

# TAKENAKA Corporate Report 2022





# Dreams into Reality for a Sustainable Future



We will inform all of our stakeholders through our report and website about the operations and initiatives that the Takenaka Group is pursuing with the aim of realizing a sustainable society.

## Editorial policy

We have compiled this Takenaka Corporate Report 2022 for the purpose of presenting the Takenaka Group CSR Vision and describing the projects undertaken by our corporate group as a whole with maximum clarity. Its contents primarily comprise details related to activities conducted by Takenaka Corporation. Contents, case examples and data that could not be covered in the report due to space constraints will be featured on the Takenaka Corporation website. This report integrates our corporate brochure (introductory overview of our businesses) and sustainability report (CSR activity report), which were formerly issued as separate publications. It also seeks to obtain the full understanding of our stakeholders by incorporating our medium-term management plan as well as our principal financial and nonfinancial data in order to present the business operations implemented by our group on a global scale. For further information located on our website, scan the 2D code found in this report.

## Coverage of this report

- Period of coverage**  
 January–December 2021. Some contents concern activities conducted outside this period.
- Scope of coverage**  
 Contents include activities of the Takenaka Group centered on activities of Takenaka Corporation.
- Reference guidelines**  
 The GRI Sustainability Reporting Standards, Environmental Reporting Guidelines 2018 by the Ministry of the Environment, and the Japan Standards Association's draft translation of ISO26000 (Guidance on Social Responsibility), first edition published on November 1, 2010, were employed as references in compiling this report.
- Date of issue**  
 Japanese: March 2022 (next issue March 2023).  
 English: May 2022 (next issue May 2023).  
 We have also published this report on our website to make it available to larger numbers of readers.
- Inquiries**  
[https://www.takenaka.co.jp/takenaka\\_e/e\\_contact/inquiries/index.php](https://www.takenaka.co.jp/takenaka_e/e_contact/inquiries/index.php)

Corporate Website  
(Japanese/English)  
[www.takenaka.co.jp](http://www.takenaka.co.jp)



- Major Works
- Solutions
- Corporate Information
- CSR Activities

## Corporate Publications (Japanese/English)



Corporate Report  
(Japanese/English)



Major Works Report  
(Parallel Japanese/English)



Financial Report  
(English)

Financial and nonfinancial information concerning the company is presented in an integrated, compact format. Its business operations and results (works) are introduced in greater detail.  
\* Separate technology and solutions publications are also available.

The report provides detailed coverage of financial and nonfinancial information across a wide range.



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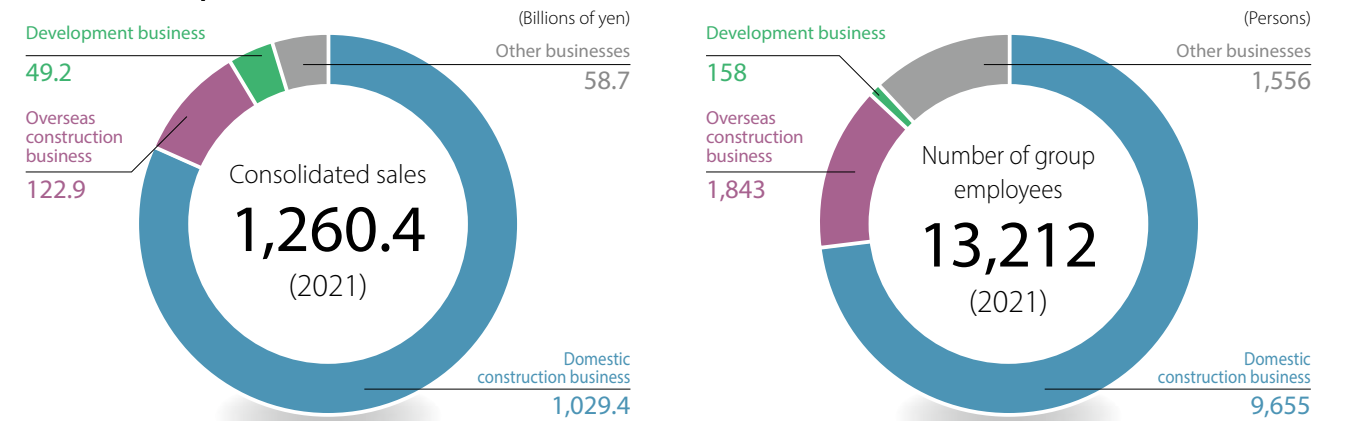
## Financial and Nonfinancial Highlights



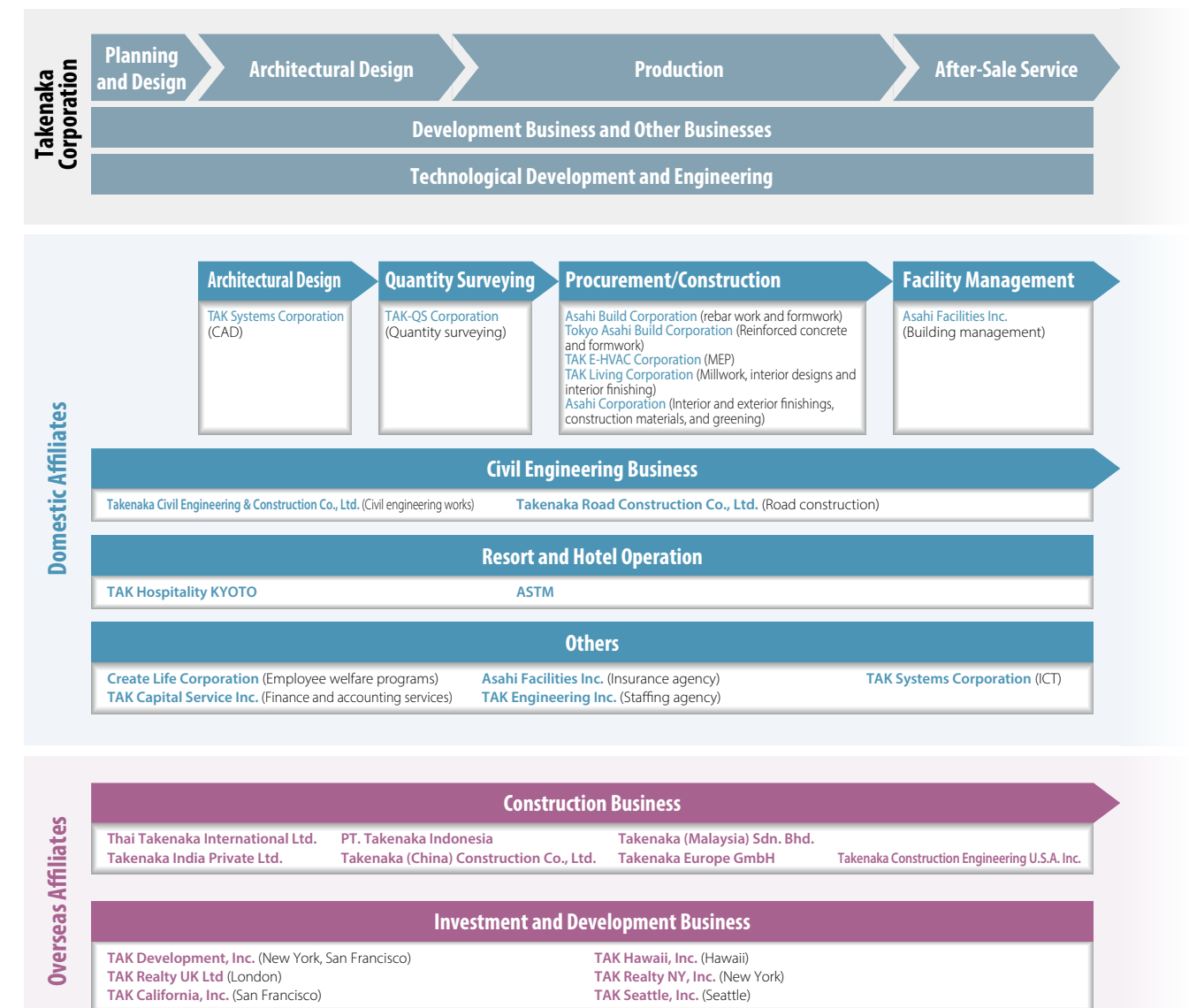
## Group Overview

Our entire group will meet customer expectations at every stage of urban creation.

### Takenaka Group's Business Size



### Principle Operations of Main Affiliates



\* Major consolidated subsidiaries, excluding indirectly owned companies



# Takenaka, the Past and Future

Since its founding in 1610, Takenaka has specialized in architecture to produce a multitude of buildings that have become landmarks, and in this way, we have played a vital role in the development of our society. From the days of our founder Tobei-Masataka Takenaka, a master builder of shrines and temples, our philosophy of specializing in building construction lives on. Today this spirit is embodied in all of our work, which has spread beyond the framework of architecture to prosperous and secure urban creation, not only in Japan but all over the world.

1610



**1610**  
Tobei-Masataka Takenaka established a business in Nagoya to engage in shrine and temple construction.

**1874**  
**Nagoya Garrison barracks** featuring Western-style architecture adapted to the postrestoration era completed.

**1884**  
**Mitsui Bank Nagoya branch** completed.

**1897**  
**Mitsui Spinning Mill** completed in Nagoya.

**1899**  
14th-generation head of family Touemon Takenaka expanded the business into Kobe, which marked the first year of the company's foundation.

**1900**  
**Mitsui Bank Warehouse** completed in Onohama district of Kobe.



**1909**  
**Unlimited Partnership Takenaka Komuten** established with headquarters in Kobe and a branch in Nagoya.

**1912**  
**Takashimaya Kyoto Store** completed as Japan's first reinforced concrete retail store building.



**1916**  
**Osaka Asahi Shimbun Head Office Building**, a steel reinforced concrete structure, completed.

1920



**1934**  
**Meiji Seimei** (Marunouchi, Tokyo) completed.

**1937**  
**Takenaka Corporation** established. Capital ¥1,500,000.

**1941**  
**Takenaka Civil Engineering & Construction Co., Ltd.** established.

**1957**  
**Antarctic Exploration Research Facilities** constructed. Patent acquired for Takenaka Caisson Process.

**1958**  
333-meter-high **Tokyo Tower** completed.



**1960**  
**Takenaka & Associates, Inc.** established in San Francisco, starting full overseas business operations.

**1963**  
Takenaka awarded first prize in **National Theatre Design Competition**.



**1969**  
**Asahi Facilities, Inc.** established, expanding business into building management and insurance businesses.

**1973**  
**Takenaka Europe GmbH** established, expanding business into Europe.

**1974**  
**Thai Takenaka International Ltd., PT. Takenaka Indonesia, and Takenaka Corporation Singapore Office** established, expanding business into Southeast Asia.

1975



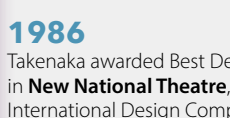
**1978** **West Germany**  
**Deutsch-Japanisches Center** completed.

**1979**  
Takenaka awarded Deming Application Prize.  
**Ashiyama Seaside Town**, proposed by the ASTM Group of which Takenaka was a member, completed.



**1981** **Singapore**  
**Changi International Airport Terminal 1** completed.

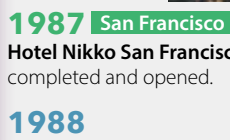
**1983** **Tokyo**  
**Ote Center Building** completed and opened.



**1986**  
Takenaka awarded Best Design Prize in **New National Theatre**, Tokyo International Design Competition.



**1987**  
**Yurakucho Mullion** completed.



**1987** **San Francisco**  
**Hotel Nikko San Francisco** completed and opened.

**1988**  
Chairman Renichi Takenaka awarded the Deming Prize.  
**Tokyo Dome**, Japan's first multipurpose stadium with an air-supported membrane structure, completed.



1990

**1990** **Osaka**  
**Crystal Tower** completed and opened.

**1990**  
**Takenaka (Malaysia) Sdn. Bhd.** established.

**1991** **Hawaii**  
**Grand Hyatt Kauai Resort and Spa** completed and opened.



**1992**  
Takenaka awarded the Japan Quality Control Medal.

**1993**  
**Fukuoka PayPay Dome**, Japan's first multipurpose stadium with a retractable roof, completed.



**1993**  
**PT. Takenaka Doboku Indonesia** established.

**1995**  
**ACROS Fukuoka**, a pioneering work in environmental architecture, completed.



**1996** **Thailand**  
**Ayutaya Bank Main Office** completed.



**1997**  
**Nagoya Dome** completed, one of the five major domes. (Vantelin Dome Nagoya)

2000

**2001**  
**Takenaka Corporation (U.S.A.)** established.

**2001**  
**Oita Sports Park Showa Denko Dome Oita and Sapporo Dome** completed.

**2003**  
**Takenaka (China) Construction Co., Ltd.** established.

**Germany**  
**Hyundai Motor Europe R&D** completed.



**2006**  
Superhigh-rise base isolation condominium **City Tower Nishi-Umeda** completed.

**2007**  
Chubu region's tallest skyscraper **Midland Square** completed. Large-scale integrated **Tokyo Midtown** and **Shin-Marunouchi Building** completed in central Tokyo.



**2008**  
World's first high-rise condominium comprising three interconnected skyscrapers, **Island Tower Sky Club**, completed.

**2009**  
**Mitsubishi Ichigokan and Marunouchi Park Building** completed.



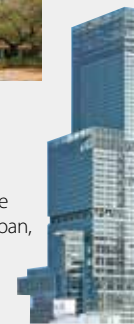
2010

**2010**  
**Takenaka India Private Ltd.** established.

**2013**  
**Osaka Timber Association Building**, constructed in Moen-Wood, completed.



**2014**  
**Abeno Harukas**, the tallest building in Japan, completed.



Takenaka awarded Architectural Institute of Japan Award (Architectural Design) for **Meiji Yasuda Life Insurance New Toyocho Building**.



**2017**  
**Takenaka Vietnam Co., Ltd.** established.

**Singapore**  
**Changi International Airport Terminal 4** completed to handle the flow of people and economic activities as Southeast Asia's hub airport.



**Indonesia**  
**Pacific Century Place Jakarta** completed and distinguished for outstanding environmental features with LEED Platinum certification.



2018

**2018**  
Open community hub for academic and local exchanges **Tokoha University, Shizuoka Kusanagi Campus** completed.



First legacy utilization project **FORMER MANKICHI YAMAGUCHI HOUSE/kudan house** completed.



**2019** **Kyoto**  
**Kyoto Higashiyama Project (Kyoyamato & Park Hyatt Kyoto)** opened.



**2019**  
**Ariake Arena**, a sports event venue, completed.



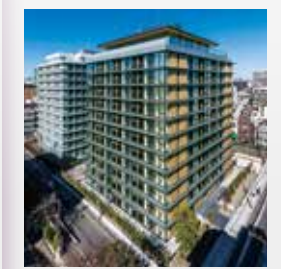
**Shibuya PARCO • HULIC building** completed as an urban and cultural development center.

**National Cerebral and Cardiovascular Center** completed as a center for leading-edge medical services.



2020

**2020** **Tokyo**  
**FLATS WOODS KIBA** completed to accelerate the Forest Grand Cycle.



**2020**  
**Yokohama City Hall** completed as a city hall open to citizens.



**PACIFICO Yokohama North** completed. PFI projects contribute to the Yokohama landscape.

Spatial configuration based on a 3D Voronoi model, **"Steel Nest" Sanei Construction Steel Structure Division New Office**, completed.



Office building embodying changes in the environment, **River Holdings Ryogoku Office**, completed.



**MIYASHITA PARK** completed by application of a vertical urban park system.

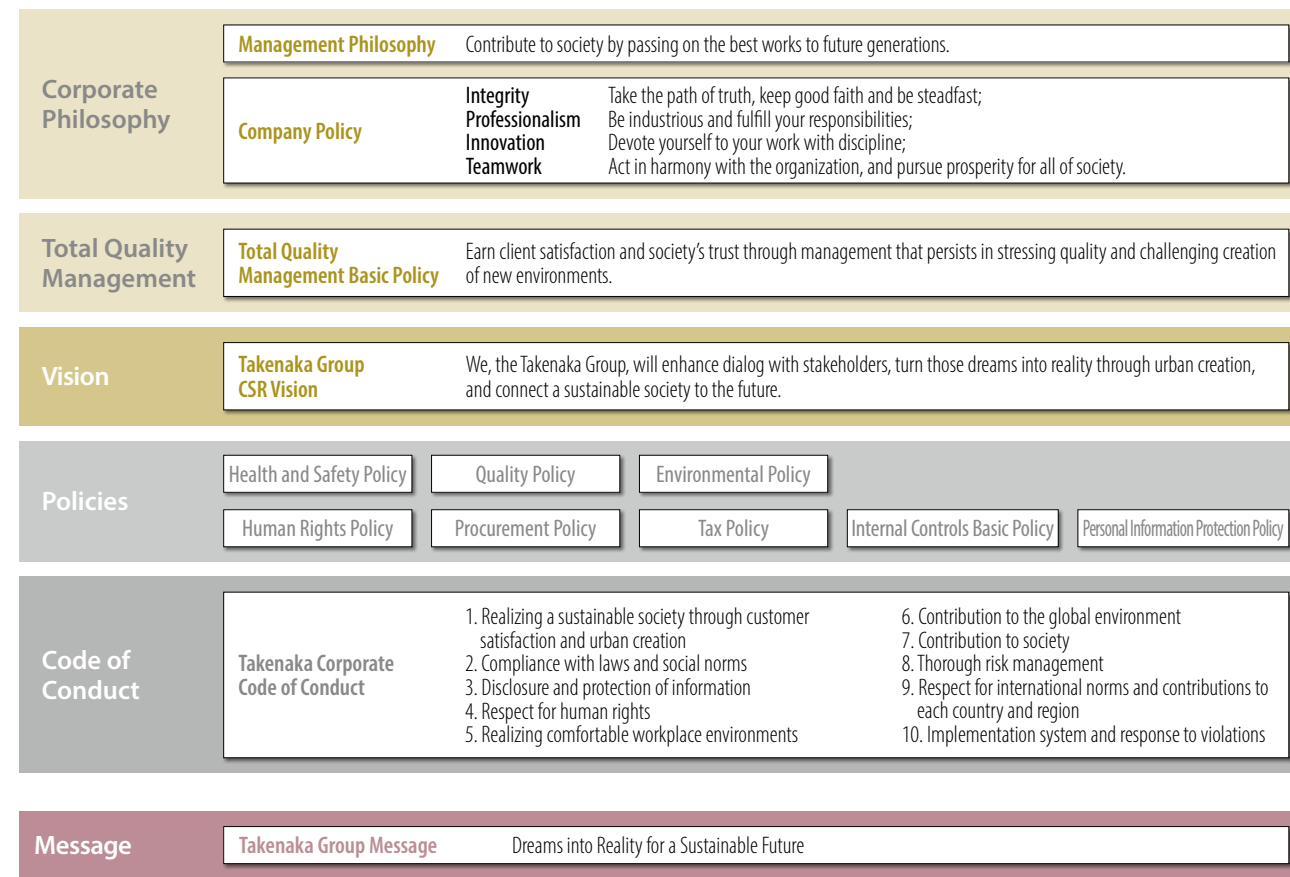




# Dreams into Reality for a Sustainable Future

We consider our Management Philosophy, "Contribute to society by passing on the best works to future generations," to be our corporate mission. To achieve it we follow our Company Policy and handle every architectural project we undertake with the utmost care. This ensures Total Quality Management, which earns customer satisfaction and society's trust, and raises the company's value to society. More than ever before, we are required to engage in many activities that share our corporate values with society as stakeholders diversify and the functions of architecture change. Moreover, society is facing various problems, such as global warming and climate change, safety and security, an aging social infrastructure, and a declining birthrate and aging population.

