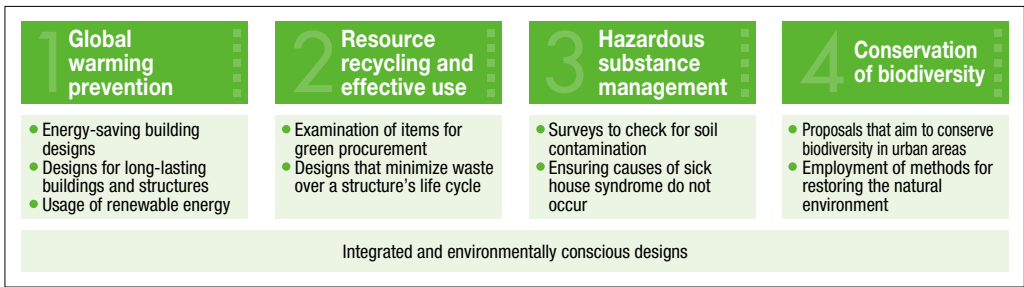


Bringing Protection and Creation to Every Project Stage

For Kajima, the life cycle of a building or structure covers project stages beyond construction, and encompasses project planning and architectural design to occupancy and usage. Kajima works to conserve the environment by decreasing its environmental impact at each stage of a building or structure's life cycle, with the ultimate goal of realizing a sustainable society.



Construction planning and design is concerned with the environmental impact of all stages of a building's life cycle. The impact from procurement-related activity includes resource extraction, energy consumption through the manufacture and transport of materials, waste emissions, impacts on ecosystems, and pollution of air, water, and soil.

Aiming to Improve Added Value in the Project Planning Stage

In a construction project, the project owner and Kajima share concepts during the project planning stage. From the early stage, Kajima puts forth proposals and support for both the technical and non-technical aspects to raise the value added to each project. In particular, Kajima offers a combination of value-maximizing technologies suited to customers' needs, built on a foundation of pioneering initiatives in areas including biodiversity.

Moreover, as a part of the risk management that Kajima undertakes together with project owners, our Head Office, branch offices and all concerned parties act as one to conduct proper treatment and management of hazardous materials, including surveys of buried objects or soil contamination.



Environmentally Conscious Design with an Eye on the life cycle

At the design stage, we look beyond the structure and form of the building to also consider the materials and construction methods to be used. By doing so, we raise quality and efficiency.

Throughout the life cycle of a building, the greatest amount of energy consumption takes place during occupancy. To minimize energy consumption during this stage, Kajima approaches architecture and equipment from the design stage, incorporating improved performance of insulation and solar radiation, shading of windows and outer walls, the use of natural ventilation and lighting, and the adoption of efficient air conditioning and lighting equipment.

By contrast, the majority of energy consumption during the life cycle of civil engineering structures such as dams and bridges takes place during the construction stage. Our considerations here focus on three perspectives: 1) reducing the thickness of components and amounts of materials used; 2) changing the selection of materials and how they are used; and 3) adopting building methods that shorten the construction period. Kajima takes care to use alternate materials that consume less energy per unit and reduce the amount of materials used in order to ensure that its structures can be used efficiently over a long service life.





Toward the Realization of Biodiversity in Urban Areas

4 Conservation of biodiversity

Under the Kajima Biodiversity Guidelines established in 2009, we are creating a network of projects that take into account conservation of the natural environment. Through the networking of these projects, we are raising the environmental conditions of the community as a whole. In fiscal 2010, we put forth proposals based on the concept of conserving biodiversity in urban areas, including proposals for shops and educational facilities utilizing Japanese honeybees, rooftop greenery to attract nightingales from neighboring woods, and office buildings holding events linked to rooftop gardens. Five such projects are currently moving toward realization.

Through such efforts, Kajima's "Design of City and Biodiversity" (a series of projects



utilizing eco-minded services) received the 2010 Good Design Frontier Design Award.

2010 was the International Year of Biodiversity, with the 10th Conference of the Parties to the Convention on Biological Diversity (COP10) taking place in October in Nagoya, Aichi Prefecture. At the time of the Conference, Kajima participated in seven events to introduce technologies for conservation of biodiversity. At the panel discussion entitled "Harmonizing Development with Conservation of Biodiversity," organized by the Ministry of Land, Infrastructure and Transport, Kajima employees were in attendance as the only panelists representing the construction industry.



