CSV objectives to turn stakeholder dreams into reality for a sustainable future

Leaving a beautiful earth to future generations
Contributing to the sustained progress of local communities
Growing together with employees
Fair corporate activities
and partner companies
Achievement of targets through partnerships
Contributing to the business growth of customers
Issues for management

Realizing a sustainable society through urban creation

Sustainable urban creation and social system development
Realization of healthy and rewarding workplace environments
Promotion of social contribution activities
Development of industrial and social infrastructure through technical innovation
Prepare a foundation for promoting sustainable production

Promotion of diversity
Response to the global environment and biodiversity
Achievement of targets through partnerships

This reference shows the activities conducted during the past several years that could not be included in the main Report.
3 Sustainable urban creation and social system development

3 Identify social and urban issues through dialog and planning strategy
4 Promote innovation to resolve issues and build infrastructure.

5 Prepare a foundation for promoting sustainable production

5 Promote green procurement
5 Build infrastructure for a sound and attractive construction industry
6 Dialog with cooperating companies

7 Response to the global environment and biodiversity

7 Environmental Policy
7 Activity Guidelines
7 Biodiversity Activity Guidelines
8 Enhanced application of energy management
8 Reduce CO2 emissions from the entire supply chain
9 Achieving a positive energy balance by renovating our office building into a ZEB
10 Benefiting from biomass
10 Initiative for Symbiosis with Nature
11 Iino Building integrates “Iino Forest” into a green network in the heart of Tokyo

12 Promotion of social contribution activities

12 Urban recovery together with children
13 Naniwa Demae juku
13 Giving support to the activities of the “Asian Architecture Friendship (AAF)” NPO
13 Takenaka Scholarship Foundation
14 Social Contribution and Architectural Culture Promotion by Modern Wooden Architecture “Chochikukyo” Recognized with Grand Mécénat Award 2019
15 Takenaka Carpentry Tools Museum
15 Gallery A Quad
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16 Development of industrial and social infrastructure through technical innovation

16 Develop and deploy technology focused on strengthening cities and buildings
17 Development of a fire-resistant laminated lumber, Moen-Wood (2-hour resistance)
18 Takenaka Corporation undertakes demonstration tests of Boston Dynamics’ SpotMini Robot, together with Softbank Robotics and Softbank

19 Realization of healthy and rewarding workplace environments

19 Improve work-life balance through drastic productivity improvement
20 Ensure safe, hygienic workplace environments at our work sites
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21 Tokyo Main Office Innovation project to facilitate closer communications and provide the optimum working environment for each worker
23 Mido Building Innovation Space Seibi (MISS) renovation project —Aiming to create new value and productivity improvement
25 Renovation of Fukae Chikuyuryo to develop “Human Resource for the New Future”
26 Developing aptitude on an individual basis
27 Experiential safety training through sight, touch and experience — Practical Technology Training Center “Omoi” (Hyogo Prefecture)
27 Examinations and care provision implemented to preserve mental and physical health

28 Promotion of diversity

28 Fatigue-reducing support wear for women by women
28 Creating workplaces that invite participation by diversified personnel

29 Achievement of targets through partnerships

29 Understand social issues through dialog and check policy plans and measures
Identify social and urban issues through dialog and planning strategy
Aiming to be an integrated engineering firm for urban creation, we hold dialogs with stakeholders to identify social issues and create urban areas and solutions that resolve them. We are now promoting initiatives to create business models based on this approach.

Dialogs with urban stakeholders
We concluded community partnership agreements with Unnan City, Shimane Prefecture; Ogawa-cho, Hiki-gun, Saitama Prefecture; and Shiojiri City, Nagano Prefecture. Through these agreements, we can communicate with governments and community stakeholders to resolve issues specific to each area and organize collaborative activities that help regional revitalization. In Koto Ward in Tokyo, where our Tokyo Main Office is located, we continue our East Bay Project which aims to revitalize the community under the themes of health, waterfront, traffic, and wooden structures.

Urban level dialogs and our expertise

<table>
<thead>
<tr>
<th>Location</th>
<th>Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnan City (Shimane Prefecture)</td>
<td>Health and longevity, Traffic</td>
</tr>
<tr>
<td>Koto Ward (Tokyo)</td>
<td>Wood structures, Traffic, Agriculture, forestry and fisheries, Area management</td>
</tr>
<tr>
<td>Ogawa-cho (Saitama Prefecture)</td>
<td>Wood structures, Biodiversity, Tradition and culture</td>
</tr>
<tr>
<td>Shiojiri City (Nagano Prefecture)</td>
<td>Wood structures, Energy, Tradition and culture, Tourism and commerce</td>
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</tbody>
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Social level dialogs
We hosted some study groups in the areas of biodiversity, traffic, and health and longevity, inviting experts from the respective fields. Based on these group discussions, we are now designing social systems that can resolve the issues identified in the discussions toward realizing a sustainable society.
Promote innovation to resolve issues and build infrastructure