The potential impact of these issues requires today's corporations to shoulder more social responsibility. Accordingly, we formulated the Takenaka Group CSR Vision and the Takenaka Group Message, which incorporate this vision in communicating our Corporate Philosophy based on a concept of Total Quality Management. We thereby express our commitment to deploying our group's concerted efforts and cooperating more closely with stakeholders and society to resolve social issues and realize a sustainable society. Each Takenaka employee will take our Corporate Philosophy, the cornerstone of our business, to heart and promote Total Quality Management in accordance with the CSR Action Guidelines presented in our Corporate Code of Conduct in order to realize this vision.



## Realizing the combined aspirations of the Takenaka Group CSR Vision and Takenaka Group Message

Besides responding to the expectations of our stakeholders, who include the global environment, local communities, customers, employees and partner companies, in our efforts to realize a sustainable society, we believe that the cities in which they all gather and pursue their various activities must be safe, prosperous and easy to live in both today and tomorrow. To

assure this, we will enhance dialog with stakeholders even further. We will combine the business capabilities of our corporate group in construction, civil engineering, real estate and development, facility management, and urban renewal in order to realize a sustainable society of the future through urban creation with new added value.



March 2022  
Honorary Chairman of the Board

*Toshiyuki Takemura*

Since the founding of our company in 1899, we have continued to adhere to the spirit of a master builder and quality management. As a result, we have earned the trust of a wide range of customers, for which we are grateful. Our business environment has undergone many changes over the past 123 years, and the scope and speed of these changes have accelerated. However, our Management Philosophy, "Contribute to society by passing on the best works to future generations," and the first line of our Company Policy, "Take the path of truth, keep good faith and be steadfast," are the cornerstone of our company and the ideas of our founder that we should continue to maintain. Aiming to realize a sustainable society, we will continue on a steadfast course of meeting the expectations of society and our customers.

In the face of diversifying values and continuing changes in the business environment, the responsibilities that companies must fulfill are growing in both breadth and gravity. Based on dialog with stakeholders, including customers, our company has adopted the Group Vision, "Contribute to society through urban creation." In order to achieve this, I think we must always be reevaluating whether or not we are meeting the roles and trust required of us, and to earnestly tackle issues facing society. We intend to approach these challenges with a strong resolve to "achieve universal truth by deeply exploring each person's role and fulfilling our responsibilities."

March 2022  
Chairman of the Board

*Muneyoshi Tawarataomi*







## Toward the realization of a sustainable society

Since 2020, the COVID-19 pandemic has greatly impacted and brought about major changes to society, the economy and people's lives. To date our company has been aiming to realize a sustainable society by tackling a variety of social issues, and we are now taking steps to address the corona crisis as one of these issues. Employing our group's comprehensive engineering capabilities, we will resolve social issues, and advance the sophistication and diversification of urban areas to create prosperous and secure communities.

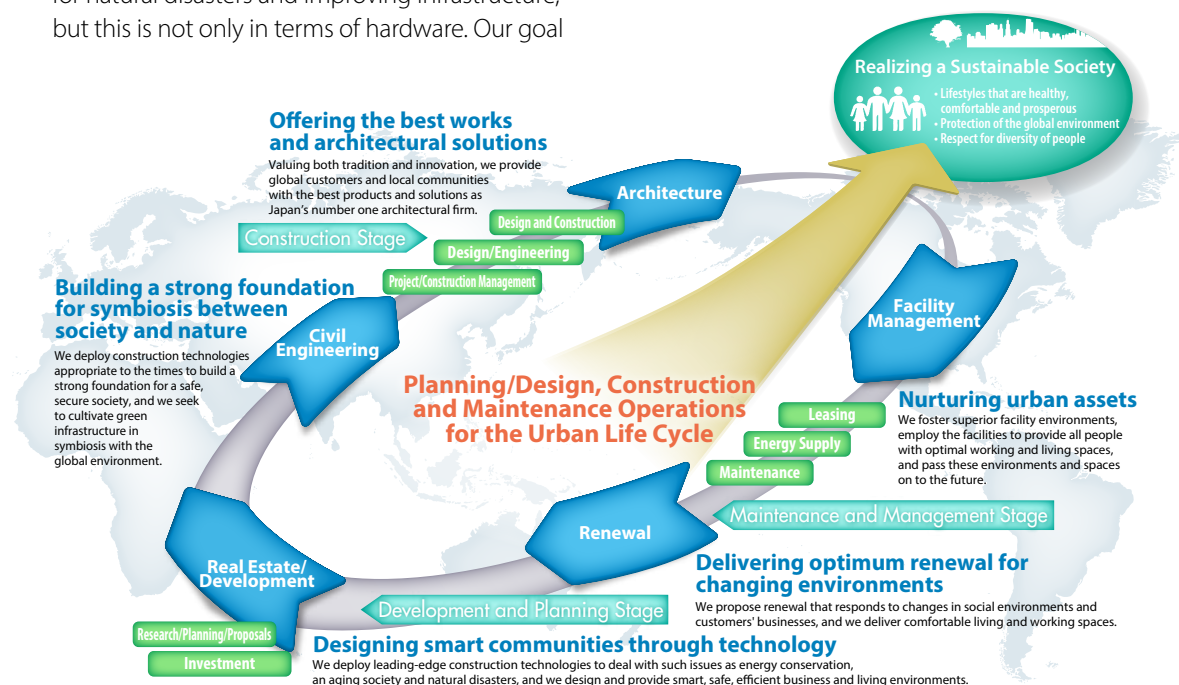
March 2022  
President

Masato Sasaki

## Environmental changes and our role

In recent years, changes in the environment have seen the intensification of natural disasters due to the effects of climate change. As this and energy problems have become urgent issues common throughout the world, there is a strong need to work toward decarbonization. The construction industry has an important role to play in preparing for natural disasters and improving infrastructure, but this is not only in terms of hardware. Our goal

of becoming a "comprehensive engineering firm for urban creation" is to enhance the functions of urban areas based on a vision of what society would like to become in the future. Moving forward we will continue to view our entire group's business domain as "urban areas," and we will provide value related to entire urban life cycles.



## Priority initiatives

### ● Harmonization with the environment

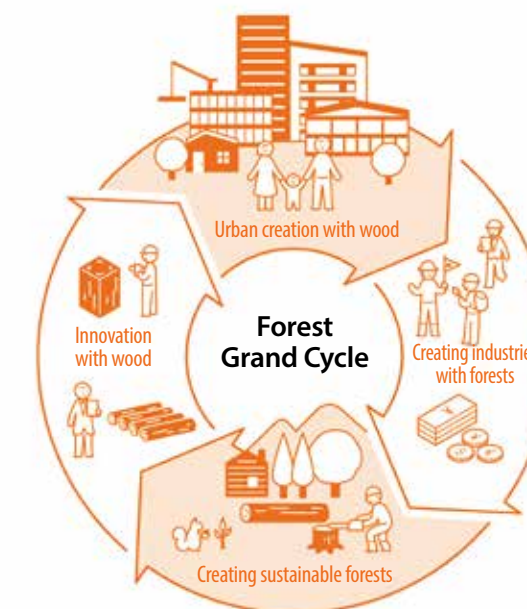
In our drive to create a sustainable society, we enacted our own Global Environmental Charter in 1992. Since then, we have been engaged in activities focused on environmental architecture based on our Environmental Concept. In 2021, we endorsed recommendations by the Task Force on Climate-related Financial Disclosures (TCFD), and since then we have been working to analyze and understand the risks and opportunities that climate change poses to our business as well as disclosing information on how we are responding to those risks and opportunities. Aiming for a healthy, comfortable and prosperous society, a decarbonized society, a resource recycling society and a society in harmony with nature, we will continue to share and resolve the issues of urban areas through dialog with stakeholders.

### ● Work style and productivity reform

In addition, by utilizing digital technology to address work style reform and a lack of skilled workers, which is a pressing issue in the construction industry, as well as to respond to the Revised Labor Standards Law, we are promoting productivity reforms through drastic improvements in the efficiency of production and business operations. In particular, we are proceeding with thorough digitization of our operations by developing Takenaka Advanced Construction Integration, which is business reform spanning all production activities, and building information modeling (BIM). All data pertaining to our business is being centrally stored, simultaneously, in the Construction Digital Platform, which began operation in 2021. Together with this business optimization by improving AI data utilization, we are creating new value for society and our customers. In the future, we aim to enhance coordination between construction robot control platforms and smart building realization, and together with promoting total development from our construction business to facilities operation, we will collaborate with a variety of stakeholders in local communities to provide new architectural and urban creation services.

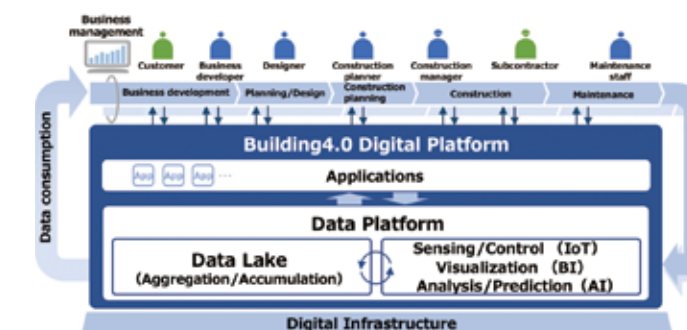
### ● Sustainable architecture and urban creation

In October 2017, we established the Urban Creation Strategy Department as an organization that would play a central role in achieving our goal of becoming an "integrated engineering firm for urban creation," and we have also been promoting an activity called MACHInnovation. Collaboration with diverse stakeholders and initiatives to address issues for urban areas are taking shape, and these efforts will assist in the transformation to a sustainable society.



### Concept of the Forest Grand Cycle

Sustainable cycle for all forest resources and local economies



### Providing new architectural and urban creation services

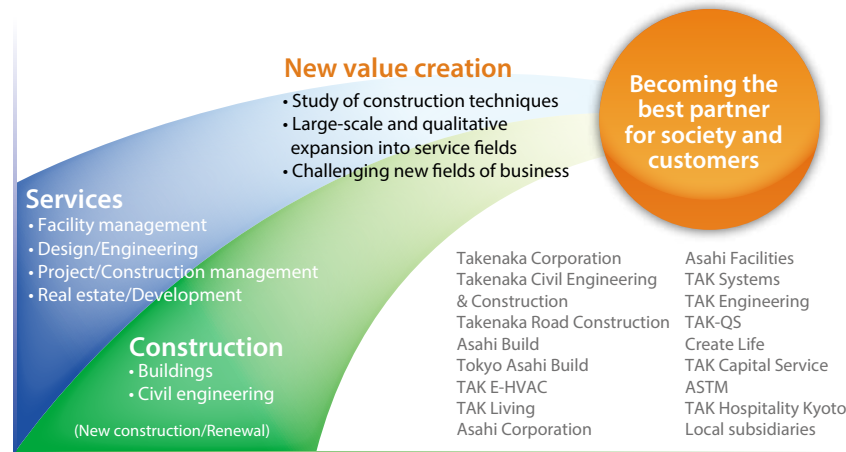




## Our Vision

We are aiming to create solutions that fuse construction technology and services so that we can demonstrate comprehensive engineering capabilities groupwide in line with urban life cycles. Values required for social issues, which change with the times in various ways, are not uniform. In order to be able to demonstrate

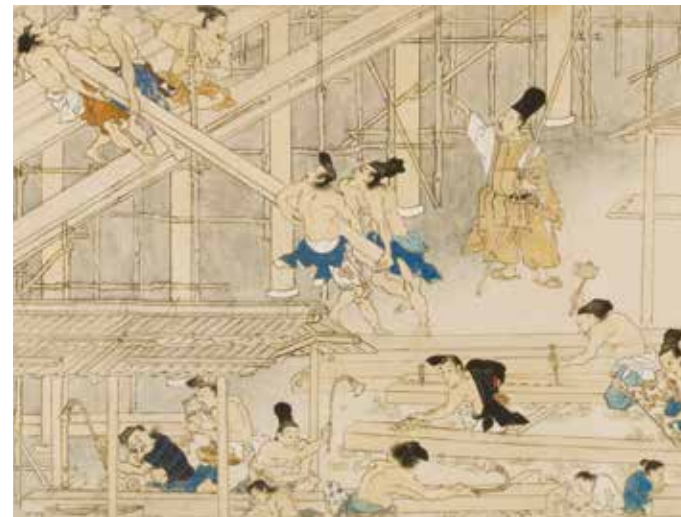
a wide range of expertise, and technical and management capabilities groupwide, we will invest in strengthening management resources, and expansion of human resources, technology and ICT. In doing so, our goal is to be the best partner for society and our customers.



## Total Quality Management and new business initiatives

### Basic approach of Total Quality Management

Our basic approach to achieving sustainable and sound corporate activities is Total Quality Management. This is because since the founding of our business, we have been focused on specializing in building construction and an integrated design-build system, which is the *toryo* (master builder) spirit of shrine and temple carpenters. At the foundation of "quality management" is the strong conviction of a *toryo* that not only technology and know-how go in to constructing a building but also that "we take responsibility for the work we undertake to the end." Our basic mindset is to earn client satisfaction and society's trust through management that persists in stressing quality and challenging the creation of new environments.



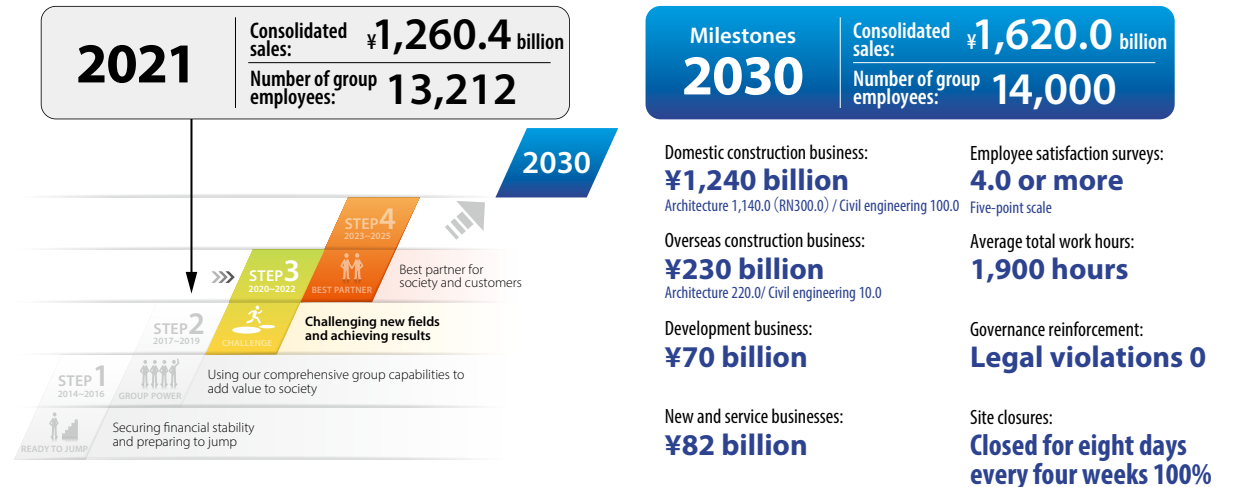
Matsuzaki tenjin engi emaki, Hofu Tenmangu Shrine, Yamaguchi Prefecture

**Total Quality Management Basic Policy** Earn client satisfaction and society's trust through management that persists in stressing quality and challenging the creation of new environments.

## Steps toward growth and milestones for 2030

We have formulated a growth strategy for where we would like to be, and in addition to developing a three-year business plan for each step, there are SDGs too. We have also set 2030 as a milestone, which is the 10th anniversary of the start of STEP3 of our growth strategy. Aiming for sustainable and stable management centered on construction, which is our group's core business, we will attempt to expand into new businesses and services in addition to our overseas construction

and development businesses. Meanwhile, along with our business targets, we have set specific goals based on respect for human rights and compliance. For sound corporate activities, we will continue to provide environments where employees can be active in good physical and mental health, and we will visualize and achieve KPIs such as employee satisfaction surveys, average work hours, strengthening governance and construction site closure times.



## Three-Year Management Plan and final year of the plan

As 2022 is the final year of our current three-year plan, we will summarize our activities for "challenging new business areas and producing results." By 2020, we had begun geothermal power generation projects and legacy utilization projects, which involved preserving the state of buildings with high historical value. We also continue to collaborate with start-up companies through an "accelerator program," which we held in 2019. We plan to continue our efforts with these businesses by making full use of our areas of expertise and engineering capabilities. Meanwhile, the COVID-19 crisis has had a large impact on the business environment, which has necessitated revising our three-year plan from the beginning. With the goal of meeting customer expectations, we have continued our business even under such circumstances while making the utmost effort to prevent the spread of infection and ensure the safety of everyone involved. Going forward,

we will continue to make solid progress toward the realization of a sustainable society based on an unwavering Management Philosophy while responding flexibly to drastic changes in the environment.





## Our Major Objectives (Materiality)

As an integrated engineering firm for urban creation, we have identified our major objectives (materiality) for resolving social issues and building a sustainable society. In our business activities we will integrate the major objectives for our growth strategies, and establish concrete action plans and targets to achieve those objectives. (Please refer to pages 37 and 38 for our 2020-2022 Action Plan for a Sustainable Society.)

