-career workers who have experience in different industries. ● Enhance cross-industrial cooperation with the Mitsui Group, the Sumitomo Group, etc.

Areas to Strengthen/Focus on

(1) Expanding floating solar power generation business and sales of the system

(2) Creating business that contributes to customized drug discovery

(3) Creating the mid- to large-scale wooden building construction market

(4) Creating business that contributes to disaster mitigation efforts in preparation for an anticipated triple interlocking Tokai-Nankai-Tonankai earthquake

Project

Expanding Business of Solar Power Generation and Selling of Generation System

Hiragioike Solar Power Generation Plant
(own project in Kagawa Prefecture)

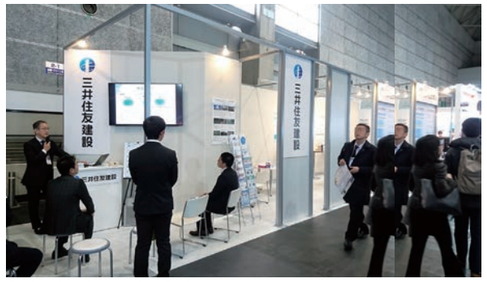
Japan's Ministry of the Environment forecasts that the installed solar power capacity in Japan in 2030 will be 40 GW, six times greater than the 7 GW achieved in 2015. The renewable energy market is thus expected to expand.

The lowering of prices in the feed-in tariff (FIT) for solar power generation, however, has brought the development of onshore solar power generation to a virtual halt. On the other hand, floating solar power generation, which, unlike onshore generation, does not require land development, is attracting attention. Sumitomo Mitsui Construction has developed and manufactured a floating solar power generation system and started a power generation business using a reservoir in Kagawa Prefecture in 2017. Taking advantage of the expertise developed, in December 2017 we established an affiliate that sells the floating solar power generation system in Taiwan, where a renewable energy policy is being promoted.

We will continue our aggressive investment in the floating solar power generation business toward the goal of owning generation capacity of 200 MW and earning 10 billion yen a year from electric power sales in the future.

Project

Creating Business that Contributes to Drug Discovery



Our booth at the Interphex Osaka

In the field of drug manufacturing, generic drug manufacturers are emerging and the percentage of high-mix low-volume products, such as biotechnology-based drugs, is increasing, replacing the conventional mass-produced drugs for general consumption. There are moves among pharmaceutical manufacturers to scale down their production facilities in line with the changes in the business environment. Against this background, Sumitomo Mitsui Construction aims to be a pioneering leader in this area with its proprietary building construction system that can provide compact, simple and low-cost pharmaceutical production facilities in a shortened construction period.

The amount of earnings we can gain in this area depends on how quickly we get the business on track and on our ability to respond to this new class of customers promptly and without fail.

In February 2018, we exhibited at the fourth Interphex Osaka, the only expo for pharmaceuticals and cosmetics technologies in western Japan. We are now carrying out marketing to help customers become aware of our pioneering business and its usefulness.

Taking on Challenges to Create New Value to Support Sustainable Growth

Akio Kasuga
Executive Vice President
Division Director
Technical & Engineering Service Division

In the field of technological development that supports our manufacturing capability, we are taking on challenges to address social issues, which change with the times, including development of new materials and execution methods and development of markets with technology transfer to outside Japan.

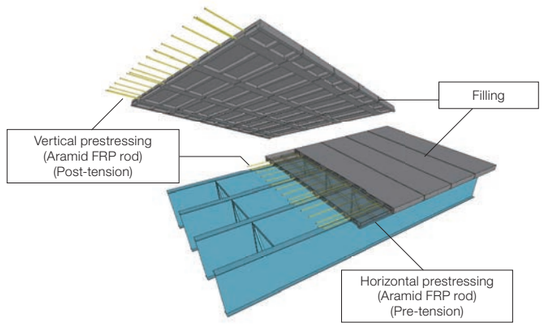
The construction industry is facing the aging of skilled workers, lack of workers, aging of social capital and other serious issues. To address these issues, we are not only saving labor and manpower for on-site operations but also reforming production systems to build a safe, high-quality, durable and environment-friendly infrastructure. In terms of technological development, we are developing DIM/CIM/MIM[1], a construction management system based on 3D modeling common to civil engineering and building construction. One of the achievements of the initiative is SMC-Bridge, a construction platform used in the area of bridges. We have started to provide new solutions in our area of strength.

Currently, with ongoing IoT, everything is connected to the Internet, bringing big changes even to the operational processes on construction sites. We can now easily obtain information that we had not been able to see, such as minute changes in gigantic structures, the positions and movements of numerous workers, and deterioration over time, which allows us to develop new solutions. To accelerate initiatives in these areas, we are enhancing our organizational capabilities with in-house development of specialized human resources and aggressively collaborating with cross-industry partners. We will build a system for global technological development with a view to expanding these technological efforts to outside Japan.

1 DIM/CIM/MIM refers to information management in design, construction, and maintenance based on the concept of building a total, consistent construction management system common to civil engineering and building construction by effectively using the technologies of Building Information Modeling (BIM) in building construction and Construction Information Modeling (CIM) in civil engineering.

Project **Developing a Non-Metal Highly Durable Floor Slab: Dura-Slab**

Applying the outcome of the foregoing research to a highly durable bridge, Dura-Bridge, we have been able to develop a new technology, Dura-Slab. Like Dura-Bridge, Dura-Slab does not use reinforcing steel or prestressed concrete (PC) steel used in general precast PC floor slabs, but uses aramid FRP rods for reinforcement to eliminate the possibility of corrosion and deterioration. That will prevent accidents involving falling concrete flakes caused by corrosion, and improve durability to reduce maintenance costs. The new technology is also intended to reduce weight to improve quake resistance, allowing a reduction in the human and economic burden on future maintenance. Dura-Slab is expected to be applied to main line structures, such as the replacement of expressway bridge floor slabs, which are under a severe steel corrosion environment due to airborne salt particles and scattered anti-freezing agents.

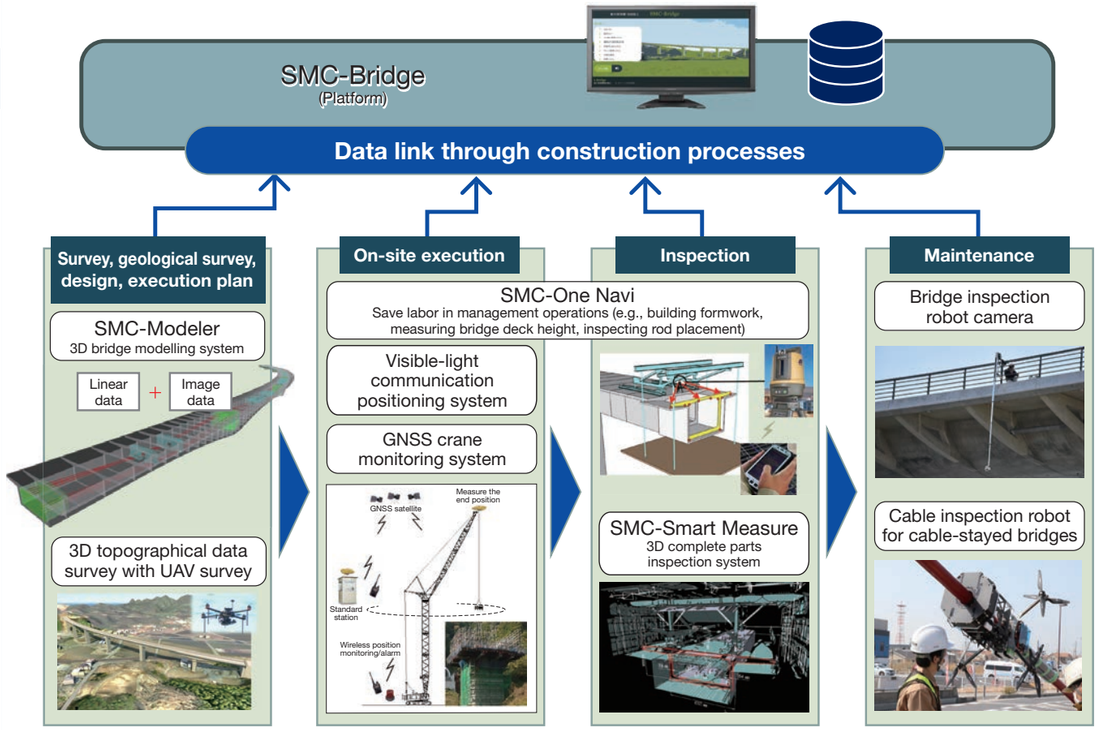


Overview of highly durable floor slab Dura-Slab
Note: An aramid FRP rod refers to a rod-shaped bundle of tension-resistant fibers that can replace PC steel.