As an integrated engineering firm for urban creation, we also continue our efforts to establish new business models and create solutions. Last year, we extended our expertise of urban creation to the creation of social systems, and initiated activities to establish new business related to this area. We are currently exploring business possibilities under the themes of carbon management, urban creation incorporating natural and cultural resources, and urban creation with innovative reforms in mobility. We also started the TAKENAKA ACCELERATOR program to help speed up the startup of new businesses by small ventures. Under the banner of “Connect through Urban Creation, Connect to the Future,” we are designing and operating the program jointly with 01Booster Inc. to encourage inventive value creation through open innovation. We have actively sought future business partners among entrepreneurs and small venture companies with whom we can create new businesses to “realize a sustainable society through urban creation.” We received some 120 applications and selected seven of the applicants. Now we are working together to complete the details of each project toward creating new businesses.
Promote green procurement
We specify selection policies and guidelines, and items subject to green procurement to obtain materials with low environmental impact in the stages of design and procurement as well as at our construction project office. The list also contains our own environmentally conscious products, such as Evoldan, Vertical Forest, and Energy-CO2 Minimum (ECM) concrete aiming to disseminate their use in various projects. Evoldan is a collapsible air duct component made with three layers of highly insulated cardboard. The product can be delivered to the construction site as a flat pack and assembled into the duct on the site, significantly reducing CO2 emissions in the transportation stage. With regard to the specific items that contribute to our long-term CO2 emissions reduction targets toward 2030 and 2050, we have now set target numbers to be achieved during the period of the three-year environmental plan from 2020.

Build infrastructure for a sound and attractive construction industry

Hands-on construction experience workshops
This year, we held the fifth hands-on construction experience workshop in Tokyo Main Office between January 29 and 31, 2020. This is an initiative to recruit new construction workers to secure the future of the construction industry. This hands-on experience can actually lead to job offers for young people into Chikuwakai member companies.
A total of 120 students attended this year’s workshop. Our skilled construction workers, including those with Takenaka Meister Certification in our specialized group companies, keenly instructed the students in the workshop by demonstrating their passion for working on buildings with their own hands. As some of the instructors had themselves graduated from the students’ schools, several attendants commented that they had been inspired to follow the same path as their alumni. Our workshop provided the students with a good opportunity to think about their future careers.
Dialog with cooperating companies

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

Improvement of Takenaka Meister Certification

We certify skilled supervisors and engineers to motivate skilled workers and invigorate their construction site. The certification is being improved in stages, such as by introducing new qualifications and increasing the incentive of certified workers.
Response to the global environment and biodiversity

Environmental Policy
Contributing to the sustainable development of society through efforts to create environmentally harmonious spaces

Activity Guidelines
1. Pursuit positively activities to realize a society of symbiosis with nature, a low-carbon society and a resource recycling society
2. Observe regulations and company rules for environmental preservation and implement measures against environmental risk
3. Implement reliable environmental management based on quality assurance system
4. Conduct training to raise employees’ environmental awareness
5. Realize detailed environmental communication
6. Participate proactively in social environmental activities

Biodiversity Activity Guidelines
1. Recognition and sharing
   Recognize the relationship between business operations and biodiversity and share this perspective throughout the company
2. Environmental management
   Position the biodiversity as an important theme for environmental management and resolutely implement the management
3. Research and development
   Accumulate expertise on factors influencing biodiversity and promote relevant research and technological development
4. Construction activities
   In planning and design process, put forward proposals which contain plan that take biodiversity into consideration
   In procurement of materials and services, promote maintenance of biodiversity with contract companies
   In construction, avoid and reduce impacts on biodiversity from the construction planning stage onward
5. Company facilities
   Promote use of lands, operation and management of company facilities with consideration of biodiversity
6. Education / Enlightenment
   Promote biodiversity education and enlighten members of management and employees of the company and its group as well as cooperating companies
7. Coordination / Cooperation
   Coordinate and cooperate with stakeholders who promotes biodiversity
Enhanced application of energy management
Combining hydrogen energy and renewable energy with our own energy management system, I.SEM, we are working toward realizing a Decarbonized Model Town. We have been carrying out technical demonstrations in the Shinsuna area of Koto Ward, Tokyo. In 2019, our demonstration test to supply electric power from a hydrogen-fuel-cell vehicle to a building through I.SEM achieved a successful result. This success presented a concrete example that hydrogen can be efficiently utilized in both vehicles and buildings.
We further utilized I.SEM to construct a DC-supply office lighting system and installed it within an office building.