### Grouping of major objectives (materiality) and SDGs

Major objective groups	Major objectives	Relevant SDGs
<b>Sustainable architecture and urban creation</b>	<ul style="list-style-type: none"> <li>Developing architecture and services that give consideration to the environment (zero-energy and decarbonization) and society</li> <li>Creating social systems for sustainable urban areas</li> <li>Improving resilience of buildings and urban areas</li> <li>Extending building life spans, and improving stock maintenance and utilization</li> <li>Passing on traditional culture and recreating value</li> </ul>	
<b>Harmonization with the environment</b>	<ul style="list-style-type: none"> <li>Reducing CO<sub>2</sub> emissions in our business activities</li> <li>Responding to future climate change</li> <li>Consideration for biodiversity</li> <li>Recycling resources and reducing waste</li> </ul>	
<b>Technical innovation and cocreation</b>	<ul style="list-style-type: none"> <li>Developing advanced technologies and promoting innovation</li> <li>Promoting cocreation activities*</li> </ul>	
<b>Work style and productivity reform</b>	<ul style="list-style-type: none"> <li>Guaranteeing appropriate working conditions, including work hours (employees and partner companies)</li> <li>Pursuing construction processes that are sustainable and highly productive</li> <li>Realizing healthy and rewarding workplace environments with a diversity of people</li> <li>Eradicating discrimination and harassment</li> <li>Securing, developing and retaining human resources (employees and partner companies)</li> </ul>	
<b>Steady production processes</b>	<ul style="list-style-type: none"> <li>Providing high quality, and safe construction and services</li> <li>Realizing work sites without accidents or public disasters</li> <li>Realizing sustainable supply chains</li> </ul>	
<b>Sound organizational foundation</b>	<ul style="list-style-type: none"> <li>Building trusted governance</li> <li>Thorough compliance</li> <li>Improving organizational transparency by promoting information disclosure and dialog</li> <li>Establishing risk management</li> <li>Ensuring information security</li> <li>Respecting human rights</li> </ul>	

■: Society ●: Environment □: Society and environment ◆: Urban creation innovation ★: Organizational foundation

### Relationships between SDGs and our business activities

We classify our major objectives into six groups according to their connection to our business activities. In addition, we established the relationship between each objective and the SDGs, alongside identifying and assessing social issues. We organized the relationship between SDGs and our approach, and summarized the result in the chart above. We will then implement our action plan after defining measures to resolve issues and setting targets and KPIs for measuring their progress and achievement. The diagram on the right shows a conceptual illustration of the structure that will allow us to conduct our activities to contribute to building a sustainable society and achieving our SDGs. Based on a sound organizational foundation, we plan to pursue the development of sustainable architecture and urban creation through technical innovation and cocreation, work style and productivity reform, and by engaging in steady production processes alongside harmonization with the environment.



Takenaka's vision for a sustainable society

## Initiatives for a Sustainable Society

As an integrated engineering firm for urban creation, we are working toward greater sophistication and diversification of urban areas through resolution of social issues to create a sustainable society.





# Harmonization with the Environment

– Initiatives for creating a society in harmony with nature and a decarbonized society –

**Environmental Policy**  
Contribute to the sustainable development of society by striving for the creation of architectural space that is in harmony with the environment.

To achieve decarbonization, resource recycling and symbiosis with nature, and create a sustainable society in 2050, we are providing environmentally conscious architecture and services, and reducing the environmental impact generated by our business activities.

## Creating a society in harmony with nature

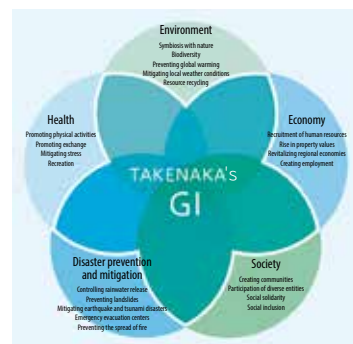
In order to realize a society in harmony with nature where people and nature coexist, we will promote urban creation that introduces "Green Infrastructure" to make full use of nature's diverse functions for multiple purposes with the goal of improving biodiversity.

### ● Green Infrastructure

Green Infrastructure (GI) focuses on the multifaceted functions that nature provides, and with it we aim to produce a variety of values and realize a sustainable society by creating diverse ways to utilize these functions.

Through the skillful introduction of green infrastructure, we plan to create cities and communities that are environmentally friendly, resilient to disasters, and promote health.

These will also be places where a diverse range of people can participate in the development and maintenance of the green infrastructure.



Five effects of GI and the versatility of Takenaka's GI

### ● Seiwadai Forest Project

The Seiwadai Forest Project was started in 2017 as part of the Takenaka Biodiversity Acceleration Program designed to embody our Environmental Policy and Biodiversity Action Guidelines. The project is an activity program in which ecosystem and biodiversity preservation models are created and executed on eight hectares of our Training Center in Kawanishi City, Hyogo Prefecture. The purpose is to organize activities including (1) forest maintenance and conservation, (2) hands-on workshop, (3) workshop development and conveying environmental technologies, and (4) collaboration with stakeholders. Through these activities, we will develop human resources that take ownership of biodiversity conservation, which in turn supports natural capital. We will also apply the knowledge gained to architectural works and urban development, and link this to the value we provide to customers.



Hands-on workshop

## Creating a decarbonized society

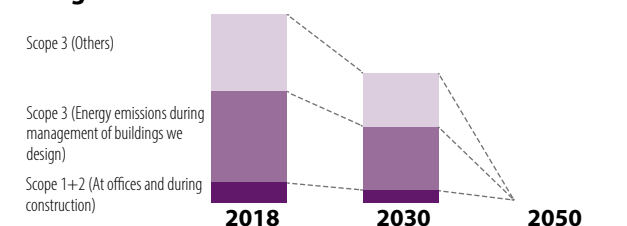
Our goal is a 100 percent reduction of CO<sub>2</sub> emissions from all of our business activities with targets set as follows.

### CO<sub>2</sub> emissions reduction target

Reducing CO<sub>2</sub> emissions for Scopes 1 - 3

**-35% by 2030**  
**-100% by 2050**

### Image of CO<sub>2</sub> emissions reductions



Target value Benchmark year: 2018

Item	2030 target	2050 target
Office (Scope 1+2)	-30%	-100%
Construction site (Scope 1+2)	-30%	-100%
During use of buildings we design	-40%	-100%
Scope 1-3 total	-35%	-100%

\* The target for offices represents the target for Takenaka Corporation and its entire group. The other is the target for Takenaka Corporation alone.

### ● Initiatives to achieve the targets

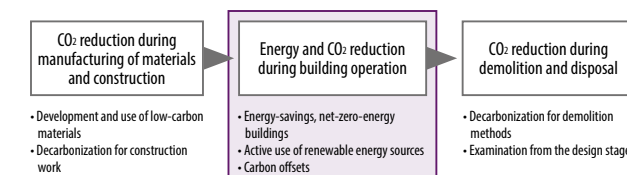
#### 1. CO<sub>2</sub> reductions for Takenaka Corporation (offices and construction sites)

To make solid reductions in CO<sub>2</sub> emissions from the energy used at our company (Scope 1+2), we are introducing renewable energy in a variety of ways, including the introduction of CO<sub>2</sub>-free electricity from biomass-derived power generation as temporary power sources for construction sites. This is in addition to energy-saving activities at our offices and construction sites, and development and application of low-carbon construction technologies.

#### 2. CO<sub>2</sub> reductions in the life cycle of buildings

We are working on decarbonization over the entire life cycle (material manufacturing, construction, operation and demolition) of the buildings that we provide to our customers.

#### Decarbonization for the entire life cycle of buildings



#### ● During manufacturing of materials and construction

We are promoting green procurement of materials with lower CO<sub>2</sub> emissions during manufacturing. Especially for cement, which produces a large amount of CO<sub>2</sub> at the production stage, we are working on wider use of low-carbon Energy CO<sub>2</sub> Minimum (ECM) cement and concrete developed jointly with other companies. We are also advocating utilization of wood that locks in CO<sub>2</sub> for a long period of time.

#### ● During building operations

We are making efforts to expand net-zero-energy buildings (ZEB) through the introduction of passive designs that incorporate natural ventilation and light, exhaustive energy-saving designs through the application and development of various technologies, and utilization of renewable energy sources. (See Page 39 for examples.)

#### ● During demolition and disposal

We are paying attention to reducing the environmental impact of demolition from the design stage.

We are disclosing progress toward these long-term goals on our website.

\* Verification of CO<sub>2</sub> emissions data by third-party organizations

### Responding to climate change

• We are analyzing business risks and opportunities related to climate change in line with TCFD recommendations, and we are disclosing this data.

[Click here for "CSR initiatives shown in data."](#)

• We are working on setting KPIs to respond to future climate change at the design and construction stages.

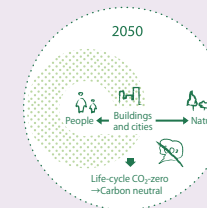
[See pages 37-38: 2020-2022 Action Plan for a Sustainable Society](#)



(Japanese only)

### ● Environmental Concept

In 2010, we announced our Environmental Concept to be achieved by 2050, and we are working to build a carbon-neutral society.



We will enhance human sensitivity and creativity, make the best use of nature, and aspire to realize a carbon-neutral society by developing life-cycle CO<sub>2</sub>-zero buildings.

### ● Environmental Concept Book 2021

This book introduces our initiatives and a roadmap for achieving decarbonization, resource recycling and a society in harmony with nature.



### ● Environment-related pages

[Page 39](#) Developing architecture and services that give consideration to the environment and society

[Page 41](#) Harmonization with the environment

### ● Website

[CSR > Initiatives for a Sustainable Society](#)





# Work Style and Productivity Reform

## – Business process reform with Takenaka Advanced Construction Integration –

Amid the growing shortage of skilled workers in the construction industry, the Construction Industry Act was revised in 2020 to raise interest in working in the construction industry and to secure production capabilities. This revision led to optimization of the construction project schedule. In addition, provisions in the revised Labor Standards Act defining limits to overtime work hours will apply to the construction industry from April 2024.

The new form of building production that we aspire to is made possible by our response to current and future changes in society and to work style reform, as well as to customer needs and the creation of new value. With Takenaka Advanced Construction Integration, we are implementing reforms in building production founded on improved productivity, which is our goal in the future.

### Open BIM for greater productivity

We are promoting construction with digital data based on BIM data as a new style of operation at our construction sites. Then we have adopted open BIM based on IFC, and an open international file format that enables various stakeholders to share and coordinate data without limitations created by specific BIM software. With the latest data available for timely and reliable sharing, not only by customers or design firms but also by various parties involved in the project including business partners, a high level of accuracy and reliability can be achieved in production. Today, BIM modeling and other data are being used with third-party inspections and facility management for greater productivity in the entire process, and with work style reform for all stakeholders.

We will continue to build a more efficient and smooth data environment in all processes of design, construction, and facility operation, and we will work on making things that are attractive to many related parties



Click here for the concept of Takenaka Advanced Construction Integration (Japanese only)

### Initiatives to make things off-site\*

The use of BIM modeling data is evolving initiatives to take processing and assembly off-site.

This modeling has enabled the decision-making process to be fast and reliable, and inspections to be conducted with greater precision and extending into construction methods. This has also led to preliminary quality checks to be conducted among relevant parties in cyberspace prior to the production of precast parts and components. Furthermore, BIM modeling data has led to digital

\* Making things off-site: Prefabrication at factories, outdoors or in stockyards

fabrication being conducted actively in business segments such as steel frame and metal works and MEP works by directly feeding the data into the machines. This has led to greater efficiency and improvements in quality and safety at work sites.

We are planning to foster greater integration with cooperating companies to connect good data to producing better components, improve productivity and create safer and more comfortable work environments.

### Rebuilding initiatives at the Shizuoka and Okayama Regional Branches

In the rebuilding projects at our Shizuoka and Okayama Regional Branches, we implemented business process reforms as a Takenaka Advanced Construction Integration model project. Under this system, we set the per-hour productivity target for both construction managers and construction workers at 25 percent in 2025.

In the Shizuoka project, early development of the BIM model for construction, which involved complex alignments and early order acquisition, helped achieve

productivity improvements of roughly 17 percent for construction workers, despite the complex reinforced concrete structure. In the steel frame construction of the Okayama project, we were able to make an approximately 25 percent improvement in productivity for both construction managers and construction workers with a front-loading effect by digital fabrication for selecting parts and finalizing drawings. (Figures show changes over the 2018 levels.)



Model project (Japanese only)



Shizuoka Regional Branch



Okayama Regional Branch

### Use of the new Advanced Construction Integration system and BIM

#### VOICE

#### Mr. Osamu Ito, responsible for the Shizuoka Regional Branch rebuilding project

The framework drawings were created by taking planes and cross-sections from the BIM model. As it was important that there were no differences between the planes and cross sections, the efficiency of checking the construction drawings was improved. We were also able to share the BIM model with construction technicians, so we were able to have a common understanding of the complex shape of the building. Because of this special shape, I felt that it was a great achievement to have been able to proceed with the complicated framework and finishing without any problems. In the future, I would like to make good use of the work style that was gained through this project for internal networks at other main offices and for reducing overtime hours.



#### Mr. Daichi Minami, responsible for the Okayama Regional Branch rebuilding project

I think the BIM model proved effective for the exterior louver shape design created by connecting pipes of different lengths. We were able to arrive at a common understanding of the connection alignment in the finished design easily with the construction technicians by layering them together. Feedback for structural dimensions, such as creation of 2D drawings from the BIM model, was easy to do. This was my first experience of using BIM, but I was able to feel the improvement when it played a key role at the work site. I also realized that we were able to eliminate holiday work, even for a single-person work site, by making comprehensive decisions on the process up to project start-up.



#### VOICE



# Sustainable Architecture and Urban Creation

## – Promoting MACHInnovation –

Since April 2019, we have been involved in urban creation with three local governments (Unnan City, Ogawa Town and Shiojiri City) through conclusion of community partnership agreements, which were designed to resolve local community issues and contribute to better living for local residents. In Koto City, where our Tokyo Main Office is located, we are tackling a new urban creation project called the East Bay Project.

We envision a society with urban areas that utilize local resources and provide solutions to social issues. Accordingly, we will verify and implement projects while formulating plans to resolve issues and conducting demonstration experiments with local residents. We have named these activities "MACHInnovation," and we will expand them from urban creation to building social systems.



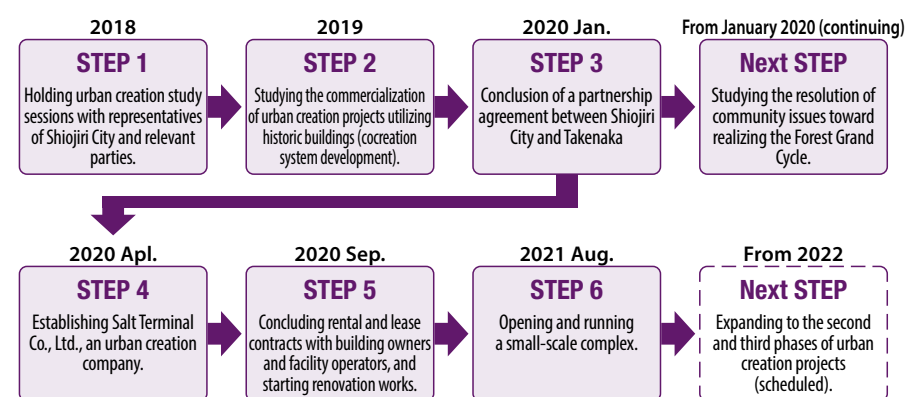
## Urban creation in coordination with Shiojiri City, Nagano Prefecture

In January 2020, we concluded a community partnership agreement with Shiojiri City for an initiative centering on our Forest Grand Cycle, which is aimed at forestry restoration and circular economies through the use of wood materials. In this way, we created a framework aimed at resolving local issues for Shiojiri City and making urban creation projects for our company. One of these community partnership projects concerns the effective use of historic buildings and other cultural resources. As part of the project, we are involved in revitalizing Narai-juku. This is a post town or rest station along the old Kisoji (Kiso trade route), which has retained its beautiful historical townscape. Narai-juku is Shiojiri City's leading historical and cultural resource, and it has been designated an Important Preservation District for Groups of Historic Buildings by the Agency for Cultural Affairs. The town attracts the highest number of visitors along the Kisoji, exceeding 600,000 each year. However, the average amount of money spent by visitors has remained low at 920 yen. For this reason, it is necessary to expand the scope of its charm to various visitor segments and to extend the length of time that visitors spend there. As the inhabitants age, moreover, a shortage of future leaders and an increase in the number of abandoned homes have become serious issues. For this reason, the former Suginomori Brewery and the former Hoihoi Inn, which have served as symbols of the town, as well as several other traditional homes and buildings, were utilized and converted into a small-scale, high value-added complex offering lodging and restaurant services to visitors in order to promote the charm of the town and restore abandoned homes. A work scheme in which staff members live and work in the complex has been adopted in the project with the aim of increasing the number of future leaders working in the town. As part of the Forest Grand Cycle program, local woodchips were used for biomass boilers to provide heating for bathrooms and living space with natural energy. We expect the first phase of the project to enhance the attractiveness of the town, leading to implementation of subsequent phases and generation of a new circular economy in the community.



Guestroom "Hyakugo" at Byaku Narai, renovated inner room of the former Suginomori Brewery

## Partnership activities with Shiojiri City, and timeline and future development with the Narai area



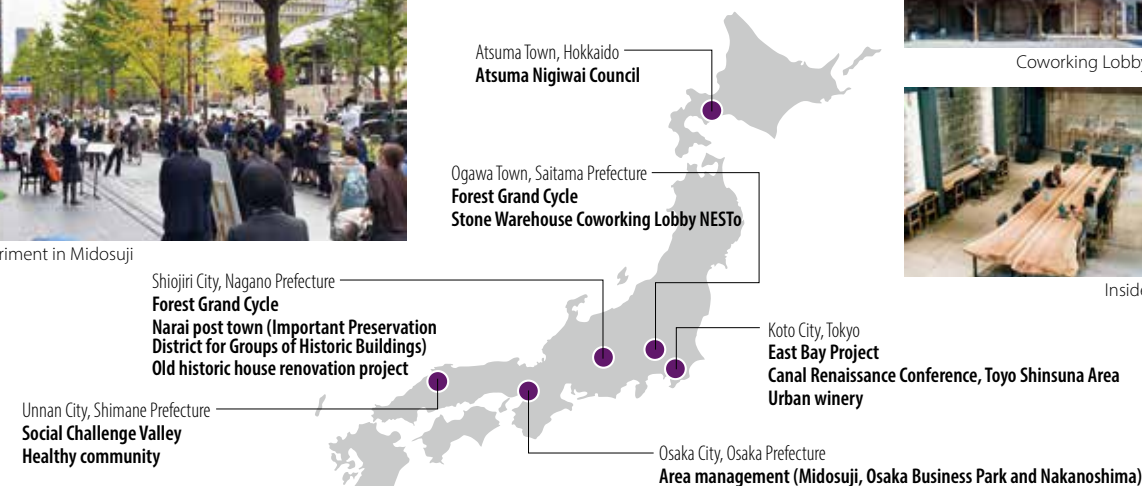
View of Narai-juku on the Nakasendo (Edo-period Edo-Kyoto Route)

## Other MACHInnovation activities

In April 2019, we started activities based on a community partnership agreement with Yamaha Motor Co., Ltd., and the NPO ETIC. Our employees have been dispatched to Unnan City, Shimane Prefecture, to work in the secretariat office of Corporation Challenges, which is coordinated by various companies. The activities have now spread nationwide, including to Atsuma Town, Hokkaido. Other urban creation activities are underway with the participation of various area management organizations represented by the Midosuji Urban Creation Network in Osaka. In response to the recognition earned by these activities, cocreation has started in various parts of Japan. In the future, we will utilize the knowledge and experience gained through these regional activities to promote MACHInnovation as an integrated engineering firm for urban creation that can resolve social issues.