Project **Building Productivity Improvement Platform for Bridges: SMC-Bridge**

SMC-Bridge is a total system for the centralized management and operation of data managed with ICT systems for bridges, linking data on a cloud platform. Its real-time data link and easy-to-understand user interface design allows all related parties, including contractees, to share information quickly. The system is significantly improving productivity by expediting operations with the automated creation of records, including execution management records.

The platform aggregates 3D data acquired through a topographical survey, data from SMC-Modeler, a 3D bridge modelling system, data from SMC-One Navi that saves manpower in on-site surveys and management operations using smartphones and survey instruments having an automated tracking function, maintenance data recorded by inspection robots, and so on, to use the data for structural maintenance. We will apply these technologies to specific projects to actualize the i-Bridge vision for bridges in response to i-Construction promoted by the Ministry of Land, Infrastructure, Transport, and Tourism.

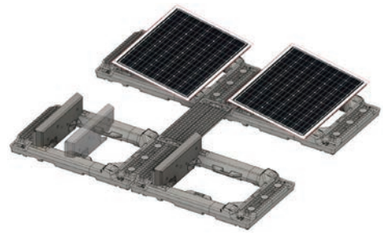


[For Environmental]
Environmental Efforts and Efforts to Support Technology

Sustaincrete is a new concrete material that almost eliminates the risk of cracking and reduces CO_2 emissions. It is expected to be put to practical use to contribute to the sustainability of society with its eco-friendliness, as well as its superior productivity and design (see Example of Technological Development for Environmental Conservation on page 54).

In the field of renewable energy, we developed floating technology for floating solar power generation systems, and established a company in Taiwan to launch its full-scale sales primarily in Southeast Asia (see Expanding Business of Solar Power Generation and Selling Generation System on pages 39 and 40).

Placing Sustaincrete



Floating Solar Power Generation Systems

[For Social]
Bringing Our Precast Concrete Technology to New Markets

Creating New Value Suitable for Localities Outside Japan and Licensing with Local Partnership

We are launching a precast (PC) concrete method, SQRIM, which we have developed as a technology for high-rise collective housing in Japan, in new markets outside Japan. In Malaysia, the method was adopted for pipe rack construction at a refinery and petrochemical plant, and has achieved high-quality construction in a shorter period despite the severe project conditions, including lack of infrastructure and labor (see Operating SQRIM PCa Method Outside Japan on page 17).

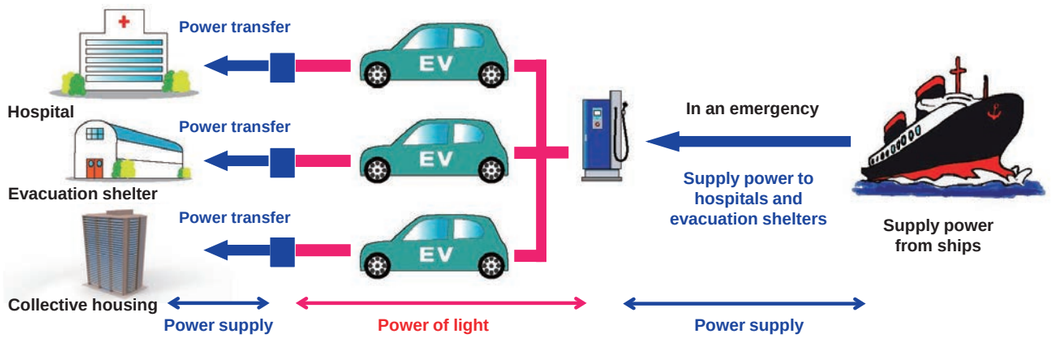
We have also started a SQRIM licensing business outside Japan. We signed the first licensing agreement with Alacali Inc. based in Istanbul, Turkey, which manufactures and constructs precast concrete (PCa) members. PCa technology is drawing great interest for large-scale projects around the new Istanbul Airport, which opened in October 2018, and projects at hospitals and educational facilities for its compliance with the (considerably tightened) new seismic standard under the 2019 Building Standard Code in Turkey.

SQRIM exhibition by Alacali

Alacali's precast plant

Project Electricity Supply System Using Electric Vehicles

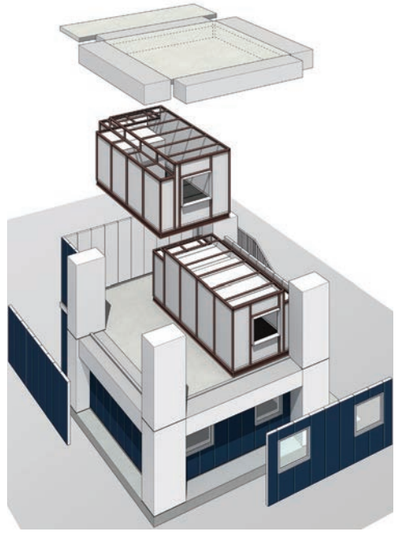
We are promoting the development of land/sea power connecting system, a power supply system that can reasonably and economically supply electricity from electric vehicles and ships in the event of a large-scale outage caused by a disaster. We developed the Connected EV System in response to the social problem of elevators stopping working following a large-scale outage, which makes it very difficult for people to move within mid- to high-rise buildings. It uses the power of light stored in electric vehicle (EV) batteries to supply power to enable elevators to operate even in the event of an outage. We are accumulating knowhow on efficient operation to put the system to practical use through cooperation with building managers and manufacturers.



Conceptual image of power supply with the land/sea power connecting system

Developing SQRIM-SSUT for Stable Quality, Speedy Execution and Labor Saving

We are jointly developing the SQRIM-SSUT construction system with Satokou Co., Ltd., combining our SQRIM, which is a method of constructing each floor in cycles as short as three days, most quickly in Japan, and Satokou's SSUT method (modularized interior and exterior finishing). Integrating the advantages of the two methods will enable production management from skeleton work to interior and exterior finishing for high-rise and super high-rise RC buildings under an integrated system. As many members will be produced in-plant, the execution period can be shortened, building waste can be substantially reduced, and quality can be improved in a field where a shortage of manpower is expected.



Conceptual image of SQRIM-SSUT module

Officers

[Photo] Front row, from left to right: Mimori (Executive Vice President), Arai (President), Nagamoto (Executive Vice President), Hanato (Executive Vice President)
Back row, from left to right: Sasamoto (External Director), Kitai (External Director), Mashiko (Senior Managing Executive Officer), Sato (Senior Managing Executive Officer), Kimijima (Senior Managing Executive Officer), Nozaki (Auditor), Kato (External Auditor), Harada (Auditor), Murakami (External Auditor), Hoshi (External Auditor)

Directors

Hideo Arai
Representative Director
President & CEO

April 1977 Joined Sumitomo Construction Co., Ltd.
April 2010 Executive Officer, Sumitomo Mitsui Construction Co., Ltd.
June 2012 Director
April 2015 Representative Director, President & CEO (to present)

Yoshio Nagamoto
Representative Director
Executive Vice President

Supervising Audit Dept., Secretariat, Public Relations Office, Corporate Planning Dept., Affiliated Business Dept., Administration Div., Business Innovation & Incubation Div. and Global Div.
In charge of Audit Dept.

April 1975 Joined The Sumitomo Bank, Ltd.
November 2005 Representative Director, President, SMFG Servicer Co., Ltd.
June 2007 Full-time Auditor, Daiwa Securities SMBC Co., Ltd.
September 2009 Advisor, Sumitomo Mitsui Banking Corporation
March 2010 Advisor, Sumitomo Mitsui Construction Co., Ltd.
April 2010 Executive Vice President, Officer in charge of Audit Dept. (to present)
June 2010 Representative Director (to present)

Yoshitaka Mimori
Representative Director
Executive Vice President

Division Director
Building Construction Div.

April 1979 Joined Sumitomo Construction Co., Ltd.
April 2011 Executive Officer, Sumitomo Mitsui Construction Co., Ltd.
June 2015 Director
April 2016 Division Director, Building Construction Div. (to present)
April 2018 Representative Director (to present)
Executive Vice President (to present)

Kunio Hanato
Representative Director
Executive Vice President

Supervising Safety and Production Management Division
In charge of Safety & Environment Management Dept.

April 1974 Joined Mitsui Construction Co., Ltd.
October 2012 Executive Officer, Sumitomo Mitsui Construction Co., Ltd.
April 2015 Branch Manager, Tokyo Building Construction Branch
April 2018 Executive Vice President
Officer in charge of Safety & Environment Management Dept. (to present)
June 2018 Representative Director (to present)

Shoji Kimijima
Director
Senior Managing Executive Officer

In charge of Secretariat and Public Relations Office
Division Director
Administration Div.

April 1979 Joined Sumitomo Construction Co., Ltd.
April 2011 Executive Officer, Sumitomo Mitsui Construction Co., Ltd.
April 2012 Officer in charge of Secretariat (to present)
April 2013 Officer in charge of Public Relations Office (to present)
Division Director, Administration Div. (to present)
June 2013 Director (to present)

Tomohiko Sato
Director
Senior Managing Executive Officer

In charge of Corporate Planning Dept. and Affiliated Business Dept.

