

TAKENAKA Corporate Report 2016



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 Web site.

■ Editorial policy

We have compiled this Takenaka Corporate Report 2016 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 Web site. 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 Web site
(Japanese/English)
www.takenaka.co.jp

- Major Works
- Solutions
- Corporate Information
- CSR Activities

Corporate Publications (Japanese/English)

Corporate Report
(Japanese/English)

Major Works Report
(Parallel Japanese/English)

Financial Report
(English)

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

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

■ Period of coverage

January – December 2015. 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.

■ Period of coverage

April 2016 (next issue April 2017). We have also published the report on our Web site to make it available to larger numbers of readers.

■ Inquiries

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

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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 2016
Chairman and CEO



"Urban Creation" with prosperity and peace of mind

Architectural firms such as ours are required to respond to constantly changing social needs. These include earthquake recovery, responding to social issues such as energy and environmental problems, developing more stable and abundant national lands, constructing cities and infrastructure around the world, and globalizing business operations. Cities and buildings are expected to fulfill increasingly sophisticated and diversified functions in today's era of changing lifestyles and corporate activities.

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. Two years ago we established the Takenaka Group CSR Vision and the Takenaka Group Message. 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 2016
President and COO

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

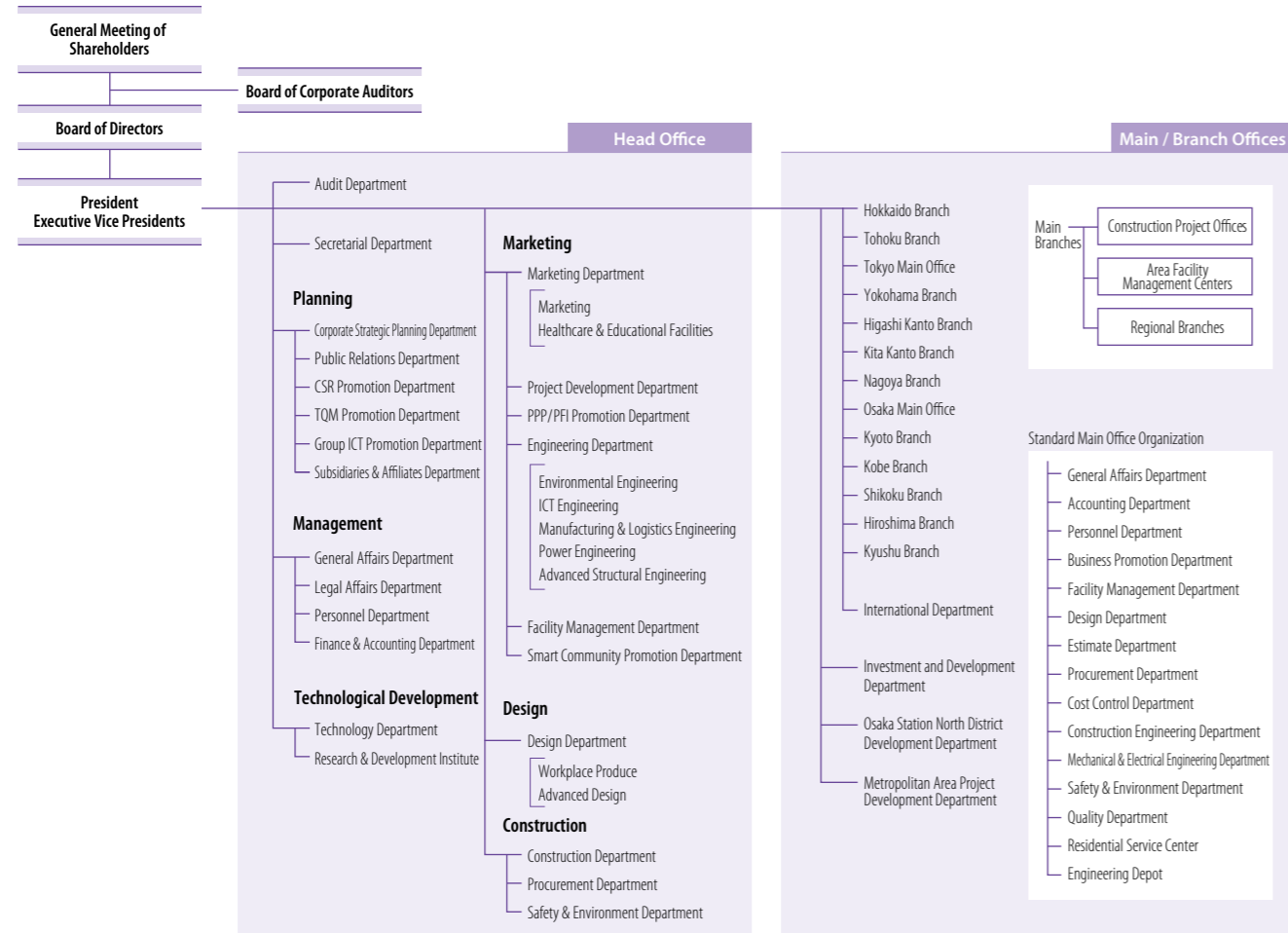
Takenaka Corporation Corporate Data

Company Name	Takenaka Corporation
Head Office	1-13, 4-chome, Hommachi, Chuo-ku, Osaka, Japan
Capital	¥50 billion (as of March 31, 2016)
Sales	¥1,284.3 billion (consolidated, fiscal 2015)
Construction Licenses	Ministry of Land, Infrastructure and Transport Construction License (Special-26, General-26) No. 2744
Employees	7,195 (as of January 1, 2016)
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, 2016)

Main Businesses	<ol style="list-style-type: none"> Undertaking, design and supervision of architectural and civil engineering works 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 Land preparation and housing construction Sales and purchasing, leasing, transaction mediation, maintenance, management and appraisal of real estate as well as real estate investment management
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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
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Corporate Organization (as of April 1, 2016)



Main Domestic Group Companies and Contents of Business

The group's main overseas companies' locations are listed on page 25.

Construction Business

Takenaka Civil Engineering and Construction Co., Ltd.

- General contracting, planning and designing for public works and building construction

Takenaka Road Construction Co., Ltd.

- Road paving contracting, and manufacturing and sales of pavement materials

Asahi Build Corporation

- Steel reinforcement construction services and formwork fabrication and assembly services

Tokyo Asahi Build Corporation

- Steel reinforcement construction services and formwork fabrication and assembly services

TAK E-HVAC Corporation

- Electrical, plumbing and sanitation, and HVAC construction services

TAK Living Corporation

- Manufacturing and sales of wooden products, and interior and finishing construction services

Asahi Corporation

- Construction services centered on interior and exterior finishing, sales of construction materials, landscaping, tree planting, planning and implementation of greening projects, and sales of petroleum products

Management and Engineering Businesses

Asahi Facilities Inc.

- Building maintenance services, casualty insurance agent, and leasing services

TAK Systems Corporation

- Construction design, Construction-related CAD services, ICT support services

TAK Engineering Inc.

- Outsourcing services for engineering management related to construction, personnel dispatch services, and personnel introduction services

TAK-QS Corporation

- Outsourcing services for quantity surveying related to construction

Create Life Corporation

- Comprehensive outsourcing services related to employee health, welfare and benefits, and general affairs and human resources

TAK Capital Service Inc.

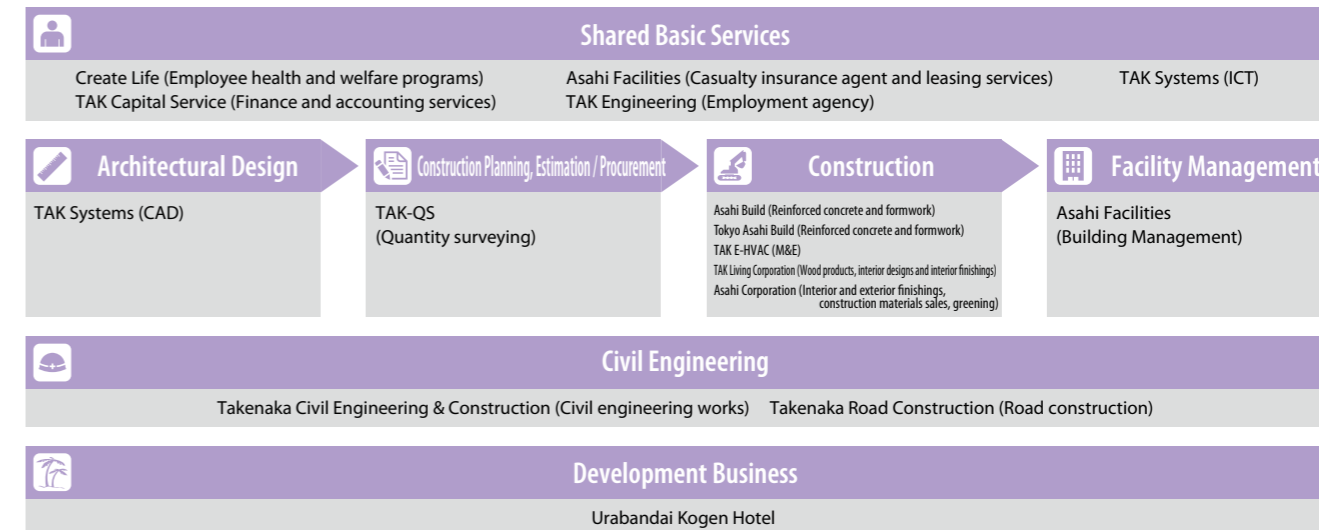
- Outsourcing factoring services and financial accounting services

Development Business

Urbandai Kogen Hotel

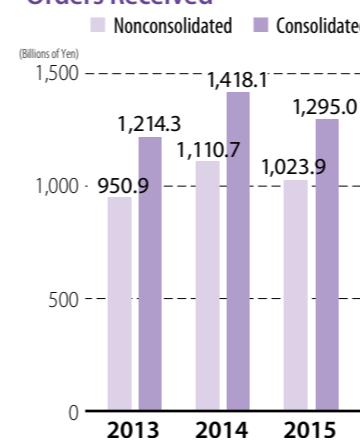
- Resort hotel and ski area operation

Principle Operations of Main Group Companies in Japan

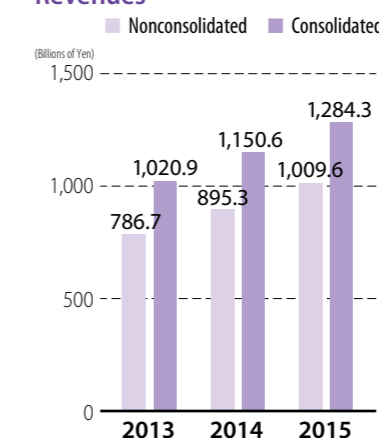


Transitions in Performance

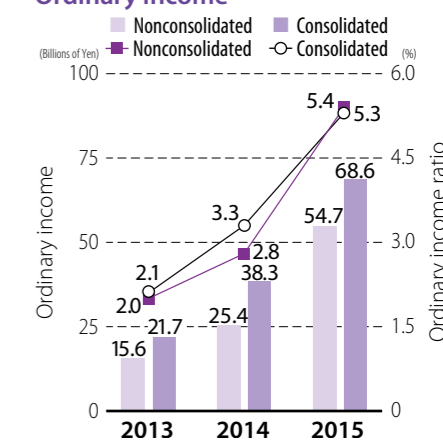
Orders Received



Revenues



Ordinary Income



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.



→ 1900

1900
Mitsui Bank Warehouse completed in Onohama district of Kobe.



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 Shimibun 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 Kasamatsu 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.

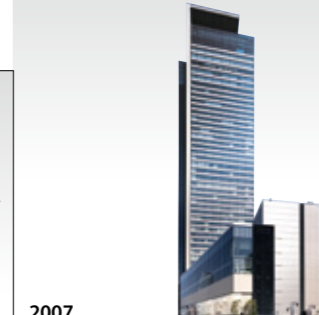


1974
Thai Takenaka International Ltd., PT. Takenaka Indonesia and Takenaka Corporation Singapore Office established.

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.



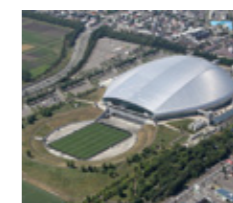
2006
World’s tallest superhigh stratified base-isolation condominium City Tower Nishi-Umeda completed.



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.



→ 2015

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



Ritsumeikan University Osaka Ibaraki Campus completed.



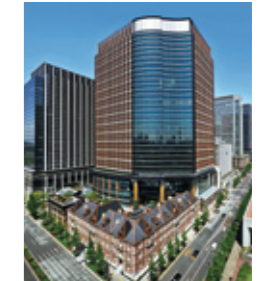
2014
Takenaka awarded Architectural Institute of Japan Award (Architectural Design) for Meiji Yasuda Life Insurance New Toyoko Building.

ABENO HARUKAS opened.

2013
Grand Front Osaka completed.

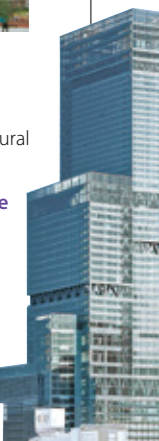
2012
Superhigh-rise Nakanoshima Festival Tower completed in Osaka.

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.

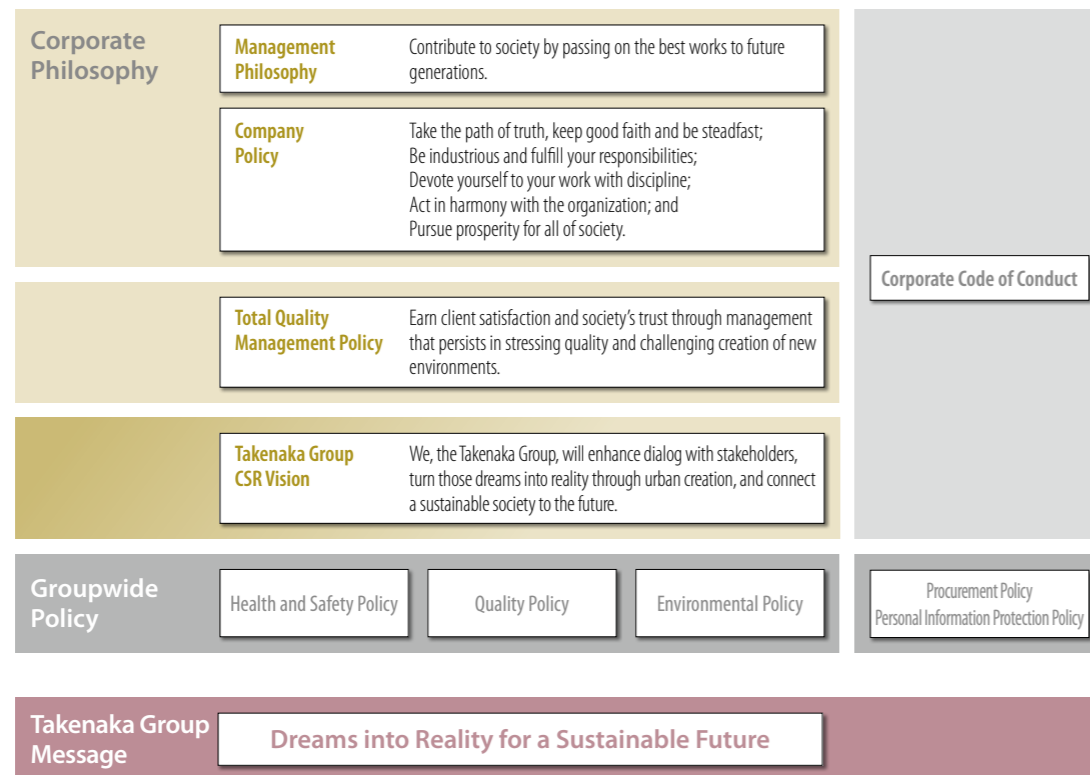


Dreams into Reality for a Sustainable Future

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.