Social experiment in Midosuji



## Renovation of stone warehouse in Ogawa Town

In Ogawa Town, Saitama Prefecture, a 100-year-old stone warehouse had been used for a range of activities organized by local volunteers. Concluding a community partnership agreement with the town in November 2019, public funding was used to embark on renovation of the warehouse together with the NPO Akarie and on modification to the Co-Working Lobby NESTo, which served as both a lobby function and as a coworking space. With the creation of a function that has been in increasing demand among a growing number of new residents in recent years and with changes in work styles accompanying COVID-19, it is operated as a venue for exchange during everyday life and work to promote growth in the population and to bring new residents to the area.



Coworking Lobby NESTo



Inside NESTo

## East Bay Project

We are currently engaged in developing the bay and canal area of Koto City, which is the waterfront area where our Tokyo Main Office is located. This East Bay Project, a future urban creation project, is being carried out in cooperation with a variety of stakeholders. It utilizes the area's distinctive waterfront, which consists of water gates, canals and rivers, to enhance the value of the land area through effective use of the waterfront. The area has also been designated as a Canal Renaissance Promotion Area by the Tokyo Metropolitan Government's Bureau of Ports and Harbors.



East Bay Canal Renaissance (miniwaterfront experiment)

Please refer to the MACHInnovation Concept Book for further details (Japanese only)





# Turning Customer Dreams into Reality

The functions required of buildings today are becoming increasingly sophisticated and diverse. In response, we are taking up the challenge of creating architecture with new value while continuously striving for "sustainable works," "designs born of our comprehensive capabilities" and "attractive renewal."



## Sustainable works

Our advocacy of "sustainable works" refers to "activities aimed at creating architectural spaces that are in harmony with the environment in collaboration with our customers. "We have adopted this approach to architecture in order to pass on a sustainable society to future generations and as a means of helping customers, who desire to contribute to the global environment and society, and to turn customer dreams into reality.

### MIYASHITA PARK

—A floating green island embracing diversity—

Design and construction: Takenaka Corporation  
Project architect: Nikken Sekkei Ltd. (2020)

The redevelopment project for Shibuya City's Miyashita Park, which is known as "Tokyo's first aerial park" as it is equipped with a public parking facility on the ground level, is based on a private-public partnership. By application of a vertical urban park system, the park, which measures roughly 330 meters in length and is elevated roughly 17 meters above ground, is located between the JR Yamanote Line tracks, Meiji-dori Street and the Shibuya River culvert. The three stories below the park are occupied by commercial facilities and a hotel on the Harajuku side. The project has been designed to serve as quality urban infrastructure and a new type of urban park that encourages exchange among a city of diverse people and embraces diverse lifestyles.



#### Effective use of park land through vertical urban park development

This park, which was created under a vertical urban park system, places emphasis on road transit flow and connectivity. Grand staircases are planned to be created at the north and south sides of the park to facilitate the flow of people between the Shibuya side and the Harajuku side. In an experiment to boost connectivity to the lower levels and enhance the park's open-air atmosphere, the central area of the park overlaps with Mitake-dori, creating a symbolic staircase from which visitors are able to see the street below.



#### 330-meter façade generating greenery and a bustling flow of people

In the area that intersects with the pedestrian bridge and Cat Street, the structure is opened for a vertical flow of people, enabling visitors to access the park easily. In addition, the entire structure will be covered with green canopies suspended from above in twin arches to provide shade and to enhance and expand the greenery view from the road for connectivity between roads on the ground level and the park above.



#### New urban park to embrace people's energy and vitality

By placing greenery, pathways and facilities in a geometric pattern, Shibuya City Miyashita Park has become a distinguished presence when viewed from nearby hotels and other high-rise buildings close to Shibuya Station. The location, which was similar to a river island surrounded by urban traffic flows and urban infrastructure, has been converted into a venue that offers an open-air environment surrounded by greenery and gentle breezes, and at the same time embraces the energy and vitality of the visitors.



#### Open-air commercial facilities offering a pleasant park environment

Utilizing the property's unique shape, 70 percent of the pathway lined with commercial facilities will have open air ventilation. In this way, visitors can experience Shibuya's pedestrian culture, as well as its street culture. The architectural structure deliberately has a skeleton design to enhance the lush greenery and presence of tenants while maintaining its structural features and enhancing the variability of commerce in the area.



#### Large-scale bridge connecting two town districts

The two town districts that had been split to the north side and the south side in the former park will have artificial ground in the form of a bridge, built above the road, to create a unified new Miyashita Park. Additionally, adequate passage width will be secured for access to the park from the grand staircase, enhancing the visitor experience of the dynamic large-scale bridge that leads to the aerial park.



#### Symbolic tower reflecting the diversity of Shibuya

The hotel located on the northwest side has its exterior designed to represent Shibuya's unique culture of diversity and distinctive characteristics with random allocation of precast concrete panels in four colors over an exposed concrete skin surface. It was designed to become a new Shibuya landmark through expression of the strength of the construction materials.



# Turning Customer Dreams into Reality



The exterior shows the spatial configuration based on a 3D Voronoi model, creating new relationships between the urban area and the factory, and expressing its technological capabilities.

## “Steel Nest” Sanei Construction Steel Structure Division New Office

Interweaving relationships



Steel frame structure model

### Design born of our comprehensive capabilities

A project owner in the steel frame structure manufacturing industry created a spatial configuration based on a 3D Voronoi model\* to enable a work style that strengthens coordination among business divisions while maintaining self-confidence and pride in its technological capabilities. The complex steel frame structure was created with the latest in digital technology, including computational design, BIM and CAM, combined with the master craftsmanship of the workers.

\*3D Voronoi model: Methodology in which multiple adjacent points located in space are split into the closest regions per point with perpendicular bisectors linearly connecting the points.



The various communication spaces that connect areas provide for interaction among employees, creating chance encounters and dialog.



The workspace interior is expressed with steel used not only for beams and columns but also for the slab (floor).



The employee entrance to the complex steel frame structure is also a space for interaction among coworkers entering the factory.



### Hori Building/GOOD OFFICE Shinbashi

Carrying on a historical heritage and paving the way to the future

We restored Hori office building with apartments (a registered tangible cultural asset built in 1932) as shared rental offices inducing innovation. The sense of an aging space and nostalgia for the structure when it was originally built were combined with modern facilities and furniture. It is an example of restoration making maximum use of a building's value and attractiveness.

KUKAN DESIGN AWARD 2021: Shortlist, Sustainable Space of the Year

Original Design: Toshio Kubo, Masatsugu Kobayashi  
Renovation Design and Renovation Construction: Takenaka Corporation (2021)

### Attractive renewal

Architecture creates vessels to protect life and property that are at the same time social assets. Our concept of "attractive renewal" aims to restore the functions and beauty of older buildings. The goal, moreover, is to increase the value of a property by adding new functions and enhancing its business functionality.

From the viewpoint of SDGs, a transition in value "from scrap and build to housing stock utilization" is beginning to spread widely today. In addition to upgrading the functions and performance of buildings that no longer satisfy contemporary needs, the concept aims to preserve and restore structures with historic significance, and utilize legacies based on building conversions that adapt to the diversification and sophistication of social needs. The Attractive Renewal project is contributing to society by utilizing our unique capabilities in design and technology to respond to various changing needs.



### Restoration of the Former Kunitachi Station

Restoration of Tokyo's oldest wooden railway station

In response to a call from residents of Kunitachi City, the city government restored the aging wooden railway station, which was on the brink of demolition. Structural design at its initial construction was restored from information in more than 4,000 historical documents, achieving 70 percent recycled use of old materials and increasing functions such as seismic reinforcement, air-conditioning, exhibition space lighting, and so on. Unused materials were recycled as furniture, cutting down on construction material losses and making efficient use of wood resources.

Design and construction: Takenaka Corporation (2020)



### Main Building of Daimaru Shinsaibashi Store

Preservation and restoration of the exterior wall that served as a symbol of the original structure

Interior components with outstanding design value were recycled and reused in restoring the retail sales space. As the ESG promotion flagship store for J. Front Retailing, the project focused on creating a low-carbon and recycling society, represented by 100 percent use of renewable energy sources, and reduced CO<sub>2</sub> emissions by roughly 7,000 tons of CO<sub>2</sub> in 2020 compared to the 2015 level when restoration began.

MIPIM Asia Awards 2020: Silver Award  
62nd BCS Prize

Original Design: William Merrell Vories (Phase I in 1922–Phase IV in 1933)  
Construction: Takenaka Corporation (Phase I in 1922–Phase IV in 1933)  
Basic design and supervision: Nikken Sekkei Ltd.  
Design, management and construction: Takenaka Corporation (2019)





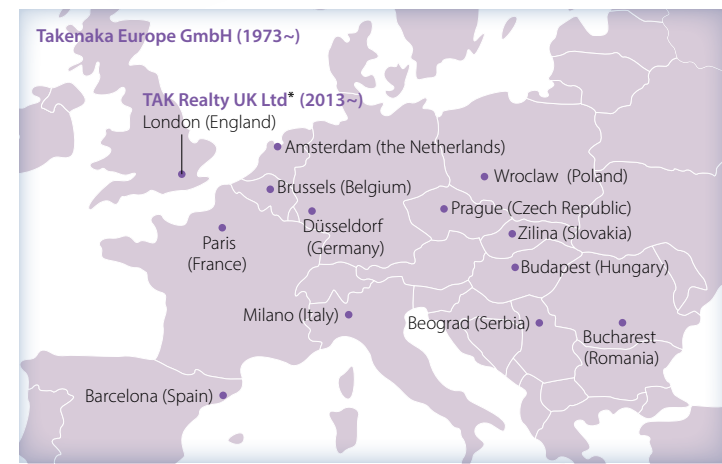
# Supporting the Business Activities of Our Customers -Contributions in each country and region-

Takenaka's international operations began in earnest with our entry into the U.S. market in 1960, and our network now spreads around the world. We have participated in a diverse range of projects in support of our customers, which include Japanese businesses launching overseas operations and public institutions in various countries as well as local business enterprises developing projects across a wide spectrum from airports to high-rise office buildings, hotels, manufacturing plants and museums. Our activities also span a diverse range comprising not only architectural design and construction works but also technical guidance and consultation services as well as materials procurement.

Locations of main overseas business offices

## Europe

Forty-nine years have passed since Takenaka opened a business office in Düsseldorf, Germany in 1973. During that time, Takenaka Europe has undertaken over 1,500 construction projects. Today about 50 employees dispatched from Japan and some 600 local employees working at operating bases in 13 countries collaborate closely to support customers who are considering establishing operations in Europe.



\* Development business

## Europe

## Asia/China

### Asia/China

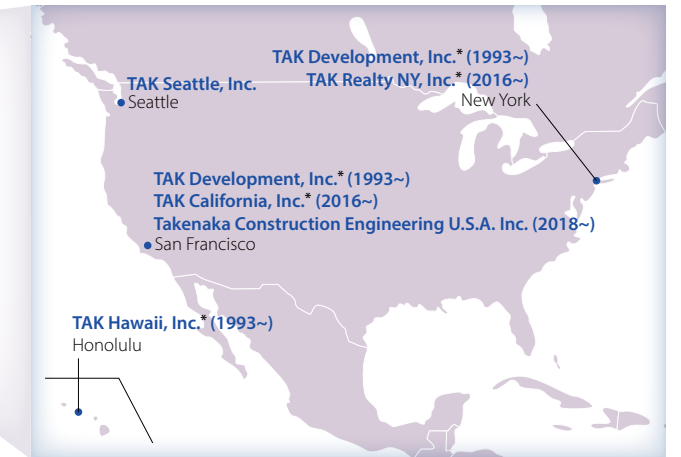
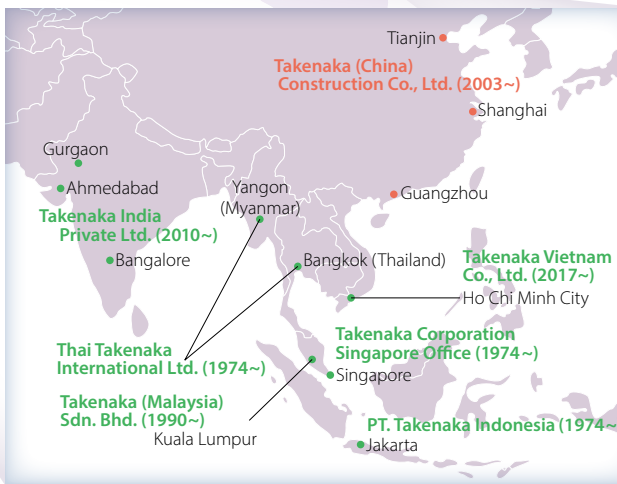
This year marks the 48th year since Takenaka opened offices in Thailand, Singapore and Indonesia. In Malaysia, we celebrated the 30th anniversary of our office opening in 2020. In 2017, we set up an office in Vietnam, and at present are operating in eight Asian countries. Some 70 expat employees have been assigned to China and other countries along with the support of roughly 1,300 local employees. Together they handle construction projects of all sizes and types.

## Branch for Takenaka Europe Opened in the Republic of Serbia

A new branch office of Takenaka Europe GmbH has been set up in the Republic of Serbia. Ever since becoming a European Union candidate in 2012, development of its investment environment is improving steadily, and in recent years it has become more attractive as an investment destination for multinational companies. In order to respond to a variety of construction needs of customers in the European market, we have added Serbia to our existing network of bases in Europe, where our aim is to provide a wide range of integrated solutions from planning, design and construction to maintenance and repairs.



## United States



\* Development business

## United States

Takenaka began laying the foundation for its overseas operations in 1960 after extending its business to the United States where it mainly provided development and consultation services.



Jaguar Land Rover Slovakia new plant (Slovakia, 2018)



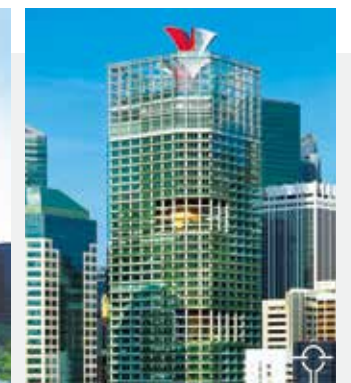
AEON MALL Jakarta Garden City (Indonesia, 2017)



Changi Airport Terminal 4 (Singapore, 2017)



Pacific Century Place Jakarta (Indonesia, 2017)



CapitaGreen (Singapore, 2014)



Daimler Poland Battery Assembly Factory (Poland, 2020)



Makita Manufacturing Romania Phase 4 Extension (Romania, 2019)



Continental Tire Thai New Factory (Thailand, 2018)



IKEA Distribution Centre Port Klang (Malaysia, 2020)



Sanko Gosei Gujarat New Factory (India, 2018)



Wuxi Murata Electronics Second Factory (China, 2020)



National Gallery Singapore (Singapore, 2015)



Hamad International Airport Emiri (Royal) Terminal (Qatar, 2013)



# Creating New Value Through Urban Creation

We have participated in planning, design and construction of numerous urban redevelopment projects, including projects in metropolitan districts in Tokyo, Yokohama, the Nagoya Station area, and central Osaka. We are also engaging in urban redevelopment, and PPP and PFI projects while actively pursuing proprietary development projects and participating in urban creation organizations. Contributions made through our various urban creation activities also include enhancement of competitive capabilities in international arenas, improvement of safety and security, symbiosis with the environment, and solutions for a variety of other problems and needs facing cities today.



## Urban redevelopment projects

### Shibuya PARCO • HULIC building

We worked as an agent to offer advice and perform designated tasks. While managing the project in general, we also designed and constructed the building, which has helped improve urban areas around Shibuya Station, as well as provided support for area management operations. The new PARCO • HULIC building was opened in November 2019. This building incorporates existing slopes and pedestrian zones surrounding it as part of three-dimensional streets going into it. The building also organically accommodates PARCO-specific designer brand shops, a theater, a business incubation facility, modern offices, and a square. The project contributed to invigorating the area as a creation and information hub for fashion, art, theatrical culture and innovation.



Shibuya PARCO • HULIC building  
Design and construction: Takenaka Corporation



## PPP and PFI projects

### Yokohama Minato Mirai International Convention Center (PACIFICO Yokohama North)

Under this project implemented by the City of Yokohama, which aims to be a "global MICE strategic city," a group of companies led by Takenaka was awarded a contract in 2015 to design, build and operate a new MICE facility (as a PFI project) and a hotel (as a private for-profit project). They were completed in spring of 2020. These facilities contribute to urban creation by improving urban amenities for pedestrians as well as enhancing the landscape of this port city.

\* MICE concept (meeting, incentive, conference/convention, exhibition)

MICE Design: Takenaka Corporation (joint venture)  
MICE Construction: Takenaka Corporation (joint venture)  
Hotel Basic concept: Takenaka Corporation



## Domestic development projects

### Kyoto Higashiyama Project (Kyoyamato & Park Hyatt Kyoto)

This was one of our exclusive projects in which we managed the entire process from development, to design and construction, and on through to operation. In October 2019, a luxury hotel with 70 rooms opened in this prime location, where guests could enjoy views of Kyoto City and the pagoda of Hokanji Temple, known as the Tower of Yasaka. By saving and restoring the historical buildings and gardens, which continue to serve as a restaurant for Villa Kyoyamato, we incorporated the uniqueness of Kyoto with a fusion of tradition and new culture.

Design and construction: Takenaka Corporation  
Interior design: Tony Chi + Takenaka Corporation  
Landscape Architect: Yasuo Kitayama



## Yokohama City Hall

The new city hall is expected not only to provide Yokohama City with administrative and legislative functions, but also to provide an atrium for cultural and fine arts events and programs. As the architect and construction contractor responsible from the basic design stage, Takenaka worked on the creation of an open city hall and a new urban landscape that was in the public interest and contributed to the community through workshops and symposiums.

Design and engineering: Takenaka Corporation, Maki and Associates, NTT Facilities, Inc.  
Construction: Takenaka Corporation (joint venture)

## OSAKA UMEDA TWIN TOWERS • SOUTH

(To be completed in 2022)

This is a complex that accommodates offices, conference halls and department stores, located in the busiest shopping district in western Japan. The buildings are integrated with two neighboring blocks redeveloping an existing road running under the new complex. The outer area of the complex provides public facilities, including sidewalks and pedestrian decks. In this project, we have been responsible for the design development, various applications, construction, planning support, and management of surrounding areas.

Basic design: NIHON SEKKEI, INC.  
Design and construction: Takenaka Corporation

## ABENO HARUKAS and Tenshiba

Japan's tallest building, ABENO HARUKAS, and the Tenshiba park renewal project, which include huge grassy spaces, had a great impact on the local area. Takenaka engaged in planning support, design and construction, which contributed to increasing the appeal of the area and attracting more people.



ABENO HARUKAS  
Design and supervision: Takenaka Corporation  
Exterior design: Takenaka Corporation and Pelli Clarke Pelli Architects  
Construction: Takenaka Corporation (joint venture)  
Tenshiba  
Design and construction: Takenaka Corporation

## Umekita Development Project

An urban creation project, which covers a zone area of 24 hectares and total development land area of 1,000,000 square meters for two combined construction phases (Grand Front Osaka and the second Umekita development project), is currently underway in the area north of JR Osaka Station. We have participated in this project as a joint developer in addition to a role in planning, design and construction.