April 1977 Joined Mitsui Construction Co., Ltd.
April 2012 Executive Officer, Sumitomo Mitsui Construction Co., Ltd.
Officer in charge of Corporate Planning Dept., Affiliated Business Dept. (to present)
June 2013 Director (to present)

Hiroshi Mashiko
Director
Senior Managing Executive Officer

Division Director, Civil Engineering Division

April 1979 Joined Sumitomo Construction Co., Ltd.
April 2007 Department Manager, Civil Engineering Dept., Civil Engineering Administration Div., Sumitomo Mitsui Construction Co., Ltd.
April 2010 Branch Manager, Tohoku Branch
April 2012 Executive Officer
April 2015 Division Director, Civil Engineering Div. (to present)
June 2018 Director (to present)

Kumiko Kitai
Director (External Director)

April 1976 Joined the Ministry of Labour
July 1999 Vice-governor, Shizuoka Prefecture
August 2005 Director-General, Equal Employment, Children and Families Bureau, Ministry of Health, Labour and Welfare
September 2006 Chief of Secretariat, Central Labour Relations Commission
August 2007 Executive Director, Japan Industrial Safety & Health Association
June 2011 External Auditor, Takara Holdings Inc. (to present)
June 2014 External Director, Kyowa Exeo Corporation (to present)
June 2014 Director, Sumitomo Mitsui Construction Co., Ltd. (to present)

Sakio Sasamoto
Director (External Director)

April 1974 Joined Nippon Kokan Ltd.
April 2005 Senior Executive Officer, Manager, General Affairs and Legal Affairs, JFE Holdings, Inc.
August 2005 Senior Executive Officer, Department Manager, General Affairs Dept., JFE Holdings, Inc.
June 2009 Representative Director, President, JFE Life Corporation
June 2012 Auditor, JFE Holdings, Inc.
June 2016 Director, Sumitomo Mitsui Construction Co., Ltd. (to present)

Auditors

Masashi Nozaki
Full-time Auditor

April 1979 Joined Sumitomo Construction Co., Ltd.
April 2001 Department Manager, General Affairs Dept., Administration Div.
April 2003 Department Manager, Affiliated Business Dept., Management Planning Div., Sumitomo Mitsui Construction Co., Ltd.
January 2009 Department Manager, Audit Dept.
June 2011 Full-time Auditor (to present)

Yoshiyuki Kato
Full-time Auditor (External Auditor)

April 1982 Joined The Sumitomo Trust & Banking Co., Ltd.
November 2011 Chief Investigator, Internal Audit Dept., Sumitomo Mitsui Trust Holdings, Inc.
April 2012 Chief, Internal Audit Dept., Sumitomo Mitsui Trust Bank, Limited.
June 2012 Full-time Auditor, Sumitomo Mitsui Construction Co., Ltd. (to present)

Michio Harada
Full-time Auditor

April 1981 Joined Sumitomo Construction Co., Ltd.
June 2011 Department Manager, Audit Dept., Sumitomo Mitsui Construction Co., Ltd.
June 2018 Full-time Auditor (to present)

Aizou Murakami
Auditor (External Auditor)

April 1974 Registered as a lawyer
April 2001 Executive Governor, Japan Federation of Bar Associations
June 2002 External Auditor, Airport Facilities Co., Ltd.
July 2005 Established Kioi Law Office
June 2012 Auditor, Sumitomo Mitsui Construction Co., Ltd. (to present)

Yukihiro Hoshi
Auditor (External Auditor)

April 1975 Joined Sumitomo Metal Mining Co., Ltd.
July 1997 Tochigi Plant Manager, Housing & Building Materials Div.
June 2007 Department Manager, Risk Management Dept.
April 2010 Director, Japan Mining Industry Association
Department Manager, Technology Dept. and Environmental Security Dept.
April 2014 Department Manager in charge of the Environment, Safety & Environment Control Dept.
June 2014 Department Manager, Safety & Environment Control Dept. and Corporate Planning Dept.
June 2018 Auditor, Sumitomo Mitsui Construction Co., Ltd. (to present)

Corporate Governance

Message from the Chairman of the Board of Directors

The Ordinary Shareholder Meeting in June 2018 appointed Hideo Arai, Representative Director and President & CEO, to the position of Chairman of the Board of Directors.

With the application of the Corporate Governance Code in June 2015, Sumitomo Mitsui Construction has stepped up its efforts to enhance its corporate governance, including appointing multiple external directors, establishing the Appointment and Remuneration Advisory Committee, evaluating the effectiveness of the Board of Directors, and reviewing cross-held stocks on a regular basis. With the introduction of a stock compensation plan for executive officers in fiscal 2018, we achieved compliance with all items of the Corporate Governance Code before the revision in June 2018. The Board of Directors will continue to examine and discuss compliance with the Corporate Governance Code, including the revised parts.

The appointment of external directors to the Board of Directors has activated discussions by the Board. It is often said that common sense within an industry or company defies common sense in the world in general. Accurate and professional feedback based on a wealth of knowledge from external directors who have held important positions at government offices or have rich experience in corporate management is valuable in terms of operating meetings.

Fiscal 2018 is the year when we must formulate the next Mid-term Management Plan for the period between fiscal 2019 and fiscal 2021. Currently, the construction industry is delivering strong performance supported by public investment and voracious private sector investment. After the end of the Tokyo Olympic Games in 2020, however, the construction market in Japan is likely to gradually shrink. The next Mid-term Management Plan, which will face a big watershed during its period of operation, will play a crucial role, even over the long term. Therefore, the Board of Directors will formulate the plan through careful review and much discussion.

Hideo Arai
Chairman, Board of Directors
Representative Director

Board of Directors meetings held

FY2017		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total (Average)
Attendance	Directors	9/9	9/9	9/9	8/9	9/9	9/9	9/9	9/9	9/9	9/9	9/9	9/9	9/9	9/9	8/9	-
	Auditors	5/5	5/5	5/5	5/5	5/5	4/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	-
	Attendance	100%	100%	100%	93%	100%	93%	100%	100%	100%	100%	100%	100%	100%	100%	93%	(99%)
No. of agenda items	No. of resolutions	2	3	6	3	1	2	4	3	3	2	1	1	3	4	5	43
	No. of reports	12	4	9	2	8	7	6	10	7	5	0	5	4	7	10	96
Time required		140 min.	90 min.	140 min.	30 min.	130 min.	170 min.	170 min.	140 min.	130 min.	90 min.	60 min.	70 min.	110 min.	130 min.	170 min.	1770 min.

Audit & Supervisory Board meetings held

FY2017		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total (Average)
Attendance	Auditors	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	-
	Attendance	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	(100%)
No. of agenda items	No. of resolutions	1	-	2	5	-	-	-	1	-	-	-	-	-	-	9
	No. of deliberations	-	-	2	1	-	-	-	-	-	-	-	1	-	-	4
	No. of reports	3	2	3	2	3	3	3	1	2	2	2	2	2	3	33
Time required		120 min.	120 min.	120 min.	105 min.	75 min.	120 min.	120 min.	75 min.	120 min.	90 min.	120 min.	120 min.	150 min.	105 min.	1560 min.

Appointment and Remuneration Advisory Committee meetings held

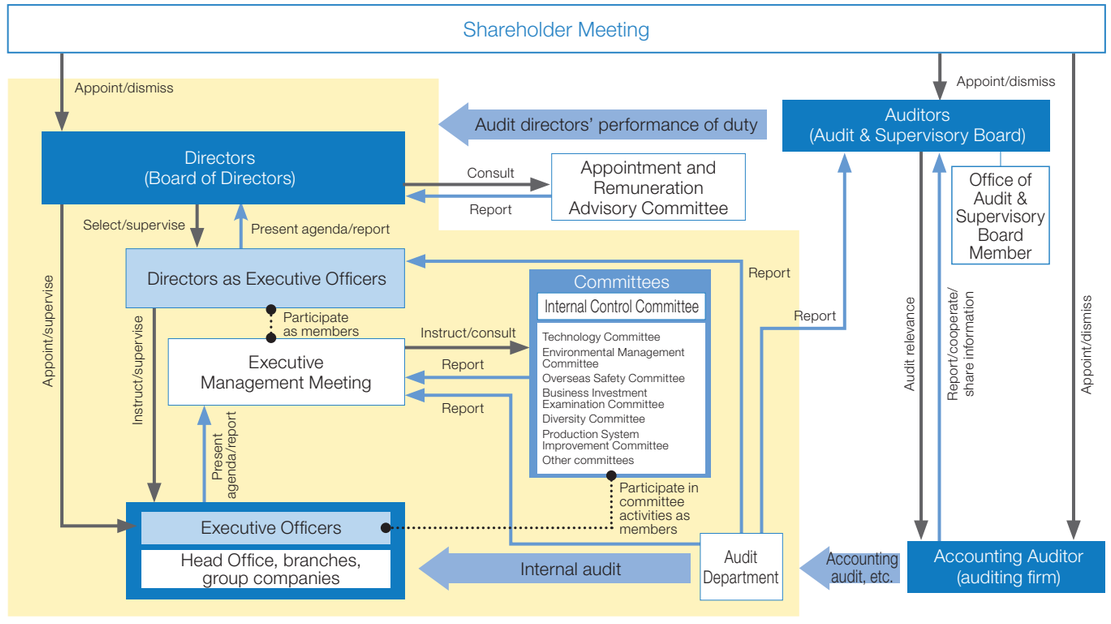
FY2017		1	2	3	4	5	6	7	8	Total (Average)
Attendance	Directors	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	-
	Auditors	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	-
	Attendance	100%	100%	100%	100%	100%	100%	100%	100%	(100%)
Time required		80 min.	50 min.	120 min.	120 min.	90 min.	90 min.	80 min.	150 min.	780 min.