Reduce CO₂ emissions from the entire supply chain
We continue working to reduce greenhouse gases directly emitted from our construction and office activities, as well as indirect emissions across the supply chain. Among indirect emissions, "procurement of materials" and "energy consumption during the operation of completed buildings" occupy a large percentage. We set our long-term CO₂ emissions reduction targets based on the figures from these stages, along with those from direct emissions.
To reduce the figures concerning material procurement, we plan to expand the usage of low-carbon products and technologies, such as Energy-CO₂ Minimum (ECM) cement and a cardboard duct (Evoldan), both of which have been jointly developed with our business partners. We will address energy consumption from building operations by increasing the number of ZEBs through building costs reduction. Further, we are contributing to CO₂ emissions reduction by encouraging forestry through an increase in the number of wooden buildings made with fire-resistant laminated timber, Moen-Wood and CLTs.
We have incorporated the target figures concerning these concrete measures within the three-year environmental plan 2020 in order to achieve our long-term targets.
Achieving a positive energy balance by renovating our office building into a ZEB

We have renovated our Higashi Kanto Branch Office building (built in 2003) into a net-zero energy building (ZEB) while continuing office work within the building. April 2017 marked a year since the building went into full use in May 2016. At this point, the annual energy balance of the building showed a positive balance between the created energy and the consumed energy.

Renovation of the Higashi Kanto Branch Office was the first project in Japan that transferred a building into a ZEB while it was in use. Installation of high-performance external wall insulation, introduction of a passive design that utilizes natural energy to the maximum extent, finely-tuned environmental control technology, and reforms to the working style reduced the annual energy consumption to 403 MJ/m² across the entire building, including the air-conditioning system, ventilation, lighting, power supplied to wall outlets, etc. This was a 70% reduction in power consumption compared to the former building. The energy created by the solar power generation reached 417 MJ/m² per year.

We will utilize the knowledge we gained through this renovation project for future proposals, offering a range of ZEB projects to our customers to meet their differing needs, and including ZEB Ready, Nearly ZEB, and Net ZEB.
Benefiting from biomass

Takenaka is also pursuing technical development aimed at reducing waste after buildings go into operation. Among the various types of waste generated in urban areas, food waste raises particular challenges because of its high moisture content, which results in high fuel requirements and other costs for transportation and disposal. Methane fermentation, an efficient technology for on-site organic matter (biomass) processing and energy recovery, is impractical for small-scale applications such as treatment of food waste generated in buildings.

Takenaka responded by effectively combining raw waste pulverization by disposer, methane fermentation and existing wastewater treatment technologies to develop the Urban Biogas System, Japan’s first technology using methane fermentation to convert raw waste from buildings into biogas.

The system, which first went into operation in the ABENO HARUKAS super-skyscraper in Osaka, uses biogas produced from food waste to fuel a co-generation system that supplies electricity and heat throughout the building. This technology earned Takenaka the 2013 Environment Minister’s Award for Global Warming Prevention Activity and the 2013 Special Prize of the Cogeneration Award Screening Committee.

Initiative for Symbiosis with Nature

We aim to create architecture and urban environments that allow people to live comfortably yet sustainably in nature. We formulated our Biodiversity Activity Guidelines in 2012 and offer environmental designs utilizing the Practical Tools for Sustainable Land Use*1 and assess biodiversity at our own sites. We have also hosted the Butterfly Project in Nagoya*2 between 2010 and 2012, the Seiwadai Forestation Project from 2017, and many more activities.

*1: Practical Tools for Sustainable Land Use
This tool was developed for the Japan Business Initiative for Biodiversity (JBIB) under the leadership of Takenaka researchers. The tool employs the Land Use Score Card, the JBIB Guidelines for Sustainable Business Sites, and the JBIB Monitoring Sheet to assess the degree of attention given to biodiversity in land use at business sites.

*2: The Butterfly Project in Nagoya
We conducted this research between 2009 and 2012 to create an urban environment in which butterflies—one of the bio-indicator animals used to assess the health of the natural environment—flourish. The findings from that research are now used for our ecosystem preservation activities.
Iino Building integrates “Iino Forest” into a green network in the heart of Tokyo

A lush landscaped forest has emerged in front of a high-rise Tokyo office building equipped with state-of-the-art environmental features. Seventy-seven species of trees and shrubs suited to the intrinsic ecosystem of the area, including Japanese bay trees (*machilus thurnbergii*) and Chinese hackberries (*celtis sinensis*), were selected to expand the green network extending from the Imperial Palace and Hibiya Park to the Atagoyama district and Shiba Park. Drawing on the results of past surveys of flora and fauna in the neighborhood, the forest’s planners selected species of birds and butterflies to attract as biodiversity indicators, and then chose suitable tree species to create a habitat for these creatures. A road lined with Oshima and Edohigan cherry trees resembling a cherry tree-lined road in nearby Hibiya Park has also been provided. Deciduous, coniferous and shade-tolerant tree species were planted based on a comprehensive evaluation of environmental factors such as shading by the building and the cold north winds of winter, giving rise of a forest where office workers can relax and experience the seasons. A pagoda provides shade for benches where people wait for buses, and artworks are arranged for the pleasure of strollers, all contributing to creation of a refreshing urban community forest. We will monitor the wildlife in the park into the future to determine the effectiveness of the green network and incorporate the gathered information into our plans to continue this creation of rich inner-city ecosystems.
Urban recovery together with children
Commissioned by the Japan Committee for UNICEF (Chairperson: Ryoko Akamatsu), we have been providing the Urban Recovery Together with Children program jointly with Yamagata University to support the growth of children in the area affected by the Great East Japan Earthquake. This program started with an intracompany competition in July 2011 for ideas to support recovery in disaster-affected areas. The program was then chosen as the best program in the International Competition for a Disaster Recovery Plan after the Great East Japan Earthquake hosted by the Association for Children’s Environments in August 2011. The program was finally put into practice, commissioned by the Japan Committee for UNICEF.

