

TAKENAKA *es*-REPORT 2011

Takenaka Corporation's Fiscal 2010
Environmental and Social Report



TAKENAKA



Toward the realization of a sustainable society

Our responsibilities

The Great East Japan Earthquake affected many people and devastated houses, social capital and other life-supporting infrastructure. This event made us fully aware of the power of nature and its consequences, as well as the importance of protecting people's lives and economic activities and developing a safe, secure and sustainable society. Based on its management philosophy of contributing to society by passing on the best works to future generations and the company policy that begins with "Take the path of truth, keep good faith and be steadfast," Takenaka has been providing valuable architectural services throughout the world since its foundation by placing the highest priority on quality at all times. In the face of the great earthquake, however, we became keenly aware of the need to develop technologies that will improve our safety and security, and technologies that will allow us to use energy more effectively. We seek to develop these technologies and use them to create new architecture and build communities as our contribution to the development of a sustainable society and to fulfill our corporate social responsibility (CSR).

Preservation of the global environment

Various discussions on building a low-carbon society have taken place, including post-Kyoto Protocol negotiations on greenhouse gas emission reduction targets. This global issue began to influence our concept of ideal cities and architecture. We have already worked on environmentally friendly designs, how to reduce CO₂ emissions during construction, and energy saving during the operational phase, while focusing on innovations in environmentally friendly architectural technologies. To communicate our environmental message of uniting people with nature, we will continue to heighten people's sensitivity and creativity, harness nature, and carry

out activities that will achieve a shift from zero-carbon buildings to carbon-neutral cities.

Meanwhile, corporate initiatives based on the agreement reached at the Convention on Biological Diversity that took place last year in Nagoya to build a world that is "living in harmony with nature," are urgently required. Although there are many issues to address, such as how to assess biodiversity and how corporations, central and local governments and NGOs should cooperate, we will step up our own corporate initiatives while simultaneously making efforts to recycle resources.

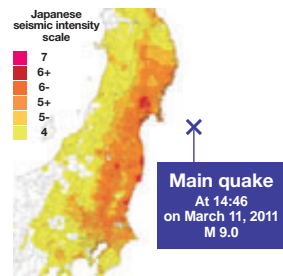
Keeping in step with society

Based on the belief that we must continue to live up to the trust that society and our customers place in us, we have established a new training center, the Takenaka Practical Technology Training Center "Omoi." We will continue to focus on employee training so that we may hand the spirit of craftsmanship, which we have inherited from our predecessors, on to future generations. We will also develop a working environment that allows a better work-life balance by providing employees with diverse opportunities to demonstrate their individual abilities, working to build a society in which everyone feels motivated in their work.

In addition to the prolonged recession, Japan is facing unprecedented difficulties due to the Great East Japan Earthquake. We are committed to working towards the earliest possible recovery of the affected areas, continuing to instill our management philosophy of contributing to society through architecture even under the current difficulties, and passing it on to future generations.

June 2011
Toichi Takenaka
President & CEO

We have been making great efforts to recover from the effects of the Great East Japan Earthquake that occurred on March 11, 2011.



Initial actions based on the Business Continuity Plan (BCP)

Establishing a Disaster Measures Headquarters

Immediately after the earthquake that occurred at 14:46 on March 11, 2011, we established a Disaster Measures Headquarters for our Head Office and the Tokyo Main Office in the Tokyo Main Office building. We connected headquarters with the locally established Tohoku Branch Office Disaster Measures Center, Osaka Main Office, and the Nagoya Branch Office Support Measures Headquarters via a video conferencing system to facilitate a companywide response system.



Disaster Measures Headquarters at Head Office

Checking the damage to buildings under construction

In the Tohoku Region, we confirmed damage to some of the buildings under construction and took appropriate measures. In the Kanto Region, on March 12, the day after the earthquake, we confirmed that none of our work sites had been affected and took measures against aftershocks.



Disaster Measures Headquarters at Tokyo Main Office

Checking the safety of our employees

We issued instructions for our employees to report that they were safe, and communicated the information using our safety confirmation system, and on March 13 we were able to confirm that all Takenaka Corporation employees were safe. By March 16 we were able to confirm that all employees, including employees of our group companies, were also safe.

Checking the status of our customers' buildings and responding

Checking the status of our customers' buildings

After the earthquake, we used our Disaster Information System (DIS) to quickly estimate any damage to our customers' buildings. Based on this estimation and requests from our customers we immediately started to check the status of their buildings on a priority basis, starting with buildings that were likely to be seriously damaged and buildings that had been damaged seriously enough to affect our customers' business operations. Two weeks after the earthquake, we had already checked about 2,580 of our customers' buildings (about 530 buildings in the Tohoku Region and about 2,050 buildings in Kanto).



Shipping rescue supplies from the East Japan Materials/Equipment Center

Supporting the recovery efforts

Starting with the 11-person mission (three vehicles) that left Tokyo for Tohoku on the morning of March 12, we had dispatched more than 70 specialists in construction works, structures, procurement and machinery by early April. Together with our Tohoku Branch Office employees, they conducted an initial survey and supported the recovery efforts. Our first trucks transporting rescue supplies left the East Japan Materials/Equipment Center (Chiba Prefecture) for Tohoku on the morning of March 13. By mid-April we had transported more than 140 truckloads of supplies.

What we can do now

Support for the people affected
GALLERY A⁴ has been collecting picture books with the help of our employees, to support the "Picture Book Project," which delivers picture books to children in the affected areas under the initiative of Suemori Books (representative: Chieko Suemori).

GALLERY A⁴ is supporting the Picture Book Project.

Let's send picture books to children affected by the Great East Japan Earthquake.

■ Takenaka contributes to the realization of a sustainable society

Since its foundation, Takenaka has made it its mission to fulfill its customers' expectations to design and construct outstanding buildings and to pass on the best works to future generations. To this end, we have worked on individual projects with painstaking care in line with our company policy. Supported by high levels of customer satisfaction and the trust of society, we have promoted Total Quality Management to enhance our corporate value in society.

We believe that each of our employees should embrace our corporate philosophy so that they can promote Total Quality Management to build sustainability in society; this is our corporate social responsibility (CSR).