Yoriyuki Yamada (left), Deputy Director of the Office of Global Environment, attending as a panelist

Energy-Saving Design for School Facilities

Global warming prevention

Kajima is making use of energy-saving design methods for school facilities based on facilities management and energy-conserving technologies that have brought real results. Over the course of seven years following the completion of Seinan Gakuin Middle and High School, we collected data on facilities, operating conditions, and energy consumption into our Building Energy Management System (BEMS). To address the energy conservation goals set by the school, we confirmed energy conservation efficacy through on-site measurements, while making monthly reports and offering proposals for operational improvements. Kajima used those years of operational and empirical data in the design and construction of the Seinan Gakuin Elementary School that opened in April 2010 to achieve a precise energy-saving design and reduce energy consumption to less than half that of a typical school.



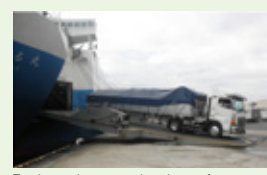
Atrium

CO₂ Reductions through Material Transport Methods

Global warming prevention

Tokyo Civil Engineering Branch: Construction of a 1500 mm water main tunnel, and tunnel pipe laying, between Kunugida Town and Midori-cho, Hachioji City

In this project, we compared two methods for transporting the water pipes to be used in construction: land transport from Amagasaki City, Hyogo Prefecture, per initial plans; and waterborne transport from the Port of Osaka to the Port of Shinagawa or Port of Chiba, using ships with lower CO₂ emissions than trucks, followed by land transport to the construction site. To calculate CO₂ emissions, we used the Guidelines for CO₂ Emission Conversion Methods in Logistics issued by the Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism. The result indicates waterborne transport achieved a reduction in CO₂ emissions of about 46%, or 18 tons. This eco-minded approach considered not only emissions from within construction sites, but also CO₂ emissions from the transport of materials.



Truck carrying water pipes leaves ferry for overland routes



Construction Stage

<p>1 Global warming prevention</p> <ul style="list-style-type: none"> Streamlined construction operations Utilization of highly efficient machinery Activities to save energy Usage of natural energy 	<p>2 Resource recycling and effective use</p> <ul style="list-style-type: none"> Green procurement Zero emission measures Restrictions on generation of waste volume Reduction of the final disposal rate 	<p>3 Hazardous substance management</p> <ul style="list-style-type: none"> Surveys to check for soil contamination Ensuring causes of sick house syndrome do not occur 	<p>4 Conservation of biodiversity</p> <ul style="list-style-type: none"> Procurement that considers biodiversity Reducing the burden on local ecosystems
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The construction industry is resource-intensive, with processes that consume great amounts of materials in the construction stage and generate considerable waste. Terrain modification, turbid water, noise, construction waste, contaminated soil, and CO₂ emissions from heavy machinery and vehicles can all be considered as having direct impacts on the global and local environments.

Pursuing the Shift to Low-Carbon

We believe that rationalizing and streamlining work, increasing productivity, reducing the use of materials, promoting greater use of recycled materials, and deploying high-performance equipment all contribute to reducing environmental impacts. As such, we strive to selectively combine these to match construction site conditions.

Construction Site Environmental Management Initiatives

Kajima creates an environmental management plan for each site prior to the start of construction, and works to prevent environmental incidents through checks by branch offices. Our construction site environmental management guidebook, which offers concrete measures for dealing with issues, is regularly revised and distributed to employees at sites. We also work toward prompt disclosure of information by updating our intranet with information on regulatory revisions, best practices, and risk scenarios. With respect to contaminated soil countermeasures and hazardous substances emitted during demolition, we undertake thorough prior checks followed by proper hazardous substance management.

Waste Disposal and Other Initiatives

The revised Waste Management and Public Cleansing Law went into effect in April 2011. The revision strengthens regulations related to proper waste disposal by treating all businesses generating waste in construction work as prime contractors.