As a specialist in urban creation, we provide this program to empower children through participation in urban recovery. With this program, we hope that children will recover their own vitality and hopes for the future and that it will grow into a drive for the development of the area.

Areas and Projects

promotion of social contribution activities

We have been providing support for Children’s Town—Ishinomaki since 2012.
Naniwa Demae juku

Naniwa Demae juku ("Naniwa Traveling Classroom"), a social action program operated by employee volunteers from Takenaka Corporation, has been offering classes since 2009 to increase interest in construction among members of the younger generation, which will shape the future. The volunteers visit elementary schools, high schools and universities to conduct the participatory experiential classes, which treat such construction-related themes as "earthquake-resistant buildings" and "eco-school observation tours (of environmentally friendly buildings)." Takenaka Corporation plans to continue to offer Naniwa Demae juku as part of its CSR activities into the future.

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.

Takenaka Scholarship Foundation

Since its establishment in 1961, the Takenaka Scholarship Foundation has maintained a program of educating and developing young people based on the philosophy of its founder and first president, Toemon Takenaka. The organization also continues to offer assistance to architectural researchers with promising futures in addition to contributing to culture and the arts.

[Takenaka Scholarship Foundation]
www.takenaka-ikueikai.or.jp/en/index.html
Social Contribution and Architectural Culture Promotion by Modern Wooden Architecture “Chochikukyo” Recognized with Grand Mécénat Award 2019

A modern wooden architecture called “Chochikukyo,” owned by Takenaka Corporation, was recognized as a social contribution and the promotion of architectural culture, receiving a Grand Mécénat Award under the Mécénat Awards 2019, hosted by the Association for Corporate Support of the Arts. Preservation and exhibition of a historical building in a collaboration with the local community was highly valued as promoting architectural culture, encouraging human exchange through the building, and nurturing the civic pride of the community.

For more details, refer to the official website of the Association for Corporate Support of the Arts.
https://www.mecenat.or.jp/en/services/mecenat-awards

We had been honored with Mécénat Awards over the years. In 2008, Takenaka Carpentry Tools Museum received the Traditional Skill Inheritance Award; Gallery A Quad received the Grand Mécénat Award in 2014; and our quarterly magazine, “approach,” received the Architect-Culture Approach Award, in 2016.

Chochikukyo

Chochikukyo is an architectural artwork built in 1928 as the private residence of Koji Fujii, who once worked for Takenaka Corporation. The building reflects aspects of both Japanese and western lifestyles embodied by an architecture designed to suit the Japanese climate and the natural environment. Its pioneering design, along with its historical and cultural value, are highly recognized as a modern Japanese house built in the early Showa period. The house was registered as one of the Selection 20 of the Modern Movement in Architecture by DOCOMOMO JAPAN in 2000, and designated as an Important Cultural Property in July 2017. Takenaka acquired Chochikukyo in December 2016 to bring the house under our own care and protection. Working together with the local community, we organize house viewing sessions and fun events to promote architectural culture.
**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.

**Gallery A Quad**
Gallery A Quad has a concept ‘Architecture Blessing’ and introduces the way of ‘blessing Architecture’ through various medias whenever visitors stop by this gallery. Gallery, which has celebrated its 15th birthday, organizes exhibitions based on the concept of examining society through architecture. The gallery provides opportunities for visitors to discover and explore architectural culture through various inspiring architectural works.

**Quarterly magazine approach**
Published since 1964, Takenaka Corporation’s quarterly magazine approach covers a wide range of global themes including design, architecture and innovative urban development. From the Spring 2013 issue, the magazine underwent a design change and an English online version was launched. In 2014, approach was awarded “This Is Mécénat” certification from the Association for Corporate Support of the Arts, as a visually recognized corporate mécénat activity and in 2016, was presented with the Mécénat Award 2016 for its contributions to architectural culture.

[approach]
www.takenaka.co.jp/takenaka_e/library/pr_magazine
Development of industrial and social infrastructure through technical innovation

**Develop and deploy technology focused on strengthening cities and buildings**

We have been working toward “building support technology for a District Continuity Plan (DCP*) in a smart community” to ensure continuation of community activities in an emergency situation.