Corporate Philosophy

Management Philosophy

Contribute to society by passing on the best works to future generations

Company Policy

Take the path of truth, keep good faith and be steadfast;

Be industrious and fulfill your responsibilities;

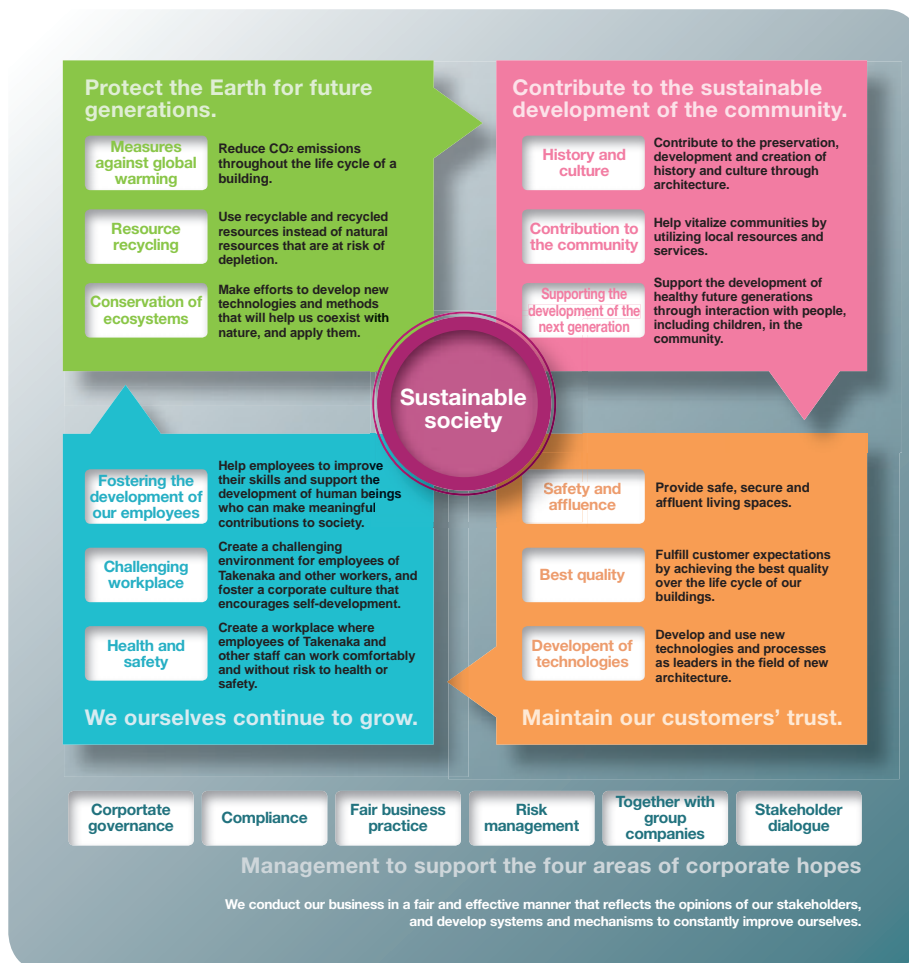
Devote yourself to your work with discipline;

Act in harmony with the organization and pursue prosperity for all of society

TOTAL QUALITY MANAGEMENT BASIC POLICY

Earn customer satisfaction and society's trust through management that persists in stressing quality and challenging the creation of new environments.

Four areas of corporate hopes and initiatives to realize a sustainable society – Putting CSR into practice



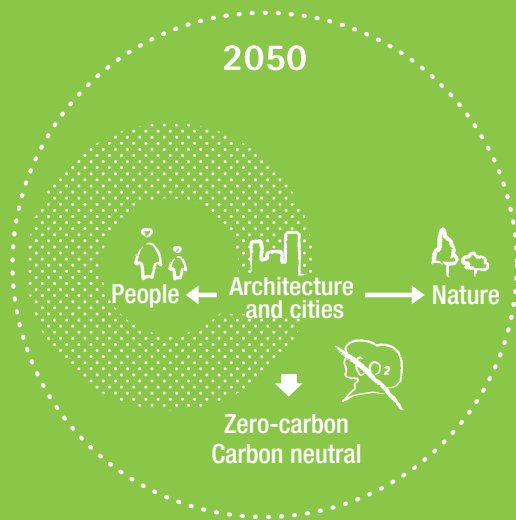
Here we report our major environmental and social activities in 2010 as well as key activities for the future.