### Grand Front Osaka (Phase 1)

This large-scale urban development project, which was completed in 2013, involved a total floor area of some 570,000 square meters.

Basic design: Nikken Sekkei Ltd., Mitsubishi Jisho Sekkei Inc., NTT Facilities, Inc.  
Construction design: Nikken Sekkei Ltd., Mitsubishi Jisho Sekkei Inc., NTT Facilities, Inc., Takenaka Corporation, Obayashi Corporation  
Construction: Takenaka Corporation (joint venture)

### The Second Development Zone in the Umekita Area

(Advance opening around summer of 2024, and full opening in 2027)

A new urban creation project is being promoted for integrated development, administration and management of an urban park (4.5 hectares), which is located at the center of the project zone and combined with a residential area created by land developers.

Design: (Rental Building, South District) Mitsubishi Jisho Sekkei Inc., Nikken Sekkei Ltd., Takenaka Corporation, Obayashi Corporation (Rental Building, North District) Nikken Sekkei Ltd., Takenaka Corporation  
Construction: Takenaka Corporation (joint venture)

## Ote Center Building

This is our own development project in Otemachi, the most prestigious central business district (CBD) in the heart of Tokyo. Through major improvement works we are providing significant new value and a comfortable business environment.

Design and construction: Takenaka Corporation

## 400/430 California

This building is in the center of the financial district of the City of San Francisco, and is also designated as a historical landmark in the city. We have completed major renovation including a seismic retrofit, and preservation of the historical landmark.

This is a great "value added" example of the synergy effect from our expertise in design, construction and real estate investment.



# Delivering the Best Solutions to Resolve Customer Issues

Our customers require speedy responses that correspond to market changes, advanced building environments, and various safety and security concerns. We are responding to these customer needs with total engineering from the project planning stage to building plan development, design, construction, and aftercare.

## Wooden structures and buildings

Utilizing Moen-Wood, a fire-resistant laminated timber that we developed, and various other wooden building solutions, such as CLT\*, we are promoting medium- to high-rise wooden buildings to contribute to the environmental management of our customers and to building a sustainable society. In 2021, we completed the HULIC & New GINZA 8 fire-resistant 12-story wooden commercial facility, as well as starting our own 20-story hybrid wooden building project, Alta Ligna Tower, aiming for completion in 2025.

\* CLT: Cross-laminated timber



Alta Ligna Tower—high-rise wooden structure model

## Contribution to a circular economy

SDGs and decarbonization are growing as major social issues. We aim to help resolve these issues through a variety of solutions. One such example is Metafarm. This is an energy generator, which utilizes food waste from the same premises. The system that we implemented in Abeno Harukas in Osaka has been smoothly processing three tons of food waste per day since its opening, and a smaller system that handles less waste started operating in 2021.



Eco-friendly shopping center Metafarm



Conceptual diagram of Metafarm installed in a commercial complex

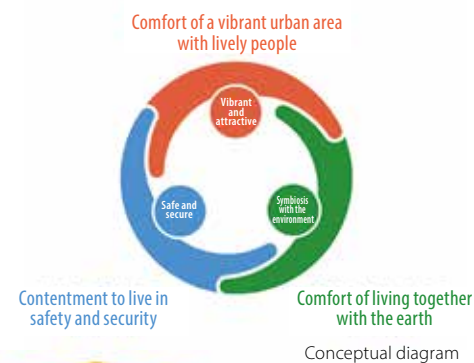
## Realizing smart communities

We are promoting initiatives for smart communities toward the realization of a people-centered sustainable society. Under the concept of "Creating a future together that is just right for humanity and the earth," our aim, in concert with various stakeholders, is for earth friendly urban creation full of vitality where people can live in security. For example, we are optimizing the movement of people and transportation of materials with a logistics simulator that utilizes 3D urban models and a construction MaaS\*. In this way, we are developing technology aimed at the realization of urban areas where people coexist with service robots, and we are proceeding with demonstrations.

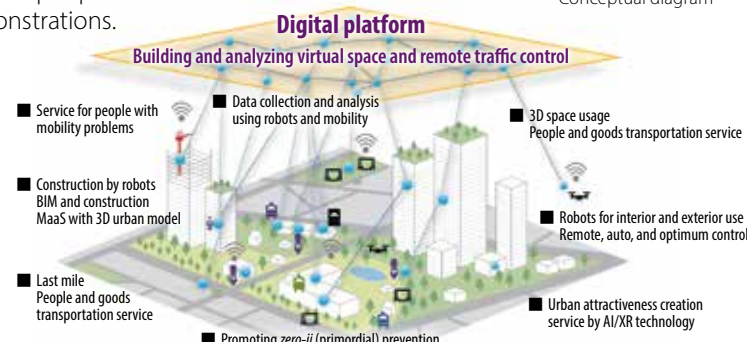
\* MaaS: Mobility as a Service



Participating in the Ministry of Land, Infrastructure, Transport and Tourism's traffic control project using a 3D urban model



Conceptual diagram



Exploring advanced services on digital platforms

## Common Ground Living Lab

Common Ground Living Lab is a joint digital twin testing site. Our cloud-based building data platform, Building Communication System (BCS), is installed in this facility. BCS provides a 3D urban and building space data platform to which additional data items can be linked to support building a real-life environment where people are safely supported by robots. One example of this platform usage is developing autonomous vehicles by reflecting real-life spatial data obtained from cameras and IoT sensors along roads into the digital twin space in real time. By repeating demonstrations of such digital twins, we would like to contribute to the realization of the Osaka/Kansai Expo and smart cities.

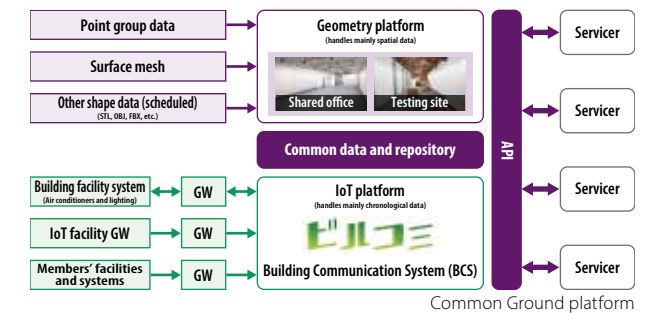
<https://www.cgll.osaka/> (Japanese only)



Clothing volume judgment by image recognition



Drawing by a game engine (robot testing site)



Common Ground platform



Robot testing site

## Optimizing building usage based on people flow data

We are working to create optimum plans for attractions and production facilities that enable the smoothest flow of people by using AI predictions of how people will move about in a completed building. We can create several different plans by changing the width of pathways and the locations of exhibition booths to compare the different flows to choose a plan that enables the least congestion and maximum circulation. Even after building completion, we can compare the predicted flow and the actual flow obtained from IoT sensors and make improvements for optimum building usage by adding guidance displays.



Congestion simulation by changing the width of a pedestrian deck

## BCP and measures against earthquake risks

The increasing frequency of earthquakes in recent years has added to the importance of adopting measures against earthquake risks as a part of BCPs. Seismic isolation technology is effective in maintaining the functions of important facilities such as government buildings, hospitals and research laboratories during earthquakes. With this seismic isolation technology, we can provide a variety of cost-effective solutions that suit our customer's needs. For example, there are the Room Seismic Isolation System, which can be installed per room within a building, and the Integrated Monitoring System, which covers from the daily inspection of seismic isolators to the structural soundness of buildings after an earthquake.



Room Seismic Isolation System

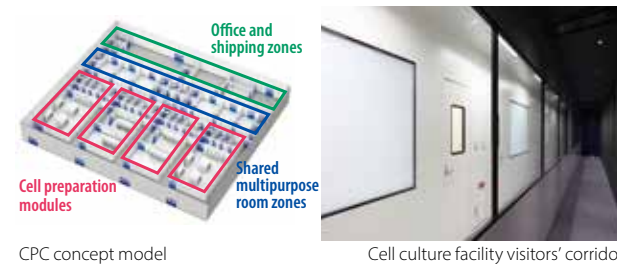


# Delivering the Best Solutions to Resolve Customer Issues

## Engineering support for biomedicine and cell culture facilities

Biopharmaceuticals and regenerative medicines have been making remarkable advances, so high levels of safety, flexibility and short-term construction are required for the research and manufacturing facilities involved. In order to meet these needs, we have been providing solutions such as the CPC Concept Model for cell culture processing facilities that can follow changes in research content and manufacturing methods, and the BiBoT series that enables facilities to be built rapidly. We have also been developing new technologies at the Takenaka Research & Development Institute's Bioclean & Biosafety Laboratory, and we have been proceeding with actual demonstrations.

### Bioclean and biosafety technology



CPC concept model

Cell culture facility visitors' corridor

## Stadiums and arenas evolving with the times

We have been involved in a large number of spectator sports facilities from large-scale stadiums, including the five major domes in Japan, to event-centered arenas. From the concept stage to realization, we are contributing to local revitalization with facilities that have multipurpose use, such as supporting changes in social needs like infectious disease control as well as improvement of profitability. These facilities are also providing solutions for continually evolving communication technologies, and improving the safety of entire surrounding areas through use as disaster prevention centers. We will continue to provide our customers with stadiums and arenas that keep pace with the times.



Paloma Mizuho Stadium, integrated with the adjacent park



Nagasaki Stadium, as a stadium in an urban area

## Automation and labor savings in factory logistics

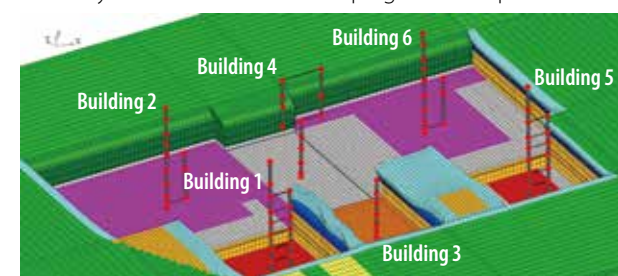
The introduction of automation and labor-saving equipment, and the usage of IoT are progressing in manufacturing and logistics facilities in order to further improve productivity. We have developed our own logistics engineering using IE methods based on objective data, and in addition to providing solutions designed for automation and labor savings, we will meet customer expectations not only in construction of new facilities but also with rebuilding existing facilities by capitalizing on the know-how we have cultivated in projects spanning a variety of industrial fields.



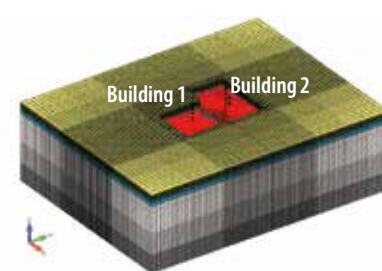
Automated storage/distribution system (right and left)

## Structural safety testing using advanced analytic technology

In the wake of major earthquakes like the 2011 Tohoku Earthquake and Tsunami, society is demanding rigorous safety against such events for vital facilities such as nuclear power plants, government buildings, hospitals and so on. As a result, we are utilizing the industry's top performance supercomputers and analysis software, and we possess high-precision analysis technology that can explain the behavior of a wide range of foundations and multiple buildings at the same time. Through such technology, we are resolving issues for many customers as well as helping to obtain permits.



Coupled analysis of ground and multiple buildings ①



Coupled analysis of ground and multiple buildings ②

## Initiatives toward an era of the "new normal"

Assembling our expertise from a wide range of fields, we work together with our customers to create spaces suitable for diverse lifestyle transformations, which the new normal era requires.

### Creating new spaces for working

After experiencing the COVID-19 pandemic, a variety of work styles such as teleworking became commonplace. We have since held dialogs with various stakeholders under the theme of "spaces for working" to explore the reconstruction of workplaces. We work together with our customers to provide the real office space required in this era of the new normal.



Nine roles required of a real office

Example workplaces in the new normal era

### Five solutions to resolve customer issues

We have categorized the issues that our customers experienced during the COVID-19 pandemic into five areas and formulated corresponding solutions. Then we proposed technological countermeasures based on our experiences, and we also developed new technologies.

#### (1) Air ventilation

We achieve both safety and energy savings by identifying crowded areas with human detection sensors and increasing the amount of ventilation just for these areas.



Local ventilation control system by human detection

#### (2) Changing work styles and usage of facilities

We support consensus building through workshops for new ways of working and how to use facilities in the new normal era.



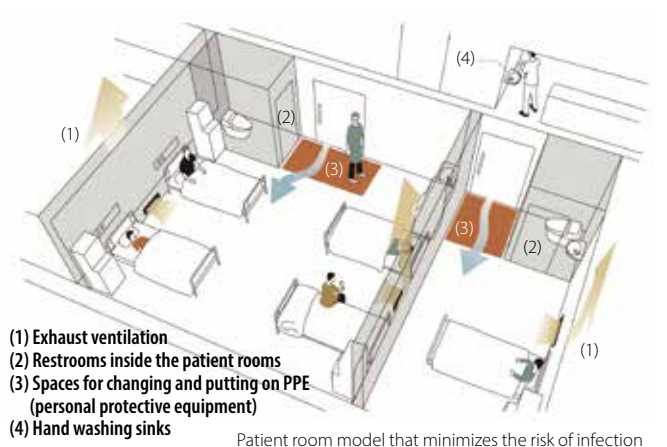
Office activity card

#### (3) Reducing human contacts

We propose new ways of using spaces to reduce human contacts by utilizing human flow prediction and real-time measurement technology.

### Hospital design that allows continuous medical care for COVID-19

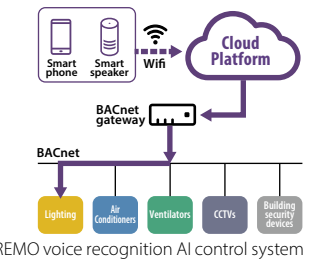
Together with medical personnel, we have been working on measures against COVID-19 infections, and we have organized the knowledge we have gained into "four perspectives for pandemic preparation (control of human movement, air control, maintaining clean conditions, and noncontact/automation)." Based on this, we propose model plans for hospital construction that allow continuation of essential medical services to continue while accepting infected patients during a pandemic. We will continue to work with our customers to create safe and secure hospital buildings where medical staff can work in an environment that minimizes the risk of nosocomial infections.



Patient room model that minimizes the risk of infection

#### (5) Reducing virus exposure

We centralize and remotely control devices inside and outside of facilities without touching things (switches, etc.) by using voice and text recognition AI.



Tweet REMO voice recognition AI control system

#### (4) Avoiding congestion

We install safe student seating in school lecture halls. The algorithms allocate specific seat colors to provide a safe distance between seats and minimize the transmission of communicable diseases.



Color layout for a sufficient distance between seats



# Accelerating Technological Development with Open Innovation

Customer needs are becoming increasingly diverse and sophisticated, and the technology to meet these needs is advancing at a remarkable pace. Not only limited to areas of construction infrastructure, but even in environmental and social areas as well as future and advanced areas, we are actively promoting technological development through open innovation together with our stakeholders, and we are continuing to take on challenges of meeting social expectations.

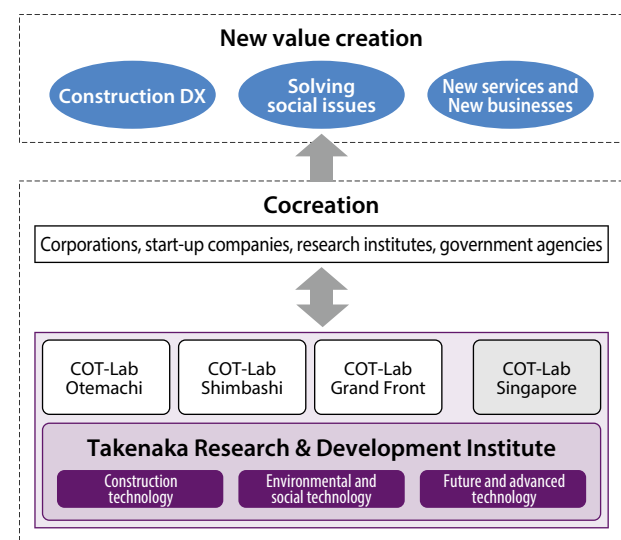


## Promoting open innovation

Improving productivity and reforming work styles are pressing issues in the construction industry. In a rapidly changing society, moreover, a wide variety of issues are arising one after another, such as measures against climate change and adaptations to new lifestyles, for example, with/after COVID-19, as well as pioneering new frontiers, including space. At the same time, technological innovations to resolve these issues, such as DX (digital transformation), AI and robots are accelerating.

In order to follow this trend, we are actively incorporating open innovation to accelerate research and development of advanced technologies. For example, in 2018, we opened an operations base in Silicon Valley in the U.S., where we have strengthened our search activities for cutting-edge technology by collaborating with accelerator Plug & Play and venture capitalist Urban Us. In this way, we are building a system that constantly gathers cutting-edge technical information, not only from Japan but also from all over the world.

At the Takenaka open laboratory COT-Lab, which we opened in Japan and overseas, we are verifying the usefulness for social application of promising technologies and business models obtained in this way. With the Takenaka Research & Development Institute, which has over 60 years of experience in R&D, as the core, we are actively extending our cocreation activities by assembling people from our Tokyo, Osaka and Singapore offices as well as people from a variety of companies and organizations. Through such collaborative research, we are seeking to provide new value that supports safe, secure, and comfortable lives for people.



Open Innovation promotion structure

## Open innovation for construction fields

It is essential to improve work efficiency at construction sites to cope with the aging of construction workers and shortening of working hours, as well as making the construction industry more attractive. Setting construction DX as one of our primary issues, we are working on labor savings in the design and construction processes by using IoT, AI, robots and other advanced technologies.

### Digitalization of construction records

We use the cloud service Holobuilder to record and share the status of construction, which changes daily. This enables us to quickly check progress and form consensus among all concerned parties.



Construction record digitalization (DX)

### Utilization of 3D printers for construction

In collaboration with Kurabo Industries Ltd., we are currently researching how to create structural members, such as columns and beams, using 3D printers. This eliminates use of formwork, which is required for reinforced concrete, thereby contributing to significant improvements in productivity.



Objects created by a 3D printer

### Industrial collaboration in the fields of construction robots and IoT

Technological collaboration, which started with just three companies, has now grown into the Construction RX\* Consortium in which 16 companies participate. At present, we are jointly developing construction robots and IoT apps.

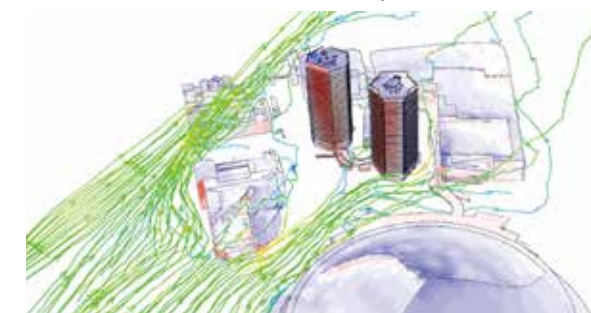
\* RX: Robotics transformation is similar to DX (digital transformation).