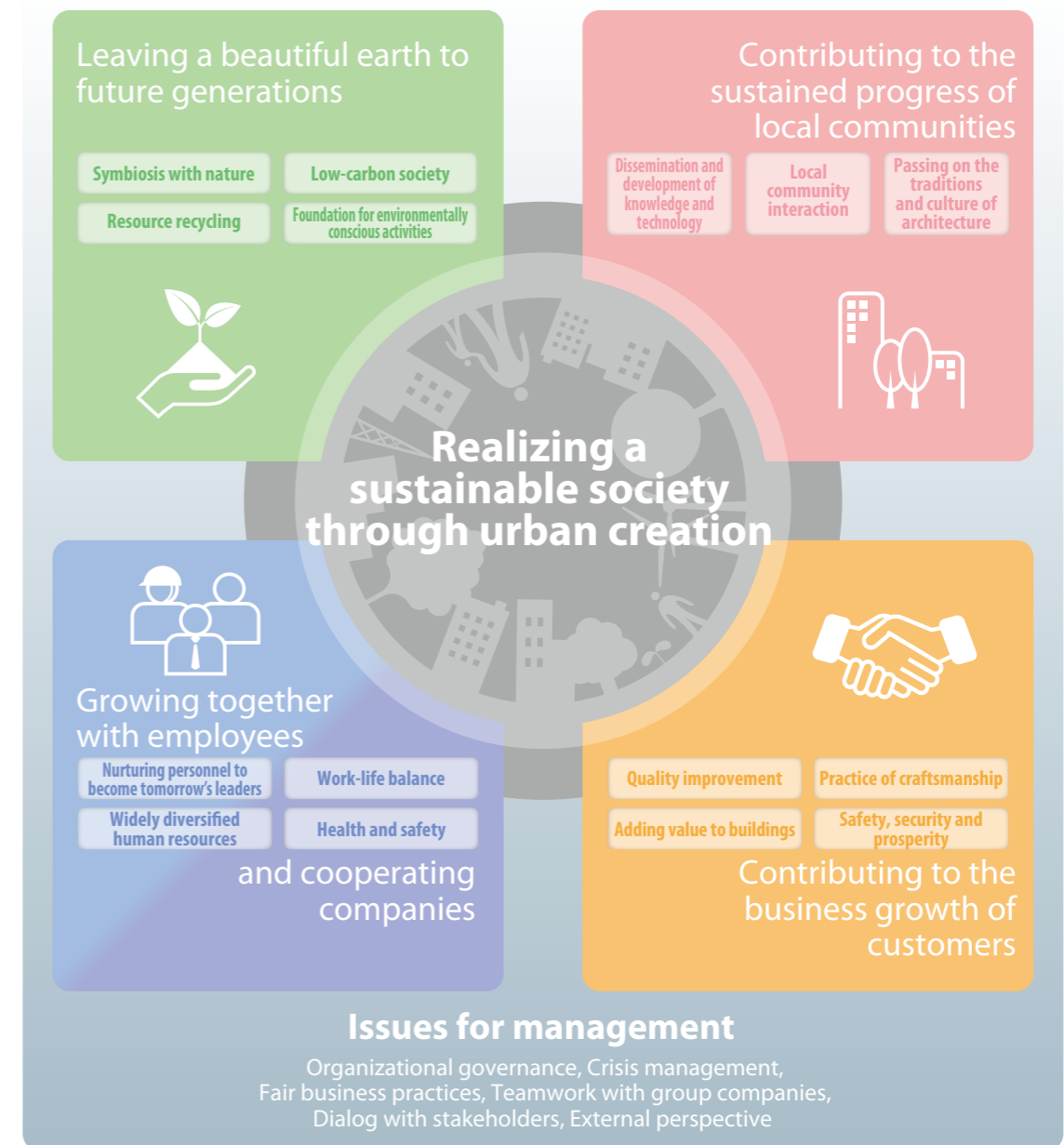
Realizing the combined aspirations of the Takenaka Group CSR Vision and Takenaka Group Message

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.

Management supporting fields of activity in which the aspirations of stakeholders are fulfilled to provide a legacy for the future



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

Masahiro Miyashita
President and COO

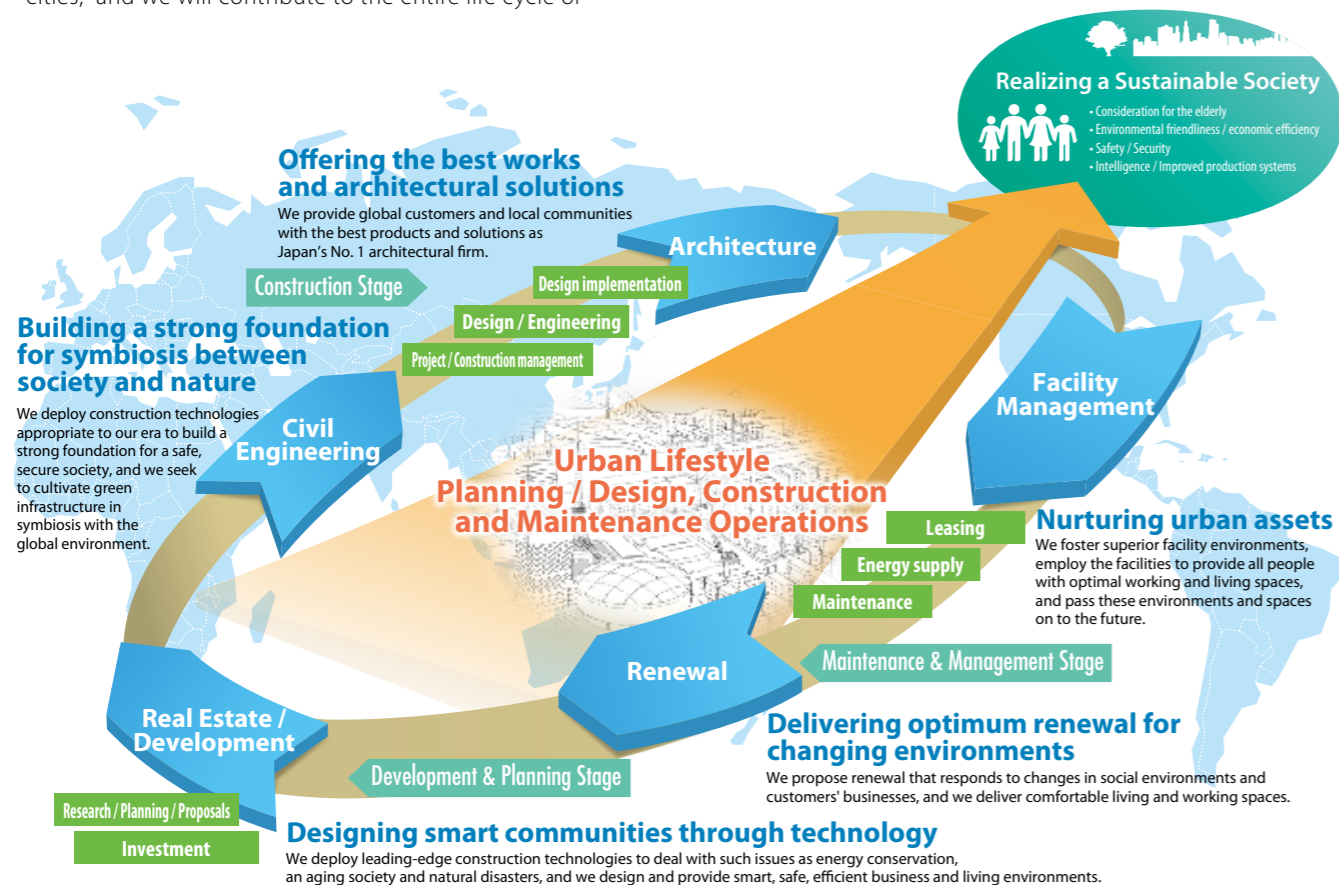


Group growth strategy toward 2025

Participation as a group in urban creation on a global scale

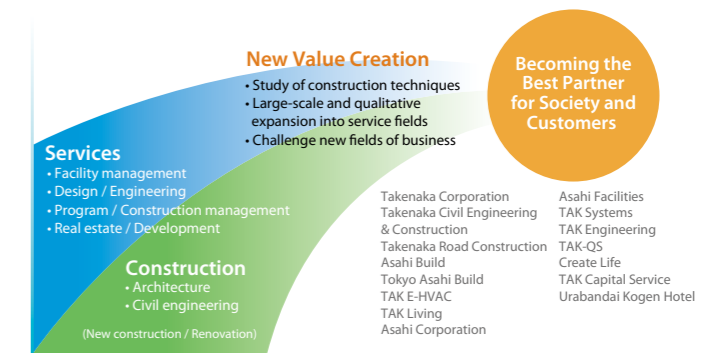
We have taken on the important mission of resolving wide-ranging issues facing society at home and overseas, and of achieving a sustainable society in which people can lead prosperous, happy lives with peace of mind. For that purpose we treat groupwide areas of business as "cities," and we will contribute to the entire life cycle of

these "cities" from planning and design to construction, maintenance and operation. Our goal is to realize a sustainable society by fulfilling the expectations of society and our customers through close collaboration among all our group companies "throughout every stage of urban creation."



New value creation

Contributing "throughout every stage of urban creation" requires pursuing activities with close collaboration among Takenaka Group companies in the peripheral areas of construction projects. New business and ordering models introduced by private sector initiatives under such plans as private finance initiatives (PFI) and public-private partnerships (PPP) are also gaining traction today. Further, IoT and big data could potentially have a substantial impact on urban creation, even changing the very roles played by buildings. Our response to the issues and needs of society will no longer be limited to creating architectural structures. We intend to establish ourselves as the best partner for society and our customers by providing cities with 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 improve the quality of our specialized technologies and services one step at a time on the path to growth. During the current three-year period (Step 1), we will seek to improve our revenue base and promote collaboration among our group companies to enhance our production capabilities and take the lead in creating new value for urban creation. In regard to our overseas architectural projects, we will establish and maintain a framework for responsive action aimed at achieving further growth of our business. We intend to establish ourselves as the best partner for society and our customers by 2025.



Review of the past years' (2014 and 2015) activities and preview of activities planned for 2016, the final year of the plan

Fiscal 2016 marks the final year of the three-year plan (STEP 1) we launched in 2014 as a basis for improving our earning capabilities to ensure stable management and establishing a foundation for the future growth of our business.

In 2014, or the first year of the plan, we were urgently required to ensure stable management and productivity 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 at an even faster rate by promoting various labor-saving construction methods. These included the use of Building Information Modeling (BIM), implementation of Takenaka Smart Work, and increased use of precast concrete. Organizationally we are attempting to strengthen solution capabilities by establishing the "PPP/PFI Promotion Office," "Smart Community Promotion Office," and the "Group ICT Promotion Office," and we are aiming to enhance group cooperation in the various stages of urban creation. Outside Japan, we also sought to reinforce our business foundation. For example, we established the "TAKSA" practical technology training center in Thailand for local staff and local subcontractors. Our group's business performance improved as a recovery in the market environment created synergies with our steady efforts to promote these activities.

In 2015, the second year of the plan, we steadily conducted the aforementioned activities, and our business performance exceeded that of the previous year, mainly driven by results in the construction business. In that year too, we also launched an initiative for a detailed study to achieve further growth in line with the STEP 2 plan, which will be implemented from 2017. In particular, we are incorporating a wide range of opinions within the group at "every stage of urban creation." These are aimed at challenges in new areas of business to achieve our contributions toward resolving social issues, and at new work styles to respond to pressures accompanying changes in market environments and to promote diversity.

In this year, which is the final year of the STEP 1 plan, we will continue to prioritize efforts to prevent disasters and improve quality at our construction sites. In pursuing further improvements in productivity, we will promote groupwide collaboration and partnerships with subcontractors. Moreover, as one of our top priorities, we will work to establish a production system that appropriately meets the needs of society and our customers. We will thereby ensure stable management and strengthen our business foundation to assure the achievement of dramatic advances over the next three years.

Urban Creation by Takenaka Corporation

Creating new value for urban environments

Takenaka identifies social needs as well as emerging societal and local problems, proposes new value for architecture to address those issues, and then takes on the challenge of creating that value in ways that both surprise and excite its customers, local communities and the broader public. Newly created value inspires local communities and society at large, attracts new people to local areas, and revitalizes economic activity, all of which help energize and enrich urban environments. The entire Takenaka Group is working to create new value for architecture toward this type of urban creation.



VOICE

Currently in Japan, the development and rebirth of urban areas as well as the improvement of infrastructure are being fostered for urban revitalization and in preparation for the 2020 Tokyo Olympic and Paralympic Games. At the same time, visions for cities have been developed for 20 or 30 years into the future. As part of this effort, the country has also started to implement initiatives to meet the new challenges of achieving economic growth and enhancing international competitiveness in the face of a shrinking and aging population. The situation surrounding cities differs by country and region, and will change and advance with the times. We will create and upgrade visions for our people, architecture and cities, staying one step ahead by predicting future changes in society, and we will strive for urban creation by making use of the Takenaka Group's collective strength. We hope to continue providing customers and society with "urban" and "future-oriented" facilities that will help people to live and work with safety and comfort, and to feel refreshed, happy and rewarded.

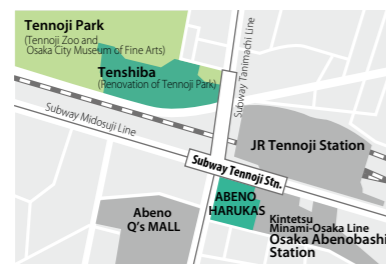


Seigo Satou
Managing Officer
General Manager, Project Development Department
Takenaka Corporation

Change urban areas

Synergy of a high-rise tower and redeveloped park transforms the local atmosphere

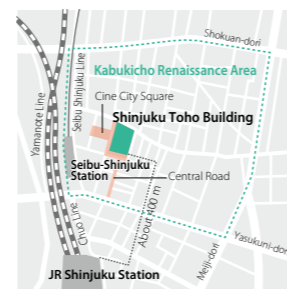
As well as attracting considerable attention as Japan's tallest building, ABENO HARUKAS provides the Abeno area with commercial, hotel, office and other urban facilities, which it had previously been lacking, thereby turning it into an urban center. In addition, the building has contributed to strengthening ties between the local area and surrounding districts, resulting in a livelier and more bustling environment. Meanwhile, in nearby Tennoji Park, a park management project named "Tenshiba" was implemented to establish a huge grassy area and cluster of shops to encourage more people—not just visitors to ABENO HARUKAS but also local families and senior citizens—to take advantage of all that the park has to offer. These two new landmarks have totally transformed the atmosphere of the area.



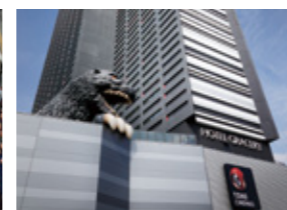
Improve urban areas

Creation of a safe area through cooperation between Shinjuku City and local communities

The Shinjuku Toho Building is expected to spur the rebirth of the Kabukicho entertainment district. Since its opening, the building has been attracting new visitors to the district thanks to unique facilities including a cinema complex (the largest in Tokyo), an urban hotel, the iconic exterior design and the life-sized Godzilla head installed on the rooftop terrace. The building has also provided the local government and local community with opportunities to cooperate on implementing projects to enhance the safety and security of the area. These include a makeover of Central Road, which connects the area with Shinjuku Station, establishing a road accessible by large buses, crime prevention measures, providing local information, and the redevelopment of the adjacent Cine City Square. This public-private cooperation is helping to revitalize and change the image of the district and is also prompting a series of redevelopment projects in the surrounding areas.