Activities in 2010 and key future activities

12 initiatives	Major activities in 2010	Key future activities
Measures against global warming	<ul style="list-style-type: none"> Published the <i>Environmental Concept Book</i> and provided all-employee training. Promoted environmentally friendly projects. Reduced CO₂ emissions in the construction phase and energy consumption in offices. 	<ul style="list-style-type: none"> Promote advanced environmental projects. Reduce energy consumption in the operational phase at best-practice and standard buildings. Reduce CO₂ emissions in the construction phase and energy consumption in offices.
Resource recycling	<ul style="list-style-type: none"> Developed and applied construction methods that reduce resource input and construction by-products. Promoted 3R activities to reduce emissions of construction by-products. 	<ul style="list-style-type: none"> Reduce final disposal volumes in gross emissions by promoting 3R activities. Reduce total paper purchases at our offices and encourage the recycling of paper.
Conservation of ecosystems	<ul style="list-style-type: none"> Linked the research for the "City Where Butterflies Fly" Project with local communities. Conducted research and development of evaluation criteria in collaboration with stakeholders. 	<ul style="list-style-type: none"> Disseminate the results of research and the activities of the "City Where Butterflies Fly" Project. Promote pioneering cases of biodiversity conservation and disseminate related information.
History and culture	<ul style="list-style-type: none"> Used modern technologies to conserve and reuse historic buildings. Passed on and spread architectural culture through corporate citizenship activities. 	<ul style="list-style-type: none"> Use modern technologies to conserve and reuse historic buildings. Pass on and spread architectural culture through corporate citizenship activities.
Contributing to the community	<ul style="list-style-type: none"> Contributed to the revitalization of local communities through the activities of the study group "For Osaka's Future." Proactive in using local materials and services. Proactive in participating in local cleaning activities. 	<ul style="list-style-type: none"> Support activities that revitalize towns and cities. Proactive in using local materials and services. Proactive in participating in local cleaning activities.
Supporting the development of the next generation	<ul style="list-style-type: none"> Communicated with children in local communities. Supported the development of the next generation through internships and at work sites. Supported scholarship and research programs through Takenaka Ikuikai. 	<ul style="list-style-type: none"> Communicate with children in local communities. Support the development of the next generation to support local communities. Support scholarship and research programs through Takenaka Ikuikai.
Safety and affluence	<ul style="list-style-type: none"> Promoted secure, safe and well-appointed buildings. Promoted building renovation to make them more attractive. 	<ul style="list-style-type: none"> Promote secure, safe and well-appointed buildings. Promote people-friendly buildings in response to the aging society.
Best quality	<ul style="list-style-type: none"> Established Takenaka Practical Technology Training Center "Omoi." Improved the quality information database and provided company-wide e-learning programs. 	<ul style="list-style-type: none"> Further reinforce systems to deliver the best quality (e.g., improve quality-related technical reviews). Develop the training programs at the Takenaka Practical Technology Training Center "Omoi."
Development of technologies	<ul style="list-style-type: none"> Developed new design/construction technologies using IT. Developed market-oriented technologies (e.g. data center). Developed technologies for buildings that will "connect people with nature." 	<ul style="list-style-type: none"> Develop and apply technologies to design/construct "best work." Develop and apply market-oriented technologies. Develop and apply technologies to achieve our long-term Environmental Concept target.
Fostering the development of our employees	<ul style="list-style-type: none"> Set up programs on basic practical construction skills. Prepared/set up hands-on quality training programs. 	<ul style="list-style-type: none"> Start trial content for e-learning program on practical design skills. Conduct hands-on quality training programs and develop the content.
Challenging workplace	<ul style="list-style-type: none"> Reorganized employee classification and established regional managerial positions. Established a system to change work areas. 	<ul style="list-style-type: none"> Promote female employees to managerial positions. Support re-employment after retirement.
Health and safety	<ul style="list-style-type: none"> Step up disaster prevention activities related to safety-focused construction work and six priority job titles. Developed comfortable workplaces at work sites. 	<ul style="list-style-type: none"> Develop the regular health check system. Provide health and safety education for employees and develop safety training instructors.
Corporate governance	<ul style="list-style-type: none"> Introduced an operating officer system to improve management. 	<ul style="list-style-type: none"> Improve internal control. Improve management efficiency and soundness.
Compliance	<ul style="list-style-type: none"> Continued to raise awareness of the counseling/reporting system. Raised awareness and provided education (e.g., awareness training by job grade, knowledge training by job grade). Compliance month (every November) 	<ul style="list-style-type: none"> Continue to raise awareness and provide education. Develop and provide training programs for group companies and cooperating firms. Improve compliance tools.
Fair business practice	<ul style="list-style-type: none"> Digitized the construction system records and simultaneous inspection. Provided training in response to the revised Antimonopoly Act. Included provisions on eliminating antisocial forces in basic agreements with cooperating firms. 	<ul style="list-style-type: none"> Provide training in response to revisions to the law and the social situation. Develop monitoring of compliance with the Construction Business Act. Improve the mechanism for CSR procurement.
Risk management	<ul style="list-style-type: none"> Conducted joint disaster drills for a possible inland earthquake in the metropolitan area. Developed BCP for the new influenza virus. Introduced information security measures. 	<ul style="list-style-type: none"> Revise BCP after verifying the response to earthquakes and the disaster drill. Improve voluntary inspection and awareness-raising of information security at group companies and cooperating firms.
Together with group companies	<ul style="list-style-type: none"> Organized a joint association for office environmental activities. Conducted environmental patrols at offices. Group company employees participated in monthly compliance activities. 	<ul style="list-style-type: none"> Develop the joint association for office environmental activities. Continue office environmental patrols. Continue the participation of group company employees in monthly compliance activities.
Stakeholder dialogue	<ul style="list-style-type: none"> Held stakeholder dialogue 2010 and published report. 	<ul style="list-style-type: none"> Hold stakeholder dialogue 2011 and publish a report.

Aiming for 2050

We established Takenaka's Environmental Charter in 1992 in pursuit of environmentally friendly architecture. In 2010, we established our environmental concept and published the *Environmental Concept Book*, which identifies ideal architecture and cities and our roadmap toward 2050.



Message

Connecting People with Nature



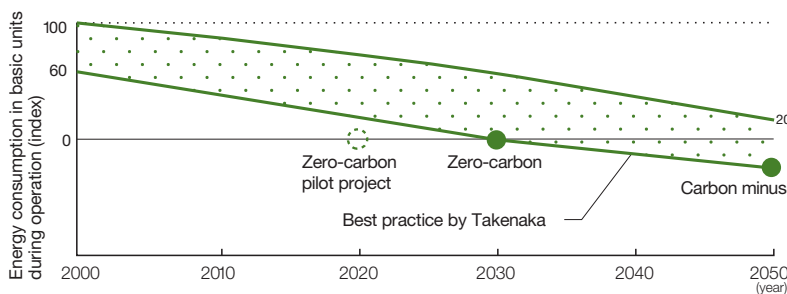
Concept

Enhancing human sensitivity and creativity and taking advantage of nature to aim for goals ranging from zero-carbon buildings to carbon neutral cities

Creating carbon-minus buildings

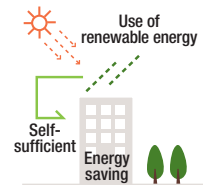
We aim to develop comfortable buildings and cities where people live in harmony with nature by valuing people's sensitivities and enhancing intellectual productivity and creativity. At the same time, we will reduce greenhouse gases emitted during the life cycle of the buildings, targeting the launch of a zero-carbon pilot project by 2020, zero-carbon buildings by 2030 and carbon minus buildings by 2050 (Figure 1).

Figure 1: Long-term targets



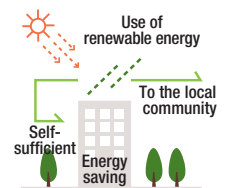
Zero-carbon buildings

Buildings which thoroughly conserve energy as they create their own energy to satisfy their total energy needs.



Carbon minus buildings

Buildings producing their own energy and even supplying the surplus to surrounding buildings (because this approach also cuts CO₂ emissions during construction or renovation of a building, it will achieve minus CO₂ emissions over the building's life cycle).



Initiatives have already started

We can achieve our long-term target only when we deepen our ongoing environmental activities and take on new challenges. We have already achieved our first best practice at our Tokyo Main Office (2004), and developed Nissan Global Headquarters with an environmental efficiency of 5.6 (2009).



