

TAKENAKA Corporate Report 2017



We disclose to our stakeholders the details of the projects and activities we are pursuing as a corporate group with the aim of realizing a sustainable society through our corporate reports and website.

■ Editorial policy

We have compiled this Takenaka Corporate Report 2017 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 cannot 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.



Corporate Website (Japanese/English) www.takenaka.co.jp



- Major Works
- Solutions
- Corporate Information
- CSR Activities

Provides detailed coverage of financial and nonfinancial information across a wide range.

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.

■ Period of coverage

January–December 2016. Some contents concern activities conducted outside this period.

■ Scope of coverage

The contents include the activities of the Takenaka Group centered on the activities of Takenaka Corporation.

■ Reference guidelines

The Ministry of the Environment, Environmental Reporting Guidelines, 2012 and the Japan Standards Association's draft translation, ISO26000 (Guidance on Social Responsibility), 1st edition, November 1, 2010, were employed as references in compiling this report.

■ Date of issue

April 2017 (next issue April 2018). We have also published the report on our website to make it available to larger numbers of readers.

■ Inquiries

Public Relations Department
Tel: 81-3-6810-5140

CONTENTS

About Us

Management Perspectives	3
Company/Group Overview	5
Takenaka Milestones	7
Group CSR Vision	9
Group Growth Strategy	11

Special Feature

1. Keeping Traditional Culture Alive and Maintaining Its Value
2. Renovate Production in the Construction Industry
3. Supporting the Society of Health and Longevity

Business Activities

Architecture Customer Dreams into Reality	21
International Operations Supporting the Global Expansion of our Customers	25
Development Creating New Value through Urban Creation	27
Engineering Delivering the Best Solutions to Help Customers Solve Their Problems	29
Technological Development Forging the Future with Technologies	31
Group Companies Business Activities Conducted by Principal Domestic Takenaka Group Companies	32

Stakeholders

Global Environment Leaving a Beautiful Earth to Future Generations	35
Local Communities Contributing to the Sustained Progress of Local Communities	37
Customers Contributing to the Business Growth of our Customers	39
Employees and Cooperating Companies Growing Together with Employees and Cooperating Companies	41
Management Improvement of Management Quality and Confirmation of Governance for Rapid, Accurate Decision Making	43
Group Companies Activities to Promote CSR at Major Group Companies	45
Targets and KPI CSR Activity Plan for 2017	47
External Perspective	48

Financial and Nonfinancial Highlights — 49



Seeking realization of a sustainable society

Since the founding of our business, we have consistently provided architectural structures that respond to the expectations of our customers based on our management philosophy, “Contribute to society by passing on the best works to future generations.” The role that corporations are called on to play in society changes with the times. Today they are being asked to contribute to solving large numbers of problems confronting our world on a global scale, including such issues as climate change and overpopulation. We wish to maintain a sensitivity to change at all times. To this end, we will continue our ongoing dialog with people everywhere and our diligent efforts to improve our technologies with the aim of providing optimal solutions to the needs of the era. By leveraging the strengths of our whole corporate group, we will contribute to urban creation by building cities and towns where people can live in safety and security, and to achieving a sustainable society with the aim of establishing a path to a better future for the earth.

April 2017
Chairman



“Urban Creation” with prosperity and peace of mind

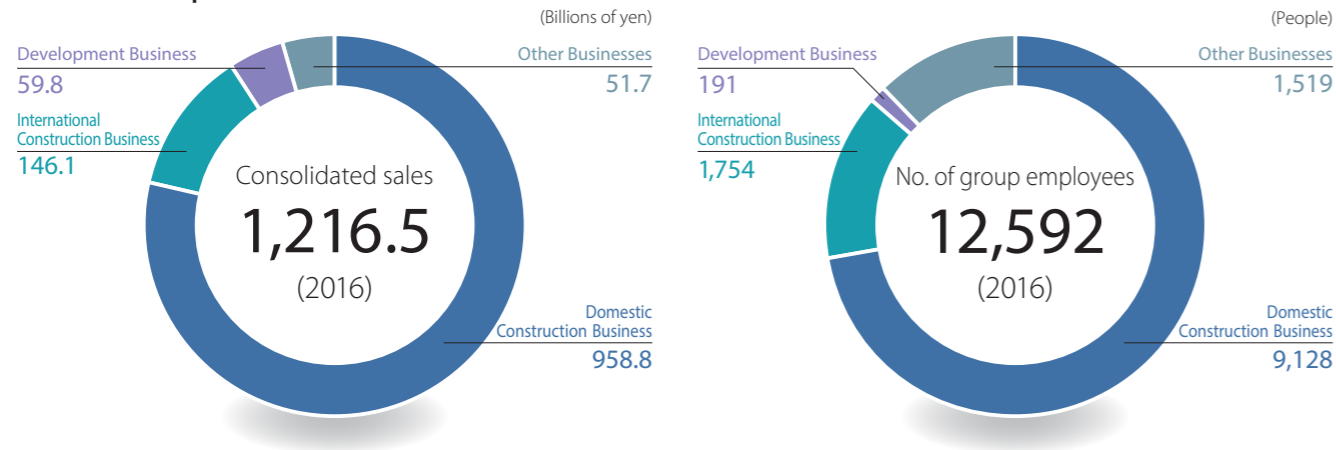
Architectural firms such as ours are required to meet constantly changing challenges. These include preparing against natural disasters, dealing with limits imposed on us by environmental and energy issues, developing more stable and abundant national lands, fostering regional revitalization, and constructing cities and infrastructure around the world. Meanwhile, cities and buildings are expected to fulfill increasingly sophisticated and diversified functions in today’s era of changing lifestyles and corporate activities, where companies are increasingly globalizing their operations and ICT is developing in dramatic ways, as demonstrated by IoT and big data.

As a company engaged in the construction industry, we believe that it is our responsibility to properly meet the needs of this type of modern society, and to continue to satisfy steadfast expectations for safety and security in an honest and reliable manner. Based on this belief, we established the Takenaka Group CSR Vision and the Takenaka Group Message in 2014. With these as a basis, we intend to promote activities that contribute to realizing a sustainable society through “urban creation” with prosperity and peace of mind, thereby continuing to enable people to lead happy, fulfilling lives.

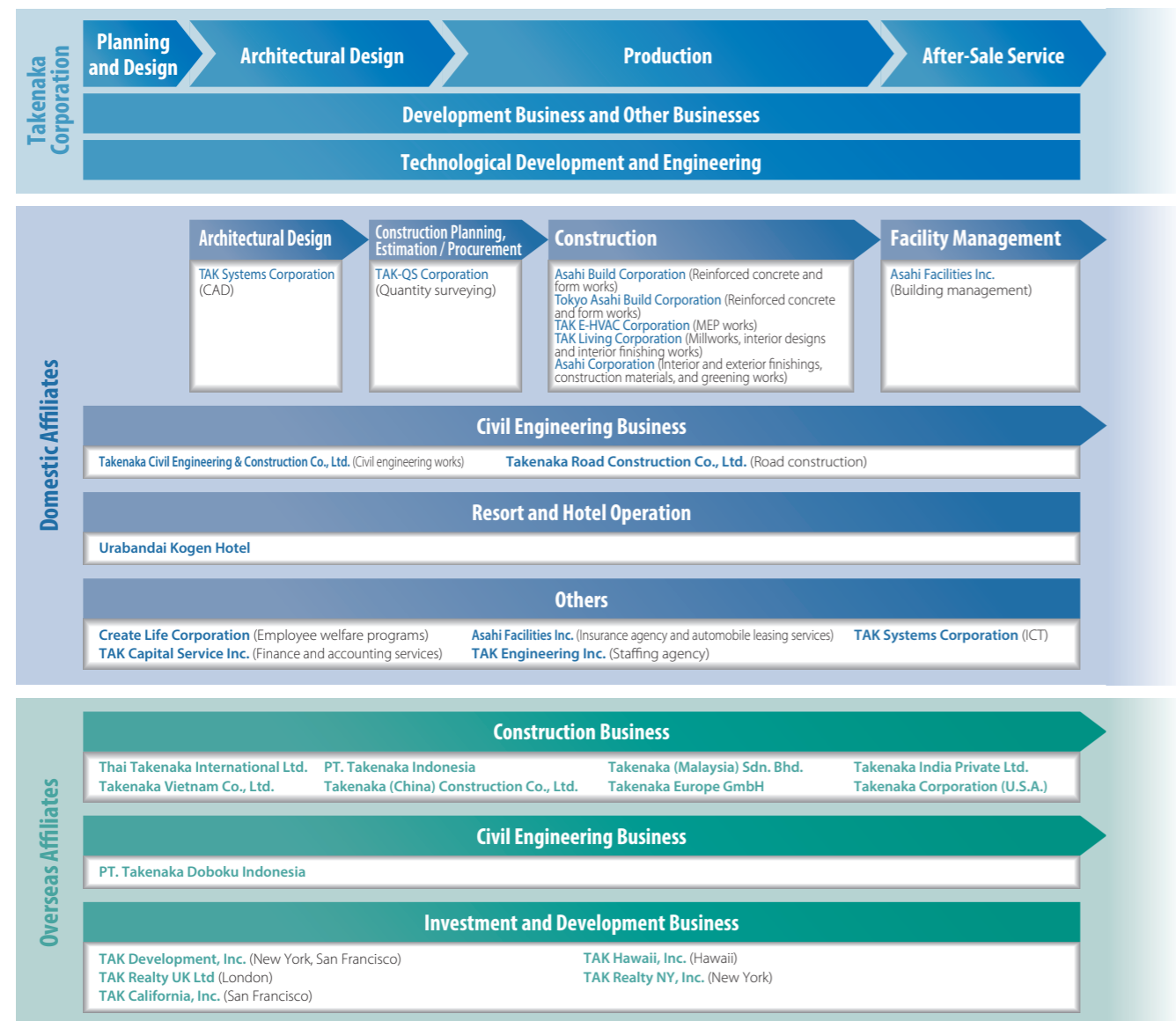
April 2017
President

Working as a group to satisfy customer expectations in every stage of urban creation

Takenaka Group's Business Size



Principle Operations of Main Affiliates



Takenaka Corporation Corporate Data

Company Name	Takenaka Corporation
Head Office	1-13, 4-chome, Hommachi, Chuo-ku, Osaka, Japan
Capital	¥50 billion (as of March 31, 2017)
Construction Licenses	Ministry of Land, Infrastructure and Transport Construction License (Special-26, General-26) No. 2744
Number of employees	7,307 (as of January 1, 2017)
Affiliates	47 subsidiaries, 16 affiliates, and 1 related company
License Holders	Licensed first class architects2,506 Licensed first class building works execution managers.....2,315 Licensed professional engineers166 Ph.D.s.....111 (as of January 1, 2017)

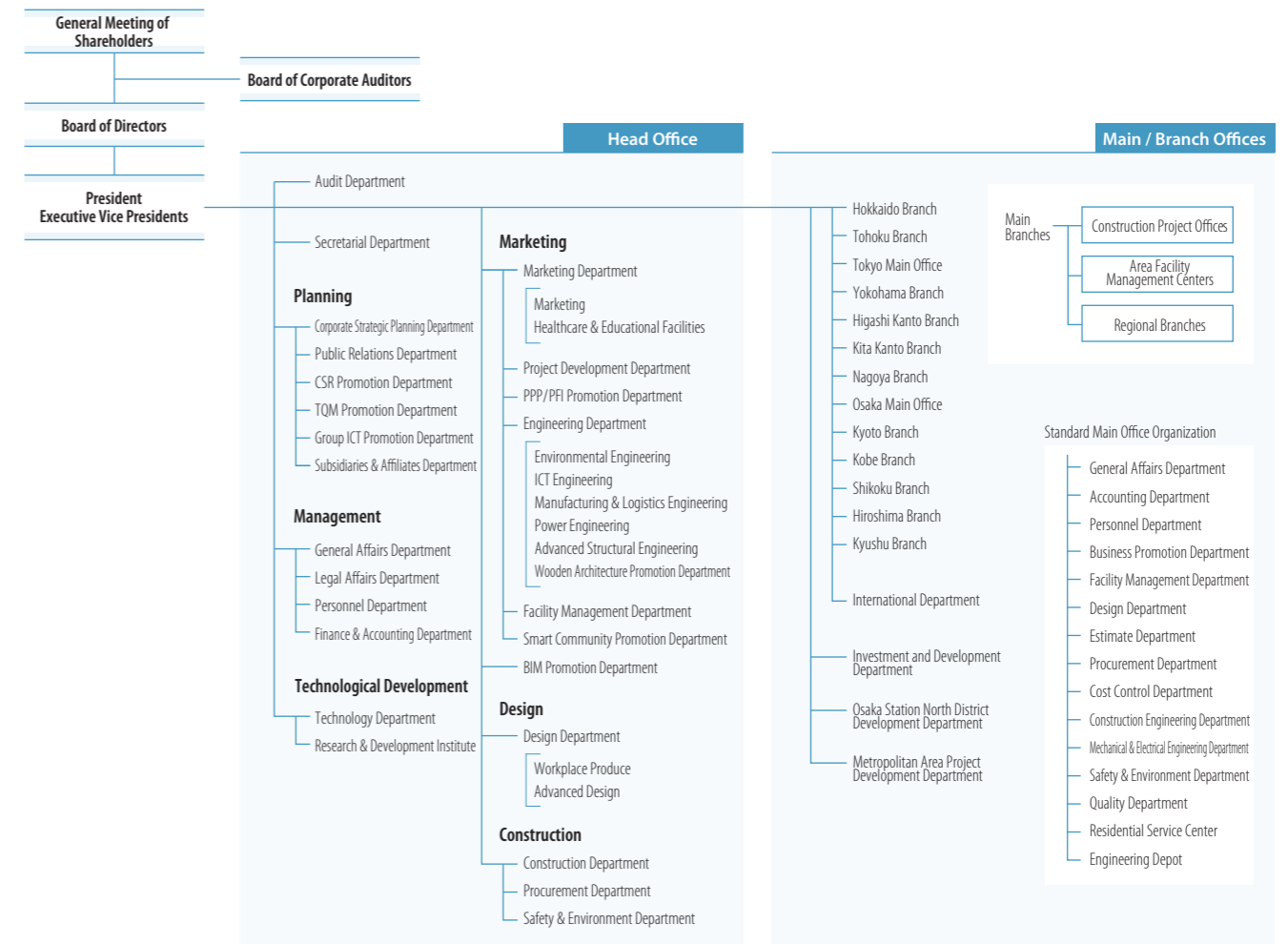
Main Businesses

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 preservation 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

Bank of Tokyo-Mitsubishi UFJ, Ltd.
Sumitomo Mitsui Banking Corporation
Mizuho Bank, Ltd.
Resona Bank, Ltd.
Mitsubishi UFJ Trust and Banking Corporation
Sumitomo Mitsui Trust Bank, Ltd., others

Corporate Organization (as of April 1, 2017)



Carrying on Tradition and Leading the Way to a Prosperous Future

Since its foundation in 1610, Takenaka, as an architectural specialist, has handled many buildings that have become landmarks, thus playing a vital role in the development of our society. Architectural works are vessels to protect life and property, and at the same time they are social assets. They are the culture of their times that is passed on to future generations—Having the pride inherent in such work, we refer to the buildings we are involved with as “works of art.” With a spirit that has been passed down from our founder Tobei-Masataka Takenaka, who was a master builder of shrines and temples, this philosophy is a way of thinking that puts customer dreams first and maintains high-level technology as an architectural specialist. Up until now we have participated in major projects that deeply affect Japanese society, economy and culture, and we have delivered a great number of works, engineering and technological developments to the world. In order to proactively promote the technological development that our times demand, we will continue to deliver the best quality, aim for prosperous “urban creation” worthy of society’s trust, and further develop our consistent design-build system.

1610

Tobei-Masataka Takenaka establishes a business in Nagoya to engage in shrine and temple construction.



1899
14th-generation head of family Touemon Takenaka moves to Kobe and founds the company within the year.

1897
Mitsui Spinning Mill completed in Nagoya.

1884
Mitsui Bank Nagoya branch completed.

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

→ 1920

1916
Ferroconcrete **Osaka Mainichi Shimbun Head Office Building** completed.

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



1909
Unincorporated **Takenaka Construction Company** established with headquarters in Kobe and a branch in Nagoya.

→ 1950

1949
TAK Living Corporation established.

1947
Asahi Build Corporation established.

1943
TAK E-HVAC Corporation established.

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

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

1934
MEIJI SEIMEIKAN (Marunouchi, Tokyo) completed.



1927
Hitotsubashi University Kanematsu Auditorium completed.



→ 1970

1969
Asahi Facilities Inc. established.



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

1961
Takenaka Road Construction Co., Ltd. established.

1960
Takenaka & Associates Inc. established in San Francisco.

1958
333-meter high **Tokyo Tower** completed. **Urabandai Kogen Hotel** opened.

1957
Antarctic Exploration Research Facilities produced. Patent acquired for Takenaka caisson construction method. **Asahi Corporation** established.



→ 2000

1997
Nagoya Dome completed.

1995
Create Life Corporation established.

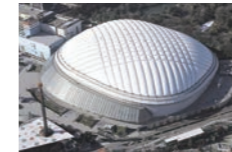


1993
FUKUOKA YAHUOKU! DOME, Japan's first multipurpose stadium with a retractable roof, completed. **PT. Takenaka Doboku Indonesia** established.

1992
Takenaka awarded the Japan Quality Award.



1990
TAK Systems Corporation established. **Takenaka (Malaysia) Sdn. Bhd.** established.



1988
Tokyo Dome, Japan's first all-purpose stadium with an air-supported membrane structure, completed. Chairman Renichi Takenaka awarded the Deming Prize. **TAK Engineering Inc.** established.

1987
Yurakucho Marion completed.



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

1979
Ashiyahama Seaside Town, proposed by the ASTM Group, of which Takenaka is a member, completed.

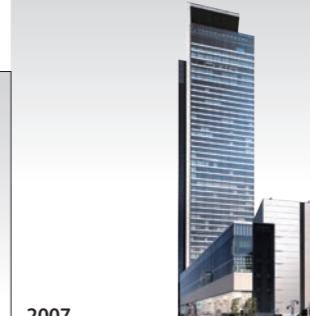


1974
Thai Takenaka International Ltd., PT. Takenaka Indonesia and Takenaka Corporation Singapore Office established.

1973
Takenaka Europe GmbH established.

1972
Tokyo Asahi Build Corporation established.

→ 2007



2007
Chubu region's tallest skyscraper **MIDLAND SQUARE** completed.

Large-scale integrated **Tokyo Midtown** and **Shin-Marunouchi Building** completed in central Tokyo.



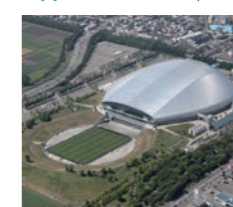
2006
World's tallest superhigh stratified base-isolation condominium **City Tower Nishi-Umeda** completed.



2003
Takenaka (China) Construction Co., Ltd. established. **TAK-QS Corporation** established.

2002
TAK Capital Service Inc. established.

2001
Takenaka Corporation (U.S.A.) established. Oita Sports Park **Oita Bank Dome** and **Sapporo Dome** completed.



→ 2016

2016
Takenaka Chairman Toichi Takenaka is awarded a prize for cultural contribution from the Architectural Institute of Japan in recognition of the management for the Takenaka Carpentry Tools Museum.

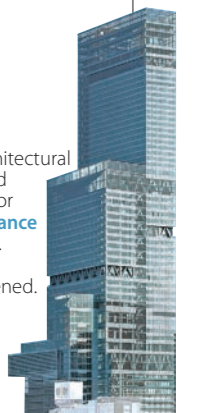


2015
CapitaGreen awarded the CTBUH 2015 Best Tall Building Award for the Asia & Australia Region.

2014
Takenaka awarded Architectural Institute of Japan Award (Architectural Design) for **Meiji Yasuda Life Insurance New Toyocho Building**.

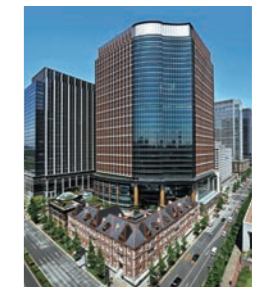
ABENO HARUKAS opened.

2013
Grand Front Osaka completed.



2012
Superhigh-rise **Nakanoshima Festival Tower** completed in Osaka.

2010
Takenaka India Private Ltd. established.



2009
110th anniversary of company's founding. **Mitsubishi Ichigokan** and **Marunouchi Park Building** completed.

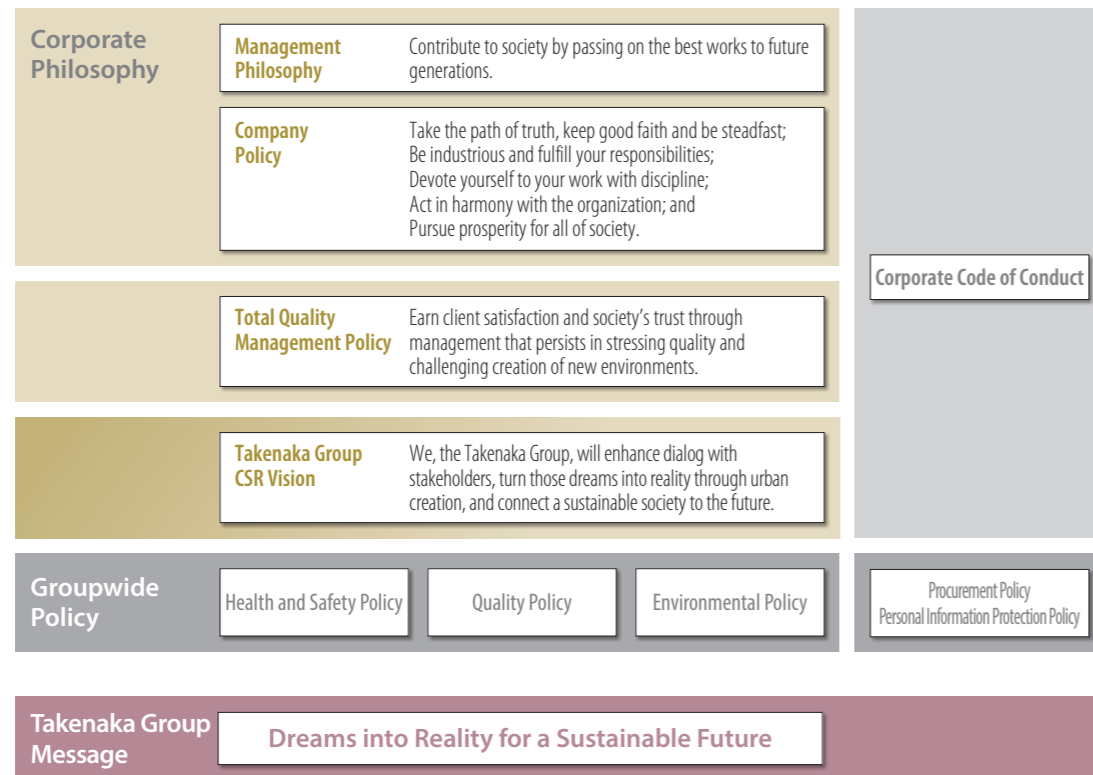
2008
World's first high-rise condominium comprising three interconnected skyscrapers, **Island Tower Sky Club**, completed.