Composition of Board of Directors, Audit & Supervisory Board, and Appointment and Remuneration Advisory Committee (as of the end of June 2018)

Name		Board of Directors	Audit & Supervisory Board	Independent Officer	Appointment & Remuneration Advisory Committee	Attendance in FY2017: Board of Directors	Attendance in FY2017: Audit & Supervisory Board	Attendance in FY2017: Appointment & Remuneration Advisory Committee
Hideo Arai	Representative Director, President & CEO	◎			◎	15 times/ 15 meetings	-	8 times/ 8 meetings
Yoshio Nagamoto	Representative Director	○			○	15 times/ 15 meetings	-	8 times/ 8 meetings
Yoshitaka Mimori	Representative Director	○			○	15 times/ 15 meetings	-	(appointed in Apr. 2018)
Kunio Hanato	Representative Director	○			○	(appointed in Jun. 2018)		
Shoji Kimijima	Director	○				15 times/ 15 meetings	-	-
Tomohiko Sato	Director	○				15 times/ 15 meetings	-	-
Hiroshi Mashiko	Director	○				(appointed in Jun. 2018)		
Kumiko Kitai	External Director	○		○	○	14 times/ 15 meetings	-	8 times/ 8 meetings
Sakio Sasamoto	External Director	○		○	○	15 times/ 15 meetings	-	8 times/ 8 meetings
Masashi Nozaki	Auditor	○	◎			15 times/ 15 meetings	14 times/ 14 meetings	-
Yoshiyuki Kato	External Auditor	○	○	○		15 times/ 15 meetings	14 times/ 14 meetings	-
Michio Harada	Auditor	○	○			(appointed in Jun. 2018)		
Aizou Murakami	External Auditor	○	○	○	○	15 times/ 15 meetings	14 times/ 14 meetings	8 times/ 8 meetings
Yukihiro Hoshi	External Auditor	○	○	○	○	(appointed in Jun. 2018)		
		14	5	5	8			

◎: Chairperson or Chair of Committee

Corporate Governance System (as of the end of June 2018)



Remuneration of Officers

We have established the Appointment and Remuneration Advisory Committee, comprising representative directors and part-time external officers, to carefully discuss senior management proposals on the officer remuneration structure of Sumitomo Mitsui Construction from an independent and objective perspective and provide appropriate advice and opinions. By referring to the advice and opinions of the committee, the Board of Directors makes decisions on remuneration of individual officers.

Officer Appointment and Successor Development

The Appointment and Remuneration Advisory Committee examines officer appointment proposals made by the president as to transparency, fairness and timeliness and evaluates their appropriateness and rationality according to the creteria for appointment. By referring to the evaluation of the committee, the Board of Directors makes decisions on appointment of officers.

As for successor appointment, Sumitomo Mitsui Construction has set the Successor Succession Plan, which clarifies requirements for successors, the appointment process, and the development plan. The Appointment and Remuneration Advisory Committee examines each successor appointment proposal made by the president as to transparency, fairness and timeliness and evaluates its appropriateness and rationality according to the Plan. By referring to the evaluation of the committee, the Board of Directors makes decisions on appointment of successors.

Overview of Results of Evaluation of Effectiveness of the Board of Directors

Based on the Corporate Governance Code (Supplementary Principle 4-11-3), Sumitomo Mitsui Construction seeks evaluation on the current effectiveness of the Board of Directors by directors and auditors, as well as their advice and opinions for further improvement, and discloses an overview of the results to improve the effectiveness of the Board of Directors.

The analysis and assessment of the results of the Board of Directors evaluation in fiscal 2017 and the future policy are as follows.

1. Methods and contents of analysis and assessment in fiscal 2017

For analysis and assessment in fiscal 2017, we conducted an anonymous survey (asking respondents to enter scores for each question and provide feedback) of all directors and auditors, and received responses. For this year's evaluation, we commissioned an external organization to set the questions and aggregate the responses in order to provide us with an objective view of the company from a third-party perspective. The results were reported to the Board of Directors for analysis and assessment.

<Survey questions (excerpt)>

(1) Composition of the Board of Directors
- Appropriateness of the number of board members, diversity of the Board, appropriateness of the ratio of internal directors to external directors

(2) Operation of the Board of Directors
- The remuneration system, appropriateness of supervision of the system, internal control, supervision of the risk management system, conflict of interest management, frequency of meetings, number of agenda items, duration of meeting, volume of materials, quality of materials, state of discussion, directions from chairman, quality of presentations, etc.

(3) Support system for the Board of Directors
- The system for information provision, support personnel structure, cooperation with internal audit department, training

(4) Initiatives by officers
- Communication between internal officers and external officers, active discussion, supervision by external directors, provision of information required to discuss agenda items, opinion exchange outside meetings

(5) Appointment and Remuneration Advisory Committee
- Setting of the proportion of performance-based remuneration, discussion on successor plan

(6) Feedback to the Board of Directors on dialogues with shareholders (investors)

2. Overview of analysis and assessment results in fiscal 2017

(1) Items evaluated positively
- Number of board members
- Frequency of board meetings
- Uninhibited, constructive discussion at board meetings
- State of opinion exchange between external officers outside board meetings

(2) Items deemed to need improvement
- Appropriateness of the number of agenda items
  ⇒Particularly with regard to items to be reported regularly, we will make continued improvement efforts to shorten the explanatory time by ensuring advance distribution of materials and will review the number of items to be reported so that we can allocate more time to discuss more strategic management issues.
- Feedback to the Board of Directors on dialogues with shareholders (investors)
  ⇒We will seek to provide the Board of Directors with regular feedback on dialogues with shareholders (investors) to make good use of shareholder (investor) opinions in corporate management and capital policy.

Internal Control/Compliance

Basic Concept of Internal Control System

To improve the value of our corporate egroup, Sumitomo Mitsui Construction and the SMCC Group continually develop and enhance the compliance system in line with the basic stance regarding internal control: take quick and appropriate actions against risks that may have a significant impact on management, properly disclose information to stakeholders and society at large, and develop a highly transparent management system.

Sumitomo Mitsui Construction regards its Basic Policies for Internal Control as providing the basic direction for efforts that continue over multiple fiscal years, and reviews their content every fiscal year. Meanwhile, the Internal Control Committee holds quarterly meetings where the progress of the review, correction and improvement of issues identified in the operation of the internal control system, and the progress of preventive measures taken as necessary, are reported, and monitors the status of operation. The results are reported to the Board of Directors to properly build and operate the internal control system.

Actions to focus on in fiscal 2018

1 Further enhance group control (governance system, internal control, etc.)

2 Enhance company-wide initiatives for reducing overtime

3 Improve the effectiveness of i-message (internal reporting and harassment reporting system)

4 Improve group-wide awareness of compliance

Internal Control Committee

As an advisory committee under the Executive Management Meeting, the Internal Control Committee holds meetings to identify issues related to emerging risk events, recognize risks, and work out preventive measures, with the goal of improving effectiveness in building and operating the internal control system within the SMCC Group. The committee discusses correction and improvement of issues pointed out in the operation of the Basic Policies for Internal Control, as well as the progress of preventive measures taken as necessary, and monitors the status of operation of the internal control system.

Compliance Education

Each fiscal year, we formulate a compliance education plan, and provide compliance education for all employees. We incorporate education about the Construction Business Act and other related laws and regulations into meetings and programs, including training for new recruits and group training for different job categories or ranks, to keep employees informed of and raise awareness of legal compliance. We also provide group companies with compliance education for top-level executives. Each group company familiarizes its employees with the content of the education to promote the understanding and penetration of corporate ethics and compliance management.

Putting up Compliance Posters and Carrying the Compliance Card

To educate employees about compliance in both their on-duty and off-duty conduct, ensure the appropriate operation of i-message (internal reporting system/workplace harassment counseling desk), and inform employees of the reporting and counseling desks, we create and distribute compliance cards and compliance posters. We distribute the cards to all staff members engaged in our operations, including officers, employees, temporary workers and secondees, and require them to carry the card with them at all times. The compliance posters are displayed in noticeable locations within the Head Office, branches, sales offices, sites and affiliates in order to raise awareness of the purpose.