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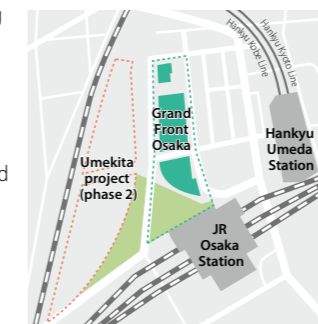


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Grow urban areas

Creating and managing a constantly evolving area that serves as a hub for innovation

Grand Front Osaka is a complex of office, commercial, hotel and Knowledge Capital facilities built on an area extending over seven hectares to the north of JR Osaka Station. The building provides an urban site for a range of activities. The Knowledge Capital component comprises exhibition, people-to-people exchange, office and showroom facilities, and it serves as an innovation hub where researchers, representatives of the business community and consumers can mingle and interact to create unprecedented services and products. Together with tenants, commuters, ordinary visitors, and neighborhood businesses, Takenaka is reviving flourishing open spaces in urban areas, and we are also striving for area management that aspires for bustling and vibrant cities. The area will be developed into a future-oriented district through activities of the two organizations launched by related companies to foster innovation and area management.



Knowledge Capital



Grand Front Osaka TMO

Link urban areas

Linking Tokyo with other regions through a new form of business based in Asakusa for regional revitalization

The Tokyo Rakutenchi Asakusa Building is located in the center of Asakusa Koen Rokku, formerly one of Japan's leading entertainment districts. Constructed to replace its predecessor, the new building opened in December 2015 and houses a hotel catering largely to inbound travelers on its upper floors and the "Marugoto Nippon" commercial facilities on its lower floors.

Regional information is collected in Asakusa to showcase the charms of each locality.



"Marugoto Nippon" is "a comprehensive center for revitalizing villages and towns," aimed at realizing the concept of returning the bustle to Asakusa Rokku and building facilities that help revitalize regional cities, which face challenges of population flows to large cities and insufficient successors of local business. This facility represents a new type of business category and showcases internationally and domestically the attractive features of individual regional cities as the appeal of Japan as a whole. Coupled with its advantageous location in the "international tourist town Asakusa," this facility will become a place that creates opportunities to feed new customer segments into local regions.



Completing a series of net zero energy buildings

“Net zero energy building” (ZEB) is a term meaning buildings that simultaneously generate the energy they consume while also reducing their energy consumption as much as possible.

Takenaka established a road map to complete a leading project in 2020 with a view to making ZEBs the norm by 2030. In connection with this, we have been working on the construction of super-energy-saving buildings, ZEBs and net-plus energy buildings (PEBs), which are buildings that produce more energy than they themselves consume.

In March 2016, we completed a project to renovate our Higashi Kanto Branch Office building to transform it into a ZEB. The 12-year-old office building remained in use while the renovation work was done.

This ZEB project, which was implemented at a reasonable investment cost, serves as a model case study for existing small or medium offices across the country.

We plan to transform this building first into a ZEB and then into a PEB.

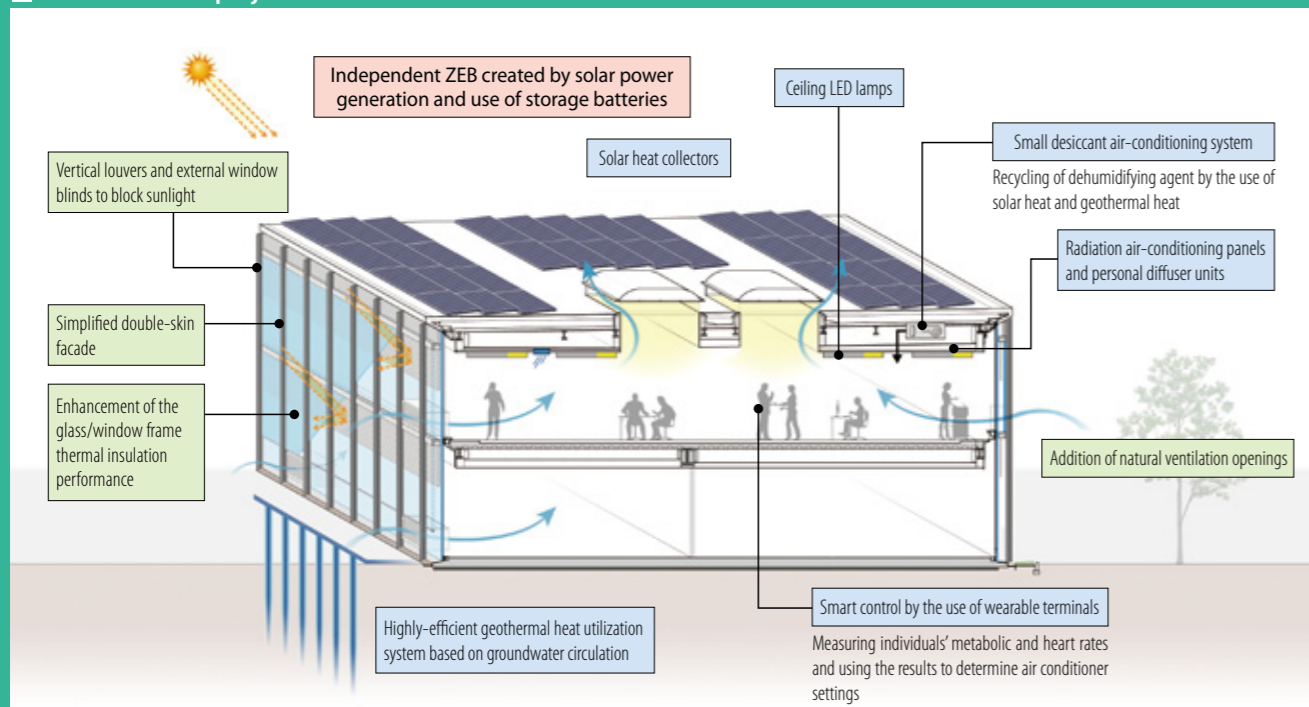
In the planning and carrying out the renovation of this building, not only was there renovation of the lighting and air-conditioning systems and envelope, but we also made substantial reductions in the energy consumption from environmental awareness and changing work styles as well as venturing into employee wellness and comfortness.

Project to transform Takenaka Corporation’s Higashi Kanto Branch Office building into a ZEB (which will start operation in April 2016)



Implementation item	Applied technology
(1) Updating to a facade with minimum exterior heat load while using the existing window frames	Enhance thermal insulation through high-insulation glass
	Enhance the thermal insulation performance of existing window frames
	Block sunlight with external window blinds
	Foster natural ventilation by adding natural ventilation openings
(2) Renovation that is compatible with a “wellness office” and making a ZEB	Enhance workplace productivity by improving the indoor environment: radiant air-conditioning, small desiccant air-conditioning systems, and ceiling LED lamps
	Use of renewable energy heat: Using geothermal heat by circulating groundwater and deploying solar heat collectors
	Smart wellness control by the use of wearable terminals: Energy conservation using personal GPS information and enhancing personal comfort by the use of personal health information
	Real-time energy control to lower loads and create an independent ZEB
(3) Introduction of smart energy for a ZEB and improvement of BCP performance	Creation of independent ZEBs and improvement of BCP performance by solar power generation and use of storage batteries

Outline of a ZEB project



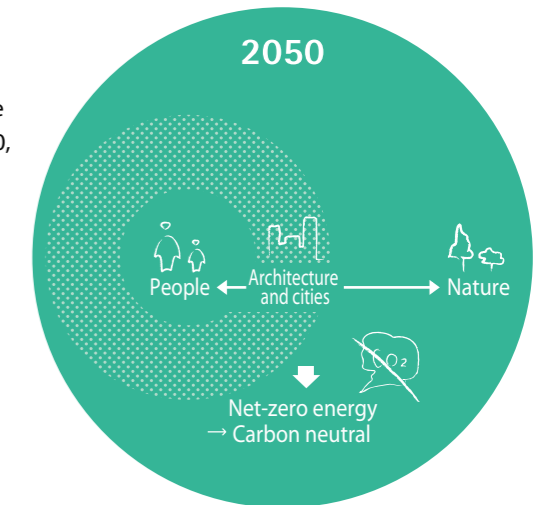
Environmental Message, Concept and Long-Term Targets

We are pursuing ongoing efforts to create architectural spaces that are in harmony with the environment in accordance with our environmental message and concept formulated in 2010 and our long-term targets for the years to 2050, which were determined in the same year.

• **Environmental Message**
Connecting people with nature

• **Environmental Concept**
We aim to realize carbon-neutral cities through net zero energy buildings that optimize the power of nature to encourage greater human sensitivity and creativity.

• **Long-Term Targets**
Realization of net-zero energy buildings by 2020 and their steady establishment by 2030 on the way to realizing net plus energy buildings.



Takenaka Corporation ZEB/ZEB-ready projects

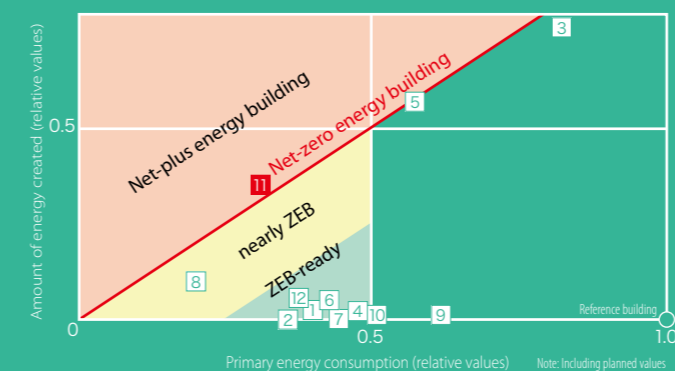
Implementation of ZEB-ready projects over 10 years

The Ministry of Economy, Trade and Industry and the Society of Heating, Air-Conditioning and Sanitary Engineers of Japan are promoting the construction of energy-saving buildings, including reviewing the definition of ZEBs to define buildings whose energy consumption is below 50 percent that of general buildings (“reference buildings”) as “ZEB-ready” or “nearly ZEB” buildings. Takenaka has already constructed ZEB-ready buildings, including its own Tokyo Main Office and the Dai-ichi Life New Ohi Office buildings as well as the Iino Building. We will also complete the construction of ZEBs, such as Shiga Bank’s Ritto Branch building. Furthermore, in the Aichi Steel’s new main building and the City of Yokohama’s new city building projects, we are aiming to construct buildings with even higher energy performance.

* Reference buildings: Buildings with standard specifications. Energy consumption standards are set for these buildings, which differ by their usage and construction areas.

Ceaseless technological development for ZEBs

Takenaka has developed a range of technologies for ZEBs, including advanced exterior materials, technology to use geothermal heat by circulating groundwater, energy-saving desiccant air-conditioning equipment for low humidity, super energy-saving radiation air-conditioning systems using geothermal heat, and systems for optimal energy management. We will continue to refine these technologies and develop even more advanced technologies.

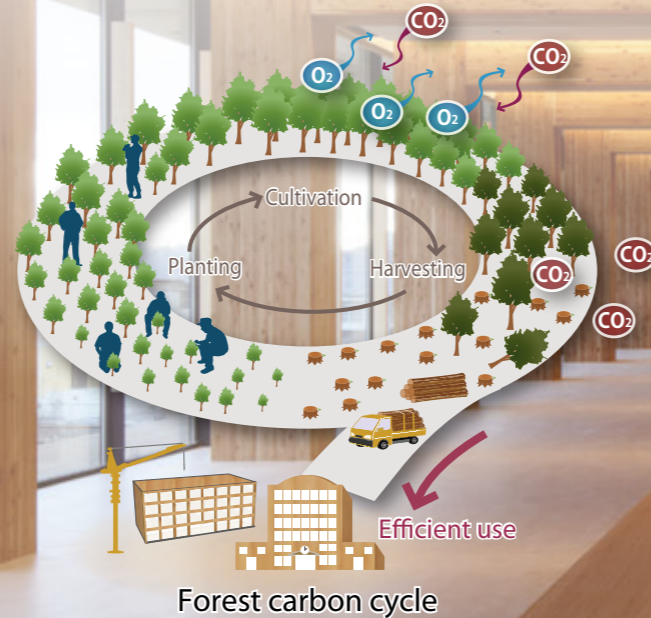


- 1 Takenaka Corporation Tokyo Main Office (2004)
- 2 Dai-ichi Life New Ohi Office building (2012)
- 3 National Stadium (World Games Stadium) in Kaohsiung, Taiwan (高雄國家體育場) (2009)
- 4 AICHI STEEL (planned for 2017)
- 5 Shiga Bank’s Ritto Branch building (2015)
- 6 New Yokohama City Hall (2020)
- 7 Iino Building (2014)
- 8 Suita City Football Stadium (2015)
- 9 Meiji Yasuda Life New Toyocho Building (2011)
- 10 NISSAN Global Headquarters (2009)
- 11 Takenaka Corporation Higashi Kanto Branch Office building (2016)
- 12 AOB Kobuchisawa Hall (planned for 2016)

The challenge of new uses for wooden materials in construction

Many of Japan's forests have trees suitable for felling, but demand for wood has been diminishing due to a recent decrease in new residential construction starts. As a result, Japanese forests are in a state where it cannot be said that they are being sufficiently maintained. It is desirable to expand the utilization of domestic timber from the viewpoint of promoting CO₂ absorption, preventing landslides and so on through revitalization of the forestry industry and rejuvenation of forests.

Takenaka Corporation has commercialized a fire-resistant timber construction technology that can be applied to large buildings as well as a technology to use engineered wood for seismic strengthening. As a result, we can now make more proactive use of lumber for urban buildings, which used to be difficult due to strict fire resistance regulations and strength performance. Through increased demand for timber, further promotion of forest carbon cycle can be expected. In addition to the comfort people derive from wood, enhanced health benefits are also anticipated.



VOICE

When we were examining the reconstruction of our clinic building and how to mitigate the stress imposed on patients on dialysis who needed to remain at the clinic for hours at a time, we happened to hear about Moen-Wood and thought, "That's just what we need." We therefore asked Takenaka to reconstruct the building using Moen-Wood.

We were deeply impressed with the massive Moen-Wood columns and beams, which contributed to the creation of an open but restful space. Patients lying in bed can look up at the ceiling and see the wood grains as well as appreciating the scent. We have received praise and encouraging comments from patients, including one who said, "Thank you very much for this wonderful space." We will conduct a more detailed survey on the effect that wood might have on patients of this clinic.



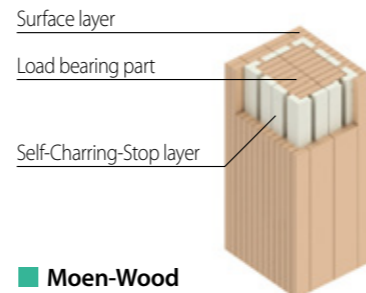
Mr. Yasuo Kimura
President of Nakazato-kai
association (medical corporation)



Mr. Keita Kimura
Head of Shin-Kashiwa Clinic

Promoting large-scale timber construction by the use of fire-resistant glued laminated timber "Moen-Wood"

In urban areas, the development of fire-resistant communities has been pursued since the Edo period based on lessons learned from earlier earthquakes and war damage. This meant that for a long time it was difficult to use lumber to construct large buildings because there were very tight regulations concerning fire resistance. However, due to the improvement of disaster control and seismic design, in 2000 the fire resistance regulations were loosened under the revised Building Standards Act. This allowed the construction of large wooden buildings that had a certain level of fire resistance. This expanded the possibility of using lumber for structures other than houses. Against this backdrop, Takenaka has developed its fire-resistant glued laminated timber "Moen-Wood." This wood product has already been adopted for a total of six architectural structures in the Tokyo metropolitan area, Osaka and Nagoya. Moen-Wood is distinguished by its ability to self-extinguish in the event of fire and by the fact that it is designed to provide the warmth and comfort of wood when used the appearance of the surface of the wood "as it is." Moen-Wood is used in the building of large and modern wooden structures such as office and shopping facilities.