As a business generating mixed waste, waste asbestos, etc. Kajima ensures proper disposal of construction waste through a designated contractor system for selecting waste disposal contractors. Under this system, the environmental manager of the branch administrative division creates a list of applicable disposal firms based upon a review of their facilities, after which the construction site selects firms from the list. In addition, disposal contracts for the above three wastes are not formed on a per-site basis; rather, the head of each branch forms contracts, checks the content of contracts, and thoroughly implements the designated contractor system, all under the oversight of the branch administrative division. In order to bear appropriate costs as a waste-generating business, Kajima enforces direct payment to waste haulers and disposal firms.

Fiscal 2010 Performance by the Numbers

Kajima has set a goal of reducing the CO₂ (per unit of construction value) generated from construction in fiscal 2020 to 30% below the fiscal 1990 level. From this we extrapolated a goal of a 16% reduction for the fiscal 2009-2011 period, and in fiscal 2010 we achieved a 17% reduction versus a goal for the year of 15%. In addition, we are developing zero emissions activities aimed at minimizing the amount of final disposal of construction wastes. In fiscal 2010 we achieved a final disposal rate of 2.4%, or an amount of 36,000 tons (excluding sludge).



Ensuring Compliance

Being a Company that People Are Proud to Work For

Providing Innovative Solutions for a Better Environment

Working Together with Local Communities

Communicating with Stakeholders

Reducing CO₂ from Heavy machinery and Vehicles

Global warming prevention

As revealed by Kajima's performance over three years from fiscal 2006, 50% of the CO₂ emitted during construction is attributable to the use of construction site heavy machinery and 23% to vehicles, for a total of 73% stemming from the use of diesel fuel. As cranes and excavators account for half of diesel fuel consumption, addressing the efficiency of heavy machinery is an environmental challenge.

Recent years have seen increasing use of biodiesel fuel and adoption of environmentally conscious construction machinery, including hybrid heavy machinery. Kajima promotes lean, efficient machine operation, and at each site conducts fuel-efficiency training. In fiscal 2010, about 400 persons attended a total of 17 such training sessions held at 12 locations within the Tokyo Civil Engineering Branch and Tokyo Architectural Construction Branch. From fiscal 2011 we are expanding this activity, with Group companies as well making use of Kajima's materials to conduct training.



Fuel-efficient operation training

Onsite Solar Project

Global warming prevention

In fiscal 2010 Kajima launched its Onsite Solar Project, installing photovoltaic (PV) panels on the roofs of construction site offices to generate a portion of the power used by the offices. The project will aid in reducing CO₂ emissions, and as of May 2011 has been introduced at 15 sites.

From fiscal 2011, we will launch the project full-scale across the nation under the slogan "Onsite Mega Solar!" with the goal of 50 or more sites generating over 150,000kWh of electricity annually within 3 years.

In March 2011, we made the amount of power generated visible on our website.



Installation at the Hokkaido Branch's Kitanomine Tunnel joint venture construction office

Zero Emissions in Road Tunnel Construction Receives Award for Achievement in Promoting 3R Activities by the Ministry of Land, Infrastructure and Transport

2 Resource recycling and effective use

Chugoku Branch's southern construction office at the Onomichi-Matsue Expressway Norotani Tunnel No. 1

In this construction project, we undertook a variety of 3R (Reduce, Reuse, Recycle) activities aimed at the full implementation of zero emissions in road tunnel construction. Our adoption of construction methods that avoid the generation of hard-to-recycle mixed wastes was instrumental in our receiving the award.

Under the conventional All Ground Fasten (AGF) auxiliary method of tunnel construction, when removing steel pipes from the ground, separating the removed pipe, the ground reinforcement grout, and the grout injection tube is difficult, resulting in the waste being disposed of as mixed waste. In our construction project, we developed and adopted the Eco Remove method that allows separation and sorting of the steel pipe and the grout. As a result, all of the removed material is recyclable, and we were able to reduce the generation of mixed wastes from the relevant processes to zero.

The wide range of initiatives we undertake also includes selecting material transport methods that do away with packaging,

and injecting the tires of dump trucks in tunnels with urethane to prevent punctures and the generation of waste tires.