Construction Business Act Patrol

In response to having received an instruction in January 2016 from the Kanto Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism pursuant to the Construction Business Act with regard to the case of a collective housing complex we constructed in Yokohama City, we have systematically carried out the "Construction Business Act Patrol." Branches conduct patrols of construction sites that they oversee to check compliance with the Construction Business Act, including assignment of engineers and also covering subcontractors. Results of patrols, issues and other information are shared among all branches. The Execution System Improvement Sub-committee, which is established under the Production System Improvement Committee, examines, formulates and promotes necessary measures.

Construction Business Act Patrol

Bid-rigging Elimination Program

We have established a bid-rigging elimination program and keep all officers and employees informed of it.

The program clearly states the recognition that complete elimination and prohibition of bid-rigging requires the upholding of all the following: (1) the clear and unshakable commitment of senior management to completely eliminate and prohibit the practice, (2) the establishment of internal compliance and monitoring systems, and (3) a full understanding and high level of compliance awareness among company officers and employees.

Based on the program, every April, our officers and employees are required to pledge in writing not to conduct or become involved in bid-rigging and submit the written pledges to the company.

Meanwhile, each group company has established its own bid-rigging elimination program and ensures compliance with it.


Group education on the Antimonopoly Act

In light of the case of order intake adjustment regarding the Chuo Shinkansen construction project, we provided group education on the Antimonopoly Act given by our corporate lawyer as a guest lecturer for officers and department managers and above at our Head Office and branches.

Measures to Raise Awareness of Human Rights and Address Harassment

For all employees, we provide education to raise awareness of human rights and assign at least one male and one female staff member to the Personnel Department at Head Office and the Administration Department at each branch. When new personnel are assigned to replace the staff in charge, we provide the new personnel with education on their task. To make workplaces harassment-free, in fiscal 2017 we provided an e-learning program on harassment prevention, which allowed participants to learn about the actions that constitute harassment and think about the appropriateness of their own views and ways of thinking using a Q&A format.

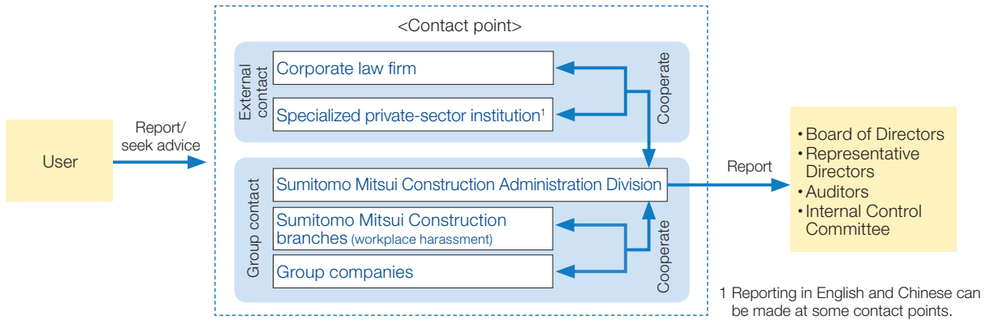
Internal Reporting System

For the early detection and correction of misconduct for the purpose of enhancing compliance management, we operate an internal reporting system based on the Internal Whistleblower Protection Regulations.

In response to reported incidents, including those at group companies, we take appropriate and necessary actions in a timely manner through close cooperation with our corporate lawyers, with due consideration given to the protection of the whistleblower. In the event a problem is found, we take necessary action against the persons involved according to internal rules, and implement measures to prevent recurrence.

In 2017, we integrated the existing internal reporting system and harassment counseling system into “i-message.” We established external counseling contact points at a specialized private sector institution as well as at a corporate law firm to rebuild the system as an easier-to-use, common group-wide internal reporting system. By properly operating the system, we are fostering a more disciplined corporate culture and more pleasant workplace environment.

[i-message] (collective term for Sumitomo Mitsui Construction Group internal reporting system and workplace harassment counseling system)



1 Reporting in English and Chinese can be made at some contact points.

Risk Management

Risk and Crisis Management

To reduce risks that may affect business operations and prevent their materialization, we operate a risk control system developed, run and constantly improved based on our Risk Management Regulations.

To take fast and appropriate action in response to a materializing risk that does, or could, seriously affect our business operations, we have established Crisis Management Regulations.

In our business operations, our committees and meetings examine potential significant risks of each project to prevent their materialization. For events that do materialize, we are enhancing our response system to enable fast action through rapid and unfailing information sharing.

Business Continuity Plan (BCP)

Recognizing that we have the important social responsibility of providing safety and security through our construction business, we have developed a business continuity plan (BCP) to make efforts to maintain and continue key functions of our own business activities while carrying out restoration, reconstruction and relief activities for affected areas and infrastructure in the event of a disaster.

In fiscal 2017, we acquired a resilience certification. The resilience certification system was set up based on the Guidelines for Certification of Organizations Contributing to National Resilience, which were established by the National Resilience Promotion Office under the Cabinet Secretariat to certify companies and local governments that are aggressively carrying out initiatives for business continuity in support of the purpose of national resilience.

To fulfill the construction industry’s mission of disaster relief, we will further enhance our business continuity structure.

レジリエンス認証
認証・登録番号D0000021

Safety Measures Outside Japan

To secure the safety of expatriate employees (and accompanying family members) as well as employees on overseas business trips during emergencies, Sumitomo Mitsui Construction has established the Overseas Crisis Management Manual and the Overseas Safety Manual. To examine, formulate and promote measures for securing the safety of employees engaged in overseas business, including local staff, and maintain the system, we established the Overseas Safety Committee, which will hold meetings in the event of a terrorist incident and as necessary.

Serious Risk Event

With regard to the case of a collective housing complex we constructed in Yokohama City, we will continue to have meetings with the rebuilding association, seller and other stakeholders as necessary, and take appropriate actions.

In November 2017, one of the contractees of the housing complex brought an action claiming compensation from Sumitomo Mitsui Construction and the two companies that undertook the piling work for expenses related to the rebuilding of the entire housing complex and for temporary accommodation during the reconstruction period.

We consider the demands to be unreasonable and lacking evidence and grounds, and will properly present our views in court.

VOICE **Message from Manager of Department in Charge of BCP**

We recognize that emergency measures and early recovery of infrastructure following a large-scale natural disaster, such as an earthquake or flooding, are the circumstances under which the existence of construction companies in charge of social capital development is typically questioned. Therefore, with the acquisition of the resilience certification, we will make our BCP more effective than its name would suggest, and build a system that enables us to immediately take action no matter when a large-scale natural disaster occurs.


General Affairs Department Manager Abe (right) and Section Manager Takahashi (left) holding the resilience certification

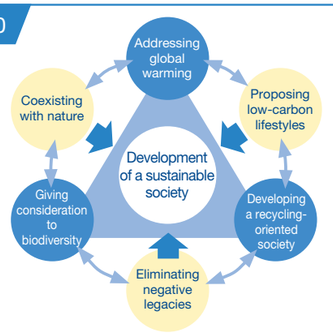
Sumitomo Mitsui Construction Environmental Vision Green Challenge 2020

We promote CSR activities based on the Charter of Corporate Conduct. We carry out activities together with local communities for the development of a sustainable society and to fulfill our corporate social responsibility.

Sumitomo Mitsui Construction Environmental Vision Green Challenge 2020

With a focus on spiritual richness rather than material affluence, we will leave to future generations an earth that we can take pride in.

Sumitomo Mitsui Construction contributes to the development of a sustainable society, with focuses on
1) addressing global warming, 2) developing a recycling-oriented society, and
3) giving consideration to biodiversity, and by
a) proposing low-carbon lifestyles, b) coexisting with nature, and
c) eliminating negative legacies
through the innovation of the construction business.



We disclose the details of our environmental initiatives on our website (http://www.smcon.co.jp/csr/csr-environment/).