Dreams into Reality for a Sustainable Future

We consider our management philosophy, “Contribute to society by passing on the best works to future generations,” as our corporate mission. To achieve it we follow our company policy and handle every architectural project we undertake with the utmost care. This ensures quality management, which earns customer satisfaction and social trust, and raises the company’s value to society.

We are required to engage in many more activities that share our corporate values with society than ever before as our stakeholders diversify and the functions of architecture change. Moreover, society faces various problems, such as energy and environmental issues, increased disaster risk, 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.

We formulated the Takenaka Group CSR Vision and the Takenaka Group Message, which incorporates this vision in communicating our corporate philosophy based on a concept of quality management, to 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 of us will take our corporate philosophy, the cornerstone of our business, to heart and promote quality management in accordance with the CSR action guidelines presented in our corporate code of conduct in order to realize this vision.

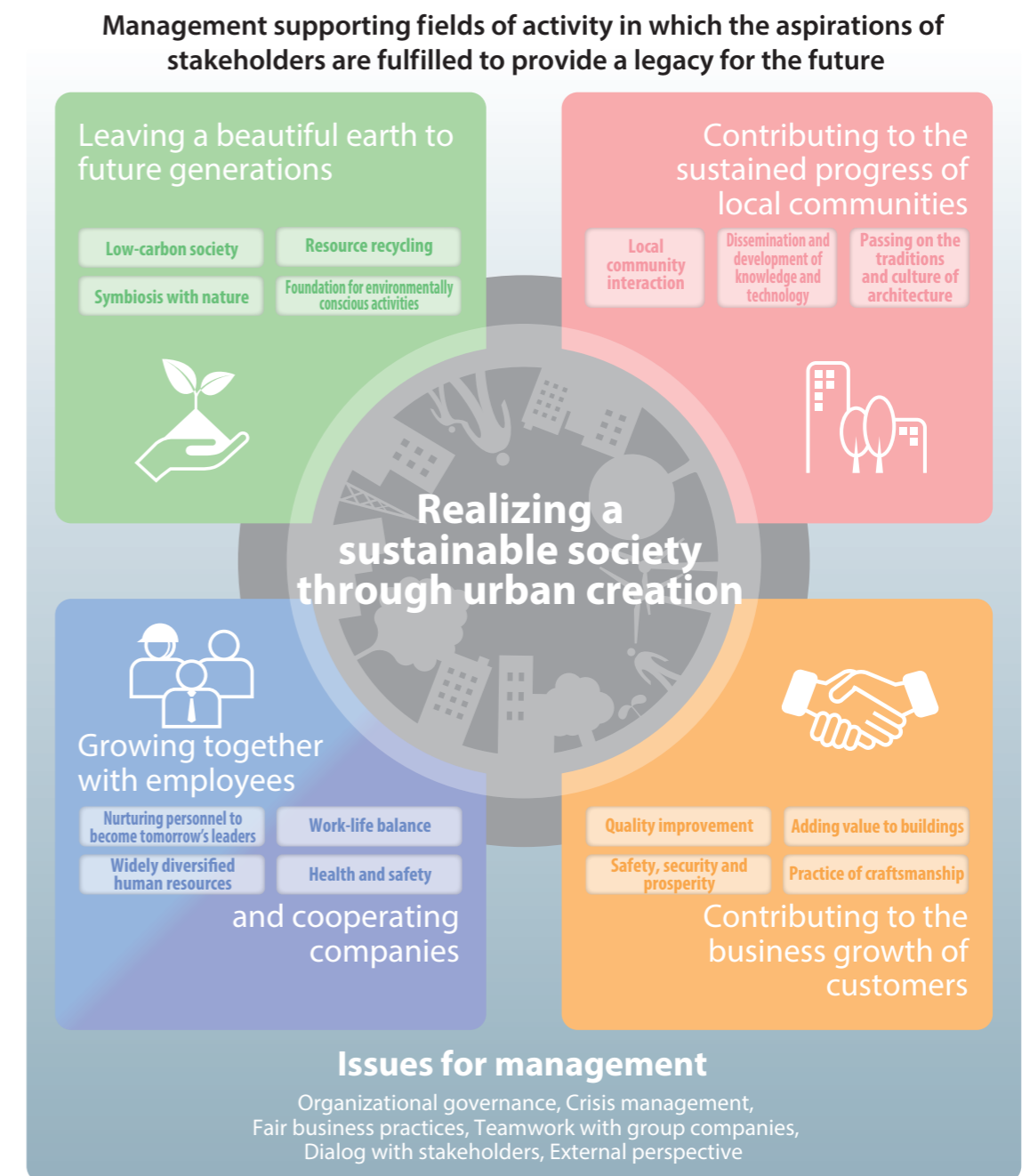


Realizing the combined aspirations of the Takenaka Group CSR Vision and Takenaka Group Message

Besides responding to the expectations of our stakeholders, who include the global environment, local communities, customers, employees and cooperating 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 our 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.

Activities implemented with stakeholders to realize our vision

In order to respond to the aspirations of our stakeholders—who include the global environment, local communities, customers, employees and cooperating companies—we have identified 15 areas of activity in which specific CSR activities are to be promoted. We have, moreover, established management activities to support these efforts in accordance with our corporate code of conduct. Our aim is to contribute to realization of a sustainable society by steadily promoting these activities and resolving challenging social issues.



We seek to provide the best solutions to our customers' business challenges in order to contribute to the realization of a sustainable society through the concerted efforts of our entire group.

Masahiro Miyashita

President

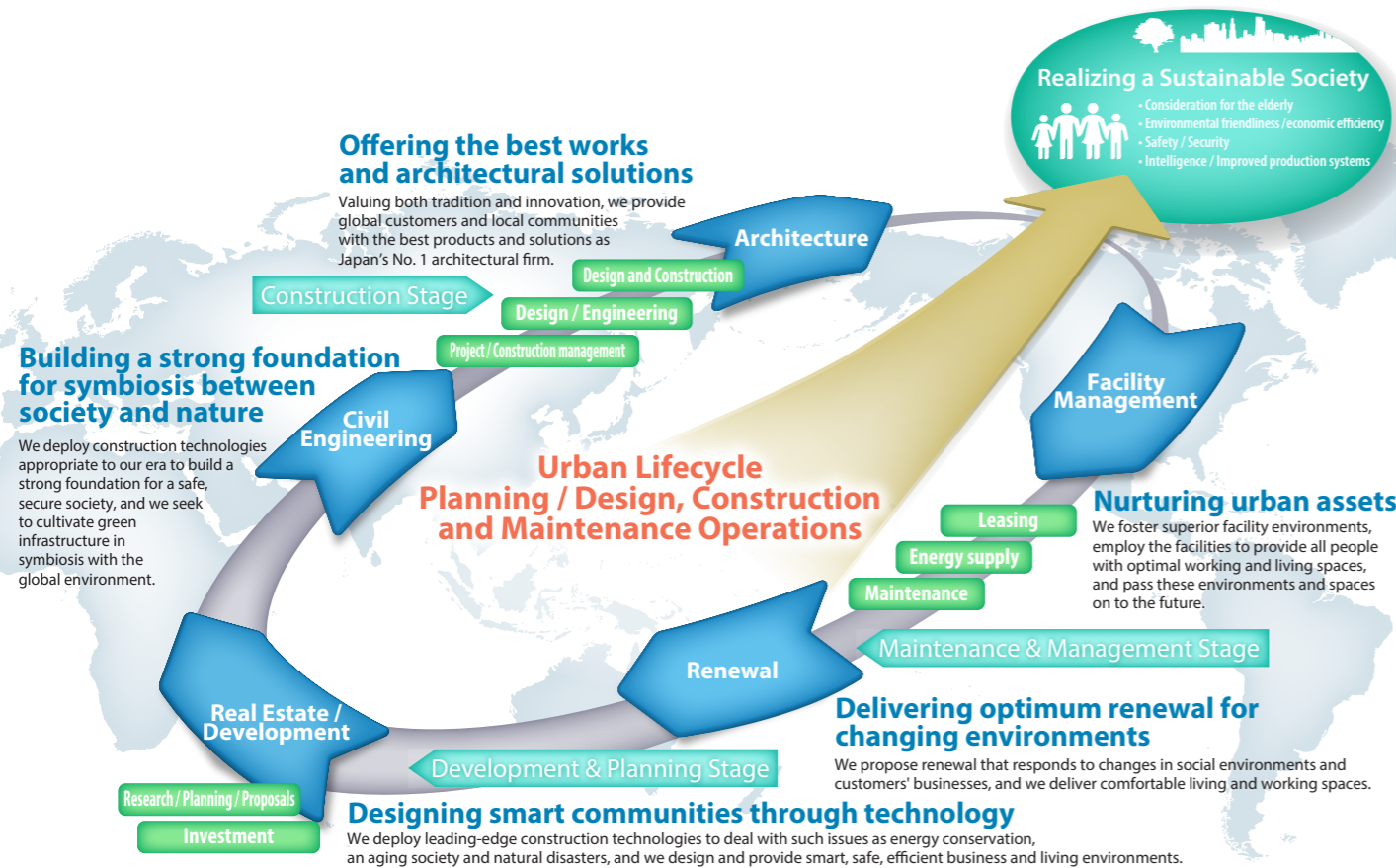


Group growth strategy toward 2025

Participation as a group in urban creation on a global scale

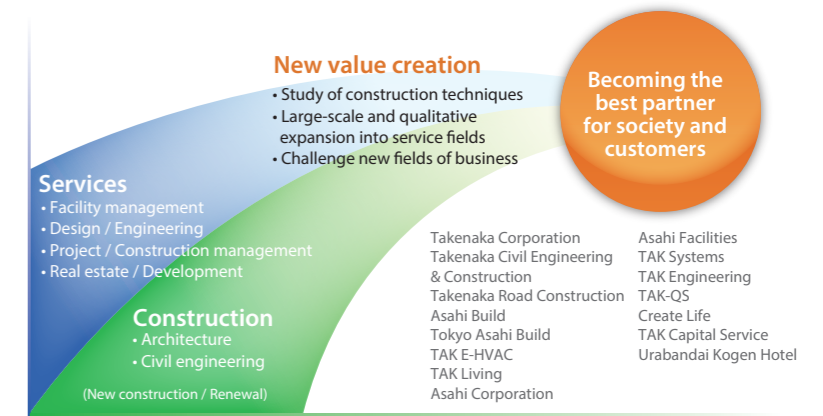
We at the Takenaka Group have been conducting activities by treating groupwide areas of business as "cities." Throughout every stage of urban creation and throughout the life cycle of these "cities" from planning and design to construction, maintenance and operation, we will continue to deepen dialogue with our

stakeholders and work to meet various challenges both in Japan and abroad based on close collaboration among all our group companies. We will do this with an eye to realizing a sustainable society where people can live with peace of mind.



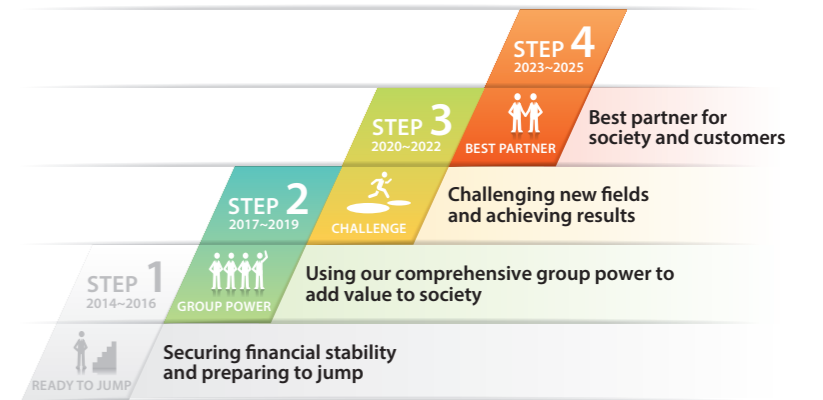
New value creation

Contributing "throughout every stage of urban creation" requires pursuing activities with close collaboration among Takenaka Group companies and stakeholders in the peripheral areas of construction projects. In our rapidly changing society, even better stock and business continuity need to be secured. The expansion of PPP, PFI and other projects, acceleration of measures for renewable energy, and AI, robots and big data are exerting tremendous influence over urban creation, substantially changing the very roles played by buildings and infrastructure. We intend to establish ourselves as the best partner for society and our customers by providing new value through new solutions realized by a fusion of architectural technologies and services.



Steps toward growth

All our group members will work in unison to provide society and our customers with new value through individual efforts by each of us to the quality of our specialized technologies and services on the path to growth. In STEP 1, we sought to promote collaboration among our group companies and improve our revenue base to enhance our production capabilities, thereby building the basis for urban creation. In STEP 2, while promoting groupwide collaboration, we will create new value for urban creation based on the results of STEP 1, with a view to steadily making progress toward 2025.



Review of the activities conducted under the former three-year plan (for 2014 to 2016) and preview of activities to be conducted in 2017 under the new three-year plan (STEP 2)

Under the former three-year plan (STEP 1), at the start of which our business results were very poor, we worked to improve our earning capabilities to ensure stable management and establish a foundation for the further growth of our business.

on challenges in new business fields and examining new work styles for diversity promotion. As a result, we improved our productivity and, thanks also to the improvement of the market environment, were able to boost our business performance far beyond the predefined targets.

consideration of the environment while drastically improving productivity across the group and helping individual employees improve their work-life balance, for which we will implement groupwide measures.

We started STEP 1 in the face of dramatic changes in the business environment caused by tight supply due to the rapid expansion of demand for construction. Under these circumstances, we improved productivity by promoting the use of precast concrete, including using Building Information Modeling (BIM). Also, to contribute to the solution of social issues throughout every stage of urban creation, we began taking

In the new three-year plan (STEP 2), we will clarify the Takenaka Group's vision by showing a clear picture of the kind of sustainable society aimed for in the group's efforts to achieve its growth strategy toward 2025. We will also strive to take the top spot in the architectural industry, valuing both tradition and innovation. To this end, we must work in a sustainable way in

In 2017, which is the first year of STEP 2, we will continue to give first priority to preventing disasters and improving quality in our core construction business. We will thereby solidify our production system to meet the needs of society and customers in appropriate ways. To deliver value to society by leveraging the full capabilities of the Takenaka Group, we will steadily implement our growth strategy by participating in urban creation on a global and groupwide basis.

Desirable sustainable society and vision for 2025

We have decided to incorporate the targets to be achieved by 2019 in the next three-year plan, while formulating the strategies for 2025 based on the sustainable society and corporate vision that we aspire to achieve. For the sustainable society sought to be realized in and after 2025, we will further improve our international competitiveness and the “compact city + network” plan to help halt population decline, create new jobs, and foster local revitalization. The concentration of population in large metropolitan areas will still be continuing

in 2025, however, with metro municipalities having their own international networks and growing populations, while at the same time some regions will be dealing with stagnant local economies, population outflow, fiscal tightness, and challenges to be met for the improvement of social infrastructure. Further, risks such as the threat of natural disasters, political instability, corporate scandals, and isolation from the international community will continue to exist, against which local and macro-level responses will be required. These imply a diversity of Japanese urban

areas in 2025, and indeed the social issues to be solved, social systems to be built, and paths to be followed for the shift to a sustainable society will differ by area. The Takenaka Group will deepen its dialogue with the community and stakeholders in each urban area while taking global perspectives and communicating the direction of urban creation in its “urban creation strategies,” thereby contributing the creation of sustainable urban area.

Integrated engineering firm for urban creation

The Takenaka Group plans to shift to the model of an integrated engineering firm for urban creation that works to build social systems for a sustainable society, with a view to meeting the needs of society by engaging in the construction and real estate business as its core business fields. Based on urban creation strategies, we

will add new solutions to the construction business from the viewpoints of “urban infrastructure,” “economy and culture,” “quality of life (QOL)” and “the future” to create new business models while designing necessary social systems, thereby creating value that we can share with society. We will expand our managerial resources

including human resources, skills and ICT to exert more expertise and technological and managerial capabilities, drive open innovation, and promote the provision of attractive workplaces as well as the establishment of functions and organizational systems with advanced engineering capabilities.

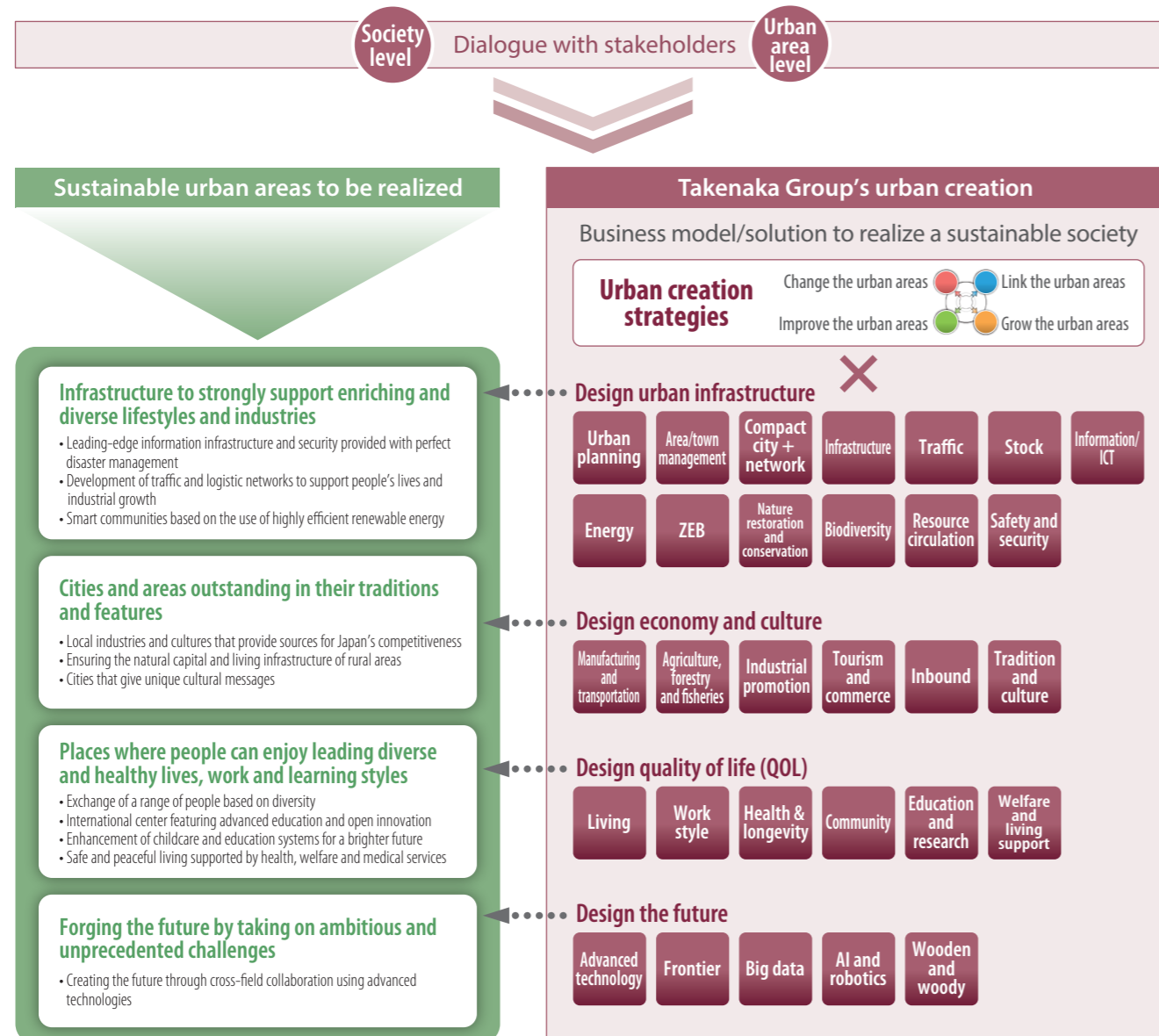
Building functions for urban creation strategies

As an integrated engineering firm for urban creation, we will identify social needs that change over time and issues faced by regions and society as a whole, and propose new architectural value. We will also make a greater number of value creation proposals for the creation of urban areas that provide robust social infrastructure and where local tradition and features are utilized and people enjoy

healthy and diverse lifestyles with high aspirations for the future. In order to transform urban areas facing various specific problems into sustainable communities, we need to formulate a road map on a medium- to long-term basis to change the atmosphere and appearance of each area, improve its infrastructure to enhance the functions available, provide opportunities for innovation to

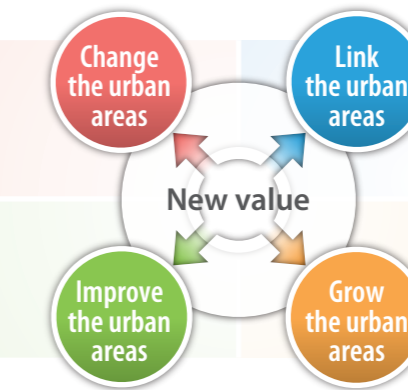
develop the area through so-called “area management” measures, and link the area with other areas through networks built between large cities and other areas. To this end, the Takenaka Group will conduct marketing, survey and analysis activities by using AI and big data and with a focus on social systems, and will build functions for urban creation strategies to develop more projects through open innovation.

Business Scope of the Integrated Engineering Firm for Urban Creation



Add a new function to an urban area and change it by enhancing its ties with surrounding urban areas.

Increase the urban functions through redevelopment that encourages cooperation between those involved in urban creation.

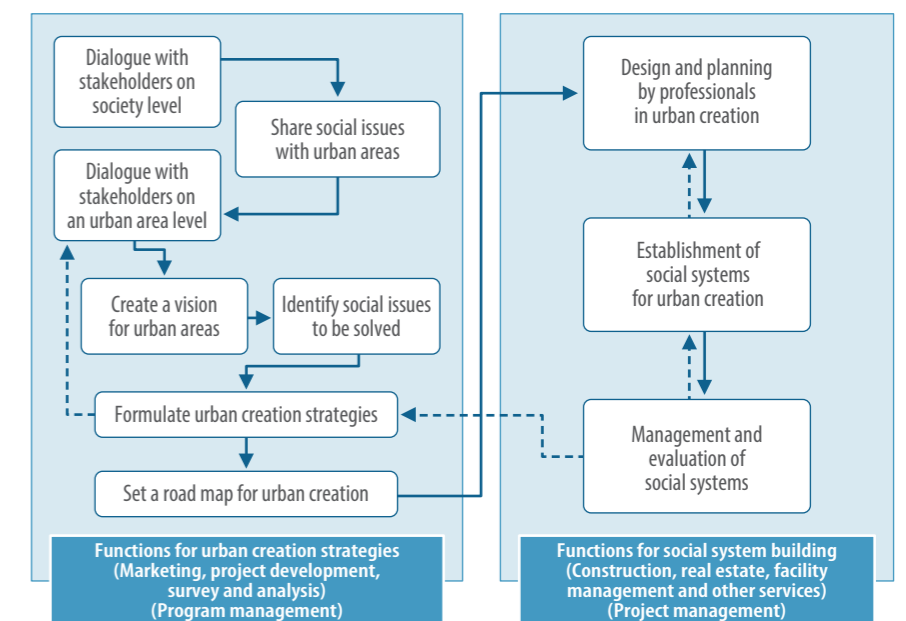


Foster the “compact city + network” plan to promote exchange between people, goods and information between various urban areas, and thereby link the areas.