Exterior of Nissan Global Headquarters



Exterior of Takenaka Tokyo Main Office

Efforts toward global warming prevention

Takenaka aims to achieve zero-carbon at every stage of the construction and operation of its buildings. At the design phase, including the exterior design, we propose a variety of low-carbon design methods and technologies and create working drawings; in the construction phase, we try to minimize CO₂ emissions. At the stage of operating the building, we support our customers in energy conservation and energy-saving refurbishment. At the same time, we continue to carry out energy-saving activities in our offices.

Initiatives at the design stage (Plan in an environmentally friendly manner)

Exterior design with high environmental performance

Nitto Kohki Co., Ltd.—New headquarters and laboratory (Tokyo)

For the building exterior, we installed exterior movable louvers on the balconies and their ends. The angle of the slats (blades) on the louvers change depending on the position of the sun and the amount of incoming daylight to reduce the heat load from the incoming daylight. They also prevent office workers from coming eye to eye with neighborhood residents, provide visual security for the laboratory, and allow the windows to be opened. We also equipped the building with a natural ventilation route from the fixed louvers to open ceiling space and light court to let natural air in. Our design contributed to reducing the primary energy consumption of the entire buildings by 25% per year, and this project was certified with the highest CASBEE rank of S.

Figure 1. Exterior appearance adapting to the environment



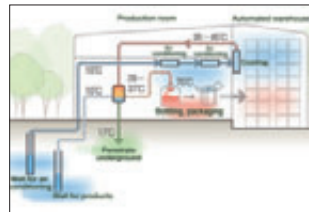
Exterior of new headquarters and laboratory of Nitto Kohki Co., Ltd.

Incorporating the blessings of nature into buildings and the production process

Third factory of Fujinoyusui Corporation (Yamanashi Prefecture)

This factory to bottle mineral water from Mount Fuji was built in a rich natural environment neighboring the national park area. Our focus in this project was to use pumped up water in various ways at multiple stages. Firstly, the water is used for air conditioning in the factory. Secondly, it is used to cool products after heat sterilization, and the water warmed during this process is then used for primary heating, which is the process prior to product sterilization with boiler heating. Finally, the water is returned to the soil. These ways of using the water enabled the CO₂ emissions from the building equipment to be reduced by about 90% and an overall reduction of around 30% for the entire factory, including the construction facilities.

Figure 2. Facility flow diagram



Exterior of the third factory of Fujinoyusui Corp.

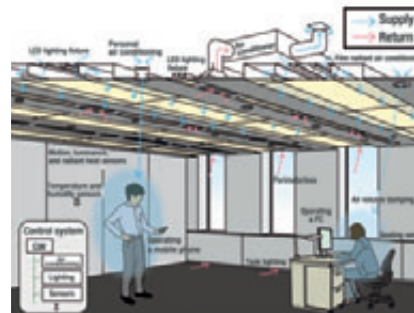
Pursuing both energy saving and comfort

Starting verification testing at TAK Shinsuna Building (Tokyo)

As part of its efforts to develop a zero-carbon building, Takenaka conceived the idea of a next-generation energy-saving office that reduces CO₂ emissions to two thirds those of a conventional building and started verification testing.

We used LED ceiling lighting fixtures to diffuse the light more extensively, providing sufficient brightness to office users but at a reduced illumination, while simultaneously providing desk-top lighting that allows individual workers to adjust the lighting intensity and color temperature as they wish. We focused on sensible temperatures for the air conditioning, and we use a radiant air-conditioning system so that office users barely feel the flow of air, while providing personal fans for individuals to adjust the airflow to what they feel is comfortable.

Figure 3. Conceptual diagram of the next-generation energy-saving office



Exterior of TAK Shinsuna Building

Initiatives at the construction stage (Build in an environmentally friendly manner)

CO₂ emissions in basic units at our work sites in 2010 were 10.9 t-CO₂/100 million yen, which was nearly the same as in 2009 (Figure 1).

Illuminating the sidewalks with LED light guide panels

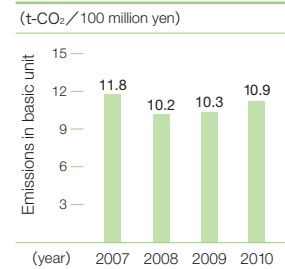
Nakanoshima Festival Tower work site (Osaka Prefecture)

As the sidewalks around this work site have heavy pedestrian traffic even at night, we installed lighting fixtures using LED light guide panels with lower power consumption along the temporary fences of the site. We also installed solar panels to store the power generated during the daytime and use the power for nighttime illumination to reduce CO₂ emissions even further.



Solar panels, LED light guide panels, and environmental bulletin board on the temporary fence

Figure 1. Changes in CO₂ emissions in basic units (per construction revenue) at work sites



Initiatives at the operation stage (Use in an environmentally friendly manner)

Developing a green building to express our customer's environmental commitment

Kyoto Ekimae Building of ROHM Co., Ltd.

In this project involving complete renewal of a building near JR Kyoto Station to increase its seismic strength and make it more energy efficient, we used double-skin curtain walls for the exterior on the south face of the building and installed built-in blinds with a solar tracker sensor. We also allowed natural ventilation to take in outside air in the intermediate seasons of spring and fall. We used ROHM's LED lighting fixtures and highly efficient equipment throughout building, and installed a photovoltaic generation system and a rainwater utilization system as well.



ROHM Kyoto Ekimae Building before renovation



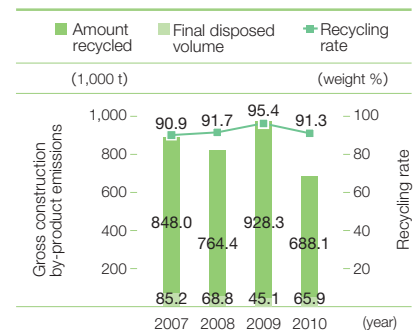
After renovation

Promotion of resource recycling

To support the building of a society that recycles resources, Takenaka is committed to using resources effectively and reducing and recycling construction by-products. The company has been making a broad spectrum of efforts ranging from developing and applying resource-saving construction methods to reusing existing buildings, extending the life cycle of building frames and green procurement to save resources. We particularly focus on zero-emission activities at our work sites, while focusing on reducing paper consumption and recycling in our offices.

At all of our work sites, we have been making efforts to curb the generation of construction by-products and to recycle in order to reduce the final disposal volume to close to zero (Figure 2).