Moen-Wood
This glued laminated timber is composed of three sections: the load bearing part of column and beam, the surface layer, and the Self-Charring-Stop layer. It is certified as one-hour fire-resistant by the Minister of Land, Infrastructure, Transport and Tourism.

Re-recognition of the comfort of wooden buildings

Wood have high heat insulating and moisture adjusting capabilities. They not only help increase the energy efficiency of buildings but also mitigate unpleasant environmental factors such as heat and cold. Moreover, it is becoming clear that wood also contributes to fatigue mitigation, infectious disease prevention and health promotion.

Examples of Moen-Wood application



Osaka Timber Association Building (Osaka, 2013)



Southwood (Kanagawa, 2013)



Aeon Town Shin-Funabashi (Chiba, 2013)



AT-Group Head Office, North Building (Aichi, 2015)



Yokohama College of Commerce High School Proctive Building (Kanagawa, 2015)



Shin-Kashiwa Clinic (Chiba, 2016)



Daini Ariake Elementary and Junior High Schools in Tokyo (planned for 2018)

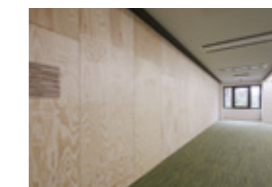
Practical application of new engineered wood "CLT" and "LVL"

The merits of light lumber materials, which can be easily processed, are increasingly being recognized, in particular because of their contribution to labor efficiency in a construction industry that is faced with an aging workforce and shortage of skilled workers. Recently, CLT^{*1} and LVL^{*2} and other new engineered wood have been increasingly used for large building walls, braces and various other structures in addition to glued laminated timber which is commonly used. Takenaka worked on the commercialization of related technologies of new engineered wood ahead of others and developed the T-FoRest series to unequivocally increase the earthquake resistance of buildings by employing easy-to-use lumber materials, which are light and need only minimum on-site processing. The T-FoRest series helps reduce the construction period of the reinforcement work and is suitable for buildings that cannot be closed for long periods for such work to be undertaken. The series was highly evaluated for its contribution to the expanded use of domestic wood and to CO₂ emissions reduction, and Takenaka won a prize at the Minister of the Environment's FY2015 Commendation for Global Warming Prevention Activity.

*1 CLT: Cross Laminated Timber
Wooden plates (about 30 mm in thickness) are layered and bonded together, with the direction of the grain alternated from layer to layer.
*2 LVL: Laminated Veneer Lumber
Wooden plates (about 3 mm in thickness) are layered and bonded together with the grain in the same direction for each layer.

Wooden share wall: T-FoRest Wall

Thanks to the combined use of the special bonding method of construction, the generation of dust can be suppressed while the wall is installed, and the time for the installation of the wall is also cut down. This wall is nearly as strong as a concrete share wall.



Mukogawa Women's University Literature Building No. 2
This became Japan's first reinforced concrete building for which LVL was used to increase seismic resistance. The seismic reinforcement work was completed over a short period during the spring vacation. The wooden panels were used "as they were" to retain the natural warmth of the wood.

Wooden brace: T-FoRest Light

The wooden brace can be installed easily by hand and at a low cost, but is almost as strong as a steel brace.



Kyoto Racecourse Grand Swan
This became the first case in Japan in which braces made of glued laminated timber were used to increase the earthquake resistance of a reinforced concrete building.

The Takenaka Group's diversified know-how and resources, including personnel, design, engineering and technical development, are in high demand by the construction, civil engineering, development and other business fields. They are contributing to realization of a sustainable society through the creation of prosperous cities that are safe and secure.

Architecture



International Operations



Development



Engineering



Overview	Contents	Page
<p>The requirements for modern architecture extend beyond providing of comfortable, efficient working and living facilities to consideration of local cultures and urban environments. Our role is to design buildings that are in harmony with the surrounding environment as well as to regenerate and create value for buildings, which are important assets for society. We provide customers with assistance in realizing their dreams, which includes contributing to the global environment and society through architecture.</p>	<ul style="list-style-type: none"> ● Sustainable Works ● Design born of integrated strengths ● Attractive Renewal 	P21
<p>Over half a century has passed since we entered the U.S. market in 1960, during which time our network has expanded to encompass over 20 offices in Europe and Asia as well. We handle a wide variety of projects across a range from design and construction to technical guidance, consulting services and materials procurement for airports, high-rise office buildings, hotels, factories, museums and other facilities. We develop our business activities strategically with a view to supporting customers' global initiatives.</p>	<ul style="list-style-type: none"> ● Europe ● Asia / China ● United States 	P25
<p>We are participating in various large-scale urban redevelopment and other projects for major Japanese cities, handling many aspects of the planning, design and construction of core complexes comprising office buildings, hotels and commercial and entertainment facilities. We also engage proactively in the various stages of city and regional restoration and urban creation, beginning with business planning for private company development, urban area redevelopment, and PPP and PFI projects.</p>	<ul style="list-style-type: none"> ● Urban redevelopment projects ● PPP / PFI projects ● Overseas development projects ● Development projects 	P27
<p>We provide leading-edge engineering solutions to meet the needs of society and our customers. Their scope encompasses rebuilding of manufacturing and logistics facilities, design of leading-edge pharmaceutical and research facilities, initiatives for spacious architecture and railroad-related buildings, energy management, provision of earthquake countermeasures and other risk management support, construction of large-scale fire-resistant wooden buildings, and development of radiation protection technologies for use in medical facilities, among others.</p>	<ul style="list-style-type: none"> ● Energy management system ● Manufacturing and logistics, leading-edge pharmaceutical and research facilities ● Large-area structures, railway-related construction ● Corporate risk management support ● Radiation protection technologies 	P29

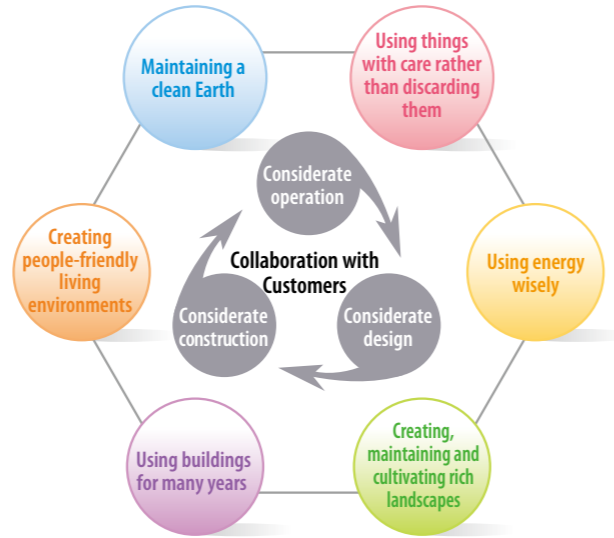
Customer dreams into reality

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.



ABENO HARUKAS

“Three-dimensional” urban creation that realizes both human comfort and a reduction in environmental load by harnessing the potential of “mixed-use” and “height”

ABENO HARUKAS is a 300-meter tall “ultrahigh-rise compact city” in which a range of urban functions are concentrated. It is located directly above Osaka Abenobashi Station on the Kintetsu Minami-Osaka Line. The high-rise serves as a “compact city” centered on the railway station. Within the building, a variety of services and information are provided in a highly-concentrated area, while energy consumption and CO₂ emissions are being reduced. This will produce the effect of further revitalizing intellectual and economic activities amidst a period of population decline.

Recipient of the 56th BCS Award
 Design and engineering: Takenaka Corporation
 Exterior design: Takenaka Corporation and Pelli Clarke Pelli Architects
 Construction: Takenaka Corporation (joint venture) (2013)

Both human comfort and environmental load reduction that makes the most of “mixed-use” and “height”

The “mixed-use” and “height” of an ultrahigh-rise compact city is potentially very effective from the aspect of aiming for both human comfort and environmental load reduction in order to realize a sustainable society. We adopted a range of environmental technologies for ABENO HARUKAS by taking a three-pronged approach. Specifically, we focused on both “active” environmental engineering (highly-efficient energy systems and others) and “passive” environmental engineering (ecovoids and others) as well as on “communication” (visualization of energy use) to substantially reduce the environmental load of the building.

“Void network” and vertical “green network”

By providing a “void network” that continued three dimensionally through an open ceiling, an “at home” feeling and a relaxed sense of time spread throughout the entire building. Composed of three vertical sections, the building has rooftops on three different levels. The green spaces laid out in a stepped cascade pattern on these rooftops provide a green urban landscape that forms a counterpart to Tennoji Park for the benefit of all of Osaka, which is otherwise not particularly endowed with green spaces.

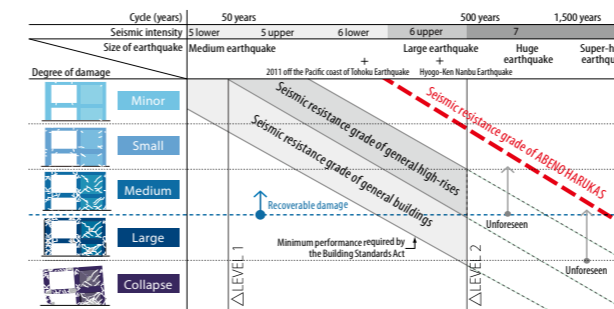
Creating people-friendly living environments



A variety of Ecovoids enhances enjoyment of the natural environment

Soft rays of sunshine penetrate into the core of the building via the office void, making it easier for workers to maintain their sense of time of day. The void also serves as a natural ventilation system. The Ecovoids located across the building help make the high-rise friendly to both the environment and people.

Using buildings for many years



High seismic resistance

ABENO HARUKAS provides seismic resistance that is one rank stronger than that of general high-rises. It is designed to suffer only minor damage even from an earthquake stronger than a huge once-in-500-years earthquake and to be continuously usable even in the event of an unprecedented devastating mega-earthquake.

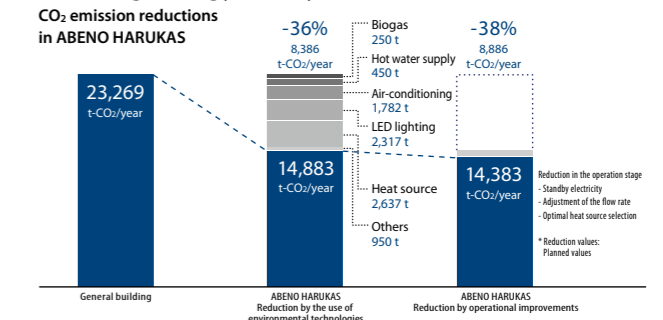
Creating, maintaining and cultivating rich landscapes



Gently connecting cities with nature

A garden has been provided by utilizing a set-back shape. People spend their time freely as they find their own living space among these rooftop gardens. The terraced rooftop gardens are designed to help people gently connect with nature in an urban setting.

Using energy wisely



Toward a low-carbon society

Relative to a standard building, CO₂ emissions have been reduced by 36 percent for the building. If reductions achieved after the completion of the high-rise as a result of improving the operation of equipment and reducing the use of standby electricity are included, emissions have been reduced by 38 percent. The high-rise project featured the combined use of leading-edge construction and equipment technologies. In recognition of this, it won support from the Ministry of Land, Infrastructure, Transport and Tourism under the Ministry’s FY2008 program to promote emission reductions in houses and buildings.

Using things with care rather than discarding them



Adoption of an environmentally friendly continuous wall construction method to reuse excavated soil

To ensure the safety of excavation work performed on the site, which is adjacent to a subway line, we adopted the Takenaka Soilcement Wall (TSW) method for the construction of ABENO HARUKAS. This method provides high rigidity and water interception, and allowed us to reuse about 40 percent of the excavated soil.

Maintaining a clean Earth



Reduction of waste through prefabrication

We constructed the building in an integrated manner from design through to completion. By using curtain walls to cover the entire surface and pipe shaft units (riser units), we reduced the generation of waste packaging and other materials for environment-friendly construction. Furthermore, we developed and applied a system to generate biogas from garbage and use it as fuel for power generation and hot water supply.

Design born of comprehensive capabilities

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."

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)." The open landscape showcases the seasonal changes and is intended to express the client's corporate philosophy of "In Harmony with People and Nature." Inside the building, the void and skip floor designs allow researchers to take in broader views—vertically, horizontally and crossways—and provide more opportunities for serendipitous encounters, thereby fostering internal communication and helping build a network for intellectual exchange. For the building we adopted deep eaves, easily updatable equipment, and various environmental technologies, including a waste heat recovery system, and used precast exterior materials whose colors would not readily fade over time. We also enhanced quality management while shortening the construction period by minimizing the use of components and materials and applying high levels of craftsmanship. As a result of exerting our comprehensive capabilities, we were able to complete a leading-edge research building for the client.



The Center is adjacent to a forest and a huge park and thus blessed with a good natural environment. The surrounding area is also home to universities and other research institutes.



This west-facing terrace is located on the third floor. From it you can see the National Diet Library's Kansai-kan in the front.

Suntory World Research Center

— Leading-edge research institute open to the world —

Design and construction: Takenaka Corporation (2015)



Composed of spaces that excite and inspire researchers while encouraging movement.

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.



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)

Kobe Kaisei Girl's junior and high school

Built in 1952, the facilities of this Catholic school for women have been long cherished, both by those associated with the school and the local community. With this in mind, we repaired and refurbished the facilities while maintaining the school's traditional position as a local landmark. Specifically, we repaired the junior high and high school building to increase its seismic resistance without changing the outer appearance. We also refurbished the library building by equipping it with an advanced structure and the latest equipment to enhance its educational functions while ensuring harmony between the building and the campus landscape. Received the FY2014 prize from the Minister of Land, Transport, Infrastructure and Tourism for excellent reinforcement work in the commendation program organized by the Japan Building Disaster Prevention Association. Renovation design and renovation construction: Takenaka Corporation



Urabandai Kogen Hotel

The hotel was rebuilt in 1983. The gabled roof and wooden shingle design is in harmony with the surrounding environment and has long been adored by local residents and visitors. Most of the existing rooms were Japanese style, but through the renovation, we responded to the diversified lodging needs of the guests by providing several different variations. The restaurant and library lounge were also renewed to provide guests with more spaces where they could spend time in an enjoyable manner. The newly-built hot baths building harmonizes with the surrounding natural environment. 23rd BELCA Award. Renovation design and renovation construction: Takenaka Corporation (2011–2014)



Former Sakuranomiya Public Hall

This Western-style building, which was built in 1935 as a memorial hall commemorating the emperor Meiji, is owned by Osaka City and its front entrance is designated as an Important Cultural Property. The structure was disused for many years, but a renovation project involving installation of a ceremonial hall built entirely of glass blocks on the second floor has given it new life as a wedding hall. 42nd Japan Federation of Architects and Building Engineers Award; 2014 Good Design Award. Renovation design and renovation construction: Takenaka Corporation (2013)



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



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 350 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 170 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.

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.



Expo 2015 Milano Japan Pavilion (Italy, 2015)



National Gallery Singapore (Singapore, 2015)



AXIA South Cikarang Tower 1 (Indonesia, 2014)



CapitaGreen (Singapore, 2014)



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



Akebono Brake Slovakia New Factory (Slovakia, 2015)



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



TTTC Eastern Seaboard Branch (Thailand, 2015)



Wuxi Yakult Plant (China, 2015)



AEON Big Alor Setar Shopping Center (Malaysia, 2014)



Amada Bangalore Technical Centre (India, 2014)



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



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

Urban and Regional Rebirth

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 has handled everything from development to construction and operation of 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 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 Corporation among Kauai residents.



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



TM & ©TOHO CO., LTD.



Rendering



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. The new complex is helping to stimulate the rebirth of the Kabukicho entertainment district with the city block having a neighborhood park at its core.