1. Infrastructural technology for safety and security: Implementation of measures against liquefaction, base isolation artificial ground reaching the size of a city block, and superlong-life concrete that supports such foundations, long-term ground motion countermeasures for superhigh-rise base isolated buildings, etc.
2. Self-sustaining lifeline technology: Formulating alternative lifeline building methods through efficient investment, etc.
3. Disaster simulation and monitoring technology: Development of an evacuation behavior prediction model based on group psychology, evacuation simulations utilizing CCTV images (of people and the environment), guide monitoring system during an emergency, etc.

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* District Continuity Plan: Strategy to maintain community services during and after a disaster.
Development of a fire-resistant laminated lumber, Moen-Wood (2-hour resistance)

Our fire-resistant laminated lumber Moen-Wood has acquired the MLIT Minister’s Certification for columns and beams that is fire-resistant for up to two hours.

In response to this certification, we made the initial design of the Alta Ligna Tower, a wooden high-rise building, making the best use of Moen-Wood. We aim at urban creation that provides people with comfort while contributing to recycling forest resources by constructing large-scale wooden buildings that utilize our exclusive technology.

We have used our one-hour fire-resistant Moen-Wood in over eight projects since its initial application in 2013 (two are under construction). The one-hour fire-resistant material could only be used in a wooden building up to four stories, or in the upper four wooden stories from the top. The newly-certified two-hour fire-resistant Moen-Wood can now be used in a 14-storey wooden building or in the upper 14 wooden stories from the top of the building.

This enables the use of wood in middle- to high-rise buildings, which until now has been limited to low-story buildings, enhancing the prospect of increasing wooden buildings in urban areas.

Moen-Wood is also available in a range of different materials, including cedar, cypress, and larch, as well as from different cultivation areas. This availability could contribute to the social demand for the use of domestically produced materials and efficient forest resource recycling.
Takenaka Corporation undertakes demonstration tests of Boston Dynamics’ SpotMini Robot, together with Softbank Robotics and Softbank

In June 2018, Takenaka Corporation, Softbank Robotics Corporation, and Softbank Corporation commenced demonstration tests of a four-legged walking robot, SpotMini, manufactured by Boston Dynamics, which incorporates cutting-edge robotic technologies. This was an assessment of utilizing a robot in the construction sites ahead of others in the industry. With the aim of significantly reducing the number of workers in construction project offices and improving construction efficiency, we examined the possibilities for the practical use of SpotMini in terms of progress monitoring and safety checks through SpotMini’s autonomous regular patrolling around the office. To make the best use of SpotMini in construction sites, we are currently developing sensors, cameras, and other hardware technologies based on SpotMini’s specifications, as well as software modules that control such devices, by utilizing the data collected in the tests. We are making progress in our preparations. The construction industry faces a serious challenge in securing and training construction workers, whose numbers are decreasing, and improving work efficiency. We plan to use robots and apply other advanced technologies in construction sites through a task force built around a young construction project office manager and proactively spread such technology utilization across our projects. The three companies aim to improve productivity and work efficiency in the construction industry by verifying the beneficial effects of robot usage in construction sites through these ongoing demonstration tests.

Boston Dynamics

The company creates world-leading advanced robots, including, BigDog, Atlas, Spot, SpotMini, and Handle. See their website (www.bostondynamics.com) for more details.

* Please note the following points:
The contents, prices of products and services, specifications, contacts, and other information are presented as of publication. These items are subject to change without notice. The plans and targets shown in the website may differ from actual results due to various risks and uncertainties.
Realization of healthy and rewarding workplace environments

**Improve work-life balance through drastic productivity improvement**

The construction industry has especially long working hours compared to many other industries. This is mainly due to the nature of the work being conducted on construction sites. It is necessary for construction workers to respond more rapidly and more efficiently to requirements from society and customers; but at the same time, they often face unexpected events, such as bad weather and changes to plans. This conflict regularly means working longer hours. We revise our WLB improvement activities every year through dialogs between the management and construction workers in order to find appropriate new ways of working on construction sites and to apply changes to increase productivity. We are currently undertaking various trials of new schemes, such as outsourcing and RPA, which are regarded as effective in increasing productivity, to see if they can work in the construction sites. However, working hour reductions in construction sites cannot be achieved solely by our efforts. Cooperation from the companies that we work with on construction sites is a major factor in improving the working conditions at our sites and to make the construction industry more attractive.

With these aims, we hold dialogs with our partner companies, including Chikuwakai (an alliance of business partners), to exchange ideas and create a highly productive working environment that also gives consideration to those working there.