Major recognition in fiscal 2017

Organization	Award	Award-winning work
Japan Society of Civil Engineers (JSCE)	Fiscal 2016 Tanaka Award (Excellence in Bridge Design and Construction)	Shin-Meishin Mukogawa Bridge
	Same as above (Technical Service Award)	SMCC employee
	Same as above (Continuing International Contribution Award)	SMCC employee
Japan Institute of Design Promotion	Good Design Award	Wooden convenience store (Lawson Vina Gardens store)
Japan Building Disaster Prevention Association	Fiscal 2017 Excellent Building Award for Excellent Seismic Renovation Buildings/Contributors	Yamanashi Culture Hall Seismic Retrofitting Project
Japan Dam Foundation	37th Dam Construction Contributor (fiscal 2017)	SMCC employee
Japan Construction Engineers' Association	Fiscal 2016 Zenken Award (Road category)	Fiscal 2016 Disaster Relief Project for Expressway Affected by Kumamoto Earthquake * SMCC was a supporting member.
	Same as above (Building category)	Takizawa City Community Center Development Project * SMCC was a supporting member.
Kanagawa Prefecture	10th Kanagawa Barrier-free Urban Development Award	Mitsui Shopping Park LaLaport Shonan Hiratsuka
Shizuoka City	Fiscal 2017 Shizuoka City Excellent Construction Project Award for Construction Industry Worker Retention and Cultivation	Kashio JV Project
Ministry of the Environment, Environmental Consortium for Leadership Development	Leadership Development Award 2016 Encouragement Award	SMCC
3R Suishinkyogikai	Fiscal 2017 Chairman's Award for 3R Promoter	Shin-Meishin Mukogawa Bridge Project
		Chuo-ku Shinkawa 2-chome Construction Project (tentative name)


Shin-Meishin Mukogawa Bridge


Takizawa City Community Center Development Project (Big Roof Takizawa)

Wooden convenience store (Lawson Vina Gardens store)

Project Example of Biodiversity-friendly Construction Project (Nakatsu No. 3 Tunnel Construction [Section 2])

We are working on the Nakatsu No. 3 Tunnel Construction (Section 2) in Oita Prefecture with due consideration to maintenance of the water environment and prevention of the diffusion of night illumination as the Koda River, which runs in front of the tunnel entrance, is the habitat of a firefly species, *Luciola cruciate*.


Fireflies flying over the Koda River (Yellow lines are firefly trails.)

■ Maintenance of the water environment

We purify unclean water from the tunnel construction work by using a turbid water treatment system (capacity: 60 tons/h) and release the purified water into the Koda River. During the construction period, we collect water from both the upstream and downstream sections of the river and measure pH and turbidity in order to monitor water quality.

■ Measures for night illumination

We work day and night for the tunnel construction. At night, while ensuring work safety, we lower the height of lights, install louvers and put in place sound insulating walls, panels and shields to control the reflection of light on the Koda River.

Project Example of Technological Development for Environmental Conservation High-performance Concrete for Sustainability: Sustaincrete™


Forms produced with Sustaincrete

Sumitomo Mitsui Construction pursues higher durability of concrete structures to contribute to the sustainability of society. Jointly with the University of Tokyo Graduate School and the Tokyo University of Science, we developed "Sustaincrete," a high-performance concrete for sustainability with five characteristics. Coined by combining the words "concrete," which etymologically means "grown together," and "sustain," the name Sustaincrete signifies "concrete that supports the increase in production and quality, including environmental aspects, of concrete structures in a sustainable manner." Sustaincrete almost eliminates the risk of cracking and improves productivity, design and eco-friendliness of concrete structures to contribute to the sustainability of society as a whole.

■ Characteristics

○ Super-low carbon
Most CO_2 emissions from concrete production come from Portland cement. Sustaincrete can be produced without the use of Portland cement, which contributes to a substantial reduction in CO_2 emissions.

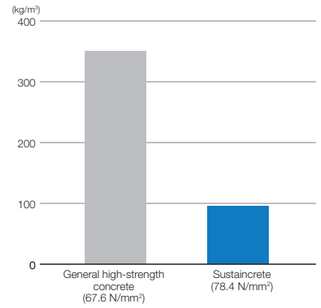
○ Super-low shrinkage
Almost eliminates dry shrinkage and autogenous shrinkage that cause cracking.

○ Super-low heat generation
Eliminates the need for mass concrete measures (almost zero temperature crack) and improves both the quality and productivity of large-scale structures because of extremely low heat generation at the time of hardening.

○ High fluidity
High fluidity helps prevent defects caused by poor infilling work and saves labor (improves productivity). Can be used for a wide variety of shapes, and therefore expands possibilities of architectural design.

○ High strength
High-strength concrete (70 N/mm² or above) to enable creation of high-rise structures

Estimated CO_2 emissions



Enhancing Environmental Communication

Supporting Education on Wood

In July 2017, we supplied kits for *Kumiko* (technique of assembling wooden pieces without the use of nails) as educational materials and sent an instructor to give a family woodworking class organized by the parent-teacher association (PTA) at an elementary school in Shimotsuke City, Tochigi Prefecture to support wood-related education. The class, attended by 71 students and 18 parents, started with an easy-to-understand talk on the relationships between lumber, the forest industry and the environment given by a plant manager at a lumber company that is one of our partners. In the subsequent workshop, the instructor and our employees worked with the children to build the *Kumiko* kits. People tend to think that woodworking is difficult and thus avoid it, but all participants successfully put the kit together. Participating employees, meanwhile, enjoyed the time spent amid a cozy atmosphere. Responses to the survey we conducted after the class revealed children's thinking about wood and their unique, innovative ideas regarding wooden products, which were quite useful for our business of wooden product development.

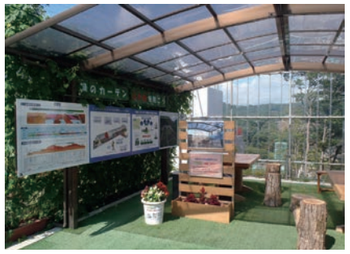
Exhibiting at EcoPro 2017

We exhibited at EcoPro 2017—International Exhibition on Environment and Energy, held in December 2017 at Tokyo Big Sight, for the first time since 2014, when we exhibited a wooden building, *Tamakian*. This time, under the concept of "New Eco Life Style 'NECO'/ comfortable lifestyle," we created a cat-shaped booth (a play on "*neko*," which means "cat" in Japanese). Our booth received more than 800 visitors during the three-day event. As well as presenting a panel exhibition we also invited visitors to play an eco building game, exhibited a model to simulate how wind power can be used to help the environment, provided an opportunity for people to experience the aroma of wood and its benefits, and offered other environmental contents. The aim was to get visitors interested in, and help them understand, our technologies and initiatives related to the environment and energy.

Raising Environmental Awareness

To raise employees' environmental awareness, we put in place an award program (environmental category) to grant a President's Award to excellent environmental activities, and provide environmental education through e-learning and group training. We also hold environmental events, including the Green Curtain campaign and a photo contest to see the results of the campaign, and participated in the Ministry of the Environment's Light-Down Campaign. In recognition of these activities, we received the Encouragement Award at the Leadership Development Award 2016, sponsored by the Ministry of the Environment and the Environmental Consortium for Leadership Development.

Leadership Development Award 2016 Encouragement Award



Work that won the highest award in the Green Curtain photo contest

Communication with Local Community: 1

Departure shaft overview

We asked local junior high students to write messages during a site tour

Shizumi Aquarium

Shizumi, official water character of Shizuoka City

Following the merger of Shizuoka City and Shimizu City, a project was set up to supply water from the Abe River (former Shizuoka City) to the Okitsu River (former Shimizu City) and vice versa to secure a stable supply of water even in the event of the recurrence of the abnormal drought that used to affect the former Shimizu City. We are working on the project's northern route to ensure an adaptable water supply.

Part of our task is to bury water pipes along a 1,330 m section using the pipe jacking method[1]. Although most of our work is done underground and is thus low profile, this project is unprecedented in terms of scale and method. As part of efforts for worker retention, we are proactively opening our project site to the public and conducting publicity activities for it.

In our office we established an information center themed on water. "Shizumi Land" has an aquarium featuring local river fish species to communicate the importance of water and nature conservation to children, and introduces the latest technologies to deepen children's understanding of water supply operations. We are proactively publicizing in-the-field activities in the local area by raising fireflies, exhibiting water pipes, and organizing a "civil engineering school," which provides elementary school students with a class on water supply, through cooperation with local university students.

1 Pipe jacking method: A method to bury pipes from a departure shaft to an arrival shaft in which a tunneling machine is attached to the end of a pipe (mainly reinforced concrete pipe) to drill underground, followed by a hydraulic jack, posterior to the tunneling machine, that literally presses forward.

Project Manager
Maeda
Kashio Project

Daily management and maintenance of Shizumi Land, where we raise living organisms, is difficult, but children like fireflies and fish and we enjoy seeing them smile. Communication with local people has provided us with a great opportunity to look at our own work anew.

Communication with Local Community: 2

At our Head Office we held a public lecture for local residents that was attended by more than 40 participants. We plan and hold the public lecture on a regular basis to contribute to communication with local people and to local community activities. The first lecture was themed "Life with wood" and the second was on disaster mitigation. As we have realized that daily communication is crucial for disaster mitigation, we decided the theme for the third lecture would be the re-discovery of Tsukuda/ Tsukishima and its community. The Tsukuda/Tsukishima area in Chuo-ku, Tokyo, where our Head Office is located, is a typical example of Japanese city planning, with traditional neighborhoods of single-family houses existing right next to blocks dominated by 21st-century high-rise collective housing. The area gives us inspiration regarding communication. The third lecture gave us an opportunity to learn about community activities among residents that continue to develop with changes in people's lifestyles in the historic Tsukuda/Tsukishima area, and to actively exchange opinions to deepen understanding.