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)



No. 2 Yoshimoto Bldg. / Herbis Ent Rendering: 1-1, Umeda district project (Scheduled for completion in 2022)

Nishi Umeda and Osaka Station South District Development

Takenaka Corporation is undertaking a diverse range of responsibilities in the Nishi Umeda/Osaka Station South district, the gateway to Osaka. This is in connection with a large-scale housing and lifestyle development project associated with moving a railway underground in order to create new urban infrastructure and functionality. Our responsibilities include renovating existing structures to upgrade their functions and attract tenants as well as planning, designing and constructing new buildings and facilities. This urban creation project will contribute to revitalizing an approximately 1 km² area around the station.



Buildings named on map
Design and construction: Takenaka Corporation (partial joint venture)
(Basic design of 1-1, Umeda district = Nihon Sekkei, Inc.)

Ote Center Building

This in our own development project at a perfect location in Tokyo's Otemachi financial district. Through this major improvement work 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.

Solutions on the leading edge

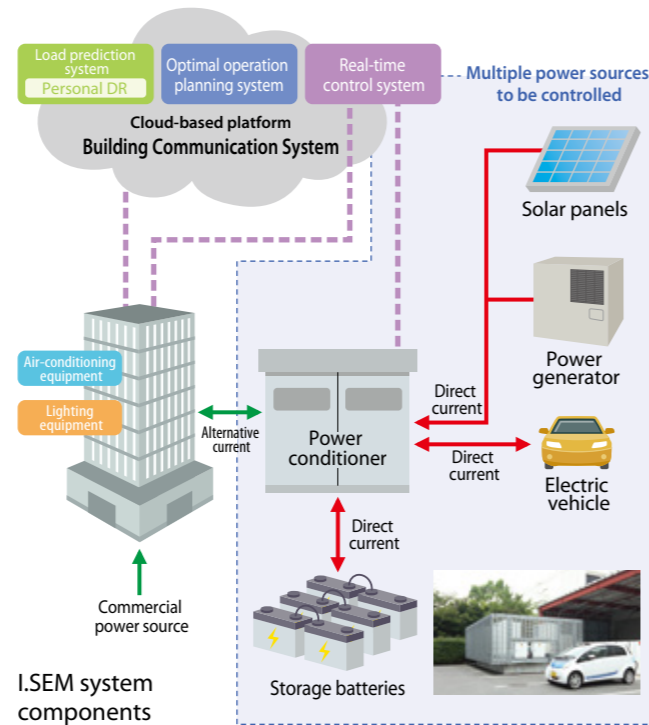
Today's consumers require speedy responses that correspond to market changes, advanced building environments, and various safety and security. We are responding to these customer needs with total engineering from project planning stages to building plan development, design, construction and aftercare.

Energy management system

In energy-related fields, we have been developing a range of energy conservation technologies and introducing them to buildings to reduce their energy use. In 2015, we newly developed the I. Smart Energy Management (I. SEM) system in response to the electricity system reform implemented by the Japanese government. We have already introduced the system for demonstrative operation to the TAK E-HVAC head office building in Shinsuna, Koto-ku, Tokyo. The I. SEM system fulfills the three functions required by the deregulation (predicting the power load imposed on the building, optimizing the heat source operation, and controlling power demand in real time). It also provides solutions to reduce electricity costs and enhance the BCP function.

Features of the I. SEM system

- (1) Uses Takenaka's internally-developed cloud-based Building Communication System for high-speed processing while providing high security
 - (2) Adjusts demand in consideration of the degree of cooperation among individual users for power savings
 - (3) Implements real-time control of multiple power sources including solar panels, battery and electric vehicles in an integrated manner
 - (4) Serves as a grid-independent power source in case of power failure
- The "I." of the I. SEM system implies interconnection, interact, or interface.

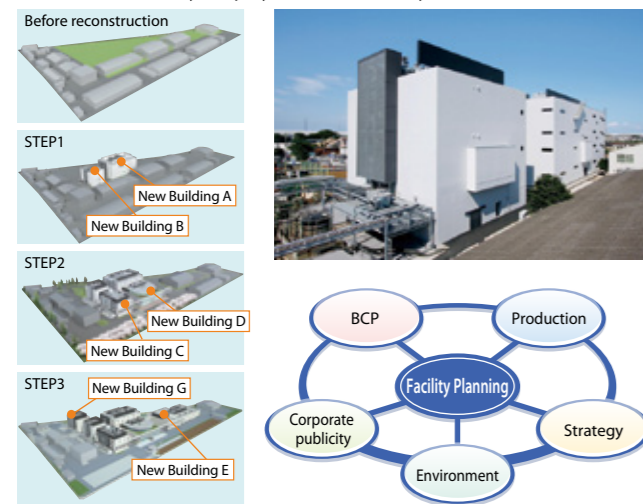


I. SEM system components

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



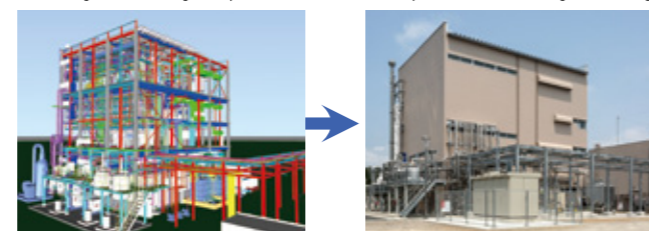
Leading-edge pharmaceuticals manufacturing and research facilities

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 bioclean 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.

Bioclean and biosafety testing facilities



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



Large-space architecture

Our experience with constructing large-scale multipurpose stadiums includes Tokyo Dome, Japan's first stadium with a pneumatic structure, along with numerous other sports and event facilities. It is essential that the architectural technologies employed in these facilities function efficiently with close mutual coordination among the respective technologies in such relevant areas as design, structures, facilities, disaster prevention and construction. We continue to offer optimal solutions to today's challenges as well as proposals that reflect the need to incorporate seeds for future facilities.

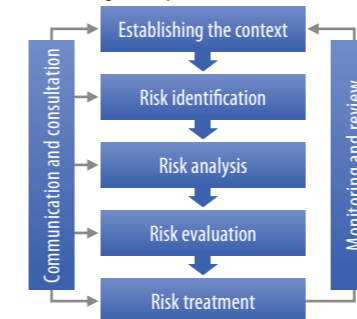


Suita City Football Stadium (2015)

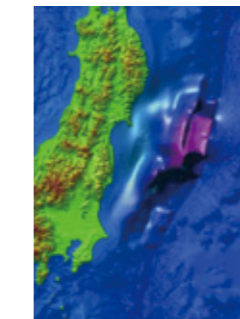
Support for corporate risk management

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

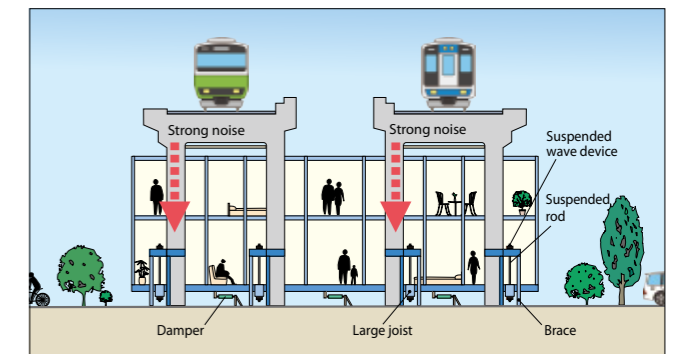


Wave power/flow analysis



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)

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)

Technological development by the Takenaka Corporate Group

The Takenaka Research and Development Institute is the Group's principle 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

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. 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

www.takenaka.co.jp/takenaka_e/services/research/

Bioclean and biosafety testing facilities

In 2015, Takenaka established a research center to verify the quality and safety of bioclean 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).



Bioclean and biosafety testing facilities

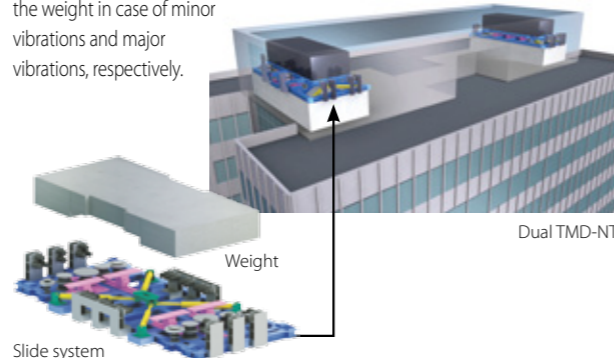
DFL

The Digital Fabrication Lab (DFL) is a pavilion constructed jointly by Takenaka and the University of Tokyo focusing on man and machine collaboration. Working under the name Tool Operated Choreographed Architecture (TOCA) for 2015, the joint team worked to "create a structure that grows vertically from the ground by using a 3D pen."



Long-cycle seismic activity countermeasure technologies

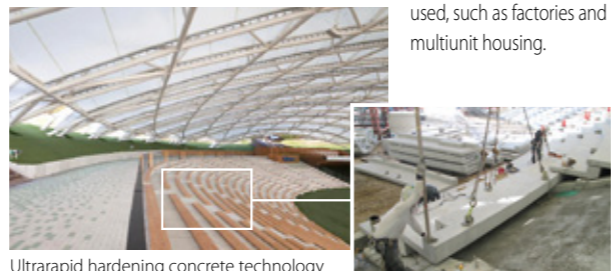
Takenaka's recent successes in the development of technologies for withstanding long-cycle seismic activity include the Dual TMD-NT. The tuned mass dampers (TMDs) use a weight that moves in the opposite direction of building sway to halve the sway time and amplitude. The rubber layers and the linear slider system support the weight in case of minor vibrations and major vibrations, respectively.



Dual TMD-NT

Ultrarapid hardening concrete technology

Takenaka developed ultrarapid hardening concrete technology to shorten the time required for the manufacture of PCa concrete components by up to one-third. The use of this technology made it possible to shorten the period required to install the floor panels of a sports stadium's spectator seating by about two months relative to the initial plan. We will expand the application of this technology to columns and beams and to all kinds of buildings for which PCa concrete components are used, such as factories and multiunit housing.



Ultrarapid hardening concrete technology

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" aimed at responding accurately to such needs as environmental protection, energy conservation and urban renewal 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 agreeable future living environments.



Kinki Expressway Kise Line Tachino zone improvement work

■ Tokyo Asahi Build Corporation

Building with pride

Established in 1972, Tokyo Asahi Build was made up of graduates of Takenaka's Tohoku Skilled Worker Training Center. The company specializes in building frame construction work, and it has a rebar and framework processing factory equipped with leading-edge equipment. Since its founding, the company has promoted active human resources development based on a policy of "taking pride in craftsmanship." In particular, it has taken up initiatives for companywide development of young employees. The company helps these employees become full-fledged builders at an early stage of their career by providing them with substantial in-house educational programs and on-site education systems. At present, those aged 30 or younger account for 40 percent of the total workforce. They are working at construction sites as foremen of the primary subcontractor or as construction managers, honing the expertise and skills passed down to them by their senior colleagues.



The office building and factory of the company

■ TAK Systems Corporation

Aiming to be a leading company for BIM

TAK Systems celebrates the 25th anniversary of its founding this year. It was spun off from Takenaka, which was at the time experiencing an increase in the volume of design work, to specialize in the drawing of figures with high quality and high efficiency. The company was named "TAK Systems" based on the assumption that an era was underway in which architectural production information would be used in electronic formats across the entire architectural process. TAK Systems focuses on design drawings, construction drawings, and ICT support as its three pillars, and has bases in Osaka, Nagoya and Tokyo. It is steadily deepening and expanding its business sphere to include CAD, 3D-CAD, CG, video creation and providing ICT support to Takenaka Group companies. The company is pursuing even higher quality and efficiency as the importance of using architectural data in an integrated manner through BIM and others is increasing throughout the design, construction and maintenance stages.



Meetings using 3D-CAD

■ Asahi Facilities Inc.

Preserving the value and safety of customers' buildings

Since its establishment in 1969, Asahi Facilities has handled building operation and maintenance for the Takenaka Group during the operational stage of buildings' life cycles. 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 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.



Facilities check using mobile terminals

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.

Page

Global Environment

Leaving a beautiful Earth to future generations



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Local Communities

Contributing to the sustained progress of local communities



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Customers

Contributing to the business growth of customers



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Employees and Cooperating Companies

Growing together with employees and cooperating companies



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Management

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Group Companies

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Dialog with Stakeholders

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External Perspective

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Main activities planned for 2014-2016 and achievements in 2015

Areas of Activity with Stakeholders	Main Activities Planned for 2014-2016	Main Activities Conducted in 2015 / Examples of Achievements
Global Environment	<ul style="list-style-type: none"> 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 Ensure of a wide range of choices through component technology development and realization of smart communities through coordinated group efforts 	<ul style="list-style-type: none"> Gave support to biodiversity conservation activities conducted by customers and local communities Implemented energy-saving designs, developed element technologies for the ISEM system (p. 29), and launched work to transform the Higashi Kanto Branch building into a ZEB (Special Feature 2) Promoted CO₂ emissions reduction by the expanded use of ECM cement and Moen-Wood (Special Feature 3) Promoted 3R activities at construction sites jointly with subcontractors Continued to conduct verification experiments on element technologies for smart communities (for decentralized model community spaces, guidance systems for space performance, and others) and practical use of the Building Communication System
Local Communities	<ul style="list-style-type: none"> Dissemination and development of knowledge and technology Local community interaction Passing on the traditions and culture of architecture 	<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" Promotion of understanding and resolving urban social issues of "cities" and "towns" with the aim of achieving sustainable urban creation Continued support for activities of aid organizations and strengthened coordination with company activities
Customers	<ul style="list-style-type: none"> Quality improvement Practice of craftsmanship Adding value to buildings Safety, security and prosperity 	<ul style="list-style-type: none"> Creating and providing optimal solutions for customers' business operations 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
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 Carried out initiatives toward maintaining a work-life balance, including a working hour reduction campaign and a competition for proposals on working style reforms Held dialog and training to help women demonstrate more of their abilities and carried out measures for skilled female workers, such as the development by an all-female team of fatigue reducing clothing for women Expanded the employee support system and enhanced its management WEB 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"> Strengthening business cooperation for the purpose of providing additional value to society by means of a group synergistic effect Promotion of employee development, creation of environments conducive to energetic work activities and improvement of employees' work-life balance 	<ul style="list-style-type: none"> Continued strengthening of internal controls Expanded the "Takenaka CSR and Compliance Month" activities groupwide including overseas subsidiaries Implemented an e-learning program to raise information security awareness groupwide, including at overseas subsidiaries; provided training against targeted e-mail attacks; and conducted patrols and group training, including companies that we deal with Conducted joint disaster training, etc., including group companies, which was aimed at disaster prevention drills for actual individual work based on regional characteristics as well as companywide cooperation 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"> Obtained ordinary rating jointly with Takenaka Civil Engineering & Construction Co., Ltd. for the "TOFT Method," which is a liquefaction countermeasure through the Grid-Form Deep Mixing Walls Method Continued to implement cooperation among companies for training targeted at group company employees, and human resources development

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. In response to the global agreement at the 21st United Nations Framework Convention on Climate Change (COP 21), we are continuing activities in order to meet the expectations of resolving social issues such as measures against global warming, which has becoming increasingly important.

Symbiosis with nature

We are supporting customers and local communities in conducting biodiversity conservation activities.

Biodiversity conservation through architectural projects

—Iino Building (Tokyo)—

Biodiversity conservation through architectural projects Takenaka Corporation is planning and designing buildings that support customers with their efforts for conservation of biodiversity. The Iino Building, for which we completed Phase II of the rebuilding project in 2014, is designed to contribute to the creation and conservation of biodiversity through abundant greenery, with 90 percent of trees planted on the premises being indigenous species. In addition, beehives are installed on the site for the raising of Japanese honeybees, and honey collection events are held locally. Meanwhile, trees planted on the road facing the premises are managed under the “Tokyo Community Road Program” and other initiatives. In recognition of these efforts, the owner of the building received ABINC certification* in February 2015.