Figure 2. Changes in gross construction by-product emissions and recycling rates at Takenaka's sites



Pursuing zero emissions at our work sites

Sekitei Ward at Kyoto University (donated hospital ward) work site

Before starting construction at the work site, we prepared a construction by-products reduction plan and discussed with cooperating firms on how to reduce by-products before bringing materials onto the site, how to measure the volume of subsequent by-products, and how to separate by-products on the site. We classified refuse into 14 categories depending on the treatment method and means of collection/transportation, and managed multiple separation yards effectively by locating them at appropriate places and with appropriate timing according to the progress of the construction work. We also loaned separation containers to the individual cooperating firms so that they could separate by-products on their own initiative. As a result, the work site achieved a recycling rate of 99.5% (target was 90%) and a final disposed volume of 0.38 kg/m² (target was 3.0 kg/m²).



Locating multiple separation yards when and where appropriate depending on the progress of the construction work

Preservation of biodiversity

To contribute to the preservation of biodiversity and sustainable use of biological resources, Takenaka is working on research, design, construction, and procurement to build cities and communities where people can live in harmony with nature.

Developing a “corporate land use report card” through cooperation with progressive companies

As a member of the Japan Business Initiative for Biodiversity (JBIB), Takenaka has promoted various research and development initiatives. In 2010, JBIB’s Sustainable Land Use Working Group, with one of our researchers serving as the leader, created a corporate land use report card to show to what extent each work site meets the habitat requirements of diverse living organisms by using common indexes. It evaluates 17 items, including the ratio of green space, on a 100-point scale. This initiative was intended to identify issues and aspects to be improved, whether the land is to be used for a factory, office, or for other purposes, and to reflect them in its land use plan.



Representatives of member companies examine land use

Aiming to develop an affluent urban environment where butterflies thrive

“Nagoya—the City Where Butterflies Fly” Project

It is imperative that we improve the urban environment to attract diverse living organisms into our cities and “connect people with nature.” With butterflies as the symbol of the project, we are researching the development of a rich environment where people can live in harmony with nature.

We have installed planters to attract butterflies into downtown areas.

For details, see page 8 of TAKENAKA es-REPORT 2010.

We found 11 different species of butterflies in the town.

- In the core green space we found 23 species of butterfly as we had expected.
- At planter locations, we found three butterfly species at all of ten locations; namely, the straight swift, Chinese yellow swallowtail, and pale grass blue, followed by the small branded swift found at nine locations and the Indian fritillary at seven locations. We found a total of 11 species, including the above species and the small white, great mormon, small copper, spangle, and common grass yellow, and six species, such as the Chinese yellow swallowtail and common bluebottle laying eggs.
- Even on the rooftop of an eight-story building, we found five species and their eggs, including the pale grass blue that reputedly has low flight capabilities.



Spreading the project

After-school program

Teaching the ecology of butterflies at a twilight school

We gave a lecture on biodiversity at Sakae Elementary School in Naka-ku, Nagoya City, taking advantage of the city’s “twilight school” system. Following our lecture, about 20 children from first to third grades observed plants, imagoes and larvae in planters that were being used for the project.



Cooperation with the local community

Store owners on a local shopping street restoring and looking after flower beds

In support of our project, Hirokoji Chuo shopping street in Nagoya started the “Shopping street where butterflies fly” project. Their project intends to convert green space along the sidewalks on the shopping street into flowerbeds and look after them so that the flowers will attract butterflies. They hope to be of some help in recovering an environment where people have contact with living organisms and in conserving biodiversity.



Passing on and promoting our history and culture

We have a group specialized in traditional architecture, which is engaged in research and analysis of traditional wooden structure technologies and styles and in the collection and preservation of reference materials. The group is also probing the fusion between traditional architectural technologies and fast-evolving modern structural technologies.

Techniques of master craftsmen and modern technologies brought a palace from 1,300 years ago into the present

The First *Daigokuden* at the special historic site of Heijo Palace (Nara Prefecture)

Daigokuden Seiden was the most prestigious and important building used for national ceremonies at Heijo Palace. Although there are almost no remains of Heijo Palace left today, the Nara National Research Institute for Cultural Properties developed a replication design based on their years of excavation and research into old buildings from the period. Takenaka started construction in 2001 and completed it in eight years and eight months. With structural reinforcement using new technologies as well as analysis technologies, we were able to revive the ancient traditional frame.



Quake-absorbing system under the stereobate



The First *Daigokuden* at the special historic site of Heijo Palace

Developing and adopting quake-resistant reinforcement technology that does not affect the interior or exterior

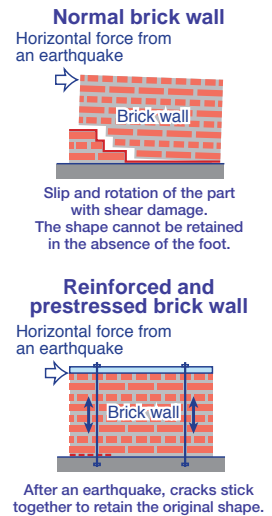
Renovation of the Main Hall at Seisen University (Tokyo)

The main hall, which was formerly the residence of Duke Shimazu, was designed by a British architect, Josiah Conder and built in the Italian Renaissance style in 1915. Aiming to improve its seismic capacity without modifying the valuable exterior appearance and finish, we inserted PC steel rods into the brick walls to apply a prestress. By doing so, we improved the strength of the brick joints and thereby improved the wall bearing capacity (Figure 1).



Exterior of Seisen University Main Hall

Figure 1. Reinforced brick wall



Conserving and passing on the techniques and spirit of master craftsmen through carpentry tools

Takenaka Carpentry Tools Museum (Hyogo Prefecture)

The museum opened in Kobe in 1984 to collect and preserve carpentry tools and to pass the spirit of master craftsmen and the making of their tools on to future generations through research and displays, and it is the only registered museum of carpentry tools in Japan. In recent years, the museum has also focused on interactive and experience-based activities, such as hands-on classes and traveling lectures. In 2010 the museum marked its 25th anniversary by organizing a touring exhibition "*Toryo*—the world of temple and shrine carpenters," which traveled to four locations in Japan to introduce the work of the *toryo* (master carpenter) by using models and drawings, as well as valuable materials, such as well-used tools and archive pictures.



Templates and round columns on display



The process of assembling a model bracket complex of Toshodaiji Temple was disclosed in the commemorating traveling exhibition, "*Toryo*—the world of temple and shrine carpenters."