Provide people in the urban area with opportunities for innovation to create new services and products, thereby growing the area.

Urban creation process

The urban creation process is composed of the functions for urban creation strategies, which are necessary to formulate an urban creation road map, and of the functions for social system building, including construction, real estate and facility management. The functions for urban creation strategies include project management, which Takenaka has been engaged in, and program management, which is required for social system planning. To achieve steady growth as an integrated engineering firm for urban creation, the Takenaka Group will promote the activities conducted at each stage of the urban creation process together with stakeholders in a planned manner, thereby successfully implementing its growth strategy toward 2025.



Keeping Traditional Culture Alive and Maintaining Its Value

Repair, restoration, preservation and reproduction of historical buildings

The Japanese government has recently been promoting “Cool Japan” as one of the national growth strategies and is implementing measures to develop new industries that target the international market based on Japan’s strength in terms of culture and tradition through public-private partnerships. Accordingly, the government is enhancing the sharing of information on Japanese culture and tradition.

Takenaka Corporation has long been engaged in the repair, restoration and preservation of traditional wooden buildings and modern architecture and has the required know-how for this work. In addition, we are developing new materials and construction methods to preserve historical buildings for the public benefit, while proactively applying new measures and systems to contribute to cultural and urban creation through the preservation of buildings.

1. We provide comprehensive solutions, including seismic reinforcement work to help customers comply with the latest earthquake resistance standards; materials analysis; and compilation of historical materials.
2. We engage in the reproduction and restoration of landmark historical heritage structures, thereby contributing to regional revitalization.
3. We also make proposals for the conservation of historical buildings, such as examining the feasibility of a preservation and maintenance plan that includes calculation of the cost.

Restoration and repair of traditional wooden buildings

Takenaka traces its roots back to a family of shrine and temple carpenters, with the business originally started by Tobei-Masataka Takenaka, who served Oda Nobunaga. Over the years, the company has built a variety of traditional Japanese buildings, including some famous examples. The craftsmanship that has been passed down from generation to generation over the company’s 400 years of history is embodied both in the principle of setting quality above all else, a principle that is underpinned by the belief that architecture is a component of culture, and in the company’s integrated design and construction system.



Suitengu Shrine (Rebuilding)

Suitengu Shrine is a shrine located in Nihonbashi, Tokyo. It is known as the place to go to offer prayers for safe childbirth, children and protection against drowning. The rebuilding was done to commemorate the 200th anniversary of the shrine’s relocation to Tokyo. As a new historical landmark in the area, the traditional wooden main building, which is designed to symbolize the holiness of the shrine, wonderfully harmonizes with the modern waiting room and assembly hall. Also, all the buildings within the premises are constructed by adopting a base isolation system to enhance earthquake resistance.



Dining Hall for Priests of Yakushiji Temple (Restoration)

This work represents the apex of the restoration of the buildings (constructed in the Hakuho period) of Yakushiji Temple, which is inscribed as a World Heritage Site. In order to ensure seismic resistance for a structure with such a large interior space, steel-framed columns and beams were used to support the traditional wooden interior and exterior. To meet the difficult challenge of integrating a modern method into the construction of a traditional wooden building, leading-edge BIM technology was utilized to match wooden parts with steel-framed parts and produce beautifully curved eaves.

Restoration and repair of traditional architecture



Tsurugaoka-hachimangu Maiden (Seismic reinforcement in 2006)

Toshodajji Kondo (Structural analysis in 2009)

Heijokyu Daiichiji Daigokuden Seiden (Reconstruction in 2010)

Hakodate Magistrate’s Office (Restoration in 2010)

Three-story Pagoda of Hotel Chinzanso Tokyo (Seismic reinforcement in 2011)

Background/Left: Sabataishonbo Tahoutou
Right: MEJISEIMEIKAN

Superplastic zinc-aluminum alloy vibration control dampers



The zinc-aluminum alloy dampers with extra high ductility control vibrations and deformations caused by earthquakes and strong winds while exhibiting high followability to the deformation of wooden structures. Being installed under the floors and at other places where they are not clearly visible, the dampers will not affect the outer appearance of the buildings. They can be used both for new construction and repair.

Resistograph wood degradation survey



A very fine drill with a diameter of about 1.5 mm is inserted into wood to check for rotten or hollow spaces. The drill hole is too small to be noticeable or to affect the strength of the wood.

Conveyance method adopted for lightweight steel-framed roofs



To prevent a precious cultural asset from being damaged by a flying object or falling building materials, a temporary roof constructed on a side of the building is slid to the designated position to cover the entire structure. The lightweight steel-framed roof also helps reduce the total weight of the building by about 30 percent, thereby reducing the impact on structural remains buried underground.

Reinforcement using prestressed steel bars



Prestressed steel bars are drilled into a brick wall to increase its overall strength. For interior protection, Takenaka developed a drilling technology based on a waterless air-cooling system.

Preservation and restoration of modern architecture

Since the Meiji period, Japan has achieved remarkable growth in terms of culture and industry by adopting Western technologies and styles. We regard the modern buildings that are legacies of Japan’s past as appropriate targets for our measures, which are aimed at creating a sustainable society where high-quality goods continue to be used for many years. We work to help preserve the value of these buildings for future generations while improving their visual appeal by employing advanced technologies.



West Cocoon Warehouse of Tomioka Silk Mill (Dismantling for preservation)

The mill was inscribed as a World Heritage Site in 2014 as one of the places from which Japan’s industrial revolution originated. Takenaka received an order for the installation of a temporary roof for construction work and for the dismantling of the modern brick building constructed at the dawn of Japan’s modernization in the Meiji period. We are working on this preservation project in a safe manner and with great care. We also designed and established a facility for visitors to observe the progress of the preservation work.



MEJISEIMEIKAN (Preservation and restoration)

Said to be a masterpiece, the building is designed by architect Shinichiro Okada, who was active from the Taisho period to the beginning of the Showa period. It is the first building constructed in the Showa period to be designated as an important cultural asset by the government. In 2001, we launched a redevelopment project to preserve and utilize the aesthetic and historical value of the building under the specified block system set based on Japan’s City Planning Act. Using advanced technologies in reference to the results of detailed surveys, we equipped the aged structure with systems and amenities necessary for an advanced office building, while ensuring that the style and design of the old architecture remained intact.

Preservation and restoration of modern architecture (examples)



YOKOHAMA RED BRICK WAREHOUSE (Preservation and restoration in 2002)

Mitsubishi Ichigokan (Restoration in 2009)

State Guest House, Akasaka Palace (Preservation and repair in 2008)

Main Building of Seisen University (Seismic retrofit 2010)

JAMES-TEI (Preservation and reproduction in 2012)

Renovate Production in the Construction Industry

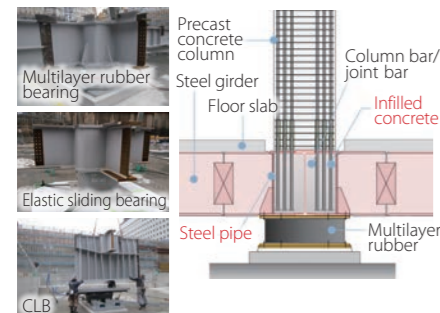
Both in Japan and abroad, construction needs remain at a high level with building requirements and related production processes becoming more diversified. On the other hand, with the graying of society and decreasing birthrate, skilled construction workers too are aging and shrinking in number. As a player in the construction industry, we need to deploy production technologies suitable for the new era while also making the industry more attractive to workers. Based on our management philosophy, "Contribute to society by passing on the best works to future generations," we have been pursuing the integration of design and construction processes for years, during which time we have nurtured craftsmanship and comprehensive technological capabilities. By fusing these capabilities with the latest technologies centering on BIM, we will continue to take on the challenge of renovating production in the construction industry.

Ono Pharmaceutical Minase Research Institute

For higher productivity

With the Osaka Medical Center for Cancer and Cardiovascular Diseases, we developed the "CFT smart base-isolated column base." The base isolation system is composed of multiple materials with the upper part of the foundation comprising concrete-filled steel pipes. Compared with the conventional system, the work process has been shortened, and labor has also been reduced by about 90 percent. For the on-ground structure, the "beam in smart precast concrete column" was adopted to save labor for the "reinforced concrete column and steel beam structure," thereby achieving zero on-site work related to concrete reinforcement.

CFT smart base isolation column base



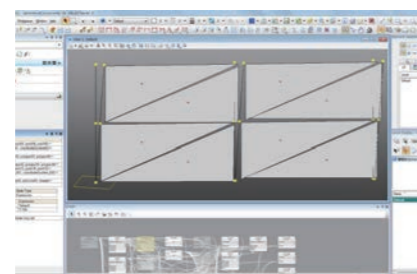
Beam in smart precast concrete column



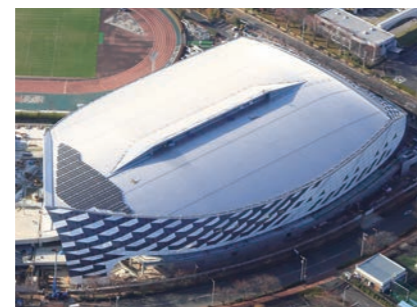
Precast concrete columns to which steel beams were knocked into in advance at a factory were installed on-site. The concrete reinforcement work usually required for the top part of the column is no longer necessary.

Quality assurance by using BIM

The Musashino Forest Sport Plaza Main Arena, which will be used as a venue for the Tokyo 2020 Olympics and Paralympics, has a curved shape achieved through the use of differently sized panels. In light of their complicated shapes, to make these panels in a large volume we developed a BIM-based evaluation program by incorporating data related to wind pressure resistance and deformation followability displayed in the case of earthquakes, thereby achieving an efficient layout and quality assurance for the arena.



We used the developed program to automatically design the shape of the exterior panels to give them sufficient wind pressure resistance and deformation followability in line with layout changes.



Exterior wall construction for the arena
Exterior panels in different sizes were produced in a large quantity based on the program data and were successfully installed on-site according to the 3D drawings.

Rationalization of construction for spatial architecture

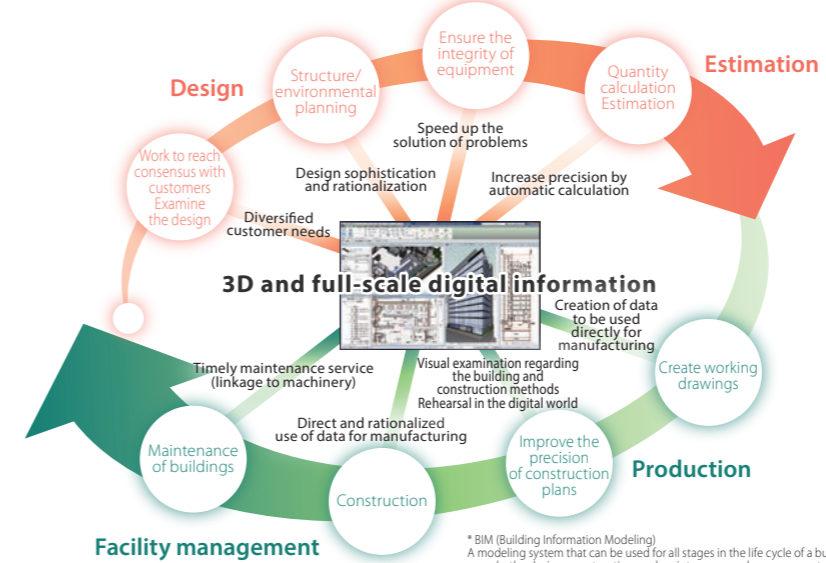
For the construction of spatial architectural designs, a lot of temporary equipment is necessary to support the roof and scaffolding for a certain period of time. Working at heights also involves hazards. With the roof construction for the Musashino Forest Sport Plaza Main Arena, most of the roof was finished on the ground by the large-scale assembly of steel frames, thereby ensuring work precision and achieving a substantial reduction in labor and the need for temporary facilities. After the assembly of the components, a large movable scaffold was established under the steel framework of the roof, thereby making the ceiling work and the floor and base work compatible, which in turn decreased the time required for roof completion and substantially reduced the duplication of work for temporary facilities. The construction work was thus rationalized.



Roof of the arena under construction

Integration of information related to construction processes

(Life cycle of construction information based on BIM*)



* BIM (Building Information Modeling)
A modeling system that can be used for all stages in the life cycle of a building, namely, the design, construction, and maintenance and management stages. Rather than consisting of a simple collection of design drawings, it is established as a database for construction plans by the addition of attribute information, such as material costs, to the digital 3D design models.

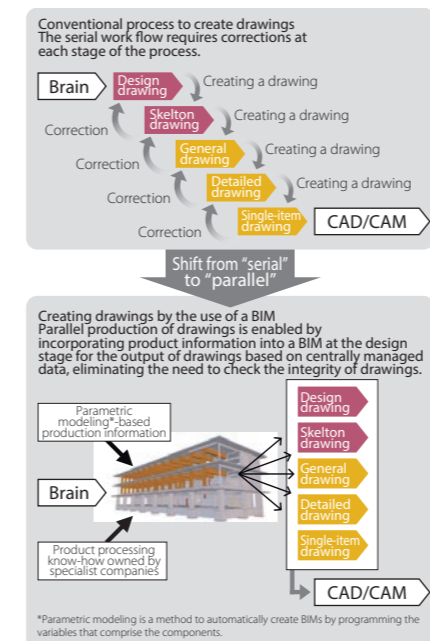
Kiyoshi Saito
Manager, Architectural Business Department
Saito Wood Industry Co., Ltd.



The use of elaborately designed Moen-Wood for the skeletons of structures often necessitated design changes during the construction period, which required us to check integrity, modify drawings, and hold on-site meetings. However, the BIM system, which incorporates information about design and structural drawings, now helps us to reduce the time required to modify and check the integrity of these drawings and also fosters smooth data conversion for the use of CNC processing machines in the subsequent process. I hope to continue using BIM to produce the best work possible.

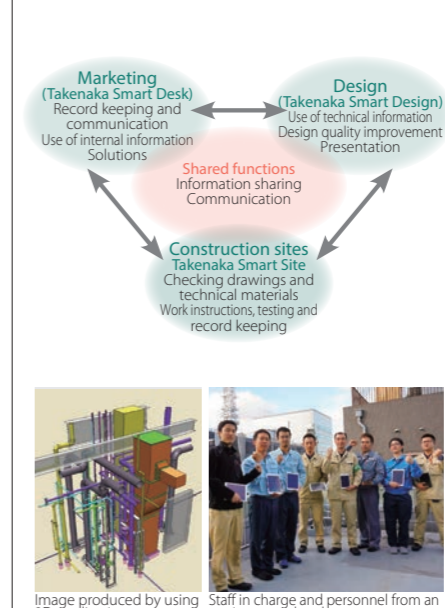
Revolution of manufacturing processes

It is usually necessary to check integrity and make necessary corrections step by step when you create design, structural and component drawings. For Sinkashiwa Clinic, we made a building information model (BIM) that incorporated the know-how of companies specializing in relevant fields as early as the design stage to start the central management of drawings right from the initial phase. This makes detailed designing and the creation of drawings compatible, expediting the creation of consistent drawings while also smoothly fostering the linkage of data to manufacturing machinery (CAD/CAM) at the factory for the rationalization of the entire manufacturing process.



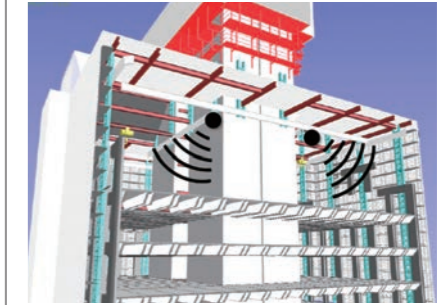
Takenaka Smart Work initiative

Takenaka Smart Work is intended to increase productivity at project implementation sites. We package effective tools and business systems for each of the marketing, design and construction fields and work to increase the efficiency of operations by the use of mobile terminals. In addition to using mobile terminals for presentations made outside the office and for schedule management, we also use the terminals for quality and safety management at construction sites. For the Orix Ueno 1-chome Building, we lease mobile terminals to partner companies to promote the effective use of the software application for the on-site 3D checking of complex details regarding the finish. In the future, we will spread the use of this application to partners as a companywide initiative.



Initiatives for future technologies

The construction industry is entering a revolutionary period in line with the progress of ICT, including IoT, artificial intelligence and robot technologies. We are taking on the challenge of developing technologies for the future based on the latest technological trends.



Virtual mock-up linked with BIM

Automation of various measurements and tests

Real-time identification of work progress and actions

IoT-based advanced construction space (illustrative image)



<Example of the practical use of IoT in construction>
Developing a system to increase the efficiency of the management of photos taken at construction sites by the real-time acquisition of positional information

www.takenaka.co.jp/news/2017/03/01/

Supporting the Society of Health and Longevity

Prolonging healthy life spans is critical for the creation of a vigorous society as well as for the implementation of fiscal solutions to the issues of aging population and rising social security costs. The term “healthy life span” refers to the period during which people can lead an active life with no health-related limitations on their activity.

Takenaka, in partnership with Chiba University’s Center for Preventive Medical Sciences, has developed the concept of “KENCHIKU” for future cities and is conducting activities to help people lead long and healthy lives.

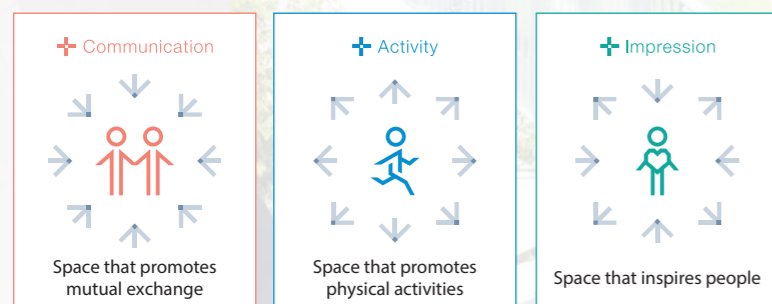
“KENCHIKU” represents the idea of promoting communication among different people and encouraging them to engage in physical activity in buildings and cities as well as providing spaces that make an impression on people, thereby helping them to maintain both their mental and physical health while interacting with others and expanding their individual potential. For the realization of KENCHIKU, we will first provide space design, then propose programs for the utilization of the space to encourage people to conduct activities for their health, and then, finally, perform analysis and evaluation to feed back the effects of the space design and the programs. By executing this cycle, we will provide environments where everyone can live and work in a healthy and fulfilling manner, thereby contributing to the creation of a sustainable society.

KENCHIKU Healthy Community Development

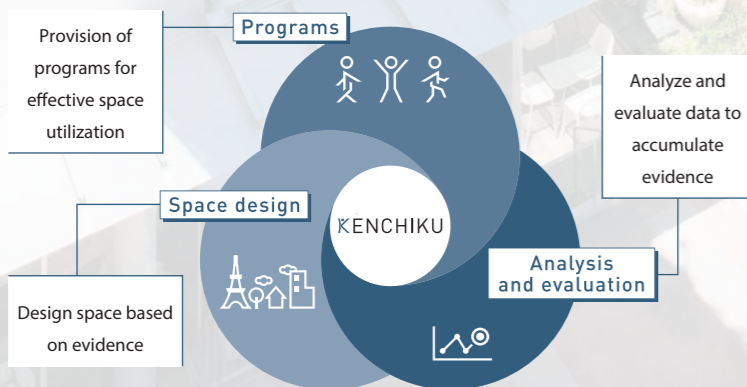
“KENCHIKU for People”

We foster KENCHIKU beyond the traditional framework of space and urban creation to provide places where anyone can lead fulfilling lives in good health.

Features of space created through KENCHIKU



Initiatives for KENCHIKU



Works

Fostering commutation and physical activities, and designing impressive spaces

We have already started to implement the space and urban creation measures for a healthy society. For example, MORINOMIYA Q's MALL BASE has an athletic track extending over the tops of multiple buildings within the site to provide locals with space for exercise. Around the rooftop track, which is open to the local community and is about 300 meters around, multiple sports facilities including a futsal court and a climbing wall have been arranged to encourage users to experience the joys of physical exercise. In the center of its office space, KONICA MINOLTA SKT has an atrium featuring a terraced design devised to maximize natural light and greenery in consideration of the sun's movement. The atrium connects offices on different floors and promotes communication and physical activity among office workers, promoting face-to-face conversations, meetings and innovation as well as linking various issues and events that happen within the building. The natural light that spills into the greenery-rich atrium gives office workers a sense of seasonality and the passing of time and makes an impression on them in their highly creative work.



MORINOMIYA Q's MALL BASE



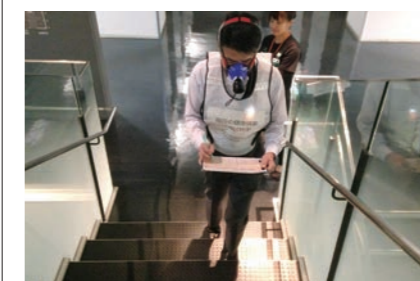
KONICA MINOLTA SKT

SKT: Smart R&D Office for Knowledge Work and Trans-boundary Communication

Research and Development

Scientific analysis and evaluation of space for health promotion

We established an endowed research department within Chiba University's Center for Preventive Medical Sciences in partnership with the university and launched R&D for “healthy companies” and for the creation of a society that promotes long healthy life spans from the perspective of space and urban creation. The department conducts surveys on office environments and activities, as well as on health to clarify the influence of workplace environments and activities on health and work engagement, including communication spaces for promoting communication and easy-to-use stairs. Further, we will gather and compile evidence and examples of the effects brought about by various factors involved in space and urban creation, such as natural light, greenery and easy-to-walk streets, to develop guidelines for “KENCHIKU” through space and urban creation. In addition, we are conducting multifaceted research activities, including collaborating with the University of Tsukuba for demonstration tests to verify the effects that spaces for which abundant wooden materials are used have on occupants and the impacts that the shape of stairs and how people ascend them have on their physical health. We will continue to engage in space and urban creation based on the evidence gained through such research and demonstration tests.