We also seek the understanding of our customers to secure conditions that can enable two-day weekends on our construction project offices. In this way, we aim to create the attractive construction industry working together with our customers.
Facilitate health management that fosters healthy minds and bodies
While our joint research with Chiba University on an office environment for healthy working has been continuing since 2016, we also commenced the Healthy Work Style Demonstration Project with FiNC Technologies Inc, and we have been studying the correlation between new employees’ lifestyles in the dormitory and their working styles. Combining the study results with results of the employees’ regular health and stress checks, we run a PDCA cycle for working environment improvements.
We were recognized by the 2020 Certified Health and Productivity Management Organization Recognition Program, thanks to our continuous health and safety promotion activities.

Ensure safe, hygienic workplace environments at our work sites
We redesigned our uniforms in 2018 to respond to new demands, such as breathability for summer, female-sized ranges, and with large pockets for tablet devices, while at the same time making them more stylish. Depending on the type of workers and work at our construction project offices, it is mandatory to wear a full-body safety harness, which distributes the load across the entire body in case of a fall. We also provide company-wide training programs on how to use double-hook safety harness lanyards*, and implement a penalty system for failing to use such safety equipment.
The Act on Promotion of Securing Health and Safety for Construction Workers was enforced on March 16, 2017. This covers securing health and safety for all construction workers, including self-employed workers. In response to this enactment, we added the accident frequency rate of workers including self-employed workers, who are not subject to protection by the Industrial Safety and Health Act, as one of our KPIs from 2019. The 2019 target was set at 0.60.

* Double-hook safety harness lanyard: A safety lanyard that incorporates two hooks to attach to a supporting structure.
Tokyo Main Office Innovation project to facilitate closer communications and provide the optimum working environment for each worker

In December 2018, we conducted the Tokyo Main Office Innovation project, originally built in 2004 in Koto-ku, Tokyo, with the aim of new value creation and productivity improvement.

In order to enable new value creation and productivity improvement, the project was carried out under the theme of creating an ACTIVE BASE CAMP to Provide the Best Service to Customers. This encompassed three purposes: (1) Fulfilling everyone's lives (to connect people and knowledge); (2) Working in a healthy manner (to develop flexible human resources); and (3) Realizing open innovation (to improve our branding and presence).

To invigorate communications between people, we built different lounges with different themes, such as a library, BIM, and greenery around the central stairwell. We also built an open innovation space Wi2 (wai square) and a café restaurant on the ground floor. Further, we built a prayer room and all-user toilets to meet diversity demands.

To realize an office floor where employees can “choose the optimum environment” for their jobs, we created an open office space, which is an office area loosely connected to the communication areas. Along the windows, there are meeting spaces for small numbers of people and suitable to their working style.

This project is a part of the facility renovations that we are undertaking in different offices of ours across Japan. We study the renewal achievements and effects in a quantitative and qualitative manner and utilize the results to help resolve problems that our customers are facing.

Details of the Tokyo Main Office Innovation project
(1) Fulfilling everyone’s lives (to connect people and knowledge)

Circling around the central stairwell, there are three lounges with themes of greenery, library, and BIM, to encourage the flow of workers. We adopted the Activity-Based Working (ABW) style for the office floor design, incorporating an enclosed rest area and concentrated work booths, in order to enable employees to choose the optimum working environment for their particular tasks. At the same time, we aim to realize a paperless working style with 50% paper document reduction. Also, the appointment of office concierges enables employees to concentrate on their core work.
(2) Working in a healthy manner (to develop flexible human resources)
Based on the KENCHIKU (healthy community development) concept, we designed and located a café restaurant and smoking spaces from the seven viewpoints of air, water, food, light, fitness, comfort, and mental health. We also built a prayer room and all-user toilets to meet diversity demands.

(3) Realizing open innovation (to improve our branding and presence)
We have established an exhibition lounge for our latest presentation and a meeting space called Wi2 (wai square), which is dedicated to collaborations with customers, venture companies, and universities. These are the representative open innovation spaces that we are currently developing.

Our Tokyo Main Office received Gold certification in the WELL Building Standard
In January 2020, our Tokyo Main Office received Gold certification in the WELL Building Standard* (WELL), a US building well-being-performance assessment system. A new version of WELL assessment criteria (WELL v2) was released in 2018. Our Gold certification was the first such recognition in Japan after WELL v2 was applied. Also, the building subject to this certification was the largest of all certified buildings in Japan. The certification recognizes the design of the building, positioning offices around a luminous courtyard and drawing natural light and air from it. The interior design was also highly appreciated, newly incorporating the KOMOREBI lounge that features greenery and water, installation of height-adjustable desks, and a DELI counter.

* WELL Building Standard is a building assessment system that focuses on human health and wellness in terms of spatial designs and operation. It is specified by the International WELL Building Institute (IWBI), a US public service company. This certification system was started in 2014, and version 2—with revised assessment items and criteria—was released in 2018.
Mido Building Innovation Space Seibi (MISS) renovation project—Aiming to create new value and productivity improvement

We continued our Mido Building Innovation Space Seibi (MISS) renovation project this year, aiming to refurbish our Osaka Main Office (originally built in 1965 in Honmachi, Chuo-ku, Osaka) to create new value and improve our work productivity.