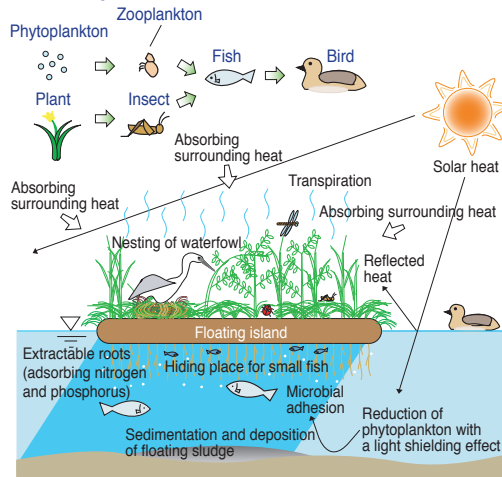
Community contributions

Takenaka's Environmental Charter calls for positive participation in community environmental activities in its Principles of Action. In line with the principles, we maintain and nurture good relationships with local communities while promoting activities for social contributions companywide. As a corporate citizen, we are also committed to developing healthy future generations.

Contributing to the revitalization of local communities through activities "For Osaka's Future"

"For Osaka's Future," which is a study group consisting of 150 volunteer employees from all divisions within the company, has been carrying out activities to inject vitality into Osaka. In 2010, three of its ongoing activities, namely, "Nakanoshima Island Project," "Natural Pergola," and "Eco-school Excursion," received the Encouragement Prize in the Osaka Environmental Award.

How the plant food chain works



How the food chain works on and around a floating island—the Ukishima Island Project to navigate floating islands in the Nakanoshima River to purify water



Construction of floating islands

Osaka Environmental Award

The award was founded in 1997 by the Osaka Citizens Environment Conference under the Osaka Prefectural Government to recognize individuals, organizations and corporations that have played an outstanding and exemplary role in creating a rich environment.

Support for the development of the next generation

For the sustainable development of the local community, the growth of young people in the community is the key. As a corporate citizen, Takenaka is committed to contributing to the development of sound future generations.

Raising awareness of the construction industry

Aiming to provide people with opportunities to better understand the construction industry, we offer internships from colleges of technology, universities and graduate schools, and organize work site visits across Japan. In 2010, we accepted a total of 77 interns, including many university students not majoring in architecture. We provided other occasions to allow students to see, become familiar with, and learn more about projects in the construction industry, including practical skills guidance provided by our cooperating firms in practical classes at industrial high schools.



Internship training at a work site in Hiroshima

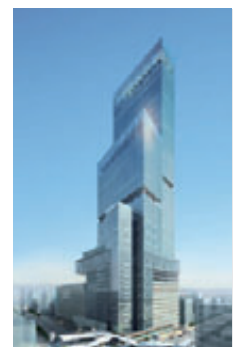
Learning security and safety at Japan's highest terminal building

Naniwa Traveling School (Osaka Prefecture)

Design department employees at our Osaka Main Office organized a hands-on participatory class in the events room of Kintetsu Department Store's Abeno Branch in August, in which about 120 children participated over two days. Under the theme of "the mechanism and quake-resistant structure of large buildings," our staff explained the architectural structure adopted for the Abenobashi Terminal Building Tower (tentative name), which is to be the highest building in Japan, with the aid of slides. They also used a vibration model of a high-rise building to explain the mechanism of quake-resistance and damping as well as building security.



Team competition to reduce vibration in buildings



Exterior perspective of the Abenobashi Terminal Building Tower (tentative name)

Pursuing safety, security, and affluence

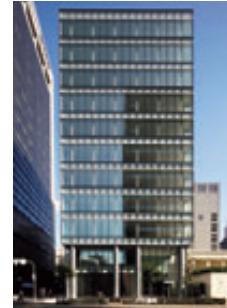
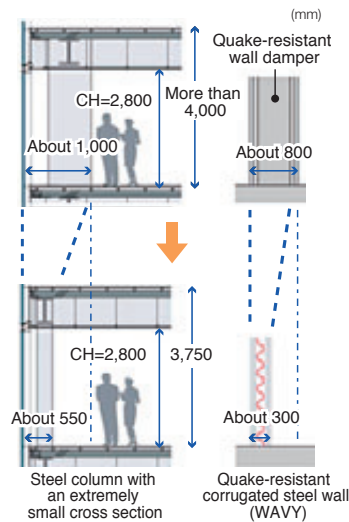
Takenaka is striving to create a new architectural space to satisfy the need of the times and society, as well as to protect life and property from earthquake, fire and other disasters.

Providing an open work space with a superslim structure

Higobashi MID Building (Osaka Prefecture)

In developing this building, Takenaka used steel tube columns less than 30 cm in diameter, which were much narrower than usual, for the outer circumference to secure the office floor area as well as to create an open interior space and glassy facade. We ensured a ceiling height of 2.8 meters while reducing the floor height to 3.75 meters (normal height is about 4 meters) to increase the number of floors and improve the space efficiency. We also adopted a quake-resistant corrugated steel wall, which required a smaller installation space than general aseismic elements, to streamline the areas surrounding the core area and maximize the actual effective area.

Figure 1. Comparison between conventional structure and superslim structure (Conceptual diagram)



Exterior of the Higobashi MID Building (Osaka Prefecture)



The interior of the office

Technological development aimed at a new architecture

In order to continue to be trusted by our customers, Takenaka has been committed to developing a variety of technologies, including technologies to design and execute “best projects,” market-oriented technologies to swiftly and appropriately satisfy the demands of the construction market and customers, and environment-related technologies to develop buildings that connect people with nature.

Developing technologies in response to changes in the market

Developing urban/suburban data centers

To satisfy the increasing demand for data centers (DCs) and diversifying customer needs, we have developed a two-layered urban DC and suburban cloud DC. We developed the two-layered urban DC for the current market, in which about 80% of DCs are concentrated in the metropolitan area. The two-layered structure has underfloor multipurpose equipment space, improved energy-saving performance, and space efficiency, allowing enhancement for future increases

in power and air-conditioning capacity (Figure 1). Meanwhile, the suburban cloud DC is likely to become a major product when services provided over the Internet go mainstream. The server building, which is located separately from the central control building, can be expanded as necessary. By adopting a renewable energy system that utilizes the power of groundwater, river water, and snow, the building achieves both environmental friendliness and energy conservation (Figure 2).