Experiment on the impact of stairs on health

Modeling

Depicting future office spaces and programs for healthy work styles

According to the results of one survey, Japanese businesspeople work for about 10 hours a day, spending at least 80 percent of that time in the office. It is important for companies to make health and productivity compatible at workplaces, thereby helping individual workers achieve their targets while promoting the management of their personal health. We examined future work styles and workplaces with a view to helping office personnel work in a healthy manner. The “healthy office” concept consists of six assumptions made to enhance work engagement while helping individuals and the organization maximize creativity. The assumptions made for the concept are based on evidence regarding light, greenery, room temperature, physical activity and communication. For example, thinking while walking helps enhance creativity, the adjustment of biorhythms by using bright illumination in the morning helps people stay mentally healthy, and feeling close to nature helps promote good interpersonal relationships. With office spaces potentially having a greater impact on people than expected, the concept is intended to create new value by incorporating elements for a healthy life into such spaces in a well-balanced manner.



Office space that fosters various physical activities

Creating new value through dialogue and collaboration

The relationship between health and build environment has been taking a growing interest. This is because rebuilding the environment can restrain health care costs and prevents non-communicable diseases such as cancer, cardiovascular diseases and diabetes. Interesting ideas are revealed domestically and internationally about build environment that have a positive impact on health. Moreover, it is important to verify the efficacy scientifically through a project after reviewing previous studies. Discover new value through dialogue between medicine, public health and urban design field and create new value through collaboration. I hope these efforts will contribute to the formation of a healthy society.



Masamichi Hanazato
Associate Professor
Center for Preventive Medical Sciences, Chiba University

VOICE

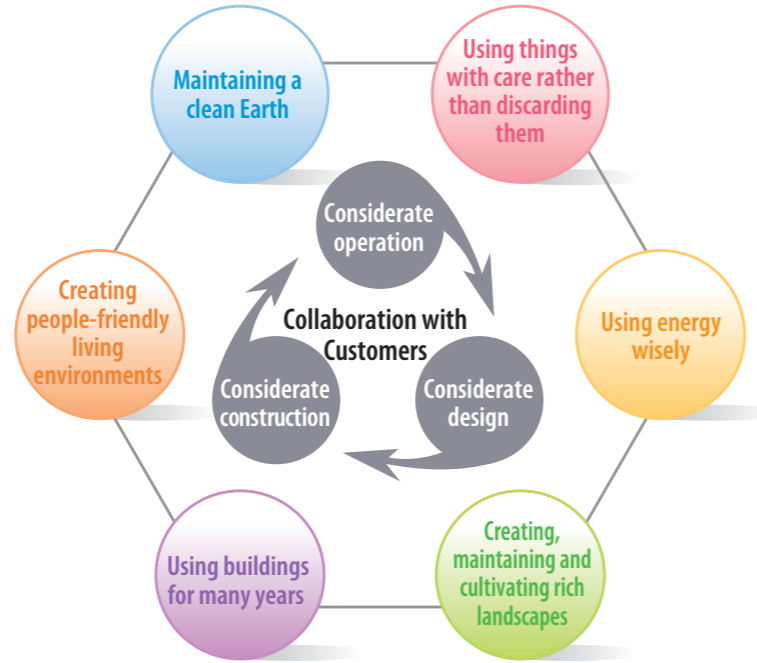
MORINOMIYA Q's MALL BASE

Customer Dreams into Reality

The functions required of buildings today are becoming increasingly sophisticated and diverse. Consideration of the environment is of course essential but facilities must also provide safety and security as well as durability. We also stress our own perspective of being “people friendly” in taking up the challenge of creating new value for architecture.

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 realize their dreams into reality. We have devised various methods for “earth-friendly thinking (design)” and “earth-friendly creation (construction)” to enable our customers to have “earth-friendly usage (operation).” We assess every aspect of our activities with respect to design, construction and operation from the six perspectives described on the right in close communication with our customers.



Creating people-friendly living environments

Office space that promotes serendipitous encounters and proactive exchange

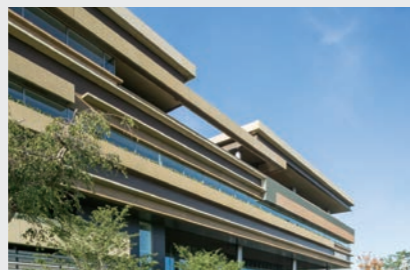
The open area is expanded vertically by the void and terraces. Researchers, who have no fixed place of work, move about freely in the course of working, engaging in conversations and taking breaks. This floating work style is designed to increase interpersonal contact and communication among researchers.



Using buildings for many years

Multifunctional exterior wall with durable texture

The precast concrete exterior wall is shaped so as to provide space for future equipment expansion and also to provide multiple spaces to install planter boxes, eaves and pipes. Further, color concrete made by finely adjusting the pigment and concrete aggregate blending rates was used for a sandblasted finish, which gives the wall a durable texture that will not fade over time.



Creating, maintaining and cultivating rich landscapes

Harmony with abundant nature and collaboration with surrounding research institutes

The site is located adjacent to the Kansai-kan of the National Diet Library in Keihanna Science City, which is home to universities and research institutes and a center for research activities. There is a forest to the south of the site while a large park extends to its north. The building is set back on the site to allow for an open landscape in front for a harmonious blending with the rich natural environment. In addition, collaboration with surrounding research institutes is fostered by promoting exchange with visitors to the building.



Suntory World Research Center

—Leading-edge research institute open to the world—

Design and construction: Takenaka Corporation (2015)

The Suntory World Research Center is at the cutting edge of global research in the fields of health science, microbiology, botany, water science, and greening. The Suntory World Research Center was designed to renew and consolidate Suntory’s basic research and technology development functions, which had previously been geographically dispersed, for the creation of new value through proactive “Knowledge Interaction.”

In harmony with people and nature

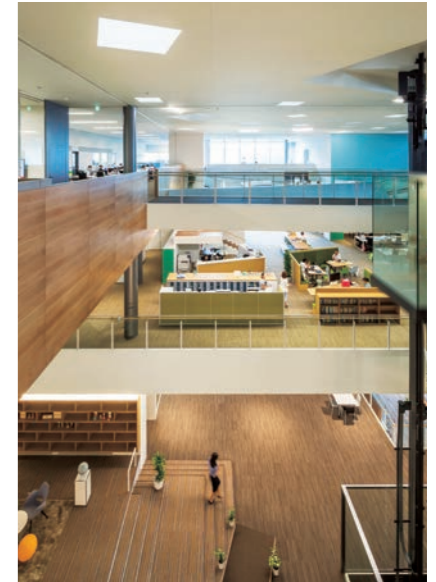
We came up with the external design based on the concept of stratum like “layers of water, greenery and soil” to symbolize the idea that “good soil (facility) produces good water (research results).”

Open landscape

The open landscape is designed to be people-friendly while showcasing seasonal changes. No gates or fences have been installed at the perimeter to allow open access and thereby enhance mutual collaboration and exchange with neighboring research institutes.

Encouraging open innovation

Floor spaces measuring about 80 square meters and composed of an L-shaped closed area (laboratory zone) and a square-shaped open area (office zone) are stacked in four layers in a rotating configuration. The open area features skip floors and intermediate floors, which are designed to foster communication among researchers. Moreover, the space provides vertical, horizontal and crossway views to



enable serendipitous encounters. The see-through elevator and stairs also provide a measure of visual linkages among internal spaces to encourage researchers to move about with a sense of expectation. A network for knowledge has thus been established within the building.



Using energy wisely

Environment-friendly research center

Compared with the former building, energy consumption has been reduced by about 40 percent by the use of soft natural light that reaches the center of the building from both the top and terrace, the deep eaves of which give the building an impressive exterior, as well as by the adoption of various other energy conservation methods such as a waste heat recovery system.



Using things with care rather than discarding them

Drastic reduction of the use of materials and manpower

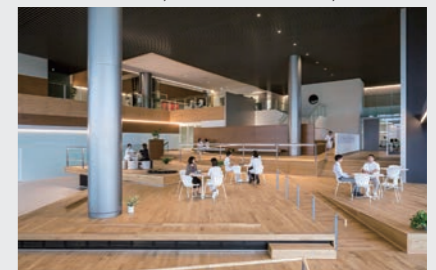
We encouraged the repeat use of molds for various precast concrete components and simplified the joints made of different types of materials to create a variety of shapes while reducing the amount of materials used. We also premade the exterior materials at factories and mechanically fixed them onto the structures on-site, thereby enhancing quality management while also reducing the manpower and time required for installation.



Maintaining a clean Earth

Space designed to harmonize with the geographical features

In light of the nearly two-meter difference in height between the southern and northern parts of the site, we designed the building in such a manner as to minimize the excavation of soil. The terraced spaces are intended to match the different heights of the restructured land and are linked via a void that extends to the communication area on the second floor, which provides an open view of the nearby forest. For the floors, walls and furniture, we used Japanese OAK thinned from Okudaiseno-Mori, one of Suntory’s “Natural water sanctuary.”



Customer Dreams into Reality



Design Developed through Comprehensive Strength

CapitaGreen, which is situated in Singapore's central business district, is an environment-friendly superhigh-rise office building. Architect Toyo Ito envisioned its design as a conceptual reproduction of the forests that once existed in Singapore to make the building breathe like a living thing. The exterior features semi-double-skin-glass curtain walls with vertical greenery. Further, it has sky terraces, on levels 5, 14, and 26, as well as a rooftop garden on the 40th floor, where there is an abundance of trees to provide the entire building with lush greenery. On the rooftop, a large air intake called the "funnel," which is 45 meters high, is installed to utilize the prevailing wind to supply offices on each floor fresh air that is cleaner and cooler than the air nearer the ground. For the perimeter structure with a high-quality exposed concrete finish, special 100 MPa ultrahigh-strength concrete was adopted to enable its slim external shape. In the entrance lobby on the ground floor, a plaster wall, which was finished by artisan plasterers from Japan using the country's traditional kakiotoshi "scratched finish" technique, looks well harmonized in the modern setting. The office building, which was developed through Takenaka's comprehensive strength, has become a new landmark in Singapore.



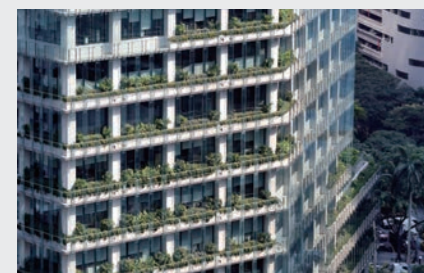
A large air intake ("funnel") as high as 45 meters is installed on the rooftop garden to supply fresh air, which is cleaner than the air closer to the ground, to each office in the building.

CapitaGreen

—Reproduction of Forests: Breathing Architecture—

Design Architect: Toyo Ito & Associates, Architects
 Architect of Record: RSP Architects Planners & Engineers Pte Ltd.
 Design Development and Construction: Takenaka Corporation (2014)

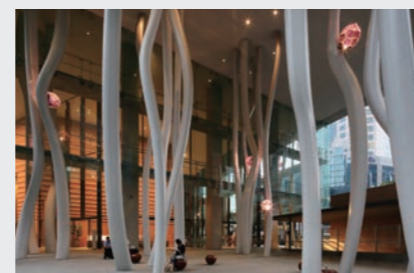
The office building has become a new landmark in Singapore's financial center, with 55% of its perimeter facade from the ground to 200m high covered by living plants and has a red flower-like funnel installed on the top of the building.



The semi-double-skin-glass curtain wall facade with vertical greenery reduces solar heat gain while also providing a refreshing view, which those working in offices on the upper floors can enjoy with a sense of safety.



A plaster wall finished by artisan Japanese plasterers in the entrance lobby provides a calm space through the fusion of modern building materials with the Japanese traditional kakiotoshi "scratched finish" technique.



In the podium plaza on the ground floor, an artwork of a noted Danish artist is installed. The artwork was created based on the motif of plant roots. This space is opened to the public as a place where people can feel peace of mind.

Attractive Renewal

Buildings, which are essentially vessels that protect our lives and possessions, are transformed into social assets over time. Our concept of "attractive renewal" refers not only to recovering the functionality and beauty characterizing architectural structures at the time of their original construction, but it also extends to adding new functions to raise their asset value and improve their business operability. At the same time, another concept, "from scrap and build to stock utilization," which was formulated from the perspective of environmental conservation and sustainability, is becoming increasingly pervasive today. The functions sought in architecture are also

diversifying and growing in sophistication. This means going beyond improvement of basic building functions and performance that no longer meet the needs of the times to include preserving buildings of historical significance while employing them efficiently by implementing changes in their functions (conversion) that create new value. The design and technological capabilities Takenaka has developed over many years are deployed for the "attractive renewal," for which we have received high acclaim, including in the form of awards from the Building and Equipment Long-Life Cycle Association (BELCA).



KITAKARO Sapporo Honkan

While preserving the outer wall and entrance hall, we expanded the former library building opened in 1926 to transform it into a sweets store. For the exterior, we preserved and accentuated the charms of the old building, including through the reuse of custom-made tiles from the Taisho period. At the same time, we created a dynamic interior space by contrasting the stately brick wall with a modern, light structure, with a void in between.

Prizes at the Japan Design Space Association DSA Design Award 2016 and at the Good Design Award 2016, as well as a commendation from the chairman of the Reduce, Reuse, Recycle Promotion Association in 2016

Basic design: Tadao Ando Architect & Associates
 Renovation design and renovation construction: Takenaka Corporation (2016)



Tsutenkaku

This project represents the world's first seismic retrofitting of a steel tower building by the mid-story isolation method. While ensuring safety against large earthquakes, we aimed to convey a message from the past to the future by preserving the outer appearance of this registered tangible cultural asset as well as by reproducing the painting on the ceiling of the first Tsutenkaku building.

Diffusion Award at the 17th Japan Society of Seismic Isolation (JSSI) Awards

Prize at the 50th Japan Sign Design Association (SDA) Awards

Renovation design and renovation construction: Takenaka Corporation (2015)

NIHONBASHI DIA BUILDING

A tower structure was added to the former Mitsubishi Logistics Edobashi Warehouse Building. The original building was constructed in 1930 and subsequently designated an historical building by the Tokyo metropolitan government. We transformed it into a new office building without changing its outer appearance and by retaining 40% of the old structure. The mid-story seismic isolation structure and anti-flood measures help tenants ensure business continuity.

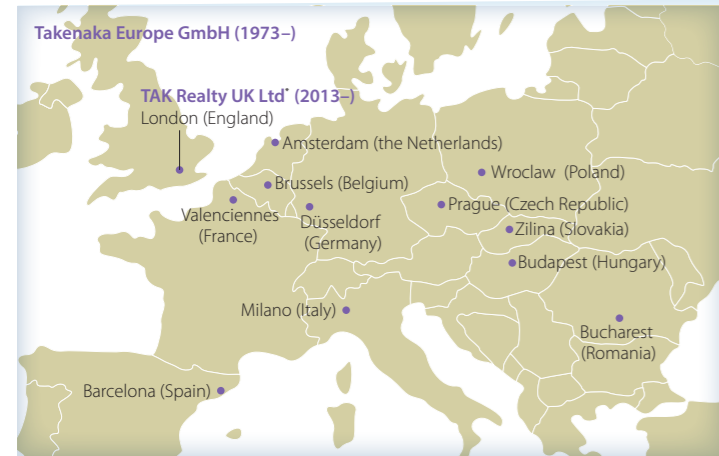
Granted the 28th Nikkei New Office Award Design: Mitsubishi Jisho Sekkei Inc. and Takenaka Corporation
 Construction: Takenaka Corporation (2014)



Supporting the Global Expansion of our Customers

Our international operations with a long history dating back to the prewar era began in earnest with our entry into the U.S. market in 1960. Our network now spreads around the world. We have participated in a diverse range of projects in support of our customers. This includes Japanese businesses launching overseas operations and public institutions in various countries as well as local business enterprises developing projects across a 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



* Development business

Europe

Over 40 years have passed since the company opened a business office in Düsseldorf, Germany in 1973. During that time, Takenaka Europe has undertaken over 1,500 construction projects. Today about 40 employees dispatched from Japan and some 400 local employees working at operating bases in 12 countries collaborate closely to provide customers who are considering establishing operations in Europe with all the information they need in a timely manner.

Asia / China

Takenaka has been conducting activities in Thailand, Singapore and Indonesia for more than 40 years. In 2015, we celebrated the 25th anniversary of the founding of our Malaysian office. At present, about 150 employees dispatched to Asian countries including China are working cooperatively with about 1,800 local employees. Together they handle construction projects of all sizes and types.



Expo 2015 Milano Japan Pavilion (Italy, 2015)



National Gallery Singapore (Singapore, 2015)



Akebono Brake Slovakia New Factory (Slovakia, 2015)



Takasago Europe New Office & Conference Building (Germany, 2015)



Amada Bangalore Technical Centre (India, 2014)



TTTC Eastern Seaboard Branch (Thailand, 2015)



AXIA South Cikarang Tower 1 (Indonesia, 2014)



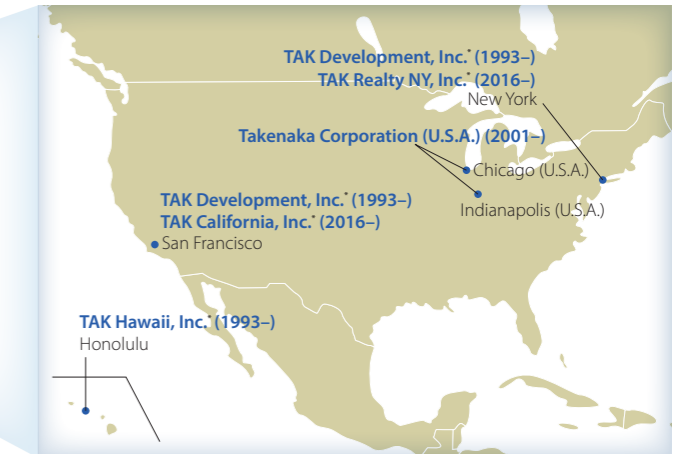
CapitaGreen (Singapore, 2014)



Wuxi Yakult Plant (China, 2015)



AEON Tebrau City Shopping Center (Malaysia, 2016)



* Development business

United States

Takenaka began laying the foundation for its overseas operations after extending its business to the United States in 1960. Today the company's U.S. business domain is centered in the four states of Illinois, Indiana, Ohio and Kentucky. It provides general building-related services, mainly to Japanese companies, across a spectrum from consultation in site selection—a necessity for companies entering the U.S.—to new building construction, existing building expansion and renovation, and a full complement of follow-up services.



Indiana Automotive Fasteners, Inc. (U.S.A., 2015)



Changi Airport Terminal 4 (Singapore, completion scheduled for 2017)



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 such as Marunouchi and Nihonbashi in Tokyo, the Nagoya Station area, and Umeda, Nakanoshima and Abeno in Osaka. We are also engaging in urban redevelopment, and PPP and PFI projects while proactively 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

Meguro Station District Urban Redevelopment Project (Scheduled for completion in 2017)

We were selected to participate in this joint venture urban redevelopment project encompassing some 180,000 square meters around Tokyo's Meguro Station in 2008 based on our proposal for a complex comprising an office and commercial building, a residential building and a "wooded area" for recreation and relaxation. Administrative staff assigned to the project gained a consensus among the 130 landowners and conducted administrative negotiations leading to our selection in 2012 as specified (joint venture) agent for the design and construction work. Completion is scheduled for 2017.



Basic design: Nihon Sekkei
Construction design: Takenaka Corporation

PPP and PFI projects

Minato Mirai 21 Civic Center 20 Block MICE Facility Project (Scheduled for completion in 2020)

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). The facilities are intended to enhance the functions of the famous Pacifico Yokohama international convention center and expected to improve urban amenities for pedestrians as well as enhancing the landscape of the port city. They are scheduled for completion in the 2020 Olympic year.
* MICE concept (Meeting, Incentive, Conference/Convention, Exhibition)



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

Overseas development projects

Grand Hyatt Kauai Resort and Spa

Takenaka handled everything from development to construction and has been operating the Grand Hyatt Kauai Resort and Spa on Kauai, a Hawaiian island renowned for its prolific natural environment. Since opening in 1991, the Hyatt has ranked among the top ten resorts in Hawaii every year. Built on a 103-hectare site, it features such facilities as 602 guest rooms, restaurants serving various international cuisines, a spa and a PGA golf course. Business activities rooted in the local community over many years have established significant credibility for Takenaka among Kauai residents.



Design: Wimberly Allison Tong and Goo
Construction: Takenaka Corporation (U.S.A.)



Rendering



TM & ©TOHO CO., LTD.



Rendering



Udagawa-cho 14/15 Development Project Implemented as an urban renewal project (To be completed in 2019)

This project is underway as an urban renewal project to restructure the area around Shibuya PARCO. The implementation of the project was approved by government in 2016, and it is slated for completion in 2019. Takenaka is engaged in designing, supporting for planning proposals for special urban renaissance districts, and promoting the urban renewal project as an agent for specific operations.

Agent for specific operations: Takenaka Corporation

Shinjuku Toho Building

The neighborhood surrounding the former Shinjuku Koma Theater has been redeveloped as a complex comprising an urban hotel, cinema multiplex, and various stores and amusement facilities. There is also a life-sized model head of Godzilla displayed on the rooftop terrace of the building. Together with the local main street improved through public-private cooperation, the new complex provides new urban landscapes and attracts more people, thereby helping to stimulate the rebirth of the Kabukicho entertainment district.

Design and construction: Takenaka Corporation

Global Gate

(Slated for completion in 2017)

This urban development complex comprising office buildings and commercial facilities as well as a hotel and conference center will form the core of the Sasashima Live 24 district, a center for international exchange located one kilometer south of Nagoya Station. Since winning a competitive bid for the project in 2008, we have engaged in planning, design and construction work with project completion targeting 2017. At the same time, we will support consultation for administrative bodies on establishment of a special urban redevelopment district and conduct an environmental assessment.

Design and construction: Takenaka Corporation

Grand Front Osaka

This large-scale urban development project involves a total floor area of some 570,000 square meters in a district spread over approximately seven hectares that is designated as a special urban regeneration area. Takenaka Corporation is not only participating in planning, design and construction but also acting as a partner in the project.

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)

ABENO HARUKAS and Tenshiba

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

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

Festival City

(West tower slated for completion in 2017)

Nakanoshima Festival Tower (east tower), which opened in 2012, is a complex that includes Asahi Shimbun's head office, Festival Hall and others. In the spring of 2017, Nakanoshima Festival Tower West will be completed as a complex of offices, a luxurious hotel and cultural exchange facilities. Then, the Festival City project is completed, which includes Japan's tallest twin towers and will serve as a business and cultural center for Osaka. Takenaka participated in the project for the west tower not only in terms of facilities but also on operational issues.

Design: Nikken Sekkei Ltd.
Structure and facility design support (east tower): Takenaka Corporation
Construction: Takenaka Corporation

Ote Center Building

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

Design and construction: Takenaka Corporation

One Fleet Place

The Takenaka Group participated in construction of this London office building in September of 2013 as part of efforts to expand our overseas real estate business. Many global corporations have established their European locations in the same district.

The scales of the photographs and actual buildings differ.