Lecture by Prof. Hideaki Shimura, School of Architecture, Shibaura Institution of Technology

Environmental, Social and Governance (ESG) Activity Report　Fiscal 2017 Major Activities and Results

Self-evaluation: ◎ Achieved the target and efforts were sufficient; ○ Achieved the target; △ Failed to achieve the target or efforts were insufficient

	ISO 26000 core subjects/SDGs	Major activity	FY2017 activity target	FY2017 activity result	Self-evaluation	Page
Environmental	The environment[1]	Enhance environmental knowledge	● Provide environmental education through e-learning/group education.	• Provided e-learning education for all employees: twice • Provided group education: 12 times • Provided education for branch-level environmental staff: twice	○	55
		Raise environmental awareness	● Raise awareness by holding internal environmental events.	• Granted a President's Award (environmental category). • Held the Green Curtain Campaign and a photo contest. • Held a seminar for Eco Test preparation.	○	55
			● Build a system to promote environmental activities at affiliates. ● Spread environmental activities to affiliates.	• Environmental staff meeting: twice • Launched the Green Curtain Campaign.	○	-
		Enhance environmental communication	● Participate in external environmental events. ● Hold external events.	• Participated in the Ministry of the Environment's Light-Down Campaign. • Exhibited at EcoPro 2017. • Held the 3rd public lecture at Head Office (on re-discovering Tsukuda/Tsukishima and the community). • Supported wood-related education for elementary school students and their parents.	○	55-56
		Provide solutions for reducing environmental impacts	● Receive orders for works or operations that contribute to energy saving and improving the building construction environment: 4 cases	• Received orders for works or operations that contribute to energy saving and improving the building construction environment (including heat-related measures): 4 cases	○	-
		Use renewable energy	● Expand floating solar power generation business. ● Stably operate existing solar power generation plants. ● Start operation of a new floating solar power generation plant.	• Established a subsidiary for floating solar power generation business in Taiwan. • Operated the existing proprietary solar power generation plant (1 case; annual energy production of 1.3 million kWh). • Commercialized a proprietary floating solar power generation plant (1 case; annual energy production of 1.18 million kWh).	○	40
		Reduce environmental impacts with technology	● Develop technologies for reducing environmental impact. Target: 93% or higher rate of progress for ongoing themes	• Average progress of technological development themes for reducing environmental impact: 95.4% including a case of developing Sustaincrete, high-performance concrete contributing to sustainability	◎	54
		Reduce environmental impacts in the design phase	● 1.45% or higher built environment efficiency (BEE) for new houses with a floor area of 5,000 m^2 or larger	• Average BEE of 5 cases: 1.58	◎	-
		Reduce environmental impacts in the execution phase	● Reduce CO_2 emissions from the execution phase. Target: 22.5 ton-CO_2 per 0.1 billion yen, or less	• 22.3 ton-CO_2 per 0.1 billion yen	◎	-
			● Reduce construction waste generated. Targets: • Civil engineering final landfill of 1.30% or less • Building construction final landfill of 2.32% or less	• Civil engineering final landfill: 1.30% • Building construction final landfill: 2.10%	◎	-
			● Use 3 or more priority green procurement items. Target: 82% or higher at building construction sites	• Percentage of building construction sites handling 3 or more items: 91.1%	◎	-
Social	Consumer issues	Provide safe, secure, high-quality construction works	● Control quality in the execution phase. • Conduct quality patrol regarding important projects by Head Office execution-related departments.	• Conducted quality patrol based on the plan: 100%	○	19-20
			● Control quality in the execution phase. • Conduct on-site quality audits twice per site. • Ensure that quality safety auditors (QSAs) check compliance of the execution processes with major quality control items (in building construction). • Check the progress of patrol by quality safety inspectors (QSIs) (in civil engineering).	• Conducted quality audit by QSAs and QSIs according to the yearly quality audit plan. • Conducted a precast concrete piling test with a quality safety auditor (QSA) witnessing, and conducted a quality audit on other major quality control items according to the production control plan.	◎	
			● Promote technologies for quality improvement.	• Promoted/spread technological development themes for quality improvement, including a case of building SMC-Bridge, a productivity improvement platform for bridges; and a case of launching the precast concrete method SQRIM outside Japan.	◎	17,42
	Human rights, labor practices	Ensure safety and health management	● Eliminate accidents. Targets: Frequency rate of 0.6 or less Severity rate of 0.02 or less	• Frequency rate: 0.49; severity rate: 0.31	△	22
		Raise human rights awareness	● Provide human rights education.	• Provided human rights education during new employee training. • Provided workplace harassment prevention education for all employees through e-learning.	◎	51
		Promote diversity	● Secure employment of people with disabilities at the statutory rate or higher. Target: Employment of people with disabilities at the statutory rate of 2.0% or higher	• Employment rate of people with disabilities as of March 31, 2018: 1.85%	△	24,25
			● Reemploy employees who desire to continue working after reaching the age of retirement until they turn 65. Target: Reemployment rate of 85% or higher	• Reemployment rate: 93%	◎	
			● Improve the personnel system for diverse work styles.	• Introduced a shorter hours/limited days programs for non-regular (senior) employees. • Introduced a satellite office program for those who have difficulty commuting to their place of work due to childcare/family care.	◎	
Social	Human rights, labor practices	Promote diversity	● Promote shorter hours.			
			• Initiatives in fiscal 2017 based on the Shorter Hours Program 2016-2018 Targets: All employees' annual overtime/work on holidays • Employees working in the office: Less than 720 hours (less than 60 hours/month on average) • Employees working outside the office: Less than 840 hours (less than 70 hours/month on average)	• Employees working in the office: Achievement 92.9% • Employees working outside the office: Achievement 80.2%	△	23
			• Reduce overtime. <Target: 15% reduction of average overtime, compared with 2015, by March 2019>	<• 19.4% reduction in fiscal 2017>	-	
			● Promote female empowerment.			
			• Increase the percentage of female employees. Target: Ensure that female employees on major career track account for 20% or higher of all new employees. <Target: Double the number of female employees engaged in technical work, compared with the April 2014 figure, by March 2019 (from 41 to 82).>	• Percentage of female employees on major career track among all new employees: 17.3% <• Number of female employees engaged in technical work as of March 31, 2018: 1.9 times greater (79 persons)>	△	25
			• Increase the number of female managers. <Target: Double the number of female managers, compared with the April 2016 figure, by March 2019 (from 12 to 24).>	<• As of March 31, 2018: 1.5 times greater (18 persons)>	-	
			• Provide diversity education.	• Provided training for managers who have female subordinates. • Provided diversity training for managers.	◎	
		Cultivate human resources (human assets)	● Provide education by job grade and classification.	• Provided education by job grade 100% based on the yearly plan.	◎	-
			● Cultivate/retain local core employees outside Japan.	• Developed a new personnel system for local core employees outside Japan. • Provided professional education by job classification for local employees at the Human Resource Development Center in the Philippines (159 participants). • Appointed local core employees outside Japan (50 employees including 5 managerial employees).	◎	36
			● Cultivate partners.	• Improved motivation by operating meister systems. • Improved the safety/quality/execution level by holding presentations on improvements. • Held site tours, organized by partners, for high school students.	○	24
		Build good relationships with local communities	● Participate in volunteer activities.	• Participated in local cleanups or other volunteer activities.	○	-
			● Participate in education programs. Target: Hold a tour at the Technical Research Institute. Target: Host students who wish to undertake work experience.	• Held a tour at the Technical Research Institute: once • Hosted students who wish to undertake work experience: twice	○	-
Governance	Organizational governance, fair operating practices	Improve the governance system[2]	● Improve/operate a governance system compliant with the Corporate Governance Code.	• Continued evaluation of the effectiveness of the Board of Directors and confirmation/evaluation of cross-shareholdings. • Conducted advance discussion on executive appointment and examination of the remuneration system by the Appointment and Remuneration Advisory Committee. • Held results briefings for analysts twice/year (year-end and interim).	○	47-49
		Operate/improve the internal control system, raise compliance awareness	● Maintain/improve the business continuity plan (BCP).	• Conducted examination as to maintenance/improvement of BCP's viability at the company level. • Acquired a resilience certification (as an organization contributing to national resilience).	○	52
			● Achieve zero major information security incidents.	• There were zero major information security incidents. • Improved information security awareness by conducting a targeted attack drill using a simulated e-mail. • Provided education on information security management system through e-learning.	○	-
			● Achieve zero major compliance violation incidents.	• Achieved zero major compliance violation incidents.	○	-
			● Provide education based on the annual plan for compliance education.	• Provided compliance education 100% according to the annual plan.	○	50-51
			● Ensure compliance with the Construction Business Act and other related laws and regulations. • Provide education on the Construction Business Act as specified in the annual plan. • Check compliance with the Construction Business Act by conducting the "Construction Business Act Patrol," and provide guidance/correction.	• Provided education on the Construction Business Act. • Conducted checks and provided guidance with the "Construction Business Act Patrol."	○	
			● Provide education on the Antimonopoly Act as specified in the annual plan. ● Collect written pledges of legal compliance to eliminate bid-rigging. ● Improve/operate programs to eliminate bid-rigging at affiliates.	• Provided education on the Antimonopoly Act. • Collected written pledges of legal compliance to eliminate bid-rigging, including pledges from affiliates. • Developed bid-rigging elimination programs and provided education for awareness raising at affiliates engaged in execution in Japan with a construction business license.	○	

1 Details of our environmental initiatives are available on our website (https://www.smcon.co.jp/csr/csr-environment/).
2 Details of the governance system improvement are available in the Corporate Governance Report on our website (https://www.smcon.co.jp/investor/corporate-governance/).