The project commenced in 2014, led by the project promotion team. This resulted in the establishment of the HIRAMEKI Innovation Core in January 2015, an open meeting space designed to be the core of innovative creation through active communications. In October 2015, T’s Innovation Salon was built as a space to encourage open innovation through working with external parties.

In September 2015, we started open discussions toward Work Style Reform to realize "attractive work styles" for each employee and designated the Mido Building as the ACTIVE BASE CAMP that realizes cocreation in a space adapted to diverse work styles. We then adopted the Activity-Based Working (ABW) style, where people can choose where to work depending on their current tasks. Finally, in December 2017, the 53-year-old Mido Building was overhauled as an innovation space.

In 2018, we verified quantitatively and qualitatively the effects of these design updates through actual utilization of the newly completed offices. We will reflect the results in our work style reform and in resolving our customers’ office design challenges.

Mido Building Innovation Space Seibi (MISS) Renovation Project Achievements

- Disposal and digital storage of paper document archive reduced the paper document volume by 60%. Size of document storeroom and personal desks were reduced by 30% and this led to an increase of cocreation space from 11% to 32%.

- The cocreation space next to the office space is equipped with family restaurant seats with large screen display for video conferences, project tables for collaborative work on individual projects, and a concentrated work booth where an individual can work alone.

- Departments that are closely related are positioned next to each other to maximize working efficiency. The internal staircase (called “HIRAMEKI Stairs”) was installed to facilitate inter-departmental communications distributed across different floors.

- Four of the personal working desks were made into groups for better human movement. Also, the desks of sales department managers were positioned facing outwards in a circular booth enabling smooth daily communications.

- A newly equipped BIM STUDIO that can project life-size images enables effective collaboration between the intra-company design and production departments, as well as when working with our customers or partner companies.

- In April 2017, we also installed a partner’s lounge which partner company staff can use as their own office space between meetings with us.

(Reference)
https://www.takenaka.co.jp/newslog/2017/04/01/index.html (Japanese only)
Our own SPADA-stairs anti-vibration technology is used in the internal staircase. Electric signals from the vibration sensors trigger the generation of an antiphase movement to offset the original vibration, maximizing the stability of the stairs.

The stairs feature ease of installation and a space-saving anti-vibration function.

(Reference)
https://www.takenaka.co.jp/news/2017/04/02/index.html (Japanese only)
**Renovation of Fukae Chikuyuryo to develop “Human Resource for the New Future”**

Fukae Chikuyuryo is our dormitory in Fukae-Kita Town, Higashi-Nada Ward, Kobe City, and it boasts a 57-year history. The building survived the Great Hanshin-Awaji Earthquake in 1995 and serves as a spiritual home for Takenaka employees. We are now renovating this memorable building.

This renovation project aims to create a new training dormitory that develops human resources that will create the new future by implementing a building design that encourages communication between dormitory residents. The dormitory rooms have traditionally been shared by two people, and the new design has developed into a horizontally-spread communal space with individual bedrooms. In sharing the entire building, new employees will naturally foster a team spirit. We believe that this building will contribute to passing on our company’s traditional corporate culture.

All the bedrooms are single occupancy and 10 of the bedrooms are organized as a cluster with a shared “cluster” living room in the center. The utility area, including a kitchen, toilet, and bathroom, is shared by the 10 residents so that they naturally see each other and share a mutual understanding of living together.

**Aiming to obtain Japan’s first WELL Certification for apartments**

KENCHIKU (Healthy Community Development) is our concept of a living environment where people can enjoy healthy lives and work actively. As a part of our initiative to spread KENCHIKU, we aim to obtain WELL Certification based on the WELL Building Standard* for our Fukae Chikuyuryo. This attempt is the first of its kind for apartments in Japan. We believe that our efforts to obtain certification will raise awareness of environmental considerations among dormitory residents who live in the certified building and encourage them to actively engage in designing and constructing environmentally friendly buildings. We think that this will lead to the creation of a new future.

* WELL Building Standard (WELL Certification)

The world’s first building standard focused exclusively on human health and wellness in addition to the conventional environmental and energy performance specified by LEED and CASBEE. Provided by Delos Living, LLC, the Standard sets 100 building and interior environment performance requirements in seven areas of air, water, nourishment, light, fitness, comfort, and mind. WELL Certification is awarded at one of the three levels of Silver, Gold, and Platinum, depending on the scores gained for the preconditions and optimizations.

**Training dormitory to develop “Human Resource for the New Future”**

Fukae Chikuyuryo has been serving as a place for mutual improvement for new Takenaka employees through living together, enabling them to improve their mental attitude and skills and develop empathy. The dormitory continues to play an important role after its renovation, and the new employees will receive a range of on-the-job training in two to three different departments in rotation, living closely together in the dormitory. This is an important period for new employees to form a wide human network in their appointed department and with their colleagues in the dormitory. These networks will become the foundation for their future career and support our comprehensive competitiveness and human resources power.