Figure 1. Two-layered urban DC

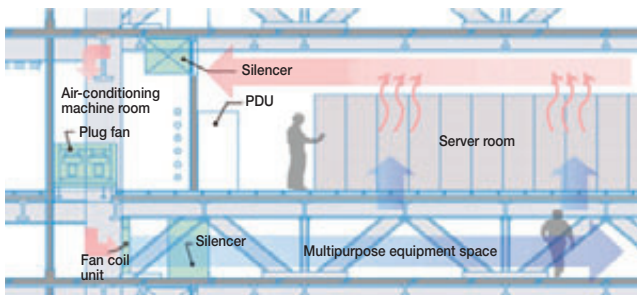
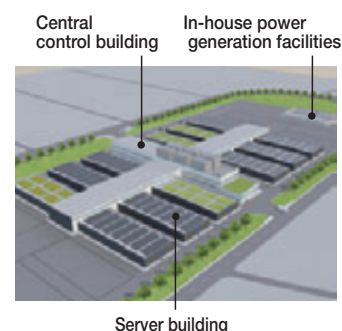


Figure 2. Suburban cloud DC



Developing tomorrow's leaders

Takenaka's aim in human resources development is for every single employee to be able to understand and develop the spirit of a master carpenter, which has been passed on ever since the company's foundation, and to be able to add one's own wisdom to create new value suited to the times.

Basis of craftsmanship starts with patterns

Takenaka Practical Technology Training Center "Omoi" (Hyogo Prefecture)

We established the center in January 2011 for use as a platform to pass on the spirit of craftsmanship. The center aims to unflinchingly pass on to future generations "the process of achieving the best quality," which is one of the valuable assets that Takenaka has acquired since its foundation. Anyone who is involved in creating is required to carry out their task "using the available materials at the site and at the time" with certainty. Therefore, the center provides hands-on training programs in which participants can see, touch, familiarize themselves with, and learn the "patterns" of craftsmanship, and nurture the basic spirit of the master carpenter.



Exterior



Indoor training

Finding mistakes in a mockup

Practical training offered at the center includes a program in which participants try to determine mistakes and defects in the frame of a reinforced concrete mockup building that has 170 intentional design mistakes.

Creating a workplace for lively staff

In respecting human rights, we focus on creating a workplace where all of our employees can make the most of their abilities and feel satisfied with their work. In particular, we focus on expanding opportunities for women.

Promoting diversity

Aiming at a workplace where female workers can play more active roles

In promoting diversity, we particularly focus on expanding opportunities for female employees, and to this end we have increased the percentage of new women employees we hire year by year. Moreover, the range of positions available to female workers on the main career track has expanded to include design, construction management, R&D, and sales.



Design Department at Osaka Main Office

Ensuring health and safety

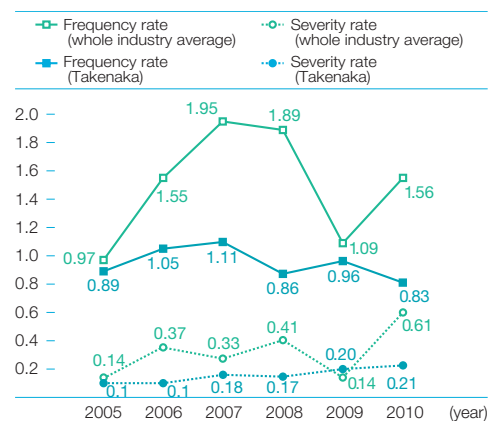
To secure an environment in which all of Takenana's employees and other workers of cooperating firms can work safely and comfortably, we are undertaking rigorous health and safety activities based on compliance with the Industrial Safety and Health Act. We have also had an Occupational Health & Safety Management System (OHSMS) since 2000.

Zero accidents

Setting priorities for construction works and jobs and stepping up efforts to prevent accidents

In 2010, the workplace accident rate improved because of a reduction in the number of accidents, although we could not eliminate severe accidents. In 2011 and onward, we will continue to make improvements following the PDCA cycle.

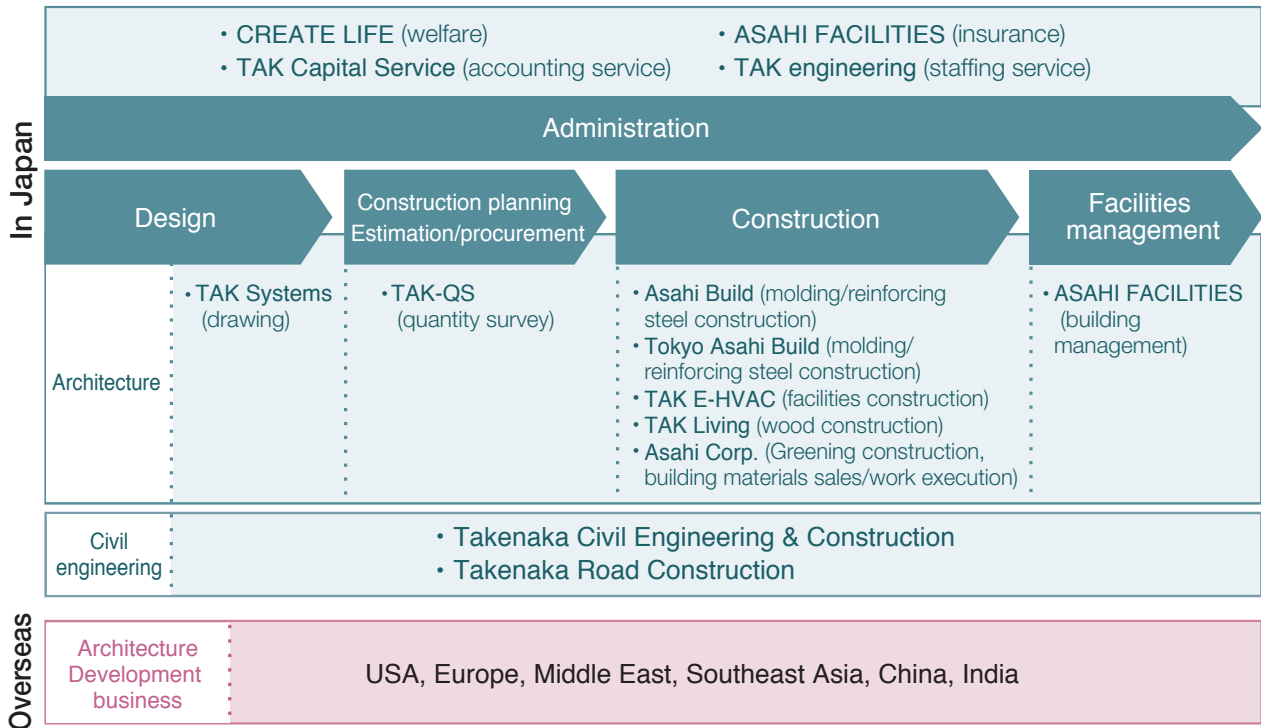
Figure 1. Trends in frequency and severity rates



Together with group companies

In the Takenaka Group, we support our customers in all construction-related phases, from planning to facilities management, as well as through the provision of comfortable offices and hotels in our development business. As part of our environmental and social activities, we regularly hold joint association meetings with our group companies to share environmental technologies and expertise in energy-savings in offices. Our overseas subsidiaries also contribute to local communities with the support of our International Department.