Delivering the Best Solutions to Help Customers Solve Their Problems

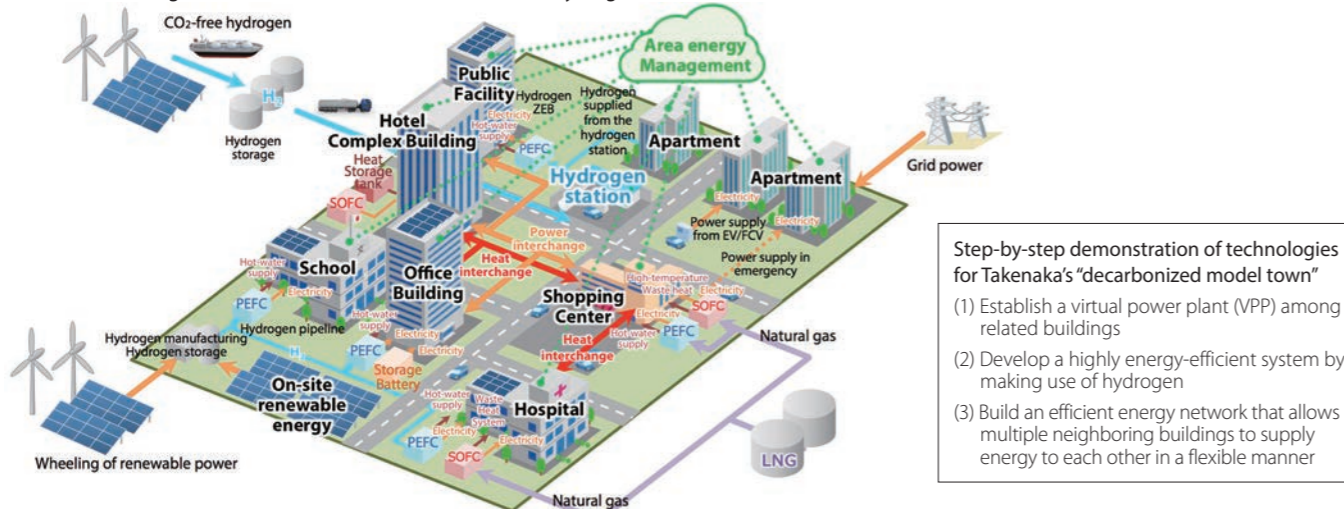
Today's consumers require speedy responses that correspond to market changes, advanced building environments, and various safety and security. We are responding to these customer needs with total engineering from project planning stages to building plan development, design, construction and aftercare.

Energy management system "Decarbonized model town" initiative

Initiatives to reduce greenhouse gas emissions to virtually zero have been started across the world. Takenaka is implementing its own "decarbonized model town" initiative as an urban creation model project and is conducting demonstrative tests in a related building in Shinsuna, Koto-ku, where its head office is located. The core technology for this project is "I.SEM" (I. Smart Energy Management), which was independently developed by Takenaka.

This system allows for the optimized control of energy generation, storage and use, thereby enabling maximum use of renewable energy, a critical power source for a decarbonized society but one whose availability is unstable. We also began making use of hydrogen, which has been attracting considerable attention as a medium for energy storage, for a demonstrative implementation of the decarbonized model.

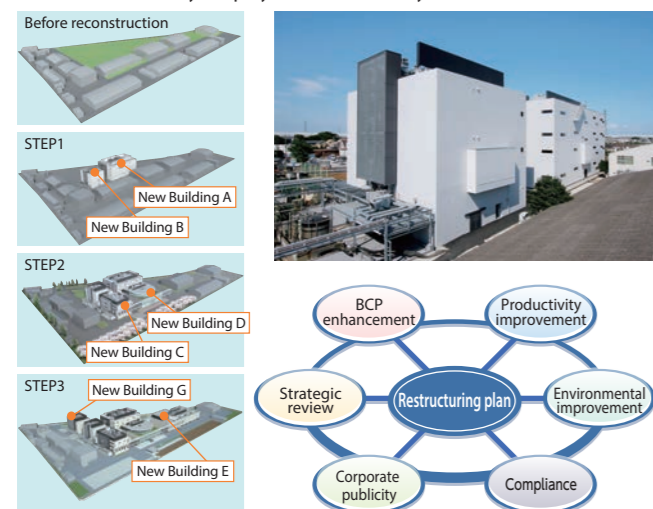
Illustrative image of "decarbonized model town" for which hydrogen is utilized



Manufacturing and logistics facilities

For manufacturing and logistics facilities, we propose restructuring plans to solve our clients' problems and support them to achieve continuous growth in line with their business strategies. These plans include enhancing production capacity, changing production items, dealing with building aging issues, and making effective use of land. Moreover we make comprehensive plans for "no-opportunity-lost" manufacturing facility restructuring that entails not only new building construction but also the refurbishment of production and logistics facilities and energy conservation measures.

ISHIFUKU Metal Industry Company Limited Soka Factory



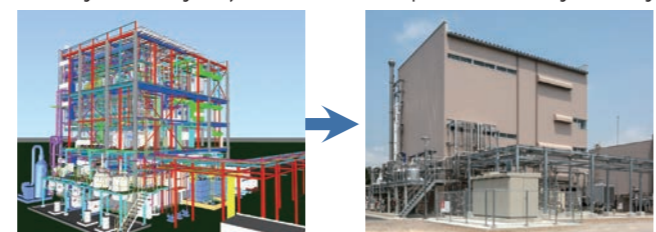
Leading-edge pharmaceuticals manufacturing and research facilities

Manufacturing and research facilities for leading-edge pharmaceutical products are increasingly required to be equipped with more sophisticated technologies to meet the conditions for sterile and highly active products, PIC/S, GMP and for the prevention of biological hazards. In response, we are developing advanced technologies to help such facilities ensure bio-clean and biosafety for the manufacture of products for regenerative medicine, which is expected to represent the next generation of medicine, as well as for the commercialization of biomedical products. In constructing new buildings for these facilities, we utilize 3D modeling to confirm the details with clients for optimization of their productivity.

Bio-clean and biosafety testing facilities



A bulk drug manufacturing facility (Shiono Finesse, Ltd. Fukui plant) constructed using 3D modeling



Wooden and woody architecture

In recent years, the use of wood has been fostered in large-space architecture to promote the circulative use of wood resources. In particular, the use of domestically produced wood is significant for the realization of a sustainable society in which people live in harmony with forests. Takenaka developed Moen-Wood fire-resistant laminated lumber for the construction of large-scale wooden architecture in cities. The lumber has already been used in a range of projects, including the construction of Osaka Timber Association Building (in Osaka) and Shinkashiwa Clinic (in Chiba). We also developed the practical T-FoRest Series technology for the seismic reinforcement of large architecture to replace conventional earthquake-resistant walls and steel braces with braces made of cross laminated timber (CLT).



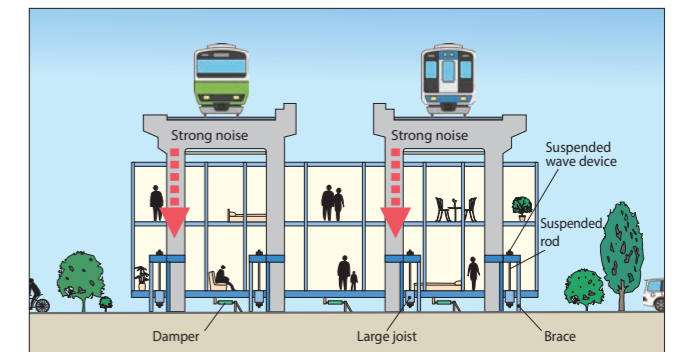
Shinkashiwa Clinic (2016)



T-FoRest (Brace made of laminated timber)

Railway-related architecture

New construction and renovation of station buildings, station area redevelopment, new railway line installation, and construction of various other station- and railway-related facilities are being conducted to increase convenience in urban areas and enhance the appeal of cities. We are implementing such technologies as the "suspended base isolation construction method" to eliminate vibrations from areas under elevated railroad tracks and our originally-developed "Traveling Construction Method" to build structures above railway lines. The purpose of their use ranges from erecting structures along railroads and in and around stations to redevelopment and urban creation. We make proposals for "sustainable station cities" that connect people to local areas via stations.

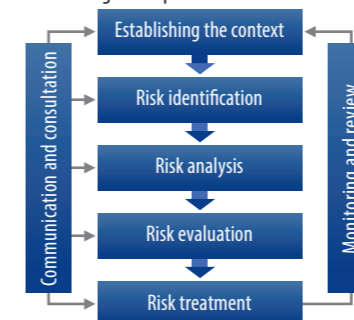


Technology for overhead structure sound reduction/vibration resistance/base isolation (suspended vibration-proofing construction method)

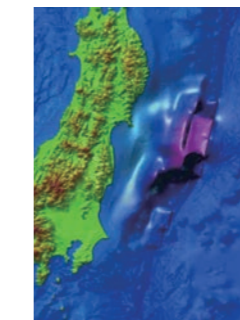
Support for corporate risk management

We identify, analyze and evaluate the various facility-related risks that may affect our customers' business activities in order to support them at every step, from formulating to implementing strategies. Our risk management service covers not only earthquakes but also measures against flooding using tools such as "tsunami simulation" and "wave power/flow analysis." We also assess tornado risks and the possible impact that could be given by ash from volcanic eruptions to help companies increase their resilience against a range of calamities, including both natural and human-caused disasters such as fires and criminal acts.

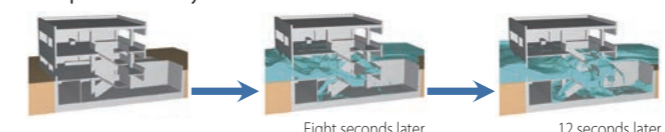
Risk management process



Tsunami simulation

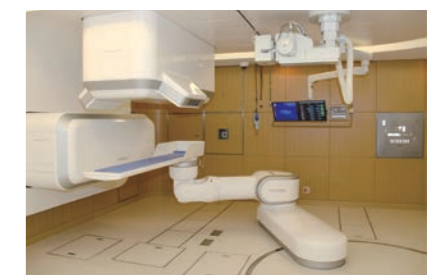


Wave power/flow analysis



Radiation protection technologies

PET laboratories, which have proven effective in the early detection of cancer, require highly reliable technologies for protection from radiation. Our design and construction of these facilities have earned a top ranking in our home market. We are leveraging our extensive track record with high-energy accelerator facilities to realize heavy particle and proton therapy facilities that provide cutting-edge cancer radiotherapy. The National Institute of Radiological Sciences' HIMAC New Particle Therapy Research Facilities are equipped with advanced cancer radiotherapy equipment. In fiscal 2015, the world's first rotating gantry to use superconducting magnets was installed at a facility to make preparations for the launch of new therapies.



Heavy particle radiotherapy room



HIMAC New Particle Therapy Research Facilities (2010)

Forging the Future with Technologies

The Takenaka Research and Development Institute is the Group's principal supplier of leading-edge technologies that society requires in the areas of environmental preservation, safety and security as well as of production innovations and research and development of innovative proprietary seed technologies. It is contributing to achievement of a sustainable society by providing the world with industry-leading technologies and solutions in every aspect of urban creation.

Takenaka Research and Development Institute

www.takenaka.co.jp/rd

Since its establishment in 1953, the Takenaka Research and Development Institute has continuously provided value, which satisfies customers by creating and assessing new technologies that respond to the needs of the future for the entire Takenaka Group. Specialists in a varied range of fields related to construction gather here to perform research at the world's highest level in collaboration with other research institutions in Japan and overseas. An exhibition hall in which visitors experience cutting-edge technologies firsthand offers customers hints for discovering solutions and creating new businesses, and plays a role in disseminating information that can uncover potential needs. The institute develops technologies for future urban creation in the four domains of technology, which are contributing to the global environment, technology supporting safety, security and comfort, technology creating leading-edge architectural environments and technology enabling advanced construction.



Exterior view of the Takenaka Research and Development Institute



Bioclean and biosafety testing facilities

Bioclean and biosafety testing facilities

In 2015, Takenaka established a research center to verify the quality and safety of bio-clean and biosafety laboratories for the regenerative medicine and drug development fields, which the Japanese government deems to be core fields in its growth strategies. To serve as biosafety testing facilities, the research center is equipped with the world's top-class architectural equipment in line with the Laboratory Biosafety Manual established by the World Health Organization (WHO).



Technology to virtually experience an architectural space

VRuno is a technology to provide users with a virtual experience of architectural spaces in a realistic and easy manner via tablet and computer terminals. We use this tool also to reach agreements with customers. On the screen, this highly advanced tool displays the concavity and convexity of floors and walls, textures, the way natural light enters from windows, and the reflection of lighting equipment in a realistic manner and with photo quality.



Greening technology to grow hardy lawn that is easy to walk on

Honeycomb Green is composed of materials that protect lawn from the load imposed by vehicles and people along with a soil layer that supports the sound growth of lawn with sufficient water retention and permeability. Thanks to this technology, lawn remains hardy even when exposed to extensive vehicle and foot traffic. It also provides an easy surface to navigate, both for pedestrians and wheelchair users.



Vibration control technology for high-grade seismic resistance performance

Thighpod is an oil damper for buildings that exhibits the world's largest damping force. Comprised of three units connected in a series, the damper has a small footprint but offers a damping force three times that of a conventional product. We have applied this technology to large superhigh-rise buildings to make them as safe as those with base isolation structures.

Business Activities Conducted by Principal Domestic Takenaka Group Companies

Companies in the corporate group headed by Takenaka Corporation respond to the varied needs of customers through every stage of a building's life cycle.

■ Takenaka Civil Engineering and Construction Co., Ltd.

Crafting civil works in consideration of people and the environment

Takenaka Civil Engineering and Construction is the Takenaka Group member company responsible for civil engineering works. Its role is to promote social progress and affluent lives for people by establishing social infrastructure in accordance with the group's management philosophy, "Contribute to society by passing on the best works to future generations." It also engages in corporate activities with a focus on being "people friendly," and aimed at responding accurately to such needs as environmental protection, energy conservation, urban renewal, declining birthrates, aging population and a highly-networked information society based on an environmental policy of "Striving to build social infrastructure that coexists harmoniously with the environment and contributes to the sustainable development of society. The environmental message defining the company's mission, "Bridge between people and the earth," guides all its employees as they walk alongside their customers in an effort to create sustainable urban areas with a focus on the establishment of infrastructure that supports various industries and a diverse range of enriched lifestyles.



Land formation work of the Aigawa land readjustment project

■ TAK E-HVAC Corporation

Providing total engineering service for building facilities

TAK E-HVAC is a comprehensive facilities provision company that creates superior architectural environments through total engineering of electrical, water supply and drainage, and air-conditioning facilities. The company provides facilities to satisfy a wide variety of needs by deploying its comprehensive, highly advanced engineering capabilities for tasks encompassing everything from project proposals to construction work and after-sales service. Furthermore, it is engaged in refurbishment work to realize net zero energy buildings (ZEBs) toward a low-carbon society by introducing energy-saving technologies and pursuing comfortable office areas, thereby contributing to creating better environmental spaces and a sustainable society.



Renovation work into a ZEB for Takenaka's Higashi Kanto Branch

■ Asahi Facilities Inc.

Preserving the value and safety of customers' buildings

Since its establishment in 1969, Asahi Facilities has been engaged in maintenance operations throughout the life cycles of buildings. The longer a building's operating lifetime is extended, the higher its value as an asset. Asahi Facilities seeks to establish itself as its customers' best partner by helping them derive greater value from their buildings, and offering superior, more attentive services designed to protect and improve their property values. These include operation and maintenance services, security services and building management services that optimize care for buildings in conducting cleaning and other tasks as well as insurance agency services that cover risk management.



Daily facilities check

■ Urabandai Kogen Hotel

Luxurious resort hotel with seasonal views of Mt. Bandai

Urabandai Kogen Hotel is located in the Goshikinuma ("Five-Colored Marshes") area inside the Bandai-Asahi National Park. Since its opening in 1958, this historical and traditional hotel has hosted various guests, including members of the Imperial Family. It was totally rebuilt in 1983 and a hot spring facility was added in 2009. Subsequently the hot spring building was expanded and the hotel facilities were renewed, for which the work won the 23rd BELCA* Award for Best Reform category. The hotel offers classic yet modern premium rooms, a restaurant where guests can enjoy both French and Japanese cuisine using local ingredients, and a library lounge stocked with around 1,200 books. Urabandai Kogen Hotel is committed to remaining a high-quality and thoroughly welcoming resort hotel where guests can enjoy enriching experiences.



Hotel seen from the courtyard

* BELCA: Building and Equipment Long-life Cycle Association

We will contribute to the realization of a sustainable society in the future by enhancing dialog with stakeholders including the global environment, local communities, customers, employees and cooperating companies, and by striving to ascertain and solve social issues through our business activities.

CONTENTS

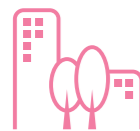
p35 Global Environment



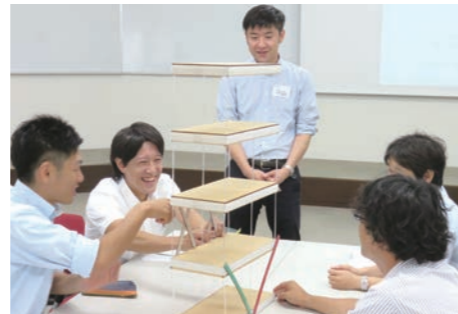
Leaving a beautiful Earth to future generations



p37 Local Communities



Contributing to the sustained progress of local communities



p39 Customers



Contributing to the business growth of customers



p41 Employees and Cooperating Companies



Growing together with employees and cooperating companies



p43 Management

p45 Group Companies

p47 Targets and KPI

p48 External Perspective

Main activities planned for 2014–2016 and achievements in 2016

Areas of Activity with Stakeholders	Main Activities Planned for 2014–2016	Main Activities Conducted in 2016/Examples of Achievements
Global Environment	<ul style="list-style-type: none"> Ensure a wide range of choices through component technology development and realization of smart communities through coordinated group efforts Realization of zero emission buildings through energy conservation planning and efforts to adopt renewable energy combined with component technology development Reinforcement of a basis for sustainable operation through proactive efforts toward reduction of regional and global environmental loads 	<ul style="list-style-type: none"> Started Takenaka's own "low-carbon model town" initiative with the independently developed Energy Management System utilized as a core technology (p. 29) Renovation work to transform the Higashi Kanto Branch Office building into a ZEB was conducted as a groupwide project. Operation and verification of benefits started. Initiatives to realize a society based on resource recycling through developing and utilizing "Mortoru" tile recycling technology and achieving zero emissions in the renovation of the Higashi Kanto Branch Office building By sharing the dreams of customers, building and land planning took into consideration symbiosis with nature and biodiversity.
Local Communities	<ul style="list-style-type: none"> Expansion of and support for regional social contribution activities by every business entity on the axes of "dissemination and development of knowledge and technology" and "passing on the traditions and culture of architecture" Continued support for activities of aid organizations and strengthened coordination with company activities Promotion of understanding and resolving urban social issues of "cities" and "towns" with the aim of achieving sustainable urban creation 	<ul style="list-style-type: none"> Conducted community contribution activities, including delivering a sitting volleyball class, private-sector teacher training programs and a restoration curriculum called "recovery urban creation built together with children" Continued assistance to public interest incorporated foundations. Extended special cooperation, together with a public interest incorporated foundation, for the exhibition "400 Years of Architectural Challenges—TAKENAKA: Master Builder in Japan" organized by the Setagaya Art Museum Promoted activities to create a society where people can lead long and healthy lives through urban creation measures and architecture (Special Feature 3) Takenaka's quarterly magazine "approach" won the excellence award (architectural culture approach award) at the Mecenat Awards 2016
Customers	<ul style="list-style-type: none"> Quality improvement by coming together with cooperating companies on the front lines of craftsmanship and building in quality Support for development and deployment of technologies to assure the safety and security of buildings and customers in conducting business and to meet the need for integrated BCP formulation Creating and providing optimal solutions for customers' business operations 	<ul style="list-style-type: none"> Developed and applied productivity improvement technologies to deal with a shortage of skilled workers in the construction industry (Special Feature 2) Provided wide-ranging life cycle support for customers' buildings and offered new forms of value Developed and applied technology to counter long-period ground motion for a superhigh-rise building Realized the customer's dreams by meeting dual needs for a building as a structure and as a contents provider
Employees and Cooperating Companies	<ul style="list-style-type: none"> Nurturing personnel to become tomorrow's leaders Work-life balance Widely diversified human resources Health and safety 	<ul style="list-style-type: none"> Continued promotion of employee career formation and skills development Expanded the Takenaka "Meister foreman" system to promote activities for increased hiring and to develop young skilled workers Conducted a working hour reduction campaign to maintain work-life balance and developed a system for consultation on nursing care Held dialog and training to help women demonstrate more of their abilities and continued activities of the Komachi construction work team Expanded the employee support system and enhanced its management Continued to strengthen occupational safety management activities through cooperation between construction sites, subcontractors and internal departments
Management	<ul style="list-style-type: none"> Organizational governance Crisis management Fair business practices 	<ul style="list-style-type: none"> Continued reinforcement of internal controls Improvement of groupwide CSR, compliance knowledge and awareness through implementation of education and learning activities, and providing guidance in response to the circumstances of group companies Maintenance of the information security policy and the security level standards and implementation of countermeasures, extending to the supply chain, to maintain compliance as well as learning through education of responsible personnel Continued maintenance and strengthening of in-house systems for responding at times of disaster Prevention of legal risk through implementation of training in timely responsiveness to revisions in laws and ordinances
	Group companies	<ul style="list-style-type: none"> Continued strengthening of internal controls Continued awareness-raising activities to promote CSR and compliance Offered e-learning programs to prepare against data breaches resulting from cyber attacks and implemented exercises to cope with targeted e-mail attacks Conducted field training at individual sites based on the BCP and taking into account regional characteristics, and implemented training that simulated procedures up to restoration under a large-scale earthquake scenario Continued activities to disseminate legal compliance, social insurance guidance for nonparticipating companies, and procurement policy / behavioral guidance throughout the construction industry
Collaboration with Stakeholders	<ul style="list-style-type: none"> Deepening of understanding of social issues through dialog with stakeholders, and promotion of business activities for their solutions 	<ul style="list-style-type: none"> Completed demonstration experiment with Honeycomb Green, a greening system developed jointly by four companies including Takenaka Civil Engineering & Construction and Takenaka Road Construction. (p. 31) Developed Vertical Forest Light, a wall greening system that can also feature trees, in partnership with Asahi Corporation Takenaka Civil Engineering & Construction won the excellence award at the first Kensetsu Komachi Empowerment Awards sponsored by the Japan Federation of Construction Contractors in recognition of the company's effort to promote involvement of female workers in construction work

* A registration system established by the Japan Federation of Construction Contractors as an initiative to support active involvement of female workers on construction sites

Leaving a Beautiful Earth to Future Generations

Based on our “Environmental Policy,” “Biodiversity Guidelines” and “Environmental Concept,” we are making efforts toward “symbiosis with nature,” a “low-carbon society” and “recycling of resources,” and we are carrying out educational activities that serve as a foundation of our concern for the environment. While receiving feedback through a dialog with stakeholders, we are continuing activities in order to meet expectations of society.