## Open innovation in environmental and social areas

With natural disasters intensifying, life styles changing completely by the COVID-19 pandemic and so on, the situation surrounding us has been changing drastically. As an "integrated engineering firm for urban creation," we are actively promoting technological development that contributes to the realization of a sustainable society and safe, secure, and comfortable lives for people.

### Assessing the impact exerted on urban areas by climate change

In 2021, we concluded an agreement with Weathernews Inc. on developing joint climate change countermeasures. By reflecting the weather data provided by Weathernews into our virtual wind tunnel simulator, Kazamidori, we can assess the impact from climate change risks, including storms, flooding, and temperature rises on buildings and across entire urban areas.



Visualization of wind flow during strong winds

### Society where people live alongside robots and mobility

Aiming to build a society where people live alongside robots and mobility—from inside buildings to the middle of the city—we proposed a building information modeling (BIM) based robot platform, expanding collaborations with robot manufacturers.



A society coexisting with robots and mobility

## Open innovation in the future and in areas of advanced technology

The development of frontiers, such as manned lunar exploration, space travel, stays in space and deep-sea exploration, has been attracting attention. Aspiring toward a future where people can live comfortably, even in extreme places such as space and Antarctica, we are diligently working on research and development of advanced technologies.

### Bridging people and urban areas with Cyber City Viewer

We use AI to perform real-time analysis of content posted on SNS, such as popular events and shops, and we reflect this in virtual cities built in digital space. Based on data accumulated in this way, we begin communication with multiple companies involved in urban creation, and this then becomes quite useful for creating bustling urban areas.



Bustling areas shown in the Cyber City Viewer

### Realizing comfortable living in space

We are conducting research and development on the theme of "food and housing" for comfortable living in space. In collaboration with JAXA, Kirin Holdings, Chiba University, and Tokyo University of Science, in 2021, we succeeded in a lettuce cultivation experiment using the world's first bag culture technology in the Japanese experiment module, Kibo, on the International Space Station.



Experiment by the astronaut, Mr. Akihiko Hoshide



# Business Activities of Major Domestic Affiliates

Takenaka and its affiliates are committed to meeting the diverse needs of our customers at every stage of the urban life cycle.

## ■ Takenaka Civil Engineering & Construction Co., Ltd.

### Becoming a vibrant company by making things that are people friendly and environmentally friendly

As the Takenaka Group company responsible for civil engineering works, Takenaka Civil Engineering & Construction conducts its business under the corporate philosophy of "Contribute to society by passing on the best works to future generations." The company is striving to enrich people's lives by developing safe and secure social overhead capital. In line with the recent social environment, moreover, the company is working on national resilience and disaster prevention and mitigation. Along with its efforts toward achieving decarbonization and other SDGs, the company is aiming to further improve its corporate value by extending the life of social overhead capital (SOC) and reshaping productivity through the use of DX.

All employees are united in their desire to realize the company's 2025 Vision, and steady progress is being made toward this goal. Sharing its corporate message, "Bridge between people and the earth," Takenaka Civil Engineering & Construction is taking on challenges in new fields and fulfilling its social responsibilities while evolving into a "vibrant company brimming with appeal."



Hokuriku Expressway Kamiichi Smart Interchange project



Oitagawa Dam construction



Construction in 3-chome Hatsugano, Izumi city, Osaka

## ■ Asahi Corporation

### Contributing to productivity improvement at construction sites with cloud services

Utilizing the abundant experience and technology acquired as a member of the Takenaka Group, Asahi provides various products, construction projects, and services over diverse areas.

One recent example is providing the Locate Plus Series, a location tracking app for construction sites developed by Takenaka Corporation, to the entire construction industry as a cloud service.

This service streamlines work management tasks utilizing the location data of people and objects at a construction site obtained through IoT technology, and it also helps improve site productivity.

When starting the service, Asahi acquired ISMS\* certification (ISO 27001), and it is building a system that customers can use with a sense of security.

\* ISMS: information security management system



Reservation and location control of aerial work platforms

## ■ Tokyo Asahi Build Corporation

### "Providing the best frameworks and services" under the motto of "pride in craftsmanship"

Tokyo Asahi Build originated from a vocational training high school that had been set up for the purpose of securing a skilled in-house labor force for Takenaka Corporation. It would later be established as a company specializing in formwork and rebar construction, and it has since grown into a company that undertakes not only those works but also overall framework construction under an integrated system. The company is meeting customer expectations through comprehensive capabilities, which even include seismic retrofitting.

Inheriting the educational philosophy from its technical high school days, "train technicians and improve their skills," the company offers continuing educational programs, such as visiting classes for technical high schools across Japan, a new employee education program, Build School, and other training programs for young or foreign workers, such as study support for qualification exams.

Aiming to last a hundred years in order to build a sustainable society, Tokyo Asahi Build continues to hold dialogs with its customers and contribute to society through its craftsmanship and emphasis on quality and safety.



Company building and bachelor dormitory built by our own employees.

## ■ Asahi Facilities Inc.

### Maintaining the value and safety of customer buildings

Ever since its establishment in 1969, Asahi Facilities has served its customers by maintaining the value and safety of their assets. As the best possible partner, the company provides one-stop services in building management. These include structural and facility maintenance, security management, cleaning, and so on for office buildings, hospitals, hotels and commercial facilities throughout Japan; property management services designed to increase asset revenues; and insurance agency services mainly in the area of nonlife insurance. A building becomes a quality asset only through the extended life of its functions. As professionals in building management, the company utilizes its technology to provide prompt responses, and it proposes solutions optimized with cutting-edge ICT. In this way, the company is meeting building management needs that are growing in sophistication and diversity to include environmental protection, energy conservation and waste reduction in order to maintain customer buildings as quality assets. Asahi Facilities will continue to provide the best building management and optimal solutions, and through better work, it will protect people's lives and link urban areas to the future.



Inspecting an emergency power generator



Centralized facility monitoring



Inspecting fire extinguishing equipment

## ■ TAK Living Corporation

### Creating comfortable spaces to support people's well-being and daily lives

With the mainstay of its business being joinery, furniture work, and general finishing work, TAK Living is committed to "making the best works," as a specialty company possessing woodworking shops. Under a system that is integrated from design and project support to after-sale service, the company is turning customer dreams into reality in a wide range of fields, including traditional wooden architecture. In recent years, the company has been promptly responding to the needs of the times, even handling interior finishing and complete interior construction. In this way, TAK Living is committed to satisfying customers in both aspects of architectural works and services. Constantly refining sensibilities to stay one step ahead of the times and being oriented toward genuine quality, the company will continue to make broad contributions to society through "reliable craftsmanship."



"Reliable craftsmanship" in its dedicated factory

## ■ TAK Systems Corporation

### Contributing to creation of buildings and cities by providing the best designs and construction information

TAK Systems celebrated its 30th anniversary in 2020. Throughout its history, the company has contributed to creating buildings and cities by providing the best designs and production information. It is supporting IT technology for design and production information in all cycles, from planning and design to actual construction and building maintenance. The company believes that the value of ICT systems will dramatically increase in the future as building information is more highly digitized to be used in BIMs, which Takenaka Corporation is actively employing throughout its design and production stages. TAK Systems is contributing to the creation of architecture and cities by constantly searching for what is the "best design and production information," and resolving issues with a unified vision.



FLATS WOODS KIBA  
Digital Twin -- Information services that possess high added value in accordance with needs



# 2020-2022 Action Plan for a Sustainable Society

To build a sustainable society through architecture and urban creation, our company has outlined goals that are designed to meet the expectations of our stakeholders in the form of "dreams." Such stakeholders include the "global environment," "local communities," "markets (customers, users, etc.)" and "employees and partner companies." To realize these dreams, we identified major objectives (materiality) that must be resolved through our corporate activities (business and nonbusiness) based on our Group CSR Vision and Group Growth Strategy in 2020. We then established targets and KPIs based on

implementation measures in our "2020-2022 Action Plan for a Sustainable Society." As the second year of the three-year plan, we worked to achieve the target values and KPIs begun in 2020. The results for 2021 and the principal initiatives are reported on page 39 and subsequent pages. We plan to engage our stakeholders and experts in discussions over the 2020-2022 Action Plan for a Sustainable Society in order to refine the plan, achieve our targets and work as an integrated engineering firm for urban creation. In this manner, we will contribute to building a sustainable society.



Major objectives groups	Major objectives (materiality)	Scope of impact				Measures	Indicators (KPIs)	Targets	Targets	Results	Targets	Contributed SDGs
		ES	C	E	S			2020	2021	2022		
Sustainable architecture and urban creation	Developing architecture and services that give consideration to the environment (zero energy and decarbonization) and society					Promote wooden structures and buildings.	Number of wooden structures and buildings projects	11	13	9	15	
						Promote zero-energy buildings (ZEBs) and energy management.	Number of ZEB projects/energy management proposals	10/10	15/13	15/31	20/15	
						Promote "wellness" buildings.	Number of wellness construction certifications	5	7	7	9	
	Creating social systems for sustainable urban areas					Define urban creation activity fields and take specific action to resolve social issues.	Number of social system demonstration tests and other activities	9	10	9	10	
						Promote business operations by building social systems.	Number of new business operations	2 or more in 3 years	2 or more in 3 years	4	2 or more in 3 years	
						Create projects that serve as starting points for urban creation.	Number of project proposals	3	5	4	5	
	Improving resilience of buildings and urban areas					Expand and apply disaster countermeasures and support menus.	Expanding the support menu (number of cases in development and application)	Studying menu expansion	Starting 2 pilots from 4 ongoing development projects	Starting 2 pilots from 4 ongoing development projects	4 development projects; 4 application start-ups	
Extending building life spans and improving stock maintenance and utilization					Strengthen research and proposal technologies for asset management and facility operation that will continue to create value.	Number of cases in which promoted component technologies were applied Number of proposals contributing to extending property life	Survey and research Studying proposal materials	3 2	3 2	6 4		
Passing on traditional culture and recreating value					Promote preservation, restoration and use of traditional architecture and historical buildings.	Number of traditional architecture preservation and renewal projects	3/5	3/5	4/6	3/5		
Harmonization with the environment	Reducing CO <sub>2</sub> emissions in our business activities					Promote reduction of CO <sub>2</sub> at work sites and offices (Scopes 1 and 2).	Emissions during construction work (JPY) Office energy consumption reduction rate (year on year)	10.1 CO <sub>2</sub> tons/100 million 1% or more	9.9 CO <sub>2</sub> tons/100 million 1% or more	8.3 CO <sub>2</sub> tons/100 million 0.1% increased	9.7 CO <sub>2</sub> tons/100 million 1% or more	
						Design: Establish guidelines for adapting planning to climate change. Construction: Develop and implement construction technologies in response to climate change.	Degree of progress	Design: Gathering Information Execution: Studying component technologies	Forecast and planning Developing technologies to address rising temperatures	Forecast and planning Applying for developing technologies to address rising temperatures	Establishing guidelines for applicable plans Starting pilots for applicable technology to address rising temperatures	
	Consideration for biodiversity					Promote biodiversity improvement projects.	Number of biodiversity improvement projects	10	12	12	15	
	Recycling resources and reducing waste					Examine resource recycling and waste reduction from the upstream stage of design and procurement. Promote waste recycling at new construction sites.	New construction by-products recycling rate (per volume)	93.0%	93.5%	96.1%	94.0%	
Technical innovation and cocreation	Developing advanced technologies and promoting innovation					Promote robotics, AI and digital data utilization, and develop advanced technologies such as new materials.	Frequency of application and commercialization	10	12	12	15	
	Promoting cocreation activities					Create venues and schemes for exchange by diverse people. Implement total urban creation development activities through area management and community design.	Number of exchange venues and events Number of activities through area management and community design	Managing performance Managing performance	4 or more 5	6 5	4 or more 5	
Work style and productivity reform	Guaranteeing appropriate working conditions, including work hours					Ensure appropriate construction periods and human resources. Reduce work after project start-up by front-loading work.	Site closure achievement rate	Closed for 7 days every 4 weeks: 100%	Closed for 8 days every 4 weeks: 100%	Closed for 8 days every 4 weeks: 25%	Closed for 8 days every 4 weeks: 100%	
	Pursuing construction processes that are sustainable and highly productive					Reduce labor hours by incorporating design with industrialization and highly efficient construction methods. Optimize processes through BIM and digital fabrication, and reduce unnecessary rework.	Value of completed work rate Value of completed work management rate	¥18,100/work-hour ¥116,000/work-hour	¥18,800/work-hour ¥121,000/work-hour	¥17,900/work-hour ¥103,000/work-hour	¥19,600/work-hour ¥126,000/work-hour	
	Realizing healthy and rewarding workplace environments with a diversity of people					Introduce diverse work styles by promoting work-life balance (WLB).	Employee satisfaction	3.60 or higher	3.65 or higher	3.53	3.70 or higher	
						Promote diversity. Implement PDCA management based on healthy management guidelines, etc.	Percentage of women in managerial positions Total evaluation score of survey on health and productivity management	4.5% or more 500 or more	5.0% or more 500 or more	4.8% 575	5.5% or more 500 or more	
	Eradicating discrimination and harassment					Implement harassment environment survey, and education and instruction.	Education rate	100%	100%	100%	100%	
	Securing, developing and retaining human resources					[Employees] Review young employee training in response to environmental changes. [Partner companies] Review recruitment activities and payments in tandem with partner companies. Train skilled workers and develop programs to pass on skills.	New graduate turnover rate (in third year with company) Number of new skilled workers	3.5% or less 720	3.0% or less 720	2.8% 609	3.0% or less 720	
	Providing high quality, and safe construction and services					Build in quality from the design stage including our partner companies.	Number of serious quality problems	0	0	0	0	
Steady production processes	Realizing work sites without accidents or public disasters					Promote safety-oriented planning, and improve knowledge and awareness among a diverse workforce.	Number of significant workplace accidents or public disasters	0	0	3	0	
	Realizing sustainable supply chains					Disseminate and apply CSR procurement guidelines. Continue environmentally conscious green procurement.	Dissemination and application rate Number of major green procurement items/1 project	Awareness dissemination rate during the current year: 100% 10 items or more	Awareness dissemination rate during the current year: 100% 10 items or more	Awareness dissemination rate during the current year: 100% Design: 13.1 items/Work sites: 14.6 items	Awareness dissemination rate during the current year: 100% 10 items or more	
Sound organizational foundation	Building trusted governance Thorough compliance Improving organizational transparency by promoting information disclosure and dialog Establishing risk management Ensuring information security Respecting human rights					Control and manage with CSR Promotion Central Committee and Compliance/Risk Management Committee.	Major compliance incidents	0	0	0	0	

ES: Environment and society C: Customers E: Employees S: Partner companies



# Sustainable Architecture and Urban Creation



In order to resolve social issues through our business activities and continue to grow while earning the trust of society, we have committed ourselves to sustainable architecture and urban creation. Hence, we are creating social systems and improving resilience for sustainable urban areas while giving consideration to local communities and the global environment.

## Developing architecture and services that give consideration to the environment (zero energy and decarbonization) and society

### Promoting wooden structures and buildings

We have been developing technologies for fire-resistant wooden components and mid- to high-rise wooden structures, and we are working to promote the spread of this construction and the utilization of domestic timber. We completed Japan's first hybrid wooden structure apartment, PROUD Kanda Surugadai, a 14-story building completed in February 2021, and HULIC & New GINZA 8, a 12-story commercial facility incorporating a fire-resistant wood structure and components (completed in October 2021). In this way, we are steadily promoting mid- to high-rise wooden structures and making things with wood. Since 2020, we have been holding sessions at FLATS WOODS KIBA, a high-rise wooden apartment complex, under the theme of Forest Grand Cycle, which represents a sustainable cycle of forest resources and local economies. This has enabled people to see and experience our wooden architecture. We have welcomed 660 visitors from 110 organizations, including corporations, and local and central governments.

Related topic: Engineering > Wooden structures and buildings (Page 29)



PROUD Kanda Surugadai

HULIC & New GINZA 8

**KPI** Number of wooden structures and buildings projects

**Result: 9** (Target: 13)

### Promoting zero-energy buildings (ZEBs) and energy management

We are promoting zero-energy buildings (ZEBs) and energy management systems to contribute to building a decarbonized society. In FOREST GATEWAY CHUO, a new campus building for Chuo University, completed in February 2021, we featured a large atrium using the latest environmental simulator and achieved both comfort and energy savings by occupied zone HVAC, natural ventilation, and so on. Energy consumption in the building was reduced by 52 percent of the standard value by effective use of natural energy, including natural ventilation, employment of natural daylight, and solar generation. It was then approved as a ZEB-Ready\*1 building (planned value). We also completed the engineering department building at the Koga Factory of Seiko Electric Co., Ltd. in August 2021. This building achieved net ZEB\*2 (planned value) with reducing energy consumption by 115 percent compared to the standard value, including the capacity of an on-site solar power generator (57 percent reduction over consumption without solar power). The highly efficient energy control features contributing to energy reduction include improvement of exterior insulation using vertical and horizontal louvers and other means, usage of natural ventilation and energy, task/ambient air-conditioning, and separate sensible and latent heat air-conditioning.



FOREST GATEWAY CHUO

**KPI** Number of ZEB projects

**Result: 15** (Target: 15)

**KPI** Number of energy management proposals

**Result: 31** (Target: 13)

\*1 ZEB Ready: A building that provides energy savings of more than 50 percent of the primary energy consumption.

\*2 Net ZEB: A building with net-zero energy consumption by creating energy (e.g., solar power) in addition to achieving energy savings of more than 50 percent of the primary energy consumption.

### Promoting "wellness" buildings

Aiming to create spaces to make people healthier, we are promoting "wellness" buildings. When we rebuilt Fukae Chikuyu Dormitory, which is exclusively for our new employees, we created a shared living space that encourages communication among the employees and incorporated natural features to make their private time more comfortable, and support healthy bodies and minds. The building obtained Silver certification in WELL Building Standard as a first in Japan for an apartment complex. Additionally, in the construction of an area facility management (FM) center in Hokkaido, we introduced activity-based working (ABW) style, in which people freely choose the seat where they will work in order to enable diverse work styles. We also improved the comfort and well-being of employees by adopting designs that can take in natural air and heat appropriately even in a harsh climate utilizing detailed simulations. Owing to these features, this building obtained the highest S rank in the CASBEE Smart Wellness Office certification.



Takenaka Corporation Fukae Chikuyu Dormitory

**KPI** Number of wellness construction certifications (WELL certification, CASBEE-Wellness Office certification)

**Result: 5** (Target: 7)

### Improving resilience of buildings and urban areas

#### Expanding and applying disaster countermeasures and support menus

Constructing disaster-resilient buildings and urban areas is becoming a social demand due to frequent natural disasters, pandemics, predictions of a Nankai Trough great earthquake, and climate change. In response, we have already been developing and disseminating various disaster countermeasures. In 2020, we identified areas for reinforcement, including infection prevention and lifeline retention. In 2021, we then started developing the actual technologies to support these measures. We also actively offer support for customers to improve the

disaster resilience of their buildings and those of local communities utilizing these technologies. As one practical measure, we offered online disaster prevention education programs and tools for emergency drills.