Takenaka supports the regular surveys conducted on living creatures within the premises, thereby gathering data on how the reconstruction of the building contributes to habitat improvement.

VOICE

* Certification given by the Association for Business Innovation in harmony with Nature and Community (ABINC) to office and commercial facilities that implement outstanding biodiversity conservation measures.

Supporting local ecosystem conservation activities

An ecological garden has been preserved in Chigasaki Park, which is located in a residential area of Yokohama City in Kanagawa Prefecture. Ecosystems such as a pond where springwater flows, a hill that has a wooded area, and a valley of rice fields called Yatoda remain through the activities of a local NPO. Takenaka’s researchers and Kanagawa University jointly proposed a method to “visualize” the results of these activities over many years and received a commendation for this proposal from the Center for Environmental Information Science. In addition, we are continuously conducting surveys and analyses on the local environment and its organisms in partnership with NPO members who are experts in insect life and with university personnel specializing in biology, aiming to establish a platform to enable local residents to evaluate their own environmental conservation activities and local biodiversity.



Iino Building

Trees planted on the premises (front side), which form a greenery network with Hibiya Park (back side)

Low-carbon society

We are working to reduce the amount of energy used by buildings in the operation stage and create net-zero energy buildings (ZEBs) through environmentally friendly designs and the development of advanced technologies. For details, please see the feature article on page 15. We also developed ECM cement to reduce CO₂ emissions in the manufacturing stage by at least 60 percent as part of our efforts to reduce CO₂ emissions from construction, and we are now expanding the application of this cement. We had used the cement in seven projects as of the end of 2015 and reduced CO₂ emissions by 1,300 tons or more in total. As a result, we won a prize at the Minister of the Environment’s FY2015 Commendation for Global Warming Prevention Activity, and we also received the Japan Business Federation Chairman Award at the 25th Grand Prize for the Global Environment Award.

VOICE

I began participating in the Iino Building reconstruction project from Phase II, in which initiatives to connect the building with the subway station and to establish an underground shopping area and “Iino Forest” at ground level were implemented. I communicated closely and repeatedly with Takenaka personnel to implement a range of new ideas until the full completion of the project. In the process toward completion, we also began the honeybee project by utilizing “Iino Forest” and rooftop greenery. Within the premises we are now raising Japanese honeybees and hold honey collection events to give employees and their families opportunities to connect with nature and become more aware of the importance of living in harmony with the natural environment. We will continue to cherish and nurture “Iino Forest” and conduct activities to create and conserve biodiversity in this urban area.



Koji Wada
Property Business Department
Iino Kaiun Kaisha, Ltd.



Example of a separation promotion tool



Use of temporarily stored backfill soil for a vegetable garden



Use of steel frameworks as substitutes for wooden ones

Resource recycling

Promotion of 3R's (Reduce, Reuse and Recycle) at construction sites

In construction work there are a variety of conditions and restrictions according to the site where a building is located and its surrounding environment, and we are actively engaged in applying our creativity and ingenuity to the issue of consideration for the environment. The following two projects were awarded a prize from the Minister of Land, Infrastructure and Transport in recognition of meritorious promotion of 3R's in 2015.

—Sumitomo Realty & Development’s collective housing construction project in Kanamachi (Tokyo)—

It was expected that various types of waste would be generated in substantial amounts in this large multiunit housing construction project. Accordingly, we planned high-quality and well-balanced 3R activities for the project, not limited to recycling.

First of all we created a waste sorting tool, judging it important to gain the commitment of on-site workers to conduct 3R activities based on first-hand knowledge. By using the tool, we worked with waste disposal companies to conduct joint patrols to ensure the sorting of waste and to educate workers on the importance of strict adherence to waste sorting guidelines. Also, to reduce the generation of waste in the first place, we increased the use of precast concrete components for construction and simplified the packaging of materials delivered to the construction site. We also temporarily stored excavated soil for reuse as backfill soil, using it to grow vegetables in the meantime. These measures helped on-site workers personally experience both resource recycling and the joys of nature.

—Mie University Hospital new building construction and other work—

The new outpatient building needed to be constructed without disrupting the use of the three existing hospital buildings surrounding the construction site. We therefore worked to suppress the generation of noise, vibration and dust and also reduce the frequency of using trucks in the construction work to minimize hindrance to the flow of people and vehicles within the premises. In particular, to reduce the use of trucks to transport waste, we strived to drastically reduce waste generation. For example, we used steel frameworks to reduce the generation of scraps from the processing and disassembly of wooden frameworks, and we expanded the use of precast concrete as the base material for the upper part of the seismic isolation structure to minimize waste generation. As a result, we were successful in limiting the use of trucks, which in turn helped reduce CO₂ emissions.

WEB publication contents
www.takenaka.co.jp/enviro/vision/ex

Environmental Policy/Biodiversity Activity Guidelines

Case studies

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

Contributing to the sustained progress of local communities

We will engage in dialog with stakeholders such as local governments, schools and NPO's about "the spirit of craftsmanship, and knowledge and technology" that are cultivated through our business activities. In doing so, we will continue to contribute to: the education of personnel who will be responsible for the next generation; the development of local communities through the dissemination of knowledge and technology by providing personnel to academic societies and educational institutions, and making available for use our in-house educational facilities; communicating with local communities at each office; and inheritance and transmitting architectural culture, which will be published in our corporate activity and periodical magazines.

Dissemination and development of knowledge and technology

Cooperation with Ishinomaki City to create a park in the Shin-Kadonowaki district

Takenaka Corporation, commissioned by the Japan Committee for UNICEF, has been implementing a project to engage local children in the recovery of the areas afflicted by the March 11 disaster in collaboration with Yamagata University.

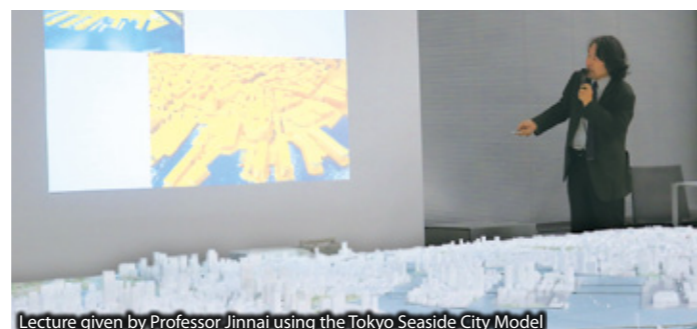
In May 2015, under a learning program implemented as part of the above-mentioned project, we held a workshop for the creation of a local park in the Shin-Kadonowaki district of Ishinomaki City with the participation of local junior high school students. Our aim was to incorporate their opinions into the recovery plan for the district. About 80 first-year students from Kadonowaki Junior High School participated in the workshop and heard presentations by experts in a community building, including Takenaka employees. Most of these students had previously attended Kadonowaki Elementary School, which had burned to the ground in the disaster and was subsequently closed in March 2015. The children also conducted their own surveys, created a model to show their ideas for the park, and in July made a presentation on their ideas to their parents, including ideas for a park that would attract people from various places and a park that would provide continuity in the district. We will work to implement these ideas in cooperation with related parties.



Explanation about the planned site for the park in the Shin-Kadonowaki district, Ishinomaki City



Morning meeting held at the school after the occurrence of a disaster



Lecture given by Professor Jinnai using the Tokyo Seaside City Model

Local community interaction

Giving support to the activities of the "Asian Architecture Friendship (AAF)" NPO

AAF is a volunteer group led mainly by those engaged in design work at Takenaka's Osaka Main Office. The group is supporting the construction of schools for children in Asia, including the school building project launched in Philim in Nepal in 2000. Under this project, Phase III construction work is still under way, being funded by donations and capital gained through PR activities. In April 2015, AAF, with the support Takenaka, was transformed into an NPO to improve the foundation for its activities. In the same month, unfortunately, the central part of Nepal was hit by a large earthquake and the school in Philim was severely damaged. Local children in the village have since been forced to live in tents. We will work together to increase donations to help the children resume regular schooling as early as possible, including the donation by new employees of all proceeds from the dormitory festival.

Communicating urban creation with a city model

Takenaka created the "Tokyo Seaside City Model" in order to further dialog with all stakeholders coming together and consider methods of urban creation centered around Tokyo coastal areas. We began displaying the model at the entrance hall located on the first floor of our Tokyo Main Office in December. The model is created at a scale of 1/2,000 and a range of visual information about the model can be projected onto a nearby screen. In starting to display the model, we invited Professor Hidenobu Jinnai from Hosei University to give a lecture on the near-future development of the bay area to employees. From now we are continuing to examine how to use the model for exchange with local communities and students.

VOICE

With the aim of earthquake recovery in the Shin-Kadonowaki district of Ishinomaki City, the city and UR are cooperating to simultaneously proceed with land management and building of reconstruction public housing, which is being done through land readjustment projects. From 2013 Takenaka Corporation and Takenaka Civil Engineering & Construction Co., Ltd. became involved with regard to design and construction in both operations. In 2015, the company was also involved in work to put together a concrete plan for a park in the same district by actually taking the ideas of local junior high school students, who were brimming with love of their hometown. This was called "recovery urban creation built together with children." Its work in the disaster-afflicted areas exemplifies how the Takenaka Group is implementing its corporate philosophy, "Contribute to society by passing on the best works to future generations." We are anticipating further developments from the Takenaka Group in the future.



Mr. Yujiro Oyama
General Manager of the Ishinomaki Office for Support of Earthquake Disaster Reconstruction /Urban Renaissance Agency (UR)

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).

● 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.

● 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.

● Gallery A Quad

Since it was opened on the first floor of Takenaka's Tokyo Main Office in 2005, this gallery has continued activities that contribute to the promotion of high-quality culture by transmitting "How to Enjoy Architecture" and "Artistry and Culture that Architecture Holds" through a variety of exhibitions. The gallery held eight special exhibitions in 2015. In June, as the fifth round in a series of world architecture schools, the gallery conveyed the possibilities of "wood" and the appeal of craftsmanship by introducing specialized education on wooden architecture from Aalto University in Finland.



Special exhibition held at the museum in Kobe



Exhibits included in the fifth round of the world's architecture schools series

WEB publication contents

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

- Dissemination and development of knowledge and technology
- Support for the education of children through Naniwa Demae Juku
- Local community interaction
- Providing safety and security to local communities
- Passing on the traditions and culture of architecture
- Publication of "approach" quarterly magazine

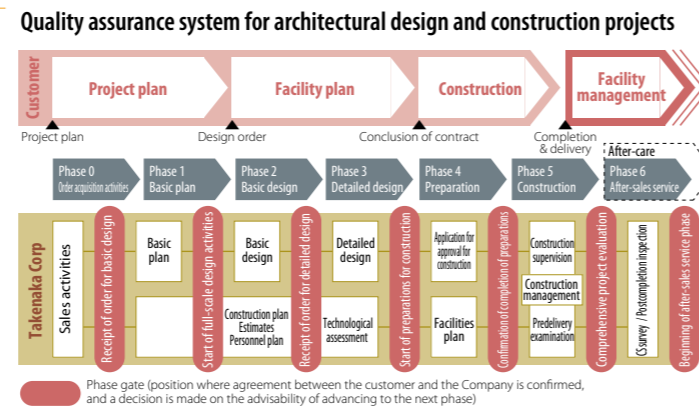
Contributing to the business growth of our customers

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.

Quality improvement

Activities based on a quality assurance system

We incorporate quality in our work during the design and construction stages in accordance with the Takenaka Quality Assurance System, which provides a set of standardized work flows for the quality assurance process followed in projects based on total quality management (TQM). We also implement further improvements based on customer feedback acquired through such tools as customer satisfaction surveys in an effort to realize diversified customer expectations and to achieve superior quality.



Practice of craftsmanship

Suita City Football Stadium that was made by everyone

Takenaka’s “craftsmanship” is not simply constructing high-quality buildings. In order to turn customer dreams into reality, we will continue to contribute to the development of customer businesses with our group’s comprehensive capabilities by standing together with clients at all processes from the initial stages of a project. The Suita City Football Stadium was completed in September as “Japan’s first stadium built with funding from everyone,” including donations from individuals and corporations as well as government subsidies. The stadium, which will be used exclusively for football as the new home stadium of J1 League football club Gamba Osaka, meets the international standards for football stadiums. It provides spectators with the same lively excitement as stadiums in Europe, with the shortest distance from the seating to the field being only seven meters. In the construction project, however, we faced a range of problems from as early as the initial planning stage, including those related to site selection, the size of the stadium, environmental impact assessments and negotiations with governmental agencies. In addition to these issues that always manifest in large projects, we dealt with the challenge of effectively utilizing the hard-won funding raised by the client without any waste through efficient design and construction work based on cooperation and the sharing of ideas with the client. Having designed it to be low cost and “ecocompact,” we worked to build a maintenance-free, very compact stadium. As a result, the stadium is equipped with all-LED ground lights and 0.5 megawatt solar panels as well as with a smart power system that leads to areawide CO₂ emission reductions through linkage with a large complex facility nearby. In the event of disaster, the stadium, which is one of the city’s large public facilities, can be used as an evacuation center.



We constructed the stadium by using precast concrete components for about 80 percent of the building frames including basic beams, thereby shortening the work period to 22 months and avoiding the issue of a skilled worker shortage. Furthermore, using an ultralarge crane rather than scaffolds, we installed very large precast concrete beams (weighing about 85 tons) to support the upper floors. For roof construction, we incorporated large blocks of steel-frame components. Through these measures, we kept labor to a minimum while showcasing leading examples of next-generation construction technologies. The football stadium, which is designed to offer a new standard for the J.League, will become part of the local community surrounding Gamba Osaka, and it will contribute to the football club as well as to Japanese football as a whole.

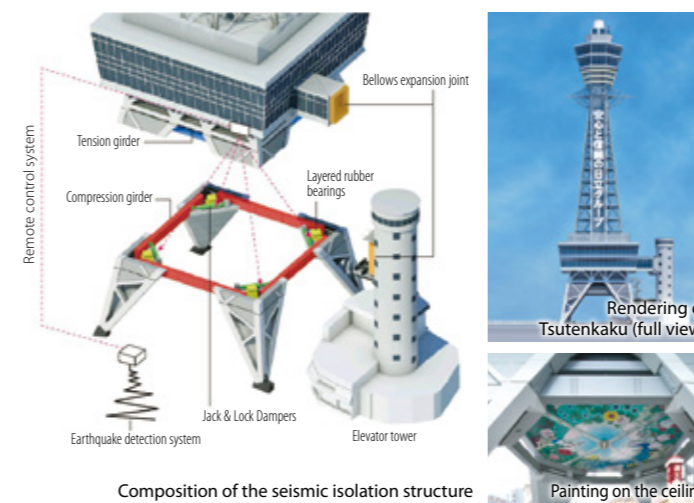
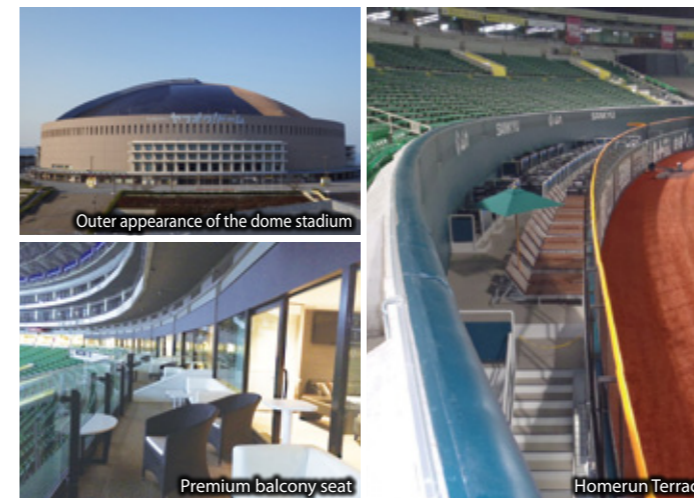
VOICE

VOICE

We launched the project with the aim of “Japan’s first stadium built with funding from everyone.” In the process from site selection to the collection of donations and various preliminary discussions, however, we faced unexpected difficulties. Takenaka Corporation personnel kindly helped us to overcome these hardships, demonstrating their comprehensive capabilities throughout the planning, design and construction stages. As a result, we were able to make our dream come true and completed the stadium, which embodies the shared ideas of all its supporters. We will make a concerted effort to achieve the next target, which is to fill the stadium with 40,000 spectators and revitalize Osaka through football. I would ask for your kind support of our efforts!