1. Outer appearance of the Higashi Kanto Branch Office building after renovation into a ZEB 2. The communication area provides different types of work spaces that can be selected according to purpose 3. Displays energy balance in real time
4. Replacement, separation and discharge of glass (a ZEB project at the Higashi Kanto Branch Office) 5. Chipping work for recycling and reusing tiles (KITAKARO Sapporo Honkan site) 6. Top: A tile before removing mortar Bottom: A tile after removing mortar

Low-carbon society

We endeavor to reduce energy use and CO₂ emissions during the construction and management stages.

Promoting popularization of net zero energy buildings (ZEBs) —Higashi Kanto Branch Office (Chiba Prefecture)—

Takenaka strives to make net zero energy buildings (ZEBs) the norm. A ZEB is defined as a building for which net energy consumption can be cut to zero by reducing energy consumption as much as possible while also generating the energy the building does consume. We renovated the Higashi Kanto Branch Office building to transform it into a ZEB while the 2003 building remained in use. In May 2016, the building started full-fledged operation. Currently, we are collecting data on energy consumption and generation, as well as comfort levels of employees working in the building, to verify effects of the renovation. In seasons other than summer and winter, natural ventilation is adopted for air-conditioning. In summer, we use geothermal heat for radiant cooling and utilize solar heat for recycling dehumidifying agents of a desiccant air-conditioning system. In this way, we are trying to use natural energy to the fullest extent, and it is expected that we will achieve super energy-saving. (photo 1, 2 and 3)

VOICE

Resource recycling

In recent years, many of our projects have been renovation works intended to extend service life by refurbishing existing buildings. General renovation work, in which existing interior and exterior finishings and facilities are removed, generates plenty of construction waste that is difficult to sort. It is not easy to meet 3R (Reduce, Reuse and Recycle) requirements, but Takenaka promoted the 3R activities with a particular focus placed on renovation work, resulting in our two projects being awarded a prize from the Minister of Land, Infrastructure and Transport in recognition of meritorious promotion of the 3Rs in 2016.

1. Zero emissions, zero carbon

For the renovation to transform the Higashi Kanto Branch Office building into a ZEB, we also pursued “zero emissions and zero carbon” in construction. Our endeavor started with the design stage: We planned to reuse existing sashes, remount aluminum fins, and use other existing components wherever possible. In construction, we reviewed our process from a new perspective, looking for components that might be used instead of demolishing or disposing. A part of existing ducts and refrigerant pipes were reused. In addition, before

starting the on-site work, we produced a list of members/components to be removed and held discussions with demolition and waste management contractors to determine a way to dismantle as well as to collect and separate waste for each item to make it recyclable. These efforts delivered additional benefits such as achieving a zero final disposal volume and establishing a route for recycling glass, which was previously difficult. Moreover, in an effort to achieve zero CO₂ emissions from construction, we used green electricity and purchased carbon credits, and achieved zero carbon emissions. (4)

2. Development of “Mortoru” tile recycling technology

Tiles used as a finishing material for interior and exterior surfaces of buildings are often durable, and there have been considerable needs for reusing original tiles for the preservation and rebuilding of historic architecture. However, mortar tightly adhered to the back of the tiles can be difficult to remove, and therefore most such tiles are traditionally discarded. Takenaka developed a technology called “Mortoru” that helps cleanly remove mortar from the backs of tiles for reuse. We apply this technology to many projects for reusing rare tiles used for walls and floors of buildings of cultural value as well as tiles that had been carefully selected by building owners, eliminating the need to

produce new tiles. Takenaka is thus contributing to the effective use of resources. (5 and 6)

Symbiosis with nature

In sharing customers’ dreams, Takenaka pays due consideration to symbiosis with nature and the preservation of biodiversity in our building and land planning.

A place for experiencing the appeal of the local environment —Megaminomori Central Garden (Yamanashi Prefecture)

The facility was opened in October 2016 as a multipurpose hall for community fellowship and training for the building owner’s company. To ensure symbiosis with the natural surrounds, we studied all trees on the site and formulated a plan to replace the forest of Japanese red pine planted at the time of construction with a deciduous broadleaf forest more suited to the local environment. By changing evergreen Japanese red pine trees to deciduous trees on the edge of the woodland, sunlight will be able to penetrate the edge of the forest and a variety of plants and animals will start to populate the area. To attract the great purple emperor, the national butterfly of Japan, we planted Japanese hackberry, the

leaves of which feed the caterpillars, and sawtooth oak, the nectar of which feeds the adults. All felled trees were consumed by using the timber as a material for the ceiling of the café and processing the rest as firewood for distribution around the neighborhood. Furthermore, during the construction period, seedlings of native plants were moved to a different place. Through these various activities, Megaminomori Central Garden has come to embody the project owner’s commitment to symbiosis with nature. (7, 8 and 9)

Foundation for environmentally conscious activities

In principle, all Takenaka’s design projects undergo self-assessment for environmental performance based on CASBEE*. In FY2016, we earnestly implemented projects based on an environmentally conscious activity plan, and the rate of projects achieving CASBEE ranks of S and A improved. Takenaka is working together with its group companies in promoting environmental activities. We have a unified environmental policy in place, share the green procurement policy, conduct Environment Month activities and other awareness-raising programs, and routinely exchange information. We also

exchange information on a regular basis with cooperating companies.

* CASBEE: Comprehensive Assessment System for Built Environment Efficiency. The five ranks based on the assessment indicators are: S (Superior), A (Very good), B+ (Good), B- (Slightly poor) and C (Poor).

www.takenaka.co.jp/enviro/vision/01

Environmental Policy/Biodiversity Activity Guidelines

- Case studies**
- Symbiosis with nature
 - Low-carbon society
 - Resource recycling
 - Foundation for environmentally conscious activities (educational activities, others)



VOICE

Hirofumi Suzuki,
Branch Manager (left)
Eiichi Hamajima,
Deputy Branch Manager (right)
Higashi Kanto Branch Office

Work style reform was one of the major objectives of the ZEB project. We broke the office space up into distinct segments. The communication area by the window is a comfortable place to work, with a natural breeze coming in during the seasons other than summer and winter. The area is designed to be versatile so that different types of work spaces can be selected according to purpose. Moreover, our efforts to achieve a ZEB attracted keen interest from both inside and outside the company, which raised awareness among employees and improved their knowledge on ZEBs. The project has brought about more changes than we expected, including the use of tablet computers for greater efficiency and other initiatives for further improvement. We will hopefully be able to convey to our customers the different types of value offered by ZEBs that we have experienced firsthand as an end user.



7. The ceiling of the café, using felled wood (Megaminomori Central Garden) 8. Outer appearance of Megaminomori Central Garden 9. View inside the café

Contributing to the Sustained Progress of Local Communities

We will engage in dialog with stakeholders such as local governments, schools and NPOs, and conduct activities that utilize “the spirit of craftsmanship, and knowledge and technology” that are cultivated through our business activities. In doing so, we will contribute to the education of personnel who will be responsible for the next generation and the development of local communities. Specifically, we will disseminate knowledge and technology by providing personnel to academic societies and educational institutions, and make available for use in-house educational facilities, communicating with local communities at each office and inheriting and transmitting architectural culture, which will be published in our corporate activity and periodical magazines.



1. Para volleyball interclass match 2. Commendation of the employee contribution award 3. Teacher training program: RC mock-up (Practical Technology Training Center Omoi) 4. Teacher training program: Lecture and practical session on building structures (Naniwa Demae Juku) 5. Teacher training program: Hands-on session at Takenaka Carpentry Tools Museum 6. Ishinomaki flower-bed-making workshop



7. Special exhibition “400 Years of Architectural Challenges—TAKENAKA: Master Builder” in Japan at the Setagaya Art Museum 8. Farewell ceremony for graduates from the 54th class of the Takenaka Ikuikai Public Foundation 9. The Sakan—Harmonization of Mud as the Spatial Structure Plasterer’s Restructuring Technique for “Wa” Japanese Style at the Takenaka Carpentry Tools Museum 10. AINO AALTO exhibition at Gallery A Quad 11. External appearance of Chochikukyo

Local community interaction

Getting acquainted with sports for the disabled Delivering a sitting volleyball class

On September 6, 2016, Takenaka, at the request of the Japan Para-Volleyball Association, delivered a class to promote understanding of sitting volleyball (a parasport) and disabled athletes. As in the previous year, five members of the volleyball team taught techniques to 88 sixth-grade students of Koto Ward Kazuya elementary school and played a game with them (photo1). The students practiced passing and tossing a ball while keeping their pelvis in contact with the floor at all times. Then, interclass matches for boys and girls were played as well as serious games contested between the athletes and teachers. During the class, the surge of enthusiasm that erupted in the gymnasium was palpable. The principal of the school gave a speech encouraging the students to think about various ways they can be involved in parasports, such as through learning, watching, doing and supporting the sports, in view of the year 2020. The students, meanwhile, promised the athletes that they would definitely be there to cheer them on at the Paralympics in four years.

VOICE

Commendation of employees’ social contribution activities

In 2006, we established a system to recognize employees’ social contribution activities and, since 2012, outstanding activities have been recognized by the awarding of the

president’s prize. In June 2016, the awards ceremony was held and the excellence prize was given to the construction (extension) project for a new research building at the Minase Research Institute of Ono Pharmaceutical Co., Ltd. The project was chosen from 40 applications in recognition of the project team’s achievement in establishing a favorable relationship with a wide range of stakeholders and conveying appealing aspects of the construction industry to children. At the ceremony, the site manager accepted the prize and reported the social contribution activity to participants. (2)

Dissemination and development of knowledge and technology

Offering private-sector training for teachers

Takenaka has been cooperating in a teacher training program organized by the Japan Institute for Social and Economic Affairs. In 2016, we offered an opportunity to experience the forefront of craftsmanship to 37 elementary and junior high school teachers in Osaka and Takatsuki cities for three days during their summer break. On the first day, the teachers experienced simulated construction work using a multiunit housing RC mock-up at the Practical Technology Training Center Omoi (3). On the second day, they received a lecture on building structures by Naniwa Demae Juku, a volunteer group organized by Takenaka employees (4), followed by an inspection tour to a construction site in Osaka City. On the third day,

they observed exhibits and took part in hands-on learning (5) at the Takenaka Carpentry Tools Museum in Kobe City. Later that day, the teachers were asked to make a presentation on how they were going to apply the training experience in their own teaching. For Takenaka too, it was a truly meaningful experience to have the opportunity to interact with teachers having direct contact with children, who are the next generation.

Colorful flower-bed-making workshop for junior high school students in Ishinomaki City

Takenaka has been supporting a restoration curriculum called “recovery urban creation built together with children” in cooperation with the Japan Committee for UNICEF and Yamagata University. In 2015, we were involved in a workshop on park development aimed at incorporating ideas of local junior high school students into the restoration work undertaken in the Shin-Kadowaki district. In 2016, students learned how to make hanging baskets and designed flower beds in the park scheduled for completion next year. Residents of the district have high hopes for the revitalization of the local community through the flower-bed-making activity. (6)

Passing on the traditions and culture of architecture

Activities supporting public interest incorporated foundations

Takenaka gives support to the activities of the following

three foundations to connect the past, present and future by promoting culture, art and education: Takenaka Carpentry Tools Museum (to pass down traditional technologies and skills to present and future generations); Gallery A Quad (to convey information about contemporary architectural culture to society); and Takenaka Ikuikai (to develop personnel who will lead society in the future). In April 2016, Takenaka Corporation, together with its three public interest incorporated foundations, contributed exhibits for a special exhibition, “400 Years of Architectural Challenges—TAKENAKA: Master Builder in Japan,” held at the Setagaya Art Museum in Setagaya, Tokyo. The exhibition, planned by the museum, provided an overview of Japan’s modernization from the perspective of architecture. (7)

● Takenaka Ikuikai Public Foundation

Since its establishment in 1961, the Takenaka Ikuikai foundation has maintained a program of educating and developing young people based on the philosophy of its founder and first president, Toemon Takenaka: “Take the path of truth, keep good faith and be steadfast; Be industrious and fulfill your responsibilities; Devote yourself to your work with discipline; Act in harmony with the organization; and Pursue prosperity for all society.” The scholarship program at the core of these activities grants scholarships to some 180 students each year as well as providing financial assistance for overseas studies. The organization also continues to offer assistance to architectural researchers with promising futures in addition to contributing to culture and the arts. (8)

● Takenaka Carpentry Tools Museum

This museum was opened in 1984 in Kobe, the birthplace of Takenaka Corporation, for the purpose of collecting and preserving carpentry tools as a national heritage, and passing on the spirit of the craftsman as well as the tools and heart of the blacksmith to future generations through research and exhibits. On the museum’s 30th anniversary in 2014, it made a fresh start by moving close to Shin-Kobe Station. As the only registered museum for carpentry tools, the museum is actively engaged in permanent exhibits, special exhibits and hands-on classes. In October a special exhibit entitled “the Challenge of Modern Architectural Craftsmanship” was held. The museum exhibited valuable resources owned by construction companies and universities, looked back on the process of technological innovation aimed at modernization since Meiji. (9)

● Gallery A Quad

Gallery A Quad, which has celebrated its 12th birthday, organizes exhibitions based on the concept of examining society through architecture. The gallery provides opportunities for visitors to discover and explore architectural culture through various inspiring architectural works. (10)

Preservation and utilization of a masterpiece residence

Chochikukyo, located in Oyamazaki-cho, Kyoto, was a residence designed and owned by the late architect Koji Fujii, who was affiliated with Takenaka.



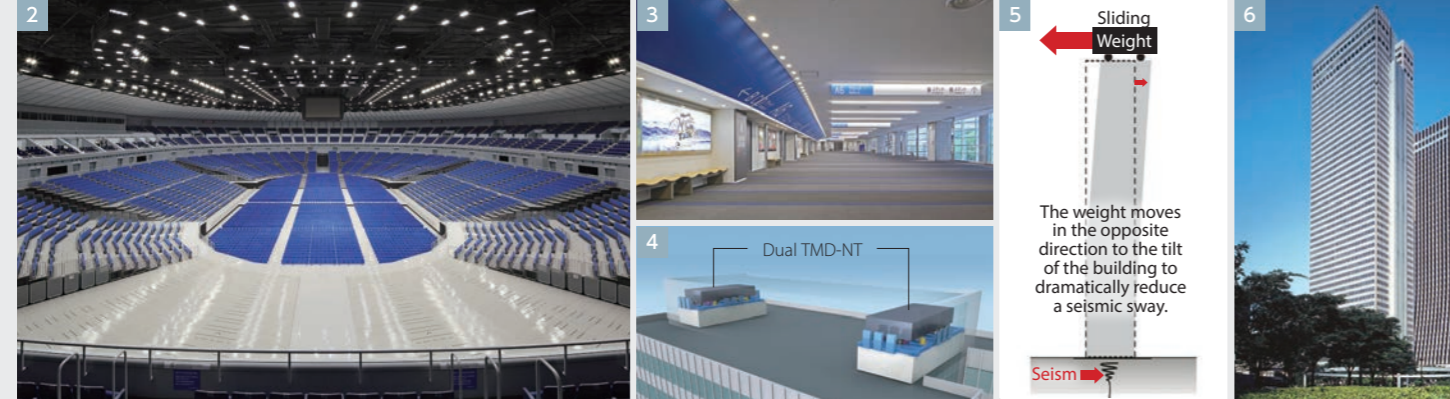
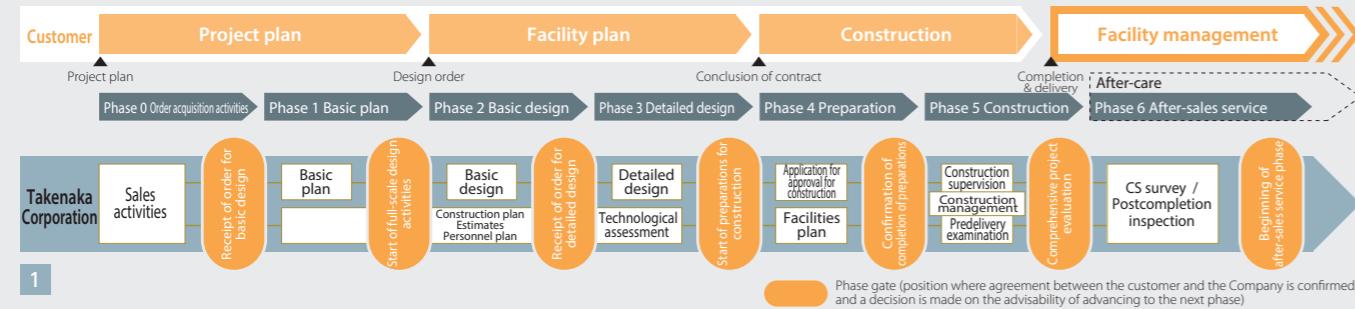
VOICE

Yoshihisa Mano
Chairman
Japan Para-Volleyball
Association

For the popularization and development of parasports, it is essential that lots of people are aware of, watch and support sports for the disabled. Our association encountered Takenaka Corporation two years ago and cohosted with it a hands-on workshop in sitting volleyball, a parasport, at an elementary school in Koto Ward. Takenaka Corporation helped us in planning the event and by providing volunteers. I hope that being taught by para-athletes in person at an elementary school will help teachers and students become familiar with the sport and grasp the amazing physical abilities of the athletes and the excitement of the game. We do hope that they show their support by coming along and acting as a kind of cheer squad in three years’ time. In cooperation with the company, we would like to continue PR activities to educate people about sports that can be enjoyed by players both with and without disabilities.

Contributing to the Business Growth of our Customers

We create “safe, secure and attractive architectural works of art,” and we build in quality at the design and construction stages based on a quality assurance system, thereby satisfying our customers and earning society’s trust. We are committed to maintaining and improving the value as social assets of our customers’ buildings by support from both aspects of hardware and software from the initial stages of a project as well as support while holding dialog with customers throughout the life cycles of their buildings.



1. Quality assurance system for architectural design and construction projects 2. Yokohama Arena (Main Arena) 3. Yokohama Arena (Lobby floor) 4 & 5 Shinjuku Nomura Building (Illustration of Dual TMD-NT installed) 6. Shinjuku Nomura Building 7, 8, 9 and 10: HIRAKATA T-SITE

Quality improvement

Activities based on a quality assurance system

In view of realizing diversified customer expectations and achieving superior quality, we have the Takenaka Quality Assurance System as a standardized quality assurance process followed in projects based on total quality management (TQM). Based on this system, we implement further improvements through incorporating quality into our work during the design and construction stages, conducting quality inspections during after-sale service and customer feedback through customer satisfaction surveys. (figure 1)

Adding value to buildings

Contribution to enhancing the value of Yokohama Arena

With a total floor area of 45,000 square meters and seating capacity of approximately 17,000, Yokohama Arena was designed and constructed by Takenaka as a multipurpose hall. Since its opening in 1989, the facility has enjoyed enduring patronage by the public as a venue for concert, sporting and other entertainment events, as well as product sales events, trade

shows and Yokohama City’s coming-of-age ceremonies. In addition to being able to change the number of seats and layouts to suit different events, Yokohama Arena boasts a high-quality sound system and has been named among the best 100 concert halls in Japan as selected by musicians. The arena was closed for six months in 2016 for large-scale renovations. The interior finishing for lobbies, box seats, green rooms and other backstage spaces were completely refurbished. Facilities and equipment were also upgraded and, in a first for multipurpose halls in Japan, a new LED lighting system with controllability of lighting output from 0 to 100 percent of the maximum was introduced. The arena has thus enhanced its value as a comfortable, highly convenient hall not only for the audience but also for performers, promoters and facility management staff. We continue to contribute to creating a space with new value to meet the needs of the time. (photo 2 and 3)

Safety, security and prosperity

Revolutionary dampers installed for Shinjuku Nomura Building to deal with long-period ground motion caused by earthquakes

To cope with long-period ground motion, which causes superhigh-rise buildings to sway in the

event of large-scale earthquakes, a Dual TMD-NT* was installed near the top of the Shinjuku Nomura Building. Each weight is supported by rubber bearings in case of small vibrations and by linear sliders built into the linear slide mechanism in case of large vibrations, with sliding amplitudes reduced with oil dampers. The system was developed jointly by building owner Nomura Real Estate Development Co., Ltd. and Takenaka Corporation, and the project’s use of such a system represents the first instance of retrofitting to counter long-period ground motion. As compared with the performance prior to introduction, the system is expected to reduce the amplitude of vibrations caused by long-period ground motion following an earthquake as powerful as the 2011 earthquake or a Nankai Trough earthquake by 20 to 25 percent and shorten the duration of the vibrations by around 50 percent. In addition, since this system requires no electricity to operate, it is possible to maintain damping capabilities even in the event of power failure. We believe that providing safety and reliability is one of the most important functions of cities and buildings in this earthquake riddled country, and we continue to maintain and increase the value of our customers’ important assets through our most advanced technologies and solutions. (4, 5 and 6)

* TMD-NT: An abbreviation of tuned mass damper. NT comes from the first initial of Nomura Real Estate Development Co., Ltd. and Takenaka Corporation.

Practice of craftsmanship

The highly dense HIRAKATA T-SITE becomes “a living room” for the community, transforming the station front area

Takenaka’s “craftsmanship” is about contributing to the development of customer businesses by standing together with them at all processes from the initial stages of a project and by maximizing value through demonstrating our comprehensive solution capabilities in order to turn customer dreams into reality. From the early stage of the project, Takenaka, the customer and other project stakeholders shared the concept of a project aimed at creating a “community living room.” Takenaka also satisfied the customer’s aspiration for renewing the birthplace of the company. HIRAKATA T-SITE is a commercial facility that proposes lifestyles related to books. It was planned to be built in front of Hiramatsush Station, which is located about midway between Osaka and Kyoto. The project aimed at revitalizing the station front area, which was otherwise about to hollow out resulting in a loss of town culture, by providing a “community living room” where local residents would play key roles in activating the community and creating new value. The T-SITE’s transparent façade symbolizes a comfortable living room feel and lifestyles that evolve around books, while its

rooftop terrace commands the townscape. The exterior design incorporating both the transparent façade and rooftop terrace has created a new landscape, through which local residents can feel an affinity for the community. Inside the building, each floor is connected to the next seamlessly thanks to a migratory floor plan while a void section on each story is slightly staggered to guide visitors to encounter various goods and services amid a bustling environment and engage in continuous, spontaneous communication.