**KPI** Expanding the support menu (number of cases in development and application)

**Result: Starting 2 pilots from 4 ongoing development projects**  
(Target: Starting 2 pilots from 4 ongoing development projects)

### Passing on traditional culture and recreating value

#### Promoting preservation, restoration and use of traditional architecture and historical buildings

Traditional and historical buildings are being called on to play additional social roles as facilities that provide a starting point for conveying Cool Japan. However, some of these buildings have been found to be difficult to maintain. Utilizing design solutions specialized for traditional buildings, which we have developed over time, we offer consultation, design, and construction work to improve the functions of these existing buildings or to regenerate parts of them for new purposes. In 2020, we refurbished the former Rissei Primary School building in Kiyomachi, Kyoto into a hotel and entertainment complex, which became Rissei Garden HULIC Kyoto. The old school building facing the Segawa River was converted into hotel rooms, and the appearance of the additional buildings behind the hotel were designed to match the original building. Rissei Square, formerly the school playground, offers a space for local festivals and sports events, which invigorates the community by encouraging interaction between hotel guests and local residents.

Related topic: Architecture > Attractive renewal (Page 24)



Rissei Garden HULIC Kyoto

**KPI** Number of traditional architecture preservation and renewal projects

**Result: Preservation 4/Projects 6**  
(Target: Preservation 3/Projects 5)



## Harmonization with the Environment



Guided by our Environmental Policy, we are promoting environmental contribution activities based on an ISO-14001-certified environmental management system, which is aimed at building a decarbonized resource recycling society in symbiosis with nature.

### Consideration for biodiversity

#### Promoting biodiversity improvement projects

In our design projects, we utilize the diverse functions of nature to optimize land. We are in the process of increasing our expertise in projects that focus on biodiversity, such as those that encourage the related parties involved to focus on local natural vegetation, the historic land use, creation of ecological networks and activities that integrate the entire process from planning and design to maintenance and management.

##### ● Takenaka Scholarship Foundation student dormitory rebuilding project (Nerima city, Tokyo)

The curved roof kept low to match the surrounding residential area harmonizes with the rain garden, which is designed to store, filter and evaporate rainwater collected on the roof. The outdoor, semioutdoor and interior spaces create an ambiance of comfort for residents. The dormitory is designed to offer open space that can serve as a starting point for an ecological network created through research into local natural vegetation and living creatures. This will produce a richly creative venue where students, who are in an important phase of their lives, can experience the interactions between people and nature with each season.



Takenaka Scholarship Foundation student dormitory rebuilding project (image of exterior design)

**KPI** Number of biodiversity improvement projects

**Result: 12** (Target: 12)

### Recycling resources and reducing waste

#### Examining resource recycling and waste reduction from the upstream stage of design and procurement Promoting waste recycling at new construction sites

In the construction of the new Nagano M-5 Monozukuri plant for Suntory Products Ltd., a new production facility was created amid abundant nature in a mountainous area. Reflecting the customer's corporate group philosophy of pledging to "live with nature" and its approach to thought and action, all aspects of the project implemented sustainable construction with the 3Rs, low carbon (CO2) and symbiosis with nature through reuse of soil and cut timber in concert with the area's existing vegetation. The result led to the company winning the 2021 3Rs Promotion Council President's Prize.

**KPI** New construction by-products recycling rate (per volume)

**Result: 96.1%** (Target 93.5%)



## Work Style and Productivity Reform



In order to maintain a sustainable construction industry, we are pursuing highly productive construction processes. We are also working to secure and train human resources by assuring proper working conditions, and to achieve healthy and rewarding workplace environments with a diversity of people.

### Realizing healthy and rewarding workplace environments with a diversity of people

#### Promoting diversity

We are working to create a work environment that enables everyone to work with enthusiasm, regardless of gender, nationality or age, whether disabled or not. Despite the fact that the construction industry is noted for its high percentage of male employees, more than 20 percent of our new recruits in recent years have been women. We are also working on diversity, particularly to promote empowerment of women and widen the scope of their job functions. We are continuing to promote our Komachi construction work team as well as incessant efforts to support women working at our project sites. In order to assist employees who are simultaneously managing childcare and work, in 2020 we introduced a work-at-home or flextime system for childcare and family care, variable hours for those with outside duties, and an hourly time-off system for all employees. In April 2022, we also introduced a retirement age extension program to 65 for senior employees. In this way, we are making better use of their extensive skills and experience, and fostering a system that allows active involvement by employees of all age groups.



Komachi construction work team at work sites

**KPI** Percentage of women in managerial positions

**Result: 4.8%** (Target 5.0% or more)

#### Introducing diverse work styles by promoting work-life balance (WLB)

We started helping our employees to improve their work-life balance in 2017 through the Work-Life Balance Committee for Radical Productivity Improvements Companywide, which was headed by our President. The committee is working to improve work efficiency and increase job satisfaction while valuing diversity.

One issue requiring urgent action is compliance, including a new regulation on overtime limits with potential penalties to be applied to the construction industry from April 2024, as well as eight-day site closure every four weeks. In 2021, our president released a message aimed at a mode change in awareness of time management, and we sent out a step plan for the upper limit target of overtime until the regulation comes into effect. In addition to promoting Takenaka Advanced Construction Integration and BIM to improve productivity for achieving the target, we are reinforcing the work style reform promotion system at work sites to reduce their burdens. Meanwhile, we are assessing the progress and effects in a WLB dialog held directly between our president and employees, which is then used to develop subsequent measures.

In addition, we are providing online content that improves IT skills for work and stimulates communication under the title Yu-katsu, which has resulted in improved job satisfaction and fulfillment among a broad range of employees.



WLB dialog

**KPI** Employee satisfaction

**Result: 3.53** (Target: 3.65 or higher)



## Steady Production Processes

With our Safety Policy and Quality Policy as a foundation, we work together with our partner companies to promote high-quality craftsmanship that meets customer expectations.



### Providing high quality, and safe construction and services

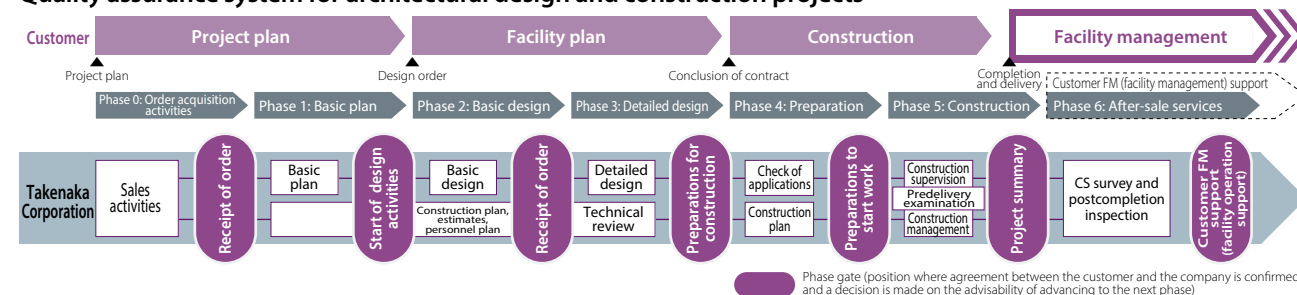
#### Building in quality from the design stage including our partner companies

Having standardized our quality assurance system (ISO9001 certified), which is a workflow that capitalizes on the merits of integrating design-build, our construction department and major partner companies work together to build in quality assurance from the design stage.

**KPI** Number of serious quality problems

**Result: 0** (Target 0)

#### Quality assurance system for architectural design and construction projects



### Realizing work sites without accidents or public disasters

#### Promoting safety-oriented planning, and improving knowledge and awareness among a diverse workforce

We have created VR content that allows workers to learn about workplace accidents on their own, and this is being utilized for training to improve worker knowledge and awareness. The contents included a live action video based on incidents that actually happened. This added realism to education and made it clear and easy to understand even for workers who were young or had little experience in construction work.



Simulating workplace accidents with virtual reality (VR)

**KPI** Number of serious quality problems

**Result: 3** (Target 0)

### Realizing sustainable supply chains

#### Disseminating and applying CSR procurement guidelines

For comprehensive implementation of actions that are based on our Procurement Policy and Action Guidelines at cooperating companies, in 2020, we published our Business Partners Action Guidelines, which set out content on compliance with statutory laws, respect for human rights, and so on. We then created an abridged version in 2021 to raise awareness and strengthen CSR action for the entire supply chain.

**KPI** Promotion of awareness among our business partners listed in the Chikuwakai journal and during Fair Construction Transactions Promotion Month.

**Awareness dissemination rate during the current year: 100%** (Target: 100%)



Business Partners Action Guidelines (abridged version)

## Sound Organizational Foundation



Based on our Corporate Philosophy, we practice Total Quality Management to earn customer satisfaction and society's trust. In doing so, we will fulfill our social responsibility as well as increase our social value as a corporation.

### Controlling and managing with the CSR Promotion Central Committee and Compliance/Risk Management Committee

#### Building trusted governance

Based on our Internal Controls Basic Policy, we established and disseminated our Corporate Philosophy and Code of Conduct for wider awareness. According to these corporate guidelines, we set up the Corporate Ethics Central Committee, chaired by our president, to control corporate risks and compliance issues in general and promote compliance with laws and social norms. With this committee, we integrated our corporate risk information to foster groupwide awareness and provide instructions to the entire group.

#### Establishing risk management

We have developed systematic risk management with our Risk Control Committee, which is under the Corporate Ethics Central Committee, to deal with terrorism, cyberattacks, natural disasters, other accidents and antisocial activities that may threaten civic life or our business activities.

#### Strengthening information security

We have established a basic policy on information security to increase security levels and to protect the information assets of our customers. Especially with the growing threat of cyberattacks in recent years, we have introduced systems for early detection of external attacks and unauthorized entry to keep damage to a minimum. At the same time, we have developed an incident response system called TAKENAKA-SIRT. We organize training and awareness activities for all employees of the Takenaka Group across the world. These activities are also made available to our business partners to strengthen security throughout the supply chain.

#### Examination of business continuity plans (BCP) and measures against COVID-19

We have established a business continuity plan (BCP) on a groupwide scale for preparedness against mega-earthquakes to confirm the safety of employees and their families, and check the damage and restoration status at all workplaces, construction sites and completed buildings that have been delivered to customers. Each year, disaster simulation drills are conducted as part of the initial response training, and our earthquake disaster training is adapted to suit regional characteristics. Training in joint disaster measures involving employees from group companies is organized to verify the effectiveness of the companywide cooperation system. In view of the increasing number of disasters caused by typhoons and rainstorms in various parts of Japan in recent years, we have identified action items required in the event of a storm or flooding, and these are listed in a manual to prepare for such emergencies. At the same time, we have implemented measures to prevent the spread of COVID-19 infection inside our company and to others. We have placed top priority on the lives and safety of our customers, our employees and their families, and other related parties including our partner companies. As part of the effort to assure greater safety and security of our employees, temporary workers, and employees of partner companies working at our construction sites, we are running a workplace vaccination program for interested persons in response to social needs.

#### Thorough compliance

We established a Compliance Committee under the Corporate Ethics Central Committee as a system to promote comprehensive compliance. In addition to checking the response status of individual cases and giving instructions on preventing recurrences, this committee identifies critical risks, establishes action policies, checks the status of programs, and provides instructions on how to make improvements. We have also set up committees at branches to develop policies and programs throughout our group, and we have appointed an officer in charge of promoting these measures. In addition, we have set up multiple contact points for consultation and whistleblowing from within our company, group companies and business partners as well as a window to accept inquiries from the general public. These activities enable us to ensure that our businesses are functioning in an ethical manner. Our Corporate Code of Conduct states explicitly that each and every employee should make efforts to ensure ethical conduct, fair trade, maintenance of transparency in their relations with government and administrative authorities and refuse any involvement in bribery and corruption aimed at any unfair profit. We review our Corporate Code of Conduct every year. We also established a Tax Policy in 2020 to comply with the laws of countries and regions where we operate and international rules, and to fulfill our social responsibility and public mission to pay correct taxes. In training and awareness, we are conducting job classification education programs that include information on amendments to various laws and regulations, along with the release of newsletters reporting on the latest developments, top management messages in the annual Compliance Awareness Month, and workplace meetings held groupwide on measures to prevent any recurrence of work incidents.

#### Promoting respect for human rights

Based on the UN Guiding Principles on Business and Human Rights, and in observing compliance with our Corporate Philosophy and Corporate Code of Conduct, we are promoting respect for human rights in our business activities. At present, we are continuing to work on high-risk issues that have been identified and assessed in the same year.



# Promotion of Social Contribution Activities

Under the slogan, "With the local community," we are cooperating with various local stakeholders to provide support for local educational activities, participating in local exchange events, preserving and communicating architectural culture through corporate foundation activities and other support programs. In these ways, we are contributing to the education of young people and the future of local communities.

## Activities in the construction business

### ● Hands-on architecture workshops for elementary school students

A Takenaka kids' program, *Tatemono Tankentai* (Building Explorers), is being held at new construction sites for facilities such as the civic auditorium in Mito City, Ibaraki Prefecture. This is a hands-on type of workshop for local elementary schools, designed to allow students to see, touch, and experience the distinctive features of the building under construction. Focusing on "Moen-Wood," a fire-resistant laminated timber used to create the Yagura Hiroba space in this building, students learn about the background of why wood is being used and about traditional Japanese wood jointing techniques. We have received a lot of favorable feedback, such as "I want to learn more about wood and this building through experience."



Learning about wood frame systems with a wooden model

### ● Accepting trainees from a job transition support office

We accepted people with developmental disorders from a job transition support office in Kobe City, Hyogo Prefecture (JOT Support Kobe) as trainees at our work sites. With office assistance tasks in particular, we helped them to improve their office processing capabilities as well as their communication skills through interactions with different people. This was also an opportunity for our employees to experience a workplace based on mutual respect, regardless of anyone's disabilities.



Trainees performing tasks at work sites

### Support and coordination with public interest foundations

Through support of public interest foundations, we have been expanding our corporate patronage and scholarship programs, which are connected to the past, present and future. The mainstay of these activities is formed by the trio of the Takenaka Carpentry Tools Museum (passing on traditional technology to present and future generations), Gallery A4 (conveying modern architectural culture to the present generation), and the Takenaka Scholarship Foundation (nurturing future leaders). In 2021, Gallery A4 (A Quad) won the Western Art Promotion Foundation Award for its exhibition of *AINO and ALVAR AALTO: Shared Visions*. It won recognition for spotlighting the architectural and design work of Alvar and Aino Aalto, the Finnish master

of modernist architecture, and his wife who collaborated with him to create works over a span of 25 years. Three exhibitions were held at the gallery and at the Takenaka Carpentry Tools Museum on three occasions up to 2020. These were then upgraded and combined into one exhibition, which was held at the Setagaya Art Museum and Hyogo Prefectural Museum of Art in 2021. Even amid the COVID-19 pandemic, it was able to be organized with the support of the Aalto Family Collection, Alvar Aalto Foundation and the Takenaka Scholarship Foundation.



Exhibition at the Setagaya Art Museum

### ● Takenaka Scholarship Foundation

Established in 1961, the Takenaka Scholarship Foundation aims to foster the development and education of young people under the philosophy of *kanon-hosha* (literally "gratitude for kindness") of its founder and first chairman Touemon Takenaka. In addition to scholarship grants, the foundation provides subsidies for research in architecture and assists with research in the field of disabilities, as well as for creating educational facilities. Since 2012, the foundation has been expanding its scope of activities in support of cultural and artistic advancement by holding various exhibitions.

### ● Takenaka Carpentry Tools Museum

The museum was opened in Nakayamate, Kobe City in 1984 with the purpose of "collection and preservation of carpentry tools, handing down the spirit of the master carpenter to future generations, and following the development of carpentry tools through research and exhibition." In 2014, the museum was moved to a location near Shin-Kobe Station and housed in a structure that has a distinctly Japanese atmosphere and is filled with the scent of wood. It is attracting many visitors, including foreigners who are interested in Japan's traditional culture. The museum is also engaged in educational support and cultural promotion in the form of dispatching speakers to events and accepting trainees from universities.

### ● Gallery A4 (A Quad)

Gallery A4 opened in 2005 on the first floor of Takenaka Corporation's Tokyo Main Office. It is organizing exhibitions under the concept of "architecture and enjoyment" and representing society through architecture. It offers many paths to experience architectural culture, as well as entertaining presentations that direct visitors' attention to urban creation and environmental issues.

### Chochikukyo, an important cultural property in Oyamazaki-cho, Kyoto Prefecture

Chochikukyo was the residential home of the late Koji Fujii who belonged to our design group and later became a professor at Kyoto University. It is presently closed for preservation work on its buildings (main building, pavilion and tearoom), which is scheduled to be completed in June 2022. Landscape work including the front garden is expected to be completed in spring of 2023.



Exterior of the main building (1928)

### ● Social background to the preservation and repair of cultural assets

Amid the fire damage of Paris' Notre Dame Cathedral in April 2019 and Okinawa's Shuri Castle the following month, awareness grew of the threat to cultural assets. In view of this background, we started preservation work on the three Chochikukyo buildings to protect this cultural property from fire. In addition, installation of six automatic water sprinklers, and an underground water storage tank and pump room was completed in the spring of 2022. This was part of a national program to install fire prevention equipment.



Underground water storage tank, pump room and earth retaining work

### ● Academic significance of environmental architecture

Mr. Koji Fujii left Takenaka in 1919 and became a lecturer in the newly created Department of Architecture at Kyoto Imperial University. In 2020, on the 100th anniversary of his becoming a lecturer, the Department of Architecture's centennial magazine featured Chochikukyo as the realization of the ideal form of a Japanese house, and it introduced Mr. Fujii as the creator of the academic journal, *Architectural Research*, and as a person who worked to nurture and mentor younger generations. In spring of this year, moreover, Chochikukyo was featured in a high school home economics textbook as "a residence that truly suits the climate of Japan and the sensibilities of Japanese."



100 years of Kyoto University Architecture

### ● Local partnerships and dissemination of architectural culture

For the preservation and effective use of invaluable private homes, a survey of the actual location has been conducted for the vacant Chochikukyo since 2000 by volunteers from the Design Department of Takenaka's Osaka Main Office. Public openings started on a subscription basis in 2008. Chochikukyo gradually attracted visitors from all across Japan, including a visit by the then Emperor and Empress of Japan in 2013. We acquired the land and buildings on the property in 2016, and it was designated as an

Important Cultural Property of Japan the following year when it received nearly 20,000 visitors. The preservation and public opening activities were organized in cooperation with Chochikukyo Club, a general incorporated association consisting of local residents. These activities were recognized by receipt of the 2019 Grand Mécénat Award. We also established the Oyamazaki-cho Important Cultural Properties Network with the owners and managers of the six important cultural properties located in Oyamazaki-cho. Since then, we have been holding activities with a passion and love for the local community.