Teruhisa Noro
Former President of Gamba Osaka Co., Ltd. Stadium construction fund-raising organization director



Adding value to buildings

Contribution to generating appeal for Fukuoka Yahuoku! Dome

Takenaka supports the business of its clients by proposing new value to be added to buildings in response to changes in the social landscape throughout the life cycles of their buildings. Fukuoka Yahuoku! Dome was completed in 1993 as Japan’s first multipurpose retractable-roof stadium. Our sales, design, technology and FM teams have been jointly supporting the client in its aims to make its team and stadium the world’s best by adding new appeal to the stadium. In 2015, we completed the Homerun Terrace to enable spectators to enjoy a close-up view of the dynamic plays of outfielders as well as the Premium balcony seat, where occupants can enjoy an unobstructed view of the stadium through wide sash windows. We also replaced the arena lamps with LED lights ahead of other dome stadiums in Japan. In order to do all of these things designed to add more excitement to baseball games played in the stadium, our staff worked in round-the-clock shifts during the off-season, and we received a high evaluation from the client for our achievements. We will continue to contribute to enhancing the appeal of the stadium, which is one of the largest facilities in Japan.

Safety, security and prosperity

Seismic isolation retrofitting of Tsutenkaku

The current tower was the second Tsutenkaku built as a symbol of postwar recovery. This Osaka landmark is registered as a tangible cultural asset and visited by more than one million people every year. We worked on the seismic isolation retrofitting of the tower, a challenge unprecedented on a global scale, to meet the needs of the owner of the building, which wanted to secure it against huge earthquakes and attract more visitors. We decided to adopt the seismic isolation method for the tower to limit the scope of reinforcement work to its base part and connecting corridors in order to minimize the impact given to the outer appearance of the cultural asset while providing the tower with seismic resistance of the highest standard. In the retrofitting work, seismic base isolators were installed in the piers located 10 meters above ground. The isolators, which are composed of rubber support layers and the Jack & Lock Dampers that can also prevent wind shakes, provide the seismic isolation function with the bellows expansion joints attached to the connecting corridors. For the work, we set a construction stage high above the entrance part of the tower, thereby separating the construction area from the areas accessed by visitors to the tower and making it possible for the tower to be opened during the construction period. In a move that has attracted a lot of attention, we reproduced the ceiling painting of the original Tsutenkaku on the ceiling of the base part of the tower. Tsutenkaku certainly lives up to its description as “a light in the heart” of the people of Osaka, and we have given a new life to the tower with the help of the world’s most advanced technologies.

WEB WEB publication contents
www.takenaka.co.jp/enviro/vision/ex

Practice of craftsmanship

- Simulation tool that “visualizes” medical staff communication

Adding value to buildings

- Introduction of the cloud-based Building Communication System to Ote Center Building

Safety, security and prosperity

- Received performance evaluation for the Grid-Form Deep Mixing Walls Method (TOFT method to deal with liquefaction) from Center for Better Living

Growing together with employees and cooperating companies

Takenaka Corporation is working to provide employees, including those of subcontractors, 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 the activities of the Komachi construction work team composed mainly of women (general employees and skilled workers). For human resources development, educational programs have also been implemented for architectural engineers, skilled workers and students at our Practical Technology Training Center Omoi. In recognition of these programs, we received a prize at the KAIKA Awards held by the Japan Management Association as well as an Education Award for Outstanding Practice from the Architectural Institute of Japan.

Nurturing personnel 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 Cross-Cultural Experience Training, in which selected employees are dispatched to overseas affiliates to learn to respond to different social environments, management strategies and training needs.



The president talked with new employees



Personal workplace experience study tour

Roundtable meeting held to help skilled female workers more fully demonstrate their abilities

Exhibitions and participatory architectural fairs for students

To deal with the shortage of skilled workers in the construction industry, Takenaka has been implementing a range of measures in partnership with subcontractors. At our West Japan Engineering Depot in 2015, the company held a construction machinery exhibition and a participatory architectural fair together with Chikuwakai, an organization composed of subcontractors. As part of the fair, a roundtable meeting was held on the theme of providing skilled female workers with more opportunities to demonstrate their abilities. The total number of visitors to the event reached as many as 1,714, including students and members of the general public.



Selection made to choose winners of the competition for work style reform proposals

Expansion of the Takenaka Superior Supervisor Program

To further expand the program, Takenaka newly established the Junior Meister system for the education of young skilled workers and also increased the monetary rewards given under the program as part of its efforts to improve the treatment of personnel across the industry.

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. For example, the Working Hour Shortening Promotion Week Campaign was extended to a full month in 2015 as in the previous year. Moreover, employees were invited to propose a

range of ideas for better work-life balance through a competition held by the company for work style reform proposals. Takenaka also revised the shorter working hour system by incorporating opinions from employees who needed to use the system for childcare and held seminars on long-term nursing care to deal with concerns of employees with care obligations to family members, the number of which will increase in the future. By conducting these kinds of activities in accordance with the action plan established in line with the Act on Advancement of Measures to Support Raising Next-Generation Children, Takenaka obtained its second certification from the Ministry of Health, Labour and Welfare to use the Kurumin mark, meaning it can now use it as a general employer that meets the standards set under the Act.

VOICE

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Mutual support is important

I used the shorter working hours system for childcare when I returned to work after taking childcare leave. I tried to fulfill all my design duties within my new work day, which was shortened by 1.5 hours, but I found it difficult and returned to regular hours two years later when my child was a little older. This experience taught me how critical it was for those working shorter hours to gain the understanding and support of workplace colleagues. To this end, it is important for users of the shorter working hour system to evaluate their own capacity to complete the given tasks and ask their managers and colleagues for help as necessary. At present, I am maintaining a good work-life balance thanks to the support of those around me. I will support others in return for the support presently extended to me, for which I feel so grateful.



Saori Yasukochi
Architectural Design Group 1,
Design Department,
Kyushu Branch



Training for line leaders



DARWING Komachi wear for women

Development meeting



Joint on-site safety patrol conducted by three parties

Safety and health patrol by female employees

Widely diversified human resources

Diversity promotion 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. For example, all employees were given opportunities to participate in e-learning seminars on diversity and raised their awareness of diversity through dialog with management as well as through workplace discussions on relevant issues and measures. Furthermore, line leaders, who play important roles in terms of employees' work continuity and career development, received training, and female employees were also given stratified training. Further specific opportunities for women to demonstrate more of their abilities have steadily increased. For example, a female team composed of Takenaka personnel and the employees of cooperating companies worked together to develop the "DARWING Komachi" for women in partnership with female employees of Daiya Industry based on "DARWING" fatigue reduction wear for construction workers. The clothing, developed by incorporating the opinions of a number of women, has already been put on sale. The number of women working as line leaders has also been increasing across Takenaka, and we now have our first female Construction Project Manager at the forefront of our business. Through these measures for women, Takenaka is promoting workforce diversity at its various workplace environments.

Health and safety

At construction sites, Takenaka supervises skilled workers dispatched from specialty construction firms until the completion of the buildings. In health and safety management, we are trying to prevent accidents in daily workplaces by extracting specific risks associated with each work beforehand through close communication with our employees and skilled workers at subcontractors. Furthermore, employees who provide support for construction sites inside the company, representatives of the direct employers of the skilled workers, and construction site personnel conduct safety patrols together, thereby encouraging each other to express opinions frankly and increase their safety awareness at worksites. In addition, we organize safety and health patrol teams composed of female employees to prevent workplace accidents for the creation of comfortable workplaces for women.



WEB publication contents

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

Nurturing personnel 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, and activities to shorten working hours through labor-management cooperation

Widely diversified human resources

- Current status of diversity promotion

Health and safety

- Healthcare system, safety results for 2015, and safety training conducted at Omoi

Based on our corporate philosophy, we practice “Total Quality Management” in order to obtain the satisfaction of our customers and earn the trust of our society. Together with raising our value to society as a corporation, we will fulfill our social responsibilities. 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.

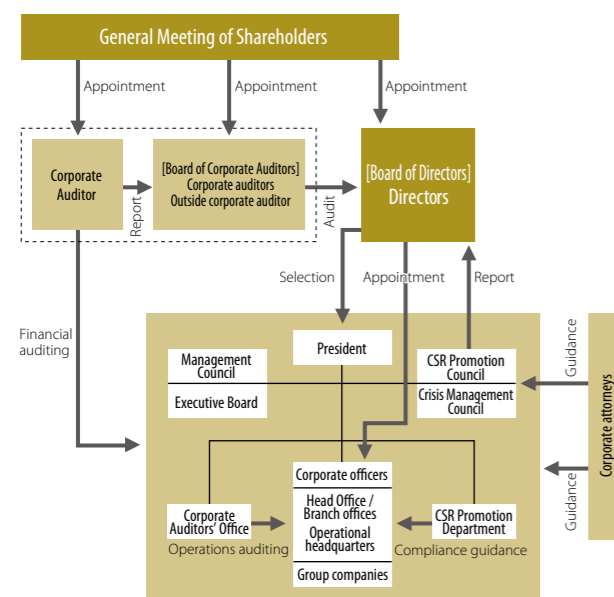
Organizational governance

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 Audit Office as an internal auditing organization to verify the accuracy and legitimacy of 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.

Corporate Governance 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.



Copies of “CSR and Compliance News”

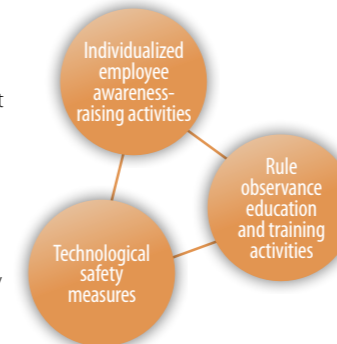


Executive CSR seminar by an outside lecturer

Crisis management

Sustained promotion of information security measures

We are implementing information security measures to protect the important information assets of our clients. In fiscal 2015, we conducted training against targeted email attacks in addition to implementing the conventional e-learning program to increase the information security awareness of all group employees including those outside Japan. We are also constantly inspecting the security measures employed at our offices and construction sites and conduct group training and security patrols to raise risk awareness among our group employees and business partners. We will attempt to strengthen these activities in the future by continuing to promote them.



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 2015, 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. The drills included how to: check the safety of their colleagues and families, deal with the damage caused by a tsunami, commute to and from their workplace on foot, examine the damage caused to construction sites and their own facilities and to the buildings constructed by Takenaka, and make efforts to recover from the damage. Also, on November 20, 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 previous year. With a total of around 11,000 employees participating from Takenaka and other 17 group companies, the four training sessions provided participants with an opportunity to combine their collective capabilities. We will continue to conduct drills against serious disasters and improve our BCP to increase our emergency preparedness.



Scene of Nagoya Branch earthquake disaster drill



Joint earthquake disaster training (2015)

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 2015, in response to the revision of the guidelines set by the Ministry of Land, Infrastructure, Transport and Tourism, we launched a new initiative across the company to encourage all our business partners to enroll in social insurance programs in the accelerated movement toward 100 percent enrollment in the programs observed in the industry. 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.



Explaining procurement policy and activity guidelines at a general meeting of the Chikuwakai (2015)

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

Asahi Facilities Inc. Global environment Customers

● Activities to reduce the use of energy

Commissioned by energy service provider (ESP) Cenergy, Asahi Facilities is engaged in equipment management and maintenance at facilities supplying energy such as electricity and heat to Ise Red Cross Hospital.

Energy needs to be supplied from the facilities to the hospital in a stable and also meticulously energy-saving manner. Asahi Facilities uses its abundant expertise in equipment management to improve the operation of the boiler and heat source equipment installed at the facilities, thereby making safe and stable operation compatible with energy use and cost reduction to the satisfaction of the client.



Service provided at the facilities' central monitoring room

Urabandai Kogen Hotel Local communities Customers

● Exchange with local communities

The Urabandai Kogen Hotel holds various events to foster exchange with local communities, including culturally and artistically appealing exhibitions, lectures and concerts. At the hotel during October to November 2015, Gallery A Quad, one of the publicly incorporated foundations established by Takenaka, organized an exhibition to introduce the fall-related works of Chihiro Iwasaki, receiving cooperation from the Chihiro Art Museum Azumino and support from the Urabandai Tourist Association. On the final day of the exhibition, a storytelling event and a hands-on workshop to make button badges and cards by imitating the watercolor techniques used by the famous painter were held with the participation of local residents and visitors to the hotel, who reportedly enjoyed the events very much.



Storytelling event held as part of the exhibition

TAK-QS Local communities Employees

● Internship training on quantity surveying

Quantity surveying firm TAK-QS provided two male students from Edogawa City Nishikasai Junior High School with a work experience opportunity within the company.

People tend to associate work experience in the construction industry with construction sites and design rooms, but TAK-QS made and implemented a unique plan to introduce the local boys to the construction industry from the perspective of quantity surveying. During the five-day program, the two students made calculations using a 3D modeling system. One of the students reported that his experience helped him gain a deeper understanding of the job of his father, who worked for a general construction company. Meanwhile, having this contact with the students helped employees, especially younger team members, better understand the difficulties of teaching others and opened their eyes to the ease with which today's junior high school students can manipulate computers. The work experience program was thus very meaningful for both the students and employees.



Work experience

TAK Living Local communities Employees

● Work experience on organizational activities and construction management

Upon the request of the school, interior design and finishing company TAK Living offered work experience programs to five students studying architecture at the Tokyo Metropolitan Kuramae Technical High School. During the three-day period, the company provided the students with opportunities to learn about corporate activities and the construction industry, in accordance with the school's request. They were briefed on the Takenaka Group's activities and were able to participate in activities related to quotations, drawing, factory operation, and construction management to understand the roles played by the firm's various departments. On the final day of the program, the students participated in a general meeting of employees and then attended a barbecue event to further deepen their understanding of the construction industry. In addition to this work experience program, TAK Living has accepted about 30 students from three other schools and has thus proactively contributed to vocational education and its local communities.



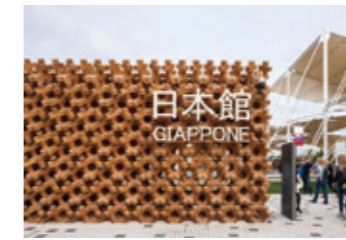
Training at a construction site

Overseas group company activities

Italy Local communities

● Participation in a national project to introduce Japan's food culture and diversity

Takenaka engaged in the construction of the Japan Pavilion for Expo Milan 2015 held from May to October 2015. The exposition was organized with a focus on food and on the specific theme, "Feeding the Planet, Energy for Life." We used wood for the outer wall of the Japan Pavilion to make it symbolic of Japan and its food culture and constructed it using traditional Japanese architectural techniques. As workers familiar with traditional Japanese architectural techniques are not available in Italy, prior to building Takenaka Europe conducted repeated verification testing for the outer wall construction using 3D software and actual materials, and finally constructed the wall with the help of skilled Italian workers. A non-Japanese visitor to the Pavilion commented that "the delicate and exquisite design is typical of Japan." The Pavilion thus introduced not only Japan's food culture but also the craftsmanship and culture of its traditional architecture.