We will continue to provide a training dormitory as a place to develop diverse human resources and form the foundation for their career, as well as developing “Human Resource for the New Future.”
Developing aptitude on an individual basis

Practical application of a web-based human resources information system*1 in everyday use by both the Human Resources Department and the various other departments supports optimal career formation that makes the most of employees' capability development and aptitudes by deepening communications between individual employees and their superiors. A goal assessment and management function was introduced in 2013 with the aim of expanding use of the system in day-to-day management and self-assessment management by the various departments.

The company’s training system (chart) directs particular effort toward programs for trainees, from young people to the main body of employees, by proactively providing selected applicants with opportunities to receive high-level specialized education in technological development and international business fields.*2

*1 A human resources information system conducted on the intranet
*2 Number of employees who had completed the training as of March 2017:
  - Trainees from the Takenaka Research and Development Institute: 596
  - International trainees: 263

Training System
Experiential safety training through sight, touch and experience — Practical Technology Training Center “Omoi” (Hyogo Prefecture)

Among the disasters occurring on construction sites, falling and plunging accidents associated with serious disasters transpire repeatedly. In January 2012, the company began experiential training in falling accident safety at the Practical Technology Training Center “Omoi” to enhance sensitivity to safety on the actual worksite. This training employs a curriculum built around a core of actual observation with the five senses, beginning with sight, hearing and touch, in a concerted effort to cultivate human resources who are capable of making the most of accident-prevention activities in worksite operations by imbuing them with a physical awareness of basic safety management and sensitivity to danger. As of fiscal 2016, this education had been implemented for 410 young employees, eliciting such comments from the participants as, “I developed a deeper understanding by actually seeing and sensing.” Moreover, Takenaka will conduct hands-on fall prevention training for skilled workers employed by our subcontractors in addition to our own employees.

Examinations and care provision implemented to preserve mental and physical health

Takenaka is implementing such initiatives as the addition of long-term health examinations, support for physical examinations, provision of registered nurses for workers in remote locations and consultation rounds by public health nurses, among others. Since 2011, items added to make health checkups more complete have included breast and uterine cancer examinations. As concerns mental health, self-care training and in-house counseling by professional counselors have been introduced as part of efforts to achieve early diagnosis and appropriate care. A reinstatement support program introduced in 2011 has created a structure, moreover, for smooth reinstatement of workers who have been absent from work for mental health reasons.
Promotion of diversity

Fatigue-reducing support wear for women by women
Based on the fatigue-reducing Shokunin DARWING support suit, and jointly developed with Daiya Kogyo Co., Ltd. for construction workers, we have started sales of DARWING Komachi wear for women, a new model redesigned and with new features to meet demands specific to women. To reflect women’s opinions in this model, a women-only product team was formed to liaise between Takenaka Corporation, partner companies, and the apparel manufacturer. We are promoting the products widely among women workers.

Creating workplaces that invite participation by diversified personnel
Generating architecture that responds to social issues and diversified value systems requires maximized deployment of the capabilities of a broad range and variety of human resources. At Takenaka, we promote diversity management aimed at realizing workplace environments in which anyone can operate freely, regardless of sex, nationality, age or disabilities. Takenaka has devoted efforts to employing such varied human resources in recent years. With respect to female employees, for example, the ratio of women among recently graduated employees has grown each year. As concerns older employees, a reemployment system introduced before continuing employment became compulsory in 2004 ensures that employees with advanced knowledge, know-how and abundant experience have the opportunity to remain active beyond the retirement age.

Transitions in number of reemployed retirees and reemployment rate

Number of women in managerial positions
Understand social issues through dialog and check policy plans and measures
We are contributing to realizing a sustainable society by invigorating partnerships with all stakeholders, as well as identifying social issues and creating solutions through our business.

[Dialog with outside experts to identify materiality]
In June 2019, we hosted dialogs with Professor Takashi Nawa from Hitotsubashi University Business School to discuss major objectives (materiality) in our company, as identified by relevant departments in the Head Office. Through dialogs, we established “major objectives (materiality)” and “2020-2022 Action Plan for a Sustainable Society,” both of which were approved at a meeting of the CSR Promotion Central Committee held in January 2020.

[Local communities]
Together with the Center for Preventive Medical Sciences, Chiba University, we have been holding stakeholder communication meetings since 2015 to discuss the roles of cities and buildings, and the ideal healthy city of the future. In July 2019, we also held the Health and Space – Urban Creation Symposium under the topic of “Environmental designs to induce spontaneous healthy activities.”

[Human rights]
Our major 2019 topic concerning Measure 22 was a discussion with foreign technical interns, while continuing our human rights due diligence. We also invited an outside expert to review the human rights measures that we are adopting inside Japan.