Local residents serving as guides for visitors

### ● Continuing communication of architectural culture through exhibitions

In 2018, the *Chochikukyo* Exhibition was held at the Takenaka Carpentry Tools Museum. In 2019, the *OTA Kijiro and FUJII Koji* Exhibition was held at the Museum of Kyoto and Meguro Museum of Art; the *Kyoto Modernism: Goichi Takeda, Koji Fujii and Kunio Maekawa* Exhibition was held in Paris, London and Cologne; the *Loneliness and Connectivity in Japanese Architecture* Exhibition was held in the Emirate of Sharjah, UAE; and the *Modern Architecture in Kyoto* Exhibition was held at the Kyoto City Kyocera Museum of Art.



Chochikukyo Exhibition at the Takenaka Carpentry Tools Museum

### ● Passing on architectural culture to leaders of the next generation

We are organizing Tours of Chochikukyo for university students in architecture courses to give presentations on environmental architecture. We also offer Chochikukyo Pavilion as a venue for the annual commemorative discussions by winners of the Koji Fujii Prize, which was created in 2017 as part of the Kyoto Architecture Awards organized by the Kyoto Society of Architects & Building Engineers. We have also provided opportunities for new employees to learn about important architecture, the ambitions and activities of our predecessors regarding Japanese residential homes, and our initiatives for architectural culture.



Koji Fujii Prize commemorative discussion



## Organizational governance

### —Improving management quality and confirming governance for rapid, accurate decision-making

#### Basic approach to corporate governance

We are working to develop a corporate governance organization and effective management of the system through efforts aimed at improving the quality of our overall corporate activities to satisfy the demands of customers, earn the trust of society as a whole, and raise our social value.

#### Preparation of company organization details and internal control systems

##### ● System of Board of Directors and Corporate Officers

The board of directors meets once a month or more often as needed in its capacity as a supervisory body for decisions concerning corporate management and business administration. The corporate officer system was also adopted in 2010 to accelerate the management decision-making process and enhance business administration and supervisory functions.

##### ● Board of Corporate Auditors

The Board of Corporate Auditors, which consists of four corporate auditors, including two from outside, audits the execution of duties by the directors, including attendance at Board of Directors meetings.

##### ● Corporate Ethics Central Committee

For further compliance with social ethics and regulations, we have created a new Corporate Ethics Central Committee headed by the president. Acting in unison with the already established Compliance Committee and Risk Control Committee, the new committee is promoting a corporate governance system.

##### ● Compliance Committee

Headed by the executive officer in charge of compliance, this committee engages in training and greater awareness of compliance as well as exhaustive guidance for recurrence prevention.

##### ● Risk Control Committee

Headed by the president, this committee responds to natural disasters and other risk events in a quick, prompt and reliable manner. At the same time, it promotes risk control activities during normal times.

##### ● Audit Office

The Audit Office was set up as an internal audit organization to serve as a self-regulatory body for our business management activities to monitor the accuracy and validity of our business operations, financial accounting and the state of the group's assets.

##### ● CSR Promotion Department

The CSR Promotion Department was set up at the Head Office to promote compliance education. Then, we have appointed CSR and compliance promotion officers, CSR compliance leaders, compliance officers and compliance subleaders at all business offices companywide to promote education and awareness.

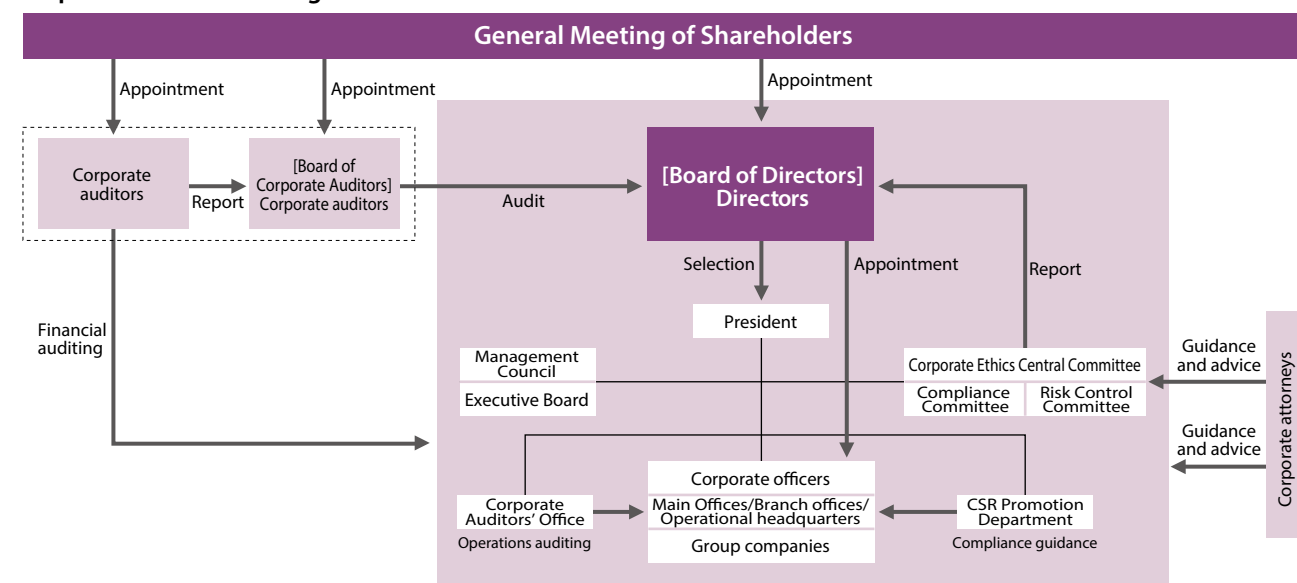
##### ● Corporate auditors

In line with the Companies Act and the Financial Instruments and Exchange Act, the company is audited by an independent auditing firm from a fair and impartial standpoint.

##### ● Corporate attorneys

We have concluded legal counseling service contracts with multiple law firms to receive guidance and advice as needed.

#### Corporate Governance Organization



<b>Company Name</b>	Takenaka Corporation
<b>Head Office</b>	1-13, 4-chome, Hommachi, Chuo-ku, Osaka, Japan
<b>Capital</b>	¥50 billion (as of March 31, 2022)
<b>Construction Licenses</b>	Ministry of Land, Infrastructure and Transport Construction License (Special-1, General-1) No. 2744
<b>Number of Employees</b>	7,757 (Takenaka Group: 13,212) (as of January 1, 2022)
<b>Affiliates</b>	53 subsidiaries, 12 affiliates, and 1 related company
<b>License Holders</b>	Licensed first-class architects.....2,397 Licensed first-class building works execution managers.....2,280 Licensed professional engineers .....189 Ph.D.s.....118 (as of January 1, 2022)

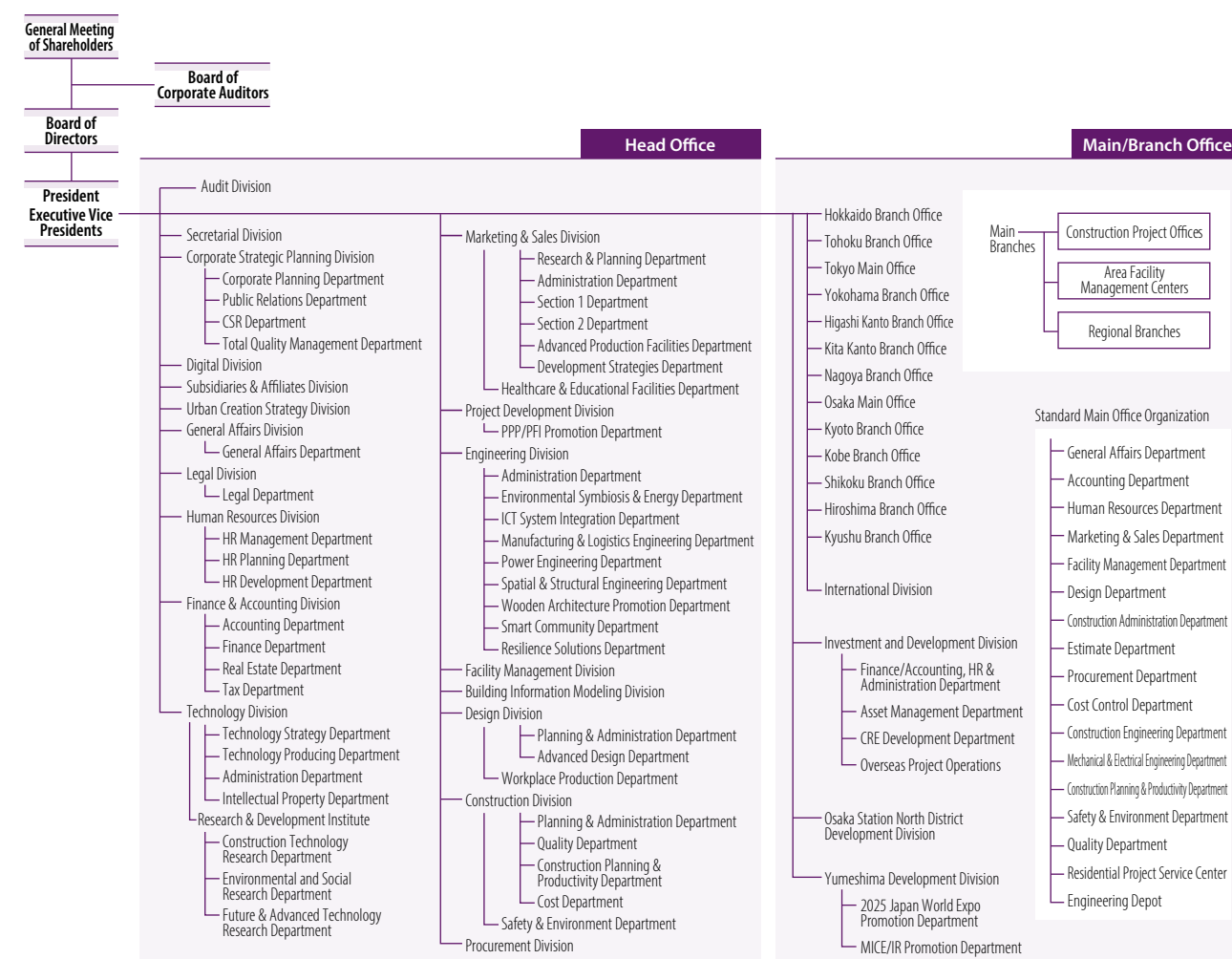
#### Main Businesses

1. Undertaking, design, and supervision of architectural and civil engineering works
2. Studies, research, surveys, planning, evaluation, diagnosis, and other engineering and management services for construction, regional and urban development, ocean development, space development, energy supply, environmental improvements, and other projects
3. Land preparation and housing construction
4. Sales and purchasing, leasing, brokerage, maintenance, management, and appraisal of real estate as well as real estate investment management

#### Main Banks

- MUFG Bank, Ltd.
- Mizuho Bank, Ltd.
- Sumitomo Mitsui Banking Corporation
- Resona Bank, Ltd.
- Mitsubishi UFJ Trust and Banking Corporation
- Sumitomo Mitsui Trust Bank, Ltd.
- The Norinchukin Bank, others

#### Corporate Organization (as of April 1, 2022)





Income Statement and Balance Sheet (Consolidated)

(Millions of yen)

	80th term 2017	81st term 2018	82nd term 2019	83rd term 2020	84th term 2021
Orders received	1,391,442	1,397,818	1,419,121	1,238,508	1,306,428
Revenues	1,295,951	1,353,627	1,352,064	1,237,758	1,260,430
Operating income	107,988	85,063	80,235	39,788	46,367
Operating margin (%)	8.3	6.3	5.9	3.2	3.7
Ordinary income	115,304	93,977	89,502	46,954	57,799
Net income	75,762	63,638	68,918	30,528	39,346
Net assets	652,033	671,189	762,642	751,745	822,449
Total assets	1,450,191	1,468,850	1,519,771	1,442,958	1,581,524

Other Financial Data (Consolidated)

(Millions of yen)

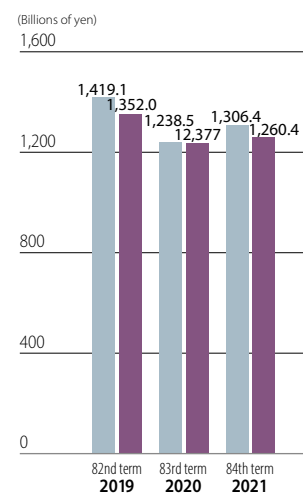
	80th term 2017	81st term 2018	82nd term 2019	83rd term 2020	84th term 2021
Cash flow from operating activities	88,476	107,719	(45,512)	(7,863)	96,522
Cash flow from investing activities	(42,847)	(40,772)	(15,448)	(33,051)	(14,324)
Cash flow from financing activities	(14,235)	(32,662)	(14,509)	23,054	2,200
Research and development expenses (Billions of yen)	7.7	8.4	9.3	9.3	9.5
Capital investment (Billions of yen)	56.5	27.0	41.7	43.2	26.7
Return on equity (ROE) (%)	12.6	9.7	9.7	4.1	5.0

Revenues by Business (Consolidated)

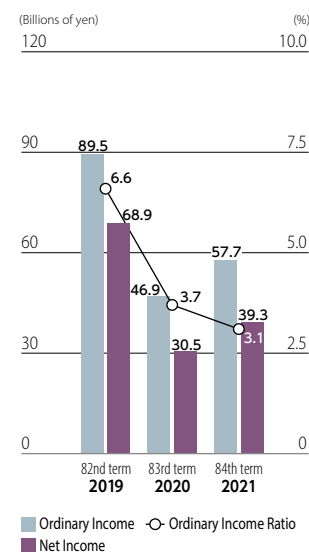
(Millions of yen)

	80th term 2017	81st term 2018	82nd term 2019	83rd term 2020	84th term 2021
Construction business	1,193,475	1,241,868	1,241,923	1,146,184	1,152,439
Development business	49,653	59,045	54,448	35,571	49,254
Others	52,822	52,713	55,692	56,002	58,736

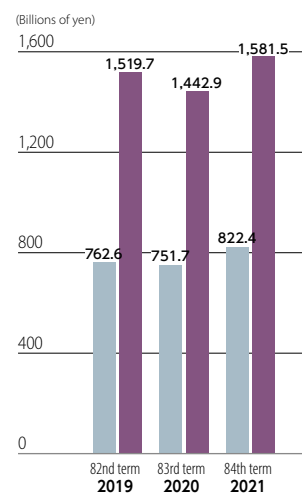
Orders Received/Revenues (Consolidated)



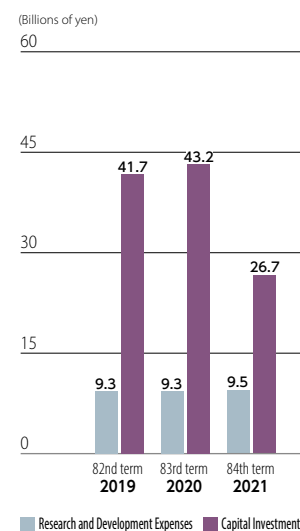
Ordinary Income/Ordinary Income Ratio/Net Income (Consolidated)



Net Assets/Total Assets (Consolidated)



Research and Development Expenses/Capital Investment (Consolidated)



Revenues by Region (Consolidated)

(Millions of yen)

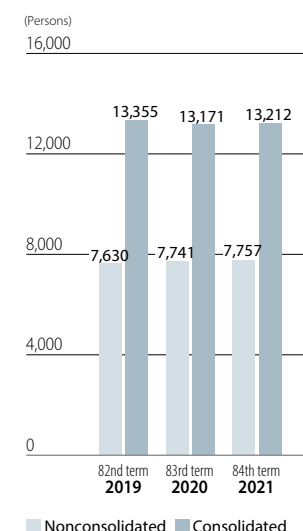
	80th term 2017	81st term 2018	82nd term 2019	83rd term 2020	84th term 2021
Japan	1,128,429	1,180,889	1,198,630	1,117,451	1,114,353
Asia	91,847	87,339	74,534	64,605	79,456
Europe	46,353	52,678	48,315	44,605	45,070
North America	29,320	32,719	30,584	11,095	21,549
Others	—	—	—	—	—

Nonfinancial Data (Nonconsolidated)

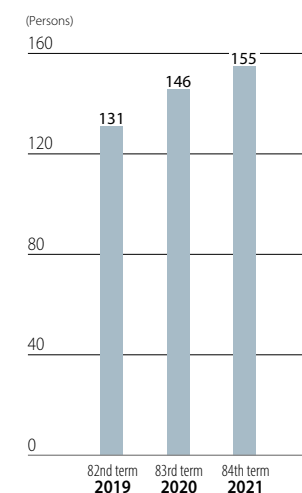
	80th term 2017	81st term 2018	82nd term 2019	83rd term 2020	84th term 2021
Number of employees (Consolidated)	7,400 (12,982)	7,500 (13,042)	7,630 (13,355)	7,741 (13,171)	7,757 (13,212)
Average age of employees	44.0	44.0	44.0	44.0	44.1
Average length of continuous employment (Years)	19.2	19.1	17.1	19.1	18.5
Number of women in managerial positions	100	121	131	146	155
Accident frequency rate (Accidents followed by absence of four days or more from work)*1	0.54	0.56	0.54	0.38	0.55
CO <sub>2</sub> emissions intensity during construction work (t/100 million yen)*2	10.0	10.4	10.3	9.9	8.3
Construction by-products recycling rate (per volume) *3	94.7	91.6	92.0	93.5	94.5
Rate of number of CASBEE S- and A-rank projects (%)*4	77.3	85.7	89.2	91.7	93.8

\*1 Percentage of the number of occupational injuries caused by industrial accidents accompanied by an absence of four days or more from work for every million man hours of labor  
 \*2 Per value of completed work  
 \*3 Covers new construction and expansion, renovation and dismantling. Does not include construction sludge and specially controlled industrial waste.  
 \*4 Total number of S- and A-rank projects among the company's design projects. The number for 2014 was revised.

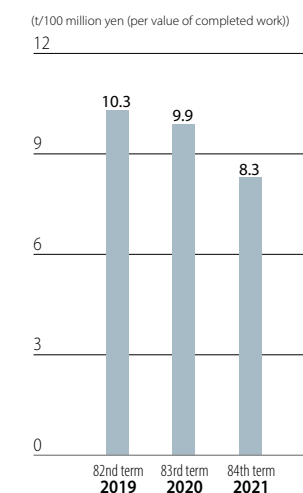
Number of Employees (Nonconsolidated and Consolidated)



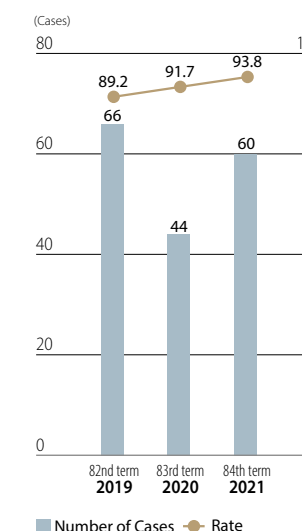
Number of Women in Managerial Positions (Nonconsolidated)



CO<sub>2</sub> Emissions Intensity During Construction Work (Nonconsolidated)



Number of CASBEE S- and A-Rank Projects/Rate (Nonconsolidated)





Dreams into Reality for a Sustainable Future



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