The wooden wall attracted a lot of visitor attention

Asia, Europe and the Americas Employees

● Commitment to educating local staff to be tomorrow's leaders

Takenaka's international branches and offices outside Japan are committed to helping locally employed staff develop their careers and abilities and deepen their understanding of Takenaka's "Total Quality Management" through contact with Japanese architecture and culture. As part of this effort, the branches and offices have been conducting short-term local staff training since 1997. In 2015, the training was held in Japan for five days with the participation of 10 employees from Takenaka's overseas subsidiaries. The trainees participated in a range of events, including lectures, touring construction sites and conversing with Takenaka's engineers on technical issues. For many of the trainees, it was their first visit to Japan. "Thanks to the training, I think I will be able to communicate even better with my Japanese colleagues," reported one smiling individual. Through this kind of training, the international branches and overseas subsidiaries are endeavoring to develop personnel who can serve as local leaders and also to promote technical exchange between Japanese and overseas staff.



Trainees had their first experience of a Japanese "morning meeting" at a construction site in Tokyo

Thailand Global environment Local communities

● Contribution to the environment and local communities through the planting of mangroves

Having been committed to cultivating local roots since 2008, Thai Takenaka International incorporates local and environmental contribution activities into its annual employee trips. In 2015, employees planted mangrove seedlings, repainted a bridge and handrails, and picked up trash in the Bangpu Nature Education Center in Samut Prakan during their trip. Decked out in matching polo shirts, employees and their families learned about mangroves through recreation and walk rally activities. Despite getting muddy, they were observed smiling and shouting with joy during the activities, indicating a fun time. Thai Takenaka International will continue to conduct nature conservation and local contribution activities, such as planting mangroves, to enrich life on the planet for the bright future of the country.



Planting mangroves

U.S.A. Global environment Local communities

● Local contribution and nature conservation activities at the Grand Hyatt Kauai

Takenaka owns and manages the Grand Hyatt Kauai in Hawaii, which gave donations to the National Tropical Botanical Garden (NTBG), an NPO established for tropical plant ecosystem-related research, protection and education activities in the United States. The NTBG has five botanical gardens and three specified protection areas in which 60,000 species in total are raised and protected. In 2015, the hotel launched a hydroponics factory for vegetable production where six lettuce varieties are produced and supplied fresh to restaurants in the hotel. The island depends on imports from the mainland for vegetables, and the establishment of vegetable factories is therefore promoted to reduce imports while also protecting the environment. We will continue to contribute to local communities and environmental protection on this naturally blessed island.



Vegetable plant where lettuce is densely grown

We hold dialogs with various stakeholders to promote activities for realizing a sustainable society. Social issues of significant relevance to our business activities are selected as topics, and experts who are active in the respective fields related to these topics are invited to participate in discussions seeking resolutions to these issues. The contents of the discussions are shared by the CSR Promotion Council and reflected in our business operations.

Theme

Stakeholder communication meetings held on Healthy-longevity society and urban creation

From April 2015 at the Tokyo Main Office

Takenaka held stakeholder communication meetings in partnership with Associate Professor Masamichi Hanazato and Project Assistant Professor Norimichi Suzuki from the Center for Preventive Medical Sciences, Chiba University for participants to discuss the roles to be played by cities and buildings as well as future visions for “healthy community development.” Participants discussed general themes, including the challenges for Healthy-longevity society, and also focused on themes related to physical, mental and social health. Medical, public health and kinematics experts were also invited to the meetings to report their latest research results and talk about the roles and possibilities of buildings, architectural spaces and urban creation for the solution of present and future problems. We will continue to promote dialog and cooperation with a range of experts toward the creation of Healthy-longevity society.



Discussion by 18 participants



Participants exchanged opinions in the meeting

Theme

Dialog meetings on the promotion of diversity

April 15 and June 19, 2015 at the Tokyo Main Office

In 2014, Takenaka organized a dialog meeting between female employees and departmental managers of the main offices and branches based on the theme, “Diversity—from the perspective of empowering female employees.” The meeting clarified the importance of providing employees with workplaces where diversity is respected in order to motivate them to continue to work, develop their careers, and more fully demonstrate their abilities as well as the importance of improving their work-life balance (WLB). We therefore held the 2015 dialog meetings mainly on WLB, inviting Professor Hiroki Sato of the Chuo Graduate School of Strategic Management to give a lecture. The April meeting was held for departmental managers of the head office and the June meeting was held with the participation of President Miyashita and the chairman and members of the CSR Promotion Council.

In the meetings, participants shared information about external trends and internal situations as well as listening to Professor Sato’s lecture. They then exchanged views and opinions on issues such as “What challenges the company must meet to ensure its business continuity while helping employees improve their WLB,” and “What actions should the company take in partnership with employees to reform their work styles.” Based on the discussion results, Professor Sato offered some recommendations to the participants, including, “It is desirable for you to clearly separate your business and personal lives, but it will help you and your organization become more competitive in business if you gain inputs in your personal lives” and “People used to devote a lot of time to making good products, but from now on you should work on increasing your hourly productivity to beat the competition.”



They also discussed with invited experts



Professor Sato gave a lecture

The Paris Agreement was adopted at the 2015 United Nations Climate Change Conference (COP21) in December 2015. This agreement sets the framework for measures against global warming to be taken by the signatory countries in and after 2020. Under this framework, each of the countries will submit their global warming targets and report on their progress every five years. They have also agreed to suppress any increase in the global average temperature to below two degrees or possibly to below 1.5 degrees Celsius relative to preindustrial levels and that they will continue to set higher targets. It merits noting that a total of 196 countries have agreed to the framework, including the United States, China and India, which did not participate in the Kyoto Protocol. According to scientists, we need to reduce global emissions of greenhouse gases to zero or below within the latter half of this century in order to limit the increase in the global average temperature to below two degrees Celsius. This implies that we need to make a drastic shift from our traditional dependence on fossil fuels for our energy supply.

In Japan, we must also give consideration to the decreasing population trend. Predictions on population tend to be correct, and the National Institute of Population and Social Security Research predicts that Japan’s population, which began to decrease after reaching a peak of 128.08 million people in 2008, will drop to below 100 million in around 2050 and be between 80 to 90 million in 2060. The population therefore may continue to decrease by 0.8 million or more people on average every year up to 2060. For comparison, Japan’s population decreased by 2.3 million during the year from 1944 to 1945 due to the Second World War but began to recover in the year following the end of the war. Japanese society will also be older as we head toward 2060, leading to a further decrease in the working population.

Takenaka Corporation has a history of more than 400 years. In order to sustain its corporate organization for another 400 years, Takenaka needs to promptly and properly grasp the dramatic changes to impact the economy and society on a long-term basis, identify the roles to be played by the company in the face of socioeconomic changes, and strategically take actions to fulfill these identified roles. To this end, Takenaka has already announced its vision for 2050. Specifically, in its Environmental Concept Book: Target for 2050 announced in 2010, the company describes the concept of “Enhancing human sensitivity and creativity and taking advantage of nature to aim for goals ranging from zero-carbon buildings to carbon neutral cities.”

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 returned 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.



This is an advanced, future-oriented concept and is highly commendable. From now I would like to see Takenaka manage its progress so that it is facing squarely in that direction by further materializing this concept.

I think this management progress should be reported precisely in the annual corporate report. It is necessary for the company to set the targets to be attained in five or 10 years toward the achievement of its long-term vision for 2050, annually check the progress, and make further efforts to attain the targets. I have provided a third-party opinion on the corporate report for three years and found that the report is excellent in showcasing the initiatives implemented by Takenaka. The company starts a range of new initiatives every year and the annual report introduces many of them. However, the report does not provide enough verification of the progress that the company has made regarding its long-term measures. For example, in this report, the company introduces its nonfinancial data for the past three years by using graphs, but does not explain why the percentage of projects ranked S or A under the Comprehensive Assessment System for Built Environment Efficiency (CASBEE) substantially decreased in fiscal 2015. 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.

The construction industry produces artificial objects that have superlong lives and is therefore required to take longer views than other industries. I expect the Takenaka Group to steadily take actions while appropriately identifying the changes to be made in the future and to make use of its annual corporate report to manage the progress of its activities toward 2050.

Appreciation of the external perspective

I would like to express my deepest gratitude to Professor Kurasaka for providing us with his evaluation and valuable advice on our commitment to achieving a sustainable society, which we have made in the Takenaka Group CSR Vision. The professor has given us important insights regarding the actions that we should strategically take in anticipation of the dramatic changes that will impact the economy and society on a long-term basis, including the outcomes of the Paris Agreement adopted at COP21 and of a drop in Japan’s population. 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 that we should attain from a long-term view as well as the management indicators, and describe the management cycle that we will follow for the attainment of the targets in an intelligible manner for readers. We have posted a questionnaire on our Web site 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)

	74th term 2011	75th term 2012	76th term 2013	77th term 2014	78th term 2015
Orders received	929,542	1,004,492	1,214,335	1,418,103	1,295,029
Revenues	976,612	998,381	1,020,956	1,150,663	1,284,362
Operating income	11,106	Δ1,369	11,525	27,741	59,883
Operating margin (%)	1.1	Δ0.1	1.1	2.4	4.7
Ordinary income	10,962	12,595	21,709	38,367	68,666
Net income	2,273	6,122	7,162	23,545	44,140
Net assets	308,135	350,884	438,468	471,436	521,011
Total assets	899,718	977,735	1,105,029	1,240,256	1,342,971

Other Financial Data (Consolidated)

(Millions of yen)

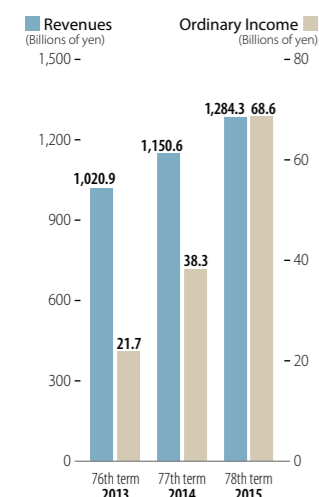
	74th term 2011	75th term 2012	76th term 2013	77th term 2014	78th term 2015
Cash flow from operating activities	55,933	Δ10,610	Δ929	14,674	40,032
Cash flow from investing activities	Δ14,082	Δ9,275	Δ18,646	Δ5,207	Δ20,119
Cash flow from financing activities	Δ7,262	Δ5,792	8,294	12,984	2,415
Research and development expenses (Billions of yen)	7.1	6.4	5.5	5.7	6.2
Capital investment (Billions of yen)	5.5	9.9	26.3	27.2	25.3
Return on equity (ROE) (%)	0.7	1.9	1.8	5.2	9.0

Revenues by Business (Consolidated)

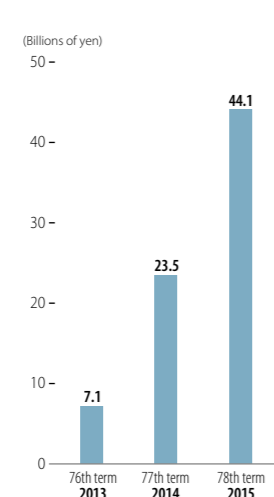
(Millions of yen)

	74th term 2011	75th term 2012	76th term 2013	77th term 2014	78th term 2015
Construction business	910,646	921,188	939,100	1,063,666	1,188,308
Development business	32,627	42,206	45,929	48,287	46,743
Others	33,338	34,986	35,926	38,709	49,309

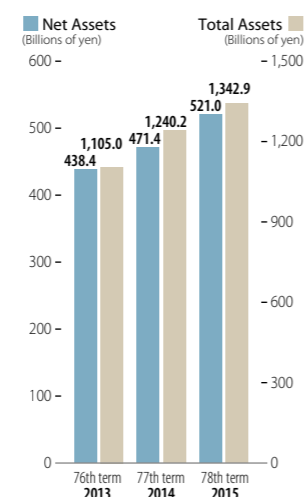
Revenues/Ordinary Income (Consolidated)



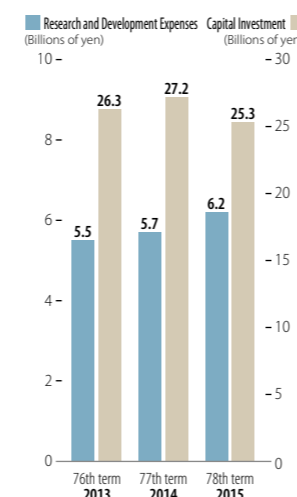
Net Income (Consolidated)



Net Assets/Total Assets (Consolidated)



Research and Development Expenses/Capital Investment (Consolidated)



Revenues by Region (Consolidated)

(Millions of yen)

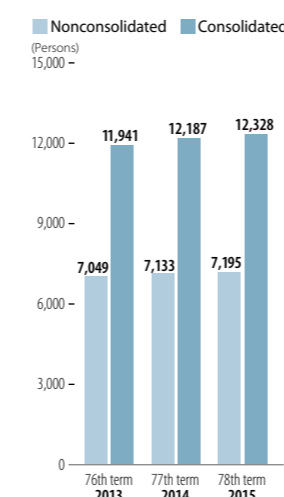
	74th term 2011	75th term 2012	76th term 2013	77th term 2014	78th term 2015
Japan	856,868	861,700	872,155	960,443	1,090,954
Asia	63,462	91,575	90,399	129,903	134,923
Europe	14,662	17,274	25,260	33,308	27,783
North America	11,995	17,493	23,289	25,921	30,701
Others	29,623	10,337	9,851	1,086	—

Nonfinancial Data (Nonconsolidated)

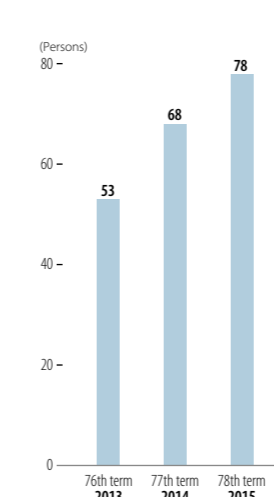
	74th term 2011	75th term 2012	76th term 2013	77th term 2014	78th term 2015
Number of employees (Consolidated)	7,272 (12,016)	7,080 (11,854)	7,049 (11,941)	7,133 (12,187)	7,195 (12,328)
Average age of employees	44.6	44.6	44.5	44.7	44.4
Average length of continuous employment (years)	20.5	20.4	19.5	20.2	19.8
Number of women in managerial positions	36	48	53	68	78
Accident frequency rate (Accidents followed by absence of four days or more from work)*1	0.75	0.62	0.75	0.55	0.47
CO ₂ emissions intensity during construction work (t/100 million yen)*2	10.0	10.4	10.3	10.8	10.6
Rate of final disposal of construction waste (Wt. %)*3	3.4	4.2	3.9	3.2	2.7
Rate of number of CASBEE S- and A-rank projects (%)*4	56.0	60.9	69.0	78.5	52.0

*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-rank and A-rank projects among the company's design projects.

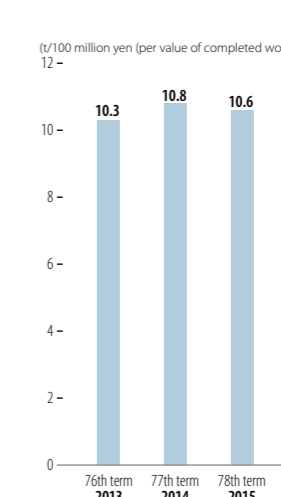
Number of Employees (Nonconsolidated and Consolidated)



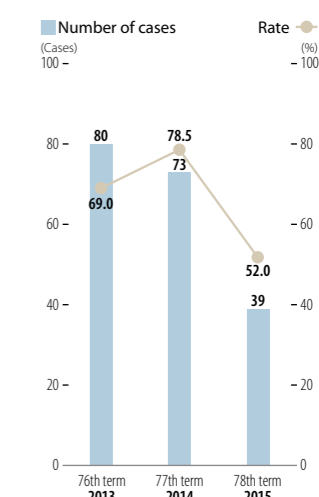
Number of Women in Managerial Positions (Nonconsolidated)



CO₂ Emissions Intensity During Construction Work (Nonconsolidated)



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



Dreams into Reality for a Sustainable Future



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