In planning what the building should offer, we designed the layouts of “Book Streets,” which will be a main feature of T-SITE, their connection with tenant areas, scenic views open to the community and the appearance of the facility as viewed from the town in line with the client’s objective to offer lifestyle proposals, with goods and services displayed between the Book Streets. Through workshops with the clients, we were able to create a highly dense, multilayer facility where space and service are connected and interrelated beyond borders, thereby realizing the community living room idea. As a safe, reliable and comfortable building, T-SITE also assumes the role of a station front disaster response base. By controlling the eccentricity of the entire building, we have achieved aseismic performance that is 125 percent of that required by the Building Standards Act of Japan by concentrating seismic reinforcing walls in the east core and the use

of cantilever framing for the two-story void on the west side. To ensure business continuity, T-SITE has an emergency power source that can provide 72 hours’ worth of power. This “re-redevelopment” project was to replace the station front building constructed as part of the redevelopment project implemented about 40 years ago during the Japan’s period of rapid economic growth. The T-SITE project presents a promising model for revitalization of station front areas in the face of population decline. (7, 8, 9 and 10)

www.takenaka.co.jp/enviro/vision/ex

Practice of craftsmanship

Adding value to buildings

Safety, security and prosperity

■ Concluded a licensing agreement for T-FoRest Wall seismic reinforcement technology using wooden panels



VOICE

Noburu Takeda

COO and Vice President Representative Director Culture Convenience Club Co., Ltd.

This facility was developed for the following purposes: To return to the place of origin where Culture Convenience Club was founded and to show our appreciation for the local community, as well as to establish a model, as the project planner, for the development of the commercial facility and its surrounding station front area in an integrated manner. In order to develop a facility the community can be proud of, we aspired to produce a lifestyle department store that delivers high quality to everyday life. Throughout all the processes of the project from concept forming to design and construction, Takenaka demonstrated its comprehensive capabilities. We are particularly satisfied with the new experimental approach taken for T-SITE to guide customers along the vertical line of flow.

VOICE

Growing Together with Employees and Cooperating Companies

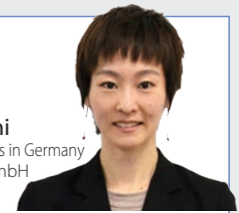
Takenaka Corporation upholds in its Company Policy “Devote yourself to your work with discipline” and “Act in harmony with the organization and pursue prosperity for all of society.” In line with the policy, we are working to provide employees, including those of cooperating companies, with safe and comfortable work environments where they can make and aspire to career plans and goals, and where workforce diversity and the individuality of each person are respected. To this end, the company is promoting the sharing of problems for their solutions through dialog with employees and subcontractors and by conducting various activities, such as inspections conducted jointly with cooperating companies and the activities of the Komachi construction work team composed mainly of women (general employees and skilled workers).



1. The president talked with new employees 2. New Recruit Global Business Experience Training 3. Participatory skill workshop 4. A dialog meeting with cooperating companies

5. Training for line leaders 6. Komachi construction work team activities 7. Training to experience a fall from a scaffold in a virtual reality construction site 8. Slings training

VOICE



Mamie Inokuchi
European Headquarter in Germany
Takenaka Europe GmbH

Experiencing diversity firsthand at an overseas office

When I took my current post two years ago, I was the first female expatriate in Takenaka Europe. Having met many business women both inside and outside the company through projects, I feel that Europe is a step ahead of Japan in terms of the social advancement of women. Staff members at the Germany office include people both from Germany and the rest of the world. For example, when we undertook a design project for a Korean company, the team engaged in discussions for design proposals was comprised of employees from Korea, Germany, Afghanistan, Surinam and Japan. Although I faced difficulty understanding and being understood due to differences in values, I made persistent efforts, and took the lead in developing proposals. As a result, we were able to present a design proposal that fully satisfied the president of the client. All members of the team found it rewarding and shared the joy of accomplishment.

Developing human resources to become tomorrow's leaders

One-year new employee training

We conduct training for new recruits for the first year after they join the company to ensure that they are properly trained to achieve growth as honest employees endowed with ample knowledge and Takenaka's traditional spirit. They reside throughout this period in our training dormitory in Kobe, the company's original hometown. Here they participate in informal gatherings with members of management and receive instructions from personnel responsible for instruction in various departments, acquiring insight through one-on-one instruction and on-the-job training (OJT) into such matters as our management philosophy and our serious attitude toward craftsmanship. The training activities are augmented and increased in substance and flexibility through such programs as New Recruit Global Business Experience Training, in which selected employees are dispatched to overseas affiliates to learn to respond to different social environments, management strategies and training needs. (photo1 and 2)

A session for first-year high school students to experience skills

While the number of young workers entering the construction industry is decreasing, Takenaka is conducting various activities to foster the understanding of young people about the appeal of the construction industry. In 2016, Takenaka held a participatory skill workshop at the Tokyo Main Office, together with Chikuwakai, an organization composed of cooperating companies. We offered an experience-based skill workshop, inviting 109 first-grade students and nine teachers from the construction course of a technical high school, while younger supervisors and craftsmen from Chikuwakai served as instructors. In addition to sessions for experiencing seven types of skills required for construction processes, the workshop featured sections on trying on assist suits and on displaying panel presentations on manpower/energy-saving work methods. Although students who attended the workshop found it challenging to work on tasks they were trying for the first time, they greatly enjoyed the workshop. (3)

Takenaka Meister Program

The program for cooperating companies was launched in 2012. In 2016, Takenaka expanded the program when it established the Junior Meister system for the education of young

skilled workers and increased the monetary rewards given under the program. This year, we introduced a monetary reward system for foremen at cooperating companies, who are responsible for technical management, guidance and supervision.

Dialog with cooperating companies

In December 2016, Takenaka had a dialog with supervisors of cooperating companies on how we should make the construction industry more attractive. Based on a comment provided by Professor Kanisawa of Shibaura Institute of Technology during the dialog, we will endeavor to make construction an appealing industry to young people. (4)

Work-life balance

Various activities are being pursued through exchange of opinions with the employees' union to ensure our employees' ability to find mental and physical fulfillment in their work. The annual Working Hour Shortening Promotion Week Campaign started in 2012, and was extended to a full month in 2015. It is now practiced by more employees. To deal with concerns of employees with care obligations to family members, the number of which will increase in the future, Takenaka also opened

Takenaka Group Nursing Care website for group company employees. It provides information on company and public support systems, nursing care seminars, consultation meetings and e-mail consultations, all of which are available from computers and smartphones.

Diversified human resources

Raising awareness of diversity through efforts to expand opportunities for women

We promote diversity management to realize workplace environments in which everyone can work comfortably, irrespective of gender, nationality, age or the presence of disabilities. Positive initiatives to expand opportunities for women are given a particularly high priority. In an effort to produce specific outcomes, all employees were given opportunities to participate in e-learning seminars on diversity. In addition, a manager dialog was held for executive officers to consider the issue of diversity from managerial viewpoints. Moreover, each workplace had a dialog as an opportunity for each member to consider diversity as their own issue and to take concrete actions. We also provide line leaders with diversity seminars on a continuous basis for them to learn practical career support methods and to improve

management skills, with a particular emphasis placed on female employees' work continuity and career development. These steady efforts were recognized by an external organization, and in 2016 the company was named among the New Diversity Management Selection 100 in FY 2015. In addition to continuing these initiatives and activities of Komachi construction work teams (12 programs registered in total as of the end of November 2016), we will share issues that have surfaced from operations with female line leaders and Construction Project Managers—who are growing in numbers—to implement measures to foster a worker-friendly workplace. (5 and 6)



Health and safety

Hands-on safety training conducted at Omoi, and the main and branch offices

Takenaka started hands-on safety training programs in 2012 at our Practical Technology Training Center Omoi. Specifically aimed at preventing fall accidents, the training program is designed to heighten the awareness of construction site safety through providing workers with opportunities to experience near accident situations with their senses. Thus far, 410

employees, mainly young workers, have received this kind of training. To offer such hands-on safety training to more employees and on-site workers, the Tokyo Main Office established a training facility to provide both hands-on and virtual reality accident training, while the Osaka Main Office and the Nagoya Branch Office have started to use other organizations' experience-based training facilities. We will conduct experience-based safety training also to deal with electric shock, getting caught hazards, scattering/falling and other possible on-site accidents to raise safety awareness and to eliminate occupational accidents. (7 and 8)

www.takenaka.co.jp/enviro/vision/ex

Developing human resources to become tomorrow's leaders

- Education system to help individuals enhance their skills, and current situation of global human resource education

Work-life balance

- Enhancement of employee support systems and strengthening of their operation

Diversified human resources WEB

- Current status of diversity promotion

Health and safety

- Healthcare system, safety results for 2016, and safety training conducted at Omoi

Promoting and Implementing Fair and Just Business Activities

Based on our corporate philosophy, we practice “Total Quality Management” in order to obtain the satisfaction of our customers and earn the trust of society. Together with raising our value to society as a corporation, we will fulfill our social responsibilities. In 2016, Takenaka Corporation won third place in the overall ranking of the Quality Management Level Research conducted by the Union of Japanese Scientists and Engineers. To achieve these objectives, we will conduct business fairly and efficiently and establish a system to evaluate the results of and improve our activities while also implementing measures to strengthen their foundation in order to promote mutual cooperation among group businesses.

Organizational governance

Improvement of management quality and confirmation of governance for rapid, accurate decision making

The board of directors meets once a month or more often as needed in its capacity as a supervisory body for making 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. In addition, the board is subject to fair, unbiased auditing by an accounting and auditing firm acting as an independent auditor. We have also established the Corporate Auditor's Office as an internal auditing organization to verify the company's operational, accounting and financial conditions. As for corporate governance, we have developed a corporate organizational framework and implemented awareness-building activities and training such as promotion of CSR activities including compliance, introduced disaster prevention and reduction activities to respond appropriately when matters involving risk arise,

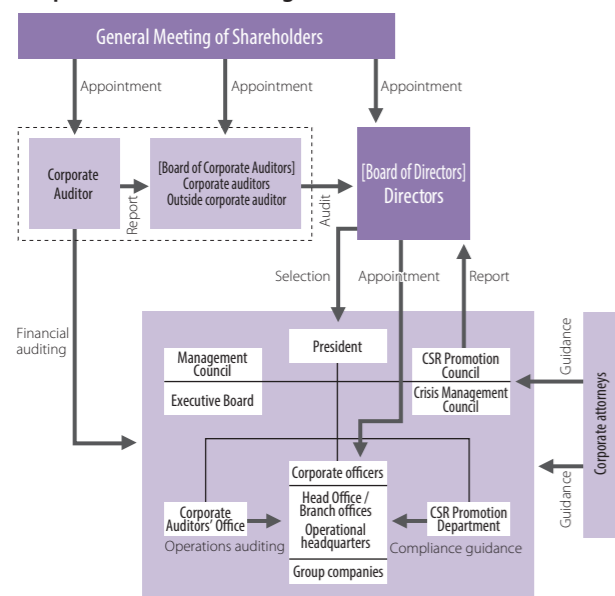
and promoted crisis management activities to be conducted under ordinary circumstances. In regard to our group companies as well, each formulates a corporate code of conduct that complies with our own to ensure optimal maintenance of the management organization.

Establishment of framework for CSR and compliance, and implementation of awareness-development activities

We established the CSR Promotion Council headed by an executive officer responsible for CSR promotion as a central organization for CSR. We also organized a compliance committee headed by the executive officer in charge of compliance under the Council as well as CSR and compliance committees for each of our branches. Furthermore, we have a CSR Promotion Department within the Head Office and have appointed CSR and compliance facilitators, CSR and compliance leaders, compliance managers, and compliance (sub) leaders at each site of the Takenaka Group, who are tasked with promoting education and raising awareness on compliance. In addition, we have established multiple consultation and reporting contacts for people in the company as well as in

other group companies and subcontractors. Specific training and awareness development activities concerning CSR and compliance include the “CSR and Compliance News,” a publication dealing with CSR and compliance issues inside and outside the company. It has been issued roughly once a month since 2009 and distributed to all employees. During “Takenaka Group CSR and Compliance Month,” which is held every year in November, the following activities were carried out groupwide, including at overseas offices: transmission of a message from top management, a “CSR Officer Seminar” by an outside lecturer, workplace compliance activities with the theme “skits and meetings,” familiarization with various consultation and reporting systems and an “e-quiz.” Each group company also independently held their own programs for the Fair Construction Transactions Promotion Month as well as harassment prevention seminars. Activities of this kind will be repeated and implemented by companies in our corporate group and throughout our network of cooperating companies to deepen knowledge and awareness of CSR, including compliance while extending the activities’ reach.

Corporate Governance Organization

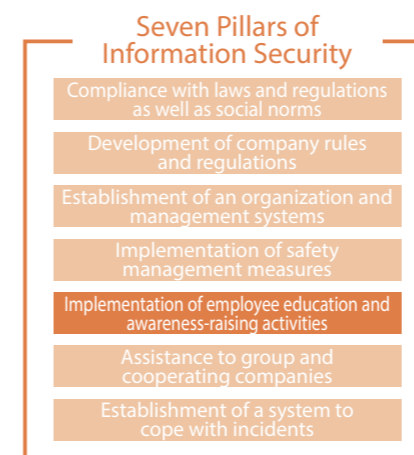


http://www.takenaka.co.jp/takenaka_e/about/code/Procurement Policy

Crisis management

Sustained promotion of information security measures

We are implementing information security measures to protect the important information assets of our clients. Given the growing threat of cyber attacks in recent years, we have stepped up our efforts to educate all our employees, including those outside Japan, and raise their awareness of information security to prevent data breaches resulting from cyber attacks and hacking, through e-learning programs and exercises to cope with targeted e-mail attacks. From now on we will continue to promote our activities based on the



seven pillars of information security to ensure a higher level of information security.

Ongoing BCP-based activities for minimizing damage by natural disasters

Takenaka has formulated a BCP in preparation for predicted earthquakes. In the event of an earthquake, we will establish emergency headquarters, check the safety of employees and their families, and examine and deal with the damage caused to our own facilities and construction sites and to the buildings we have constructed for our customers on a companywide basis in line with the BCP. In 2016, Takenaka's bases in eastern, central and western Japan individually conducted practical drills tailored to local characteristics in which their employees practiced how to respond to an earthquake. With a total of around 11,000 employees participating from

Takenaka and other 17 group companies, the training sessions provided participants with an opportunity to combine their collective capabilities. Also, on November 22, we carried out joint earthquake disaster drills throughout the entire company with the main target being companywide coordination. In addition, employees who would serve as members of the emergency headquarters received hands-on simulation training on initial responses in the event of a large earthquake, as in the past, and the scope of the training was expanded this year to include procedures up to restoration. Thanks to these drills, when the large-scale earthquakes hit Kumamoto and central Tottori Prefectures, we were immediately able to establish emergency headquarters and respond to the situations without major confusion. We will continue to conduct drills against serious disasters and improve our BCP to increase our emergency preparedness.



Fair business practices

Communicating full awareness of the details of changes to relevant laws and ordinances while continuing to conduct activities to support observation of the Construction Contractors Law

We pursue ongoing efforts to ensure employee awareness of changes and administration trends concerning various relevant laws and ordinances to ensure that corporate activities are conducted properly and legally. In 2016, the guidelines on guidance to subcontractors regarding enrollment in social insurance programs was revised by the Ministry of Land, Infrastructure, Transport and Tourism. As an industry leader, we responded by launching a new corporate-wide initiative to encourage all our business partners to enroll in social insurance programs. In association with the Fair Construction

Transactions Promotion Month (November) designated by the Japanese government, we took sufficient time to confirm that the Construction Business Act is observed at our construction sites and follow-up surveys are conducted on the social insurance enrollment status of subcontractors, with a view to ensuring fair business practices on a companywide basis.

Activities to achieve fair procurement and continuous measures against antisocial forces

To fulfill our CSR, we have formulated a procurement policy and activity guidelines, based on which we are working with our business partners to promote procurement that responds to the needs of society and our customers. We are thus conducting procurement activities in line with clear principles. We explain these principles to business partners at meetings

of the occupational health and safety association and of Chikuwakai, an organization composed of subcontractors, and ask these partners to take specific actions based on the principles. With regard to antisocial forces, we have traditionally concluded memoranda on provisions for exclusion of criminal syndicates with all our business partners. We also share information widely with our partners for the dissemination of related information to ensure that we have no relationships with any antisocial forces.



Activities to Promote CSR at Major Group Companies

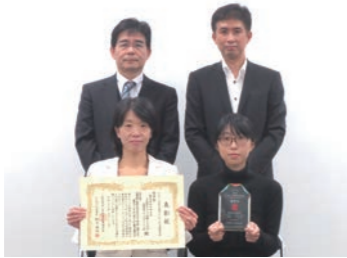
Takenaka Group companies in Japan and overseas are pursuing ongoing efforts to promote CSR based on the corporate code of conduct formulated to realize the Takenaka Group CSR Vision. The overseas affiliate companies promote activities with the culture and customs of the countries and regions in which they operate taken fully into account.

Domestic group company activities

Takenaka Civil Engineering & Construction Co., Ltd. **Local communities** **Employees**

● Diversity initiatives; Creating hospitable workplaces for women

Takenaka Civil Engineering & Construction introduced a Team Pair Program designed to utilize an individual's experience as a group's experience at the Soil Environment Group, Construction Department at the Tokyo Main Office. This initiative is intended to support active participation of female workers in the construction industry, provide comfortable work environments and enhance the image of the construction industry. Under this program, a manager and a regular employee form a pair to facilitate communication to promote work environments where female employees who are unable to work full-time due to childcare or nursing care can unleash their full potential. The program has also helped to adjust unbalanced workloads among employees. In recognition of this activity, the company was honored with the First "Kensetsu-Komachi Empowerment Award of Excellence" sponsored by the Japan Federation of Construction Contractors. The company will continue to implement activities to realize worker-friendly environments in the construction industry.



The Kensetsu-Komachi Empowerment Award of Excellence

Asahi Corporation **Global environment**

● Optimal greening initiatives

Asahi Corporation provides optimal greening solutions that suit differing building site conditions by developing and improving the Vertical Forest® wall greening system in partnership with the Takenaka Research and Technology Institute. The system can feature various species of shrubs to present a variety of colorful, seasonal greenery designs while contributing to reducing CO₂ emissions from buildings. A new system called Vertical Forest Light (patent registered) has been developed, achieving weight reduction and easier workability as compared to the previous system, as well as receiving favorable evaluations from customers in terms of cost that is equivalent to that of general wall greening systems capable of accommodating only plants. The company will continue to maximize its unique exterior vegetation techniques in metropolitan architecture, and spread throughout society the concept of symbiosis between greenery and working people.



Wall greening system: Vertical Forest Light

Asahi Facilities Inc. **Global environment** **Customers**

● Reducing energy consumption and CO₂ emissions

Asahi Facilities has been commissioned to conduct management and maintenance operations for Sapporo Dome. To ensure the safety of visitors during the winter season, the Dome has introduced a road heating system that melts snow on walkways. The snow melting system is fueled by gas, the consumption of which previously accounted for approximately 23 percent of the annual gas consumption at the entire facility. Harnessing a wealth of knowledge and experience related to facility equipment management, Asahi Facilities adjusted snow sensors and improved the operation method of the system on a continuous basis. This endeavor resulted in a reduction of approximately six percent of the annual gas consumption. The company was highly evaluated and appreciated by the client for its contribution to a reduction in facility operation costs, in addition to achieving energy conservation and reducing CO₂ emissions. The company continues to implement further improvements for the optimal operation of the facilities.



Sky Walk at Sapporo Dome

Tokyo Asahi Build Corporation **Local communities** **Employees**

● Youth Education: Passing on craftsmanship to the future

Tokyo Asahi Build Corporation provides special classes by skilled employees at technical high schools to pass their expert skills and pleasure to build on to the future generations, continuously. Through the demonstration by an expert and the ferro-concrete reinforcement and form work experience program, young generations felt pleasure to build and deepen their interest in the construction industry. The latest of these tuition visits took place at Iwate Prefectural Morioka Technical High School, and consisted of input mainly from former students of the school, who showed the current students some of "tricks of the trade" such as the layout arrangements and assembly processes for reinforcing work, and gave them instructions in practical skills. The students who participated later commented on how they would like to help to make the construction industry in Tohoku flourish, and that they had learned that women could also do this work. The company will continue to try to impart to the younger generation the message of how important "manufacturing with a sense of pride is" through opportunities to teach them such as this.



Students practicing ferro-concrete reinforcement

Overseas group company activities

China **Global environment**

● A project in China awarded the green building prize

Nabtesco Changzhou Factory, designed and constructed by Takenaka (China) Construction and completed in 2015, was awarded the highest Three Star Green Building Design Label, which is the environmental assessment and certification system for buildings established by China's Ministry of Housing and Urban-Rural Development. Takenaka (China) Construction is the first Japanese company certified under the new standards introduced in 2016. The project realizes sustainable architecture by using energy-efficient facilities and equipment, incorporating passive design measures, which promote natural ventilation and greening rooftops and making use of recyclable materials. In 2012, Takenaka (China) Construction had won the Three Star certification for the Toyota Motor Engineering & Manufacturing (China) Phase 1 and 2 projects, and is thus continuing to contribute with its environment-conscious technologies to realize a sustainable society.



A certificate presented to Takenaka (China) Construction

Indonesia **Local communities**

● PT. Takenaka Indonesia continues community exchange

PT. Takenaka Indonesia, which was established 42 years ago, is actively engaged in exchanges with local communities. Its employees voluntarily visit Rumah Rumah, an orphanage in Jakarta every year, donating contributions collected during the past year in the company and deepening relationships with the children. A team of employees participate in an annual marathon relay race held for the promotion of friendship between Japan and Indonesia and other activities with the local community. At PT. Takenaka Indonesia, more than 400 employees in a wide range of age groups and job types are locally hired. The company's CSR activities have served as an opportunity for employees to interact with each other and to foster strong teamwork, which is also demonstrated favorably in business activities.

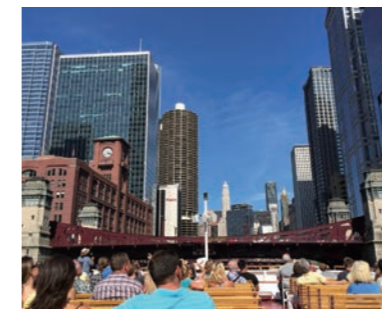


Employees visited an orphanage Rumah Rumah

U.S.A. **Local communities**

● Community exchange through architecture tours

Takenaka Corporation (U.S.A.), located in Chicago, cooperates with Chicago Architecture Tours organized annually by the Japanese Chamber of Commerce and Industry of Chicago for Japanese people residing in the area and tourists. Employees of Takenaka Corporation (U.S.A.) act as guides on the tours, providing interesting, expert explanations on the architectural structures in the city, while participants enjoy a close-up observation of the history of architecture in Chicago. Many prominent architects gathered in Chicago in the 1870s to restore the city, which was destroyed after a fire in 1871. Chicago is now home to many buildings with old and new styles, featuring a classic eclecticism inherited from European decorative art and modernism, hinting at a neo-futuristic world with use of steel and glass, all of which make the city more attractive.