Third Party Opinion

Masahiko Uomori
Former Auditor
RIKEN, Japan
Former Professor
Shibaura Institute of Technology Graduate School
President
NPO Peet-Greening Association
Executive Director
Center for Collaborative Interdisciplinary Sciences
Family conciliation commissioner, Tokyo Family Court
Author of *Nihon no gijutsu to kokoro*
(Japanese Technology and Spirit), Maruzen
Sotan no kagaku (Science of Peet Greening),
Waseda University Press

First of all, I would like to express my heartfelt sympathy to people affected by the torrential rain in western Japan in July, Typhoon No. 21, and the Hokkaido Eastern Iburi Earthquake.

I would like to offer my congratulations on the 15th anniversary of the merger, and hope for further progress in the future. I find that this year's corporate report is more enhanced in terms of both volume and contents, signifying substantial efforts by the personnel involved.

Many readers may have noticed that something was wrong with the cicadas this year. Each year cicadas chorus during the aboveground stage of their life cycle after seven years spent underground. The different species do this in the following order: *Platypleura kaempferi, Graptopsaltria nigrofuscata, Cryptotympana facialis, Hyalessa maculaticollis, Meimuna opalifera* and *Tanna japonensis*. This year, they all buzzed simultaneously and in random order. When it cooled down a bit, *Tanna japonensis*, which is usually the last to sing, joined the chorus earlier than usual. I wonder if the cicadas sensed some kind of change. It is imperative to address climate change.

Characteristics of This Report

- The Message from the President at the beginning of the report reflects on the case of the collective housing complex in 2015. I appreciate the attitude to make company-wide efforts to regain trust and build a new corporate culture for Sumitomo Mitsui Construction, rather than simply moving on from the episode.
- Initiatives of each division are clearly stated. Photographs of the key projects completed in fiscal 2017 are very impressive and prove the success of the merger.
- Each division is using a common table (Recognize issues, Address issues). Categorization into "Enhance organizational capability," "Enhance competitive advantage," and "Create value for stakeholders" is easy to follow and deepens readers' understanding.
- Commitment to the environment is evident, particularly in the example of a biodiversity-friendly construction project (page 54). I was also impressed by the effort to raise awareness regarding the relationship between lumber, the forest industry and the environment through wood-related education for the next generation (page 55).
- It is my opinion that the hands-on camp that enabled new employees to experience manufacturing from scratch, conducted as part of human resource cultivation measures (page 18), provides new employees with a good opportunity to cast off the stereotypes of their school days.
- Supreme quality is an important concept that helps uncover root causes and contributes to the made-in-Japan brand, thus helping gain trust in Japanese quality around the world. It also helps resolve complaints and other problems. It should be continued.

Requests for Next Year's Report

Multifaceted opinions from external directors and external auditors should be shared.

Aspects to Be Continued or Promoted

- By continuing to introduce proprietary technologies, such as Dura-Slab presented on page 41, Sumitomo Mitsui Construction can publicize its large capacity for technological development. Publicizing unrivaled technologies will lead to the creation of new customers.
- The common format for recognizing and addressing issues helps compare the divisions and identify division-specific issues. It is also useful for checking back in the next fiscal year.
- The visualized "Expanding Business Areas" of overseas business should be continued, using more space. How the living environments of local people are improving with infrastructure development leveraging Sumitomo Mitsui Construction's technologies should also be communicated.

While preparations for the 2020 Tokyo Olympic and Paralympic Games are steadily underway, it is imperative to take measures for existing infrastructure that will age in the next 20 years. Roads and bridges are the areas in which Sumitomo Mitsui Construction has its strengths. Advance preparations should be started now.

Response to Third Party Opinion

This year's report features a Value Creation Story that incorporates the perspective of SDGs. Incorporating SDGs into their management strategy is now indispensable for companies that focus on global business operations. The SMCC Group has just started the initiatives but intends to launch them in an aggressive fashion.

I greatly appreciate Mr. Uomori's precise and favorable opinion of this report. We recognize that, as he pointed out, continuing supreme quality is an everlasting activity for a manufacturing company committed to carrying out the execution process in a reliable manner.

We will make continued efforts to communicate our group's initiatives for improving corporate value and achieving a sustainable society in an easy-to-understand manner so that stakeholders can improve their understanding.

Tomohiko Sato
Director
Senior Managing Executive Officer
In charge of Corporate Planning Department

Corporate Profile (as of the end of June 2018)

Company Name	Sumitomo Mitsui Construction Co., Ltd.
Founded	October 14, 1941
Head Office	2-1-6 Tsukuda, Chuo-ku, Tokyo, 104-0051, Japan
Representative	Hideo Arai, Representative Director, President & CEO

Capitale 12 billion yen

Number of Employees
(as of the end of March 2018)
Unconsolidated: 2,676
Consolidated: 4,529

Key Sales Offices in Japan

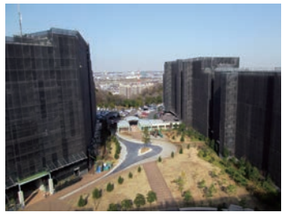
Head Office (Chuo-ku, Tokyo)	Hokkaido Branch (Chuo-ku, Sapporo City)	Tohoku Branch (Aoba-ku, Sendai City)	Eastern Kanto Branch (Mihama-ku, Chiba City)
Tokyo Civil Engineering Branch (Chuo-ku, Tokyo)	Tokyo Building Construction Branch (Chuo-ku, Tokyo)	Yokohama Branch (Kanagawa-ku, Yokohama City)	Shizuoka Branch (Aoi-ku, Shizuoka City)
Chubu Branch (Naka-ku, Nagoya City)	Osaka Branch (Chuo-ku, Osaka City)	Hiroshima Branch (Naka-ku, Hiroshima City)	Shikoku Branch (Niihama City, Ehime Prefecture)
Kyushu Branch (Hakata-ku, Fukuoka City)	International Division (Chuo-ku, Tokyo)	Technical Research Institute (Nagareyama City, Chiba Prefecture)	

Affiliates in Japan

SMC Preconcrete Co., Ltd.

Engages in manufacturing, in Kanto area, of concrete members used for precast concrete and prestressed concrete methods as core technologies of Sumitomo Mitsui Construction, as well as manufacturing of secondary concrete products and renovation of buildings.

SMC Reform Co., Ltd.



Established in 1987 for large-scale repair of superhigh-rise housing, which is the key strength of Sumitomo Mitsui Construction, and engages in maintenance, large-scale repairs and seismic reinforcement of buildings as well as heat shield measures and energy-saving renovation of plants and warehouses.

SMC Civil Technos Co., Ltd.

Creating high-quality social capital by pursuing refurbishment, including repair and reinforcement, of bridges as the main pillar, in addition to river civil engineering and PC construction as multiple axes of sales, amid the ongoing shift from the age of manufacturing to the age of maintenance, repair and reinforcement.

SMC Tech Co., Ltd.

Specialized in machine-power technology, having two divisions: civil engineering for PC bridges, PC tanks, tunnels and shield construction, and leasing of construction machinery, including vehicles for bridge superstructure construction and tower cranes for high-rise housing.

Sumiken Mitsui Road Co., Ltd.	Paving, road construction, landscaping and general civil engineering
SMC Co., Ltd.	Sale of building materials, insurance agency
Seiwa Co., Ltd.	Contract construction
Aseismic Devices Co., Ltd.	Sale of seismic isolation and control equipment
Fibex Co., Ltd.	Aramid fiber reinforcement
Yoshii Planning Co., Ltd.	Real estate business (development of the Dogodaira housing complex)
Amenity Life Co., Ltd.	Operation and management of private retirement homes
Cosmo Planning Co., Ltd.	Printing, information systems and personnel and general affairs services, and sale of measuring instruments and software

Subsidiaries Outside Japan

SMCC Philippines, Inc. (Philippines)	SMCC (Thailand) Co., Ltd. (Thailand)
SMCC Overseas Singapore Pte. Ltd. (Singapore)	SMCC Construction India Ltd. (India)
Pt. SMCC Utama Indonesia (Indonesia)	SMCC Malaysia Sdn. Bhd. (Malaysia)
SMCC Taiwan Co., Ltd. (Taiwan)	