Figure 1. Conceptual diagram of group companies



Asahi Corporation contributes to society with rooftop and wall greening

Asahi's greening business combines its knowledge of products that include natural materials and recycled materials with Takenaka's proprietary greening technologies to offer greening best suited to a specific building location. The company contributes to improving the urban landscape, as well as to air purification, preventing the heat island effect and reducing CO₂ emissions from buildings by using state-of-the-art technologies for rooftop and wall greening, among others.



Wall greening at mozo wonder city (Aichi)

Certification by the Occupational Health & Safety Management System

Thai Takenaka International Ltd.

To develop a system that ensures an environment where its employees and other workers can work safely and comfortably, the company worked on obtaining OHSAS 18001 occupational health and safety standard certification, and received it in August 2010. Complying with this standard as well as the ISO 9001 quality management standard and the ISO 14001 environmental management standard it had obtained previously, the company is committed to following the PDCA cycle in its daily business.

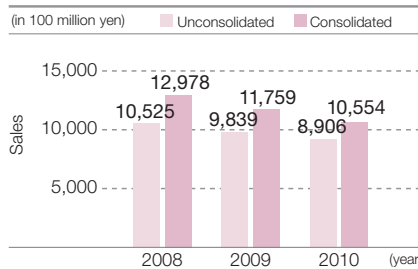


Thai Takenaka staff members

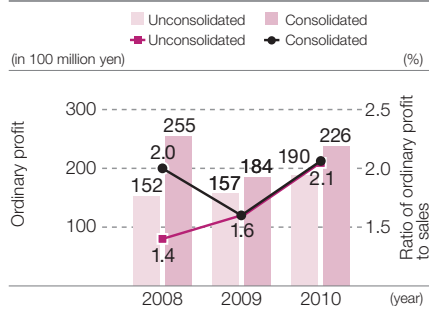
Company name Takenaka Corporation
Establishment 1899
President & CEO Toichi Takenaka
Capital ¥50 billion (as of March 2011)
Sales ¥1,055.4 billion (Consolidated, fiscal 2010)
Employees 7,780 (as of January 2011)
Offices
 Head Office
 1-13, 4-chome, Hommachi, Chuo-ku, Osaka 541-0053, Japan
 13 Main and Branch Offices in Japan
 51 Regional Offices
 Research & Development Institute
 Materials/Equipment Centers

- Main businesses**
1. Undertaking, design and supervision of architectural and civil engineering works
 2. Study, research, survey, planning, evaluation, diagnosis and other engineering and management services for construction, regional and urban development, ocean development, space development, energy supply, environment preservation and other projects
 3. Land formation and housing construction
 4. Sales and purchase, lease, mediation in transactions of, maintenance, management and appraisal of real estate, as well as real estate investment management

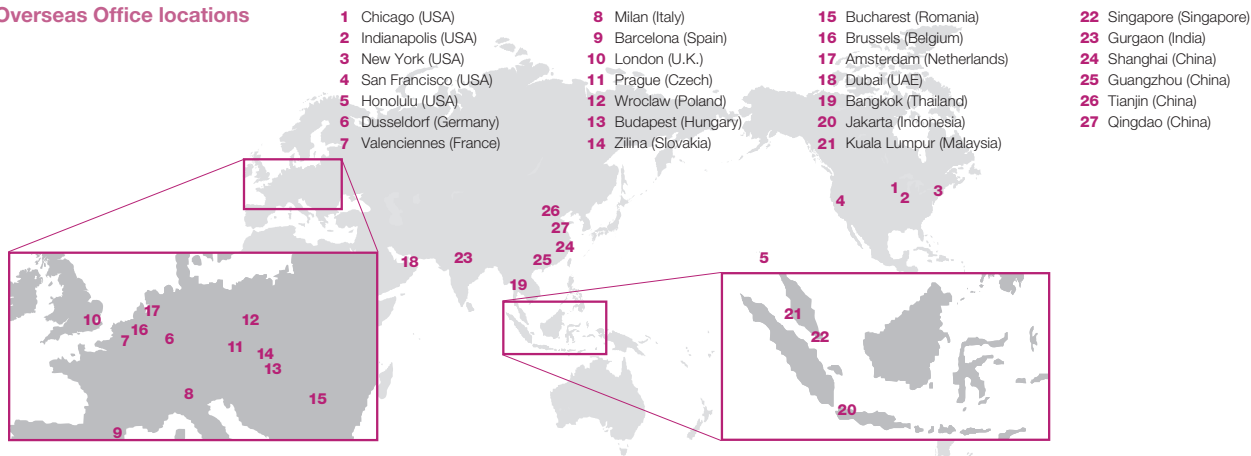
Sales



Ordinary profit



Overseas Office locations



Editorial Policy

- We issue this publication to report to our stakeholders our initiatives for the “development of a sustainable society”—our CSR practices.
- This English version consists of main articles selected out of the Japanese version of our environmental and social report.

■ Period covered
 January to December 2010
 Some activities performed before or after the period are also reported.

■ Activities covered
 Activities of Takenaka Corporation, as well as those of some group companies, are reported.

■ Date of publication
 June 2011 (next planned publication: June 2012)

Cover message

Takenaka Corporation has encapsulated its unchanging commitment in this paper airplane and delivered it to the company’s stakeholders. TAKENAKA es-REPORT 2011 has grown up a little since the 2010 issue: The young boy grew into a young man, butterflies fly in the town, and the road continues into the future. The cover picture is one of a series of illustrations depicting nature, landscape and people’s lifestyles.

Illustrator: Nao Kamimura

Takenaka on the web: http://www.takenaka.co.jp/takenaka_e/index.html