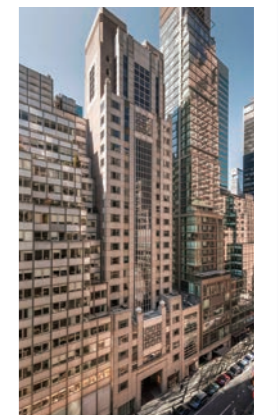


Chicago Architecture Tours

U.S.A. **Global environment** **Local communities**

● Environmental preservation activities at overseas buildings

Heron Tower in New York, owned and operated by Takenaka, achieved Energy Star certification in July 2016. Energy Star is a program that labels energy efficient products and projects, and is widely used throughout the U.S. Heron Tower underwent MEP systems upgrade, including switching to LED lighting systems and replacing HVAC equipment with current models. As a result, the building was evaluated to be 35 percent better in terms of energy consumption vs. other buildings of comparable size and use in the United States. In addition, we own and operate Hotel Nikko San Francisco, which is now preparing for certification under LEED, the U.S.'s environmental performance evaluation program for green buildings. We are making proactive contributions to environmental preservation through building operations that have a less harmful impact on the environment.



Heron Tower façade

CSR Activity Plan for 2017

Based on the Group CSR Vision and the group growth strategy toward 2025, we have identified our CSR/CSV objectives for contributing to solutions for social issues through our corporate (business and non-business) activities to realize a sustainable society. We then examined our vision in relation to the CSR/CSV objectives and the current situations, developed measures to narrow the gap between the vision and the reality, and set targets and KPIs for 2017. We referred the ISO26000 and the United Nations Sustainable Development Goals (SDGs) in identifying the objectives and verifying their appropriateness.

We also reviewed the scope of our stakeholders. To recognize stakeholders related to business more broadly, we have defined these stakeholders as "Market" to include, in addition to "clients" who order building and urban creation, end-users, potential clients, and alliance and research partners. Aspiring to be an integrated engineering firm for urban creation that contributes to the realization of a sustainable society, we will implement this plan and continue to enhance it while holding discussions with our stakeholders and external experts.

CSR/CSV objectives*1	Measures	Affected stakeholders				Targets and KPIs*2 for 2017
		Global/local communities	Market	Employees	Cooperating companies	
Sustainable urban creation and social system development (11)	1. Identify issues and develop strategies (activities and targets) for their solution through dialog with stakeholders in society and local communities	○	○			Conduct dialog at a society level and formulate strategies based on such dialog; Three fields from the issues faced by the Japanese society and cities, as indicated in pages 13 and 14
	2. Promote the establishment of a foundation for developing business models/solutions to address issues	○	○			Establish a foundation
	3. Strengthen efforts to build in quality in order to provide high-quality buildings		○			Rate of implementing education plans: 100%
	4. Prevent third-party accidents by adopting construction methods that take into account local communities and living environments and by implementing measures to deal with environmental pollution risks	○	○			Number of serious third-party accidents: 0
	5. Promote the recycling and reduction of construction by-products	○				A rate of mixed waste emission in construction of new buildings: 18% or lower
	6. Promote green procurement to reduce an impact on the environment in production	○				A rate of projects that utilize priority green procurement items: 85%
	7. Create a foundation for the development of a sound, attractive construction industry		○		○	Implement the Meister Program and other measures to support new entrants to the industry
	8. Develop energy-saving and energy-creation technologies and promote their application to projects; promote design for the environment	○	○			A rate of projects assessed as S or A rank at CASBEE ³ : 60% A number of ZEB projects: 3
	9. Promote energy management for buildings and cities	○	○			A number of projects adopting the ISEM energy management system ⁴ : 3
	10. Identify and reduce CO ₂ emissions from the entire supply chain (Scope 1, 2 and 3 emissions)	○	○			Grasp current status and examine management process
	11. Promote community exchanges and the resolution of community issues through non-business activities such as dissemination of knowledge and technology, social contribution activities, and passing down and diffusing architectural culture	○		○	○	Number of community contribution programs: 110
Development of industrial and social infrastructure through technical innovation (9)	12. Establish, disseminate and apply technologies for urban and architectural development to address social issues such as the environment as well as disaster prevention and reduction	○	○			Develop advanced technology
	13. Popularize wooden and wood-based buildings and promote the utilization of domestic timber, to preserve forests and revitalize the forestry industry	○	○			Increase the number of wooden and wood-based architecture projects
	14. Improve productivity through innovation to cope with the immediate labor shortage in the construction industry		○	○	○	Improve current situations
	15. Improve productivity drastically (also in office work), and enhance work-life balance through productivity improvement			○	○	Develop basic plans
Realization of healthy and rewarding workplace environments (3, 8)	16. Create diversified specialties and corporate culture through improvement of a corporate capability base			○		Examine and determine influencing factors
	17. Ensure safe, hygienic on-site work environments			○	○	Accident frequency rate (Accidents followed by four days or more from work): 0.5 or less
	18. Promote health and productivity management to improve physical and mental health			○	○	Understand the current situations and examine measures
	19. Expand opportunities for active involvement of women	○		○	○	Rate of women in managerial positions: 3.2% Status of activities of Komachi construction work team: Continuing
Promotion of diversity (5)	20. Secure employment opportunities for older persons			○		Set targets for 2018 and thereafter
	21. Continuously reinforce internal controls			○		Reinforce on a continual basis
Fair corporate activities (16)	22. Promote compliance			○		Number of serious non-compliance cases: 0
	23. Ensure information security			○		Number of data breach incidents: 0
	24. Develop and reinforce disaster response systems	○	○			Revise business continuity plans (BCPs) on a continual basis, and implement and follow up exercises and drills
Achievement of targets through partnership (17)	25. Deepen the understanding of social issues through stakeholder dialog and promote the resolution of these issues through business and non-business activities	○	○	○	○	Organize stakeholder dialog meetings and develop measures based on outcomes of the dialog: Two or more

*1. Numbers in parentheses indicate the numbers of relevant SDGs. Takenaka strives to also make contributions to other SDGs through its corporate activities.

*2. The targets and KPIs for 2017 are non-consolidated targets for Takenaka Corporation, except for the number of community contribution programs (which includes those by overseas subsidiaries).

*3. Comprehensive Assessment System for Built Environment Efficiency. The five ranks based on the assessment indicators are: S (Superior), A (Very good), B+ (Good), B- (Slightly poor) and C (Poor).

*4. I, Smart Energy Management. A new energy management system capable of optimally controlling power demand. Standing for the initials of Interconnection, Interoperability, Interface and Interaction.

*5. "I" represents the concept of a cloud system that links a variety of hardware and software tools. (See P. 29 for details)

*6. Accident frequency rate (Accidents followed by absence of four days or more from work: The number of death and injuries in occupational accidents resulted in absence of four days or more from work per one million work-hours in the aggregate.

Takenaka Corporation, in line with the Group Growth Strategy Toward 2025 that was formulated in 2014, completed the first three-year (Step 1) period in 2016 and has started the Step 2 period in 2017. As the 2016 results for ordinary income clearly indicates, the objective for the Step 1 period, which was "securing financial stability and preparing to jump," has been fully achieved.

The Step 2 period will be a stage for "using our comprehensive group capabilities to add value to society." The strategy defines groupwide areas of business as "cities" and sets a road map for a growth into an integrated engineering firm for urban creation that conducts dialog with stakeholders throughout the entire life cycle of these "cities." As I understand, the strategy represents Takenaka's mission statement: When the company undertakes a design and construction project, it makes proposals with regard to functions of the building site area in addition to the building itself. It takes into account functions to be offered throughout the entire life cycle of the building at the design stage. To this end, the company will have a dialog with a wide range of stakeholders. In my opinion, this approach is truly sensible for a leader in the industry. In order to incorporate a life-cycle-long viewpoint into architectural design, an ability to anticipate society over an extremely long time period will be required. A perspective of at least a 50-year time span should be necessary, given a lengthy life cycle of buildings. Moreover, the government of Japan has started to examine specific measures to reduce greenhouse gas emissions by 80 percent by the year 2050, in accordance with the Paris Agreement for preventing global warming and with the Plan for Global Warming Countermeasures decided by the

Cabinet in 2016. Furthermore, the average life expectancy of female babies who were born in 2014 is over 86 years old. This means that residents who will live in the year 2100 are already in our society. The special feature article in the Corporate Report 2017 details Takenaka's initiatives for keeping traditional culture alive and maintaining its value. Since architectural works are passed down to posterity and provide value that spans across generations, Takenaka may be called on to envisage a society after 2100.

As a leading construction company, Takenaka is required to develop a super long-term vision beyond 2025, separately from the Group Growth Strategy Toward 2025. The report envisions the sustainable society sought to be realized in and after 2025 as a society where population decline has halted, new jobs have been created and local revitalization has been promoted. It will be necessary to translate this vision into concrete plans with regard to how these situations will be realized and what contribution an integrated engineering firm for urban creation can make for the society. In the course of this process, it may be necessary in some cases to eliminate cities instead of creating them in the face of population decline. The construction business may have to shift its focus from new construction to repair and renovation. From the stage of formulating a vision, Takenaka should benefit from a dialog with various stakeholders.

In the last year's External Perspective, I pointed out, "The company should set its targets for quantitative management indicators, report the progress in achieving the targets, clarify the points to be improved in the next year onward, and explain the management cycle in an intelligible way in the corporate report."

This year's report has set, for the first time, key performance indicators (KPIs) so that the company can make efforts to achieve goals while monitoring progress made each year. I appreciate that the company took my opinion very seriously. The new KPIs are linked to each of the Sustainable Development Goals (SDGs) adopted in the United Nations Sustainable Development Summit in 2015. It is noteworthy that Takenaka quickly adapted to global sustainability trends.

While we have to wait for the next corporate report to evaluate progress based on the KPIs, all the numerical indicators presented in this report show a trend toward improvement from last year. For example, the number of accidents followed by absence of four days or more from work more than halved from 0.75 person per one million man-hours of labor in 2013 to 0.33 in 2016. CO₂ emissions intensity during construction work has also decreased steadily. These steady, sound efforts should help the company grow into an integrated engineering firm for urban creation. While stepping up its basic sustainability performance as well as upholding a super long-term vision, Takenaka Corporation should contribute to urban creation in Japan and the rest of the world.

Mr. Hidefumi Kurasaka

Professor, Graduate School of Humanities and Social Sciences, Chiba University. Professor Kurasaka was born in 1964 in Iga City, Mie Prefecture. After graduation from the University of Tokyo Department of Economics, he served from 1987 to 1998 in Japan's Environmental Agency. He moved to Chiba University in 1998 and has held his current position, teaching and researching environmental economics and policy since 2011. Professor Kurasaka is the author of several books on these and related subjects.



Appreciation of the external perspective

I would like to express my deepest gratitude to Professor Kurasaka for providing us with his evaluation on our performance during the three-year Step 1 period as set forth in the Growth Strategy Toward 2025, as well as valuable advice for Step 2. The professor has given us important insight regarding the need for a super-long-term vision in relation to: the Cabinet's action plan for 2050, which was decided in accordance with the Paris Agreement for preventing global warming; the average life expectancy of babies born in 2014; and the potential need to further envisage society as it will be in and after 2100. In this report, we introduce the activities that we have been conducting to solve social problems through closer dialog with our stakeholders. In our future annual corporate reports, we

will clarify the targets and KPIs that we should attain from a long-term view, and describe the management cycle that we will follow for the attainment of the targets in an intelligible manner for readers with a view to becoming an integrated engineering firm for urban creation. We have posted a questionnaire on our website to obtain feedback from our readers for use as a reference in our activities as well as for preparation of future reports. Your candid opinions and requests would be greatly appreciated.

Tsuneo Sato
General Manager
CSR Promotion Department

Income Statement and Balance Sheet (Consolidated)

(Millions of yen)

	75th term 2012	76th term 2013	77th term 2014	78th term 2015	79th term 2016
Orders received	1,004,492	1,214,335	1,418,103	1,295,029	1,291,682
Revenues	998,381	1,020,956	1,150,663	1,284,362	1,216,570
Operating income	△1,369	11,525	27,741	59,883	91,367
Operating margin (%)	△0.1	1.1	2.4	4.7	7.5
Ordinary income	12,595	21,709	38,367	68,666	93,572
Net income	6,122	7,162	23,545	44,140	61,432
Net assets	350,884	438,468	471,436	521,011	566,470
Total assets	977,735	1,105,029	1,240,256	1,342,971	1,318,055

Other Financial Data (Consolidated)

(Millions of yen)

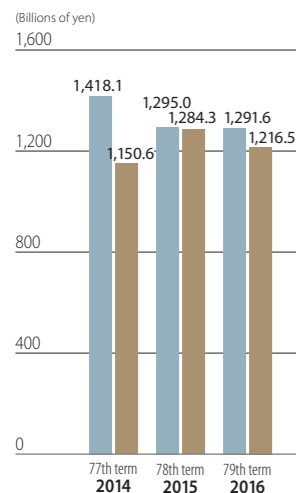
	75th term 2012	76th term 2013	77th term 2014	78th term 2015	79th term 2016
Cash flow from operating activities	△10,610	△929	14,674	40,032	88,538
Cash flow from investing activities	△9,275	△18,646	△5,207	△20,119	△48,695
Cash flow from financing activities	△5,792	8,294	12,984	2,415	△802
Research and development expenses (Billions of yen)	6.4	5.5	5.7	6.2	7.0
Capital investment (Billions of yen)	9.9	26.3	27.2	25.3	62.3
Return on equity (ROE) (%)	1.9	1.8	5.2	9.0	11.4

Revenues by Business (Consolidated)

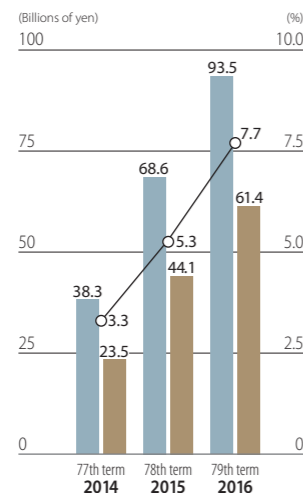
(Millions of yen)

	75th term 2012	76th term 2013	77th term 2014	78th term 2015	79th term 2016
Construction business	921,188	939,100	1,063,666	1,188,308	1,104,999
Development business	42,206	45,929	48,287	46,743	59,868
Others	34,986	35,926	38,709	49,309	51,703

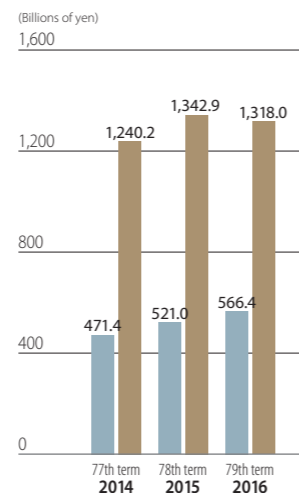
Orders Received/Revenues (Consolidated)



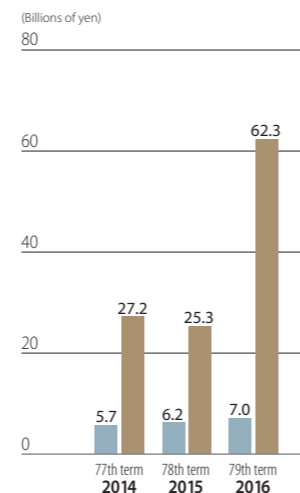
Ordinary Income/Ordinary Income Ratio/Net Income (Consolidated)



Net Assets/Total Assets (Consolidated)



Research and Development Expenses/Capital Investment (Consolidated)



Revenues by Region (Consolidated)

(Millions of yen)

	75th term 2012	76th term 2013	77th term 2014	78th term 2015	79th term 2016
Japan	861,700	872,155	960,443	1,090,954	1,043,880
Asia	91,575	90,399	129,903	134,923	117,939
Europe	17,274	25,260	33,308	27,783	26,114
North America	17,493	23,289	25,921	30,701	28,636
Others	10,337	9,851	1,086	—	—

Nonfinancial Data (Nonconsolidated)

	75th term 2012	76th term 2013	77th term 2014	78th term 2015	79th term 2016
Number of employees (Consolidated)	7,080 (11,854)	7,049 (11,941)	7,133 (12,187)	7,195 (12,328)	7,307 (12,592)
Average age of employees	44.6	44.5	44.7	44.4	44.3
Average length of continuous employment (years)	20.4	19.5	20.2	19.8	19.6
Number of women in managerial positions	48	53	68	78	86
Accident frequency rate (Accidents followed by absence of four days or more from work)*1	0.62	0.75	0.55	0.47	0.33
CO ₂ emissions intensity during construction work (t/100 million yen)*2	10.4	10.3	10.8	10.6	10.5
Rate of final disposal of construction waste (Wt. %)*3	4.2	3.9	3.2	2.7	2.7
Rate of number of CASBEE S- and A-rank projects (%)*4	60.9	69.0	61.2	52.0	67.1

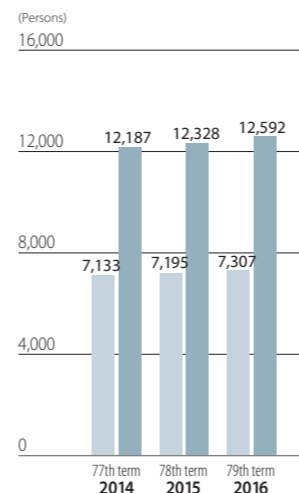
*1 Percentage of the number of occupational injuries caused by industrial accidents accompanied by an absence of four days or more from work for every million man hours of labor

*2 Per value of completed work

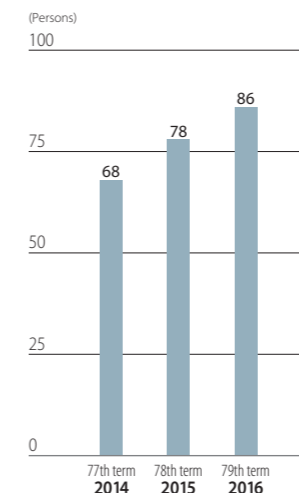
*3 Does not include construction sludge and specially controlled industrial waste.

*4 Total number of S- and A-rank projects among the company's design projects. The number for 2014 was revised.

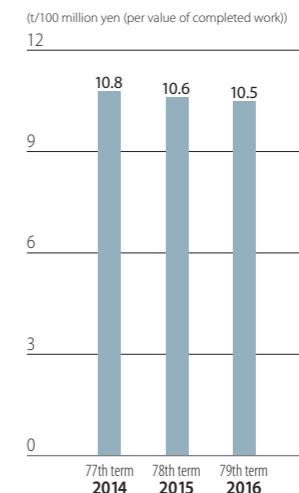
Number of Employees (Nonconsolidated and Consolidated)



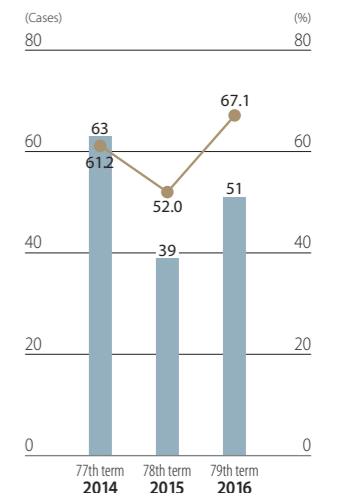
Number of Women in Managerial Positions (Nonconsolidated)



CO₂ Emissions Intensity During Construction Work (Nonconsolidated)



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



Dreams into Reality for a Sustainable Future



TAKENAKA CORPORATION

HEAD OFFICE

OSAKA
1-13, 4-chome, Hommachi, Chuo-ku, Osaka 541-0053, Japan
Tel: 06-6252-1201 Fax: 06-6271-0398

MAIN OFFICES

TOKYO
1-1, 1-chome, Shinsuna, Koto-ku, Tokyo 136-0075, Japan
Tel: 03-6810-5000 Fax: 03-6660-6012

OSAKA
1-13, 4-chome, Hommachi, Chuo-ku, Osaka 541-0053, Japan
Tel: 06-6252-1201 Fax: 06-6266-0012

BRANCH OFFICE LOCATIONS

Sapporo, Sendai, Yokohama, Chiba, Saitama, Nagoya,
Kyoto, Kobe, Takamatsu, Hiroshima and Fukuoka

TAKENAKA RESEARCH & DEVELOPMENT INSTITUTE

5-1, 1-chome, Otsuka, Inzai-shi, Chiba 270-1395, Japan
Tel: 0476-47-1700 Fax: 0476-47-3050

OVERSEAS OFFICES AND SUBSIDIARIES

THAI TAKENAKA INTERNATIONAL LTD.

BANGKOK
Silom Complex, 26th Floor, 191 Silom Road, Bangrak,
Bangkok 10500, Thailand
Tel: 66-2-266-2800 Fax: 66-2-266-2808

THAI TAKENAKA INTERNATIONAL LTD.

MYANMAR BRANCH

YANGON
No. 45 (W) Tay Nu Yin Road, 7th Miles,
Mayangone Township, Yangon, 11061 Myanmar
Tel: 95-1-662-188 Fax: 95-1-662-188

PT. TAKENAKA INDONESIA

JAKARTA
MidPlaza 1, 18th Floor, Jl. Jend.
Sudirman Kav. 10-11, Jakarta 10220, Indonesia
Tel: 62-21-573-5660 Fax: 62-21-574-1684

www.takenaka.co.jp

TAKENAKA (MALAYSIA) SDN. BHD.

KUALA LUMPUR
Lot 2.01, Level 2, Menara Manulife, No. 6, Jalan Gelenggang,
Damansara Heights, 50490 Kuala Lumpur, Malaysia
Tel: 60-3-2095-1000 Fax: 60-3-2095-2000

TAKENAKA CORPORATION SINGAPORE OFFICE

SINGAPORE
167 Jalan Bukit Merah #16-10 Tower 5, Singapore 150167
Tel: 65-6899-8989 Fax: 65-6276-7333

TAKENAKA INDIA PRIVATE LTD.

GURGAON
805, 8th Floor, Vatika City point, Mehrauli Gurgaon Road,
Gurgaon, Haryana 122-002, India
Tel: 91-124-483-5900 Fax: 91-124-483-5999

TAKENAKA (CHINA) CONSTRUCTION CO., LTD.

SHANGHAI
Room 601-602, 6F Taiping Finance Tower, 488 Yin Cheng
Zhong Lu, Pudong New Area, Shanghai 200120, China
Tel: 86-21-6859-1201 Fax: 86-21-6859-1203

TAKENAKA EUROPE GmbH (European Headquarters)

DUSSELDORF
Grafenberger Allee 136, D-40237 Dusseldorf, Germany
Tel: 49-211-167-940 Fax: 49-211-167-9444

TAKENAKA CORPORATION (U.S.A.)

CHICAGO
555 Pierce Road, Suite #190, Itasca, IL 60143, U.S.A.
Tel: 1-630-250-3400 Fax: 1-630-250-3433

TAK DEVELOPMENT, INC.

NEW YORK
70 East, 55th Street, 4th Floor, New York, NY 10022, U.S.A.
Tel: 1-212-489-6001 Fax: 1-212-489-6002

SAN FRANCISCO

222 Mason Street, 5th Floor, San Francisco, CA 94102, U.S.A.
Tel: 1-415-398-0232 Fax: 1-415-398-0322

TAK HAWAII, INC.

HONOLULU
Topa Financial Center-Fort Street Tower, 745 Fort Street, Suite
708 Honolulu, HI 96813, U.S.A.
Tel: 1-808-523-5899 Fax: 1-808-523-9082



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