Removed tubes (old construction method)



Removed tubes (new construction method)



Occupancy and Usage Stage

<p>1 Global warming prevention</p>	<p>2 Resource recycling and effective use</p>	<p>3 Hazardous substance management*</p>	<p>4 Conservation of biodiversity</p>
<ul style="list-style-type: none"> • Appropriate inspections based on monitoring and consulting • Adoption of Building Energy Management Systems (BEMS) 	<ul style="list-style-type: none"> • Increasing longevity of buildings and structures <ul style="list-style-type: none"> -Reinforcements for earthquake resistance -Strengthening of dam re-grading functions 	<ul style="list-style-type: none"> • Proper handling and disposal of asbestos • Proper handling of devices containing PCB and fluorescent tubes during disposal <p>*during renovation work or demolition</p>	<ul style="list-style-type: none"> • Monitoring of surrounding ecosystems • Environmental education with applied projects

Among a variety of structures, buildings in particular are stages for people's lives and activities. After the completion of construction, energy consumption continues for long years during the use (or occupancy) stage. In addition, during periods of renovation, the construction stage and use stage are repeated. Moreover, dismantling at the end of a building's life cycle marks a period in which much waste is generated, and noise and vibration impact the surrounding area. As buildings and structures have long lifetimes, their environmental impact must also be considered over the whole life cycle.

Support in Non-Technical Areas

Interest in energy conservation at the usage stage is rising rapidly; part of this is the need to comply with the revised Law Concerning the Rational Use of Energy and the Tokyo Metropolitan Ordinance on Environmental Preservation. Through support activities such as monitoring and verification, operational guidance, and proposals for reform and renewal of facilities, Kajima is contributing to the creation of a low-carbon society.

We will make use of our Building Energy Management System (BEMS), aimed at optimal conditions for the use of equipment, and EneMASTER, which supports energy saving planning in maintenance while making building energy usage visible, as we work to reduce environmental stress during the usage stage.



Fiscal 2010 Performance by the Numbers

At Kajima, we also manage the "indirect" reduction of CO₂ emissions that we believe is achieved through our in-house green procurement and our energy-conserving design that covers all stages before and after construction. The reduction in CO₂ achieved through energy-conserving design amounted to 19,000 tons in fiscal 2010. In addition, the reduction accompanying green procurement, such as that for blast furnace cement and concrete, was 48,000 tons.

Inclusion among the 100 Corporate Greening Projects for Conservation of Biodiversity

The 100 Corporate Greening Projects for Conservation of Biodiversity represent outstanding examples of the preservation, creation, and use of greenery in corporate initiatives, and are selected by the Organization for Landscape and Urban Green Infrastructure under special recognition by the Social and Environmental Green Evaluation System (SEGES). Kajima has received recognition for several of its locations, including Kajima Technical Research Institute, corporate housing in Tokyo's Toshima Ward, and Yazaki Corporation Y-TOWN Gotemba, Shizuoka Prefecture, where Kajima was responsible for design, construction, and activities to restore eelgrass beds.



Our Kajima Terrahouse Minami Nagasaki corporate housing, aiming for further greening after receipt of the award



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Initiatives by Our Offices: Fostering an Environmentally-Sensitive Corporate Culture

With the entire Company now a specified business operator under the revised Law Concerning the Rational Use of Energy, Kajima has undertaken a revision of its data collection system and the scope thereof. From fiscal 2010, we expanded the collection of performance data on energy and tap water usage to target not only the Head Office and branch office buildings but also all workplaces, including sales offices (see table below). Regarding energy, we will undertake activities aimed at an annual 1% reduction in usage across the expanded range of all workplaces.

Fiscal 2010 results	
Electricity	34,720,000 kWh
Fossil fuels (Kerosene)	19.66 kl
Fossil fuels (Heavy oil)	21.37 kl
Town gas	189,600 m ³
Water	184,800 m ³
CO ₂ emissions	14,410 t-CO ₂

In addition, Kajima office divisions are setting targets for electricity use, amount of waste generated, recycling rate, copier paper usage, and office supply green procurement rate in the Head Office and branch offices. Our goals for fiscal 2010 were 1% reductions from the previous year in electricity use, paper use, and waste generation, as well as a recycling rate of 70% and an office supply green procurement rate of 90%. However, we were not able to achieve the targets for electricity use and green procurement.

Fiscal 2011 Summer Energy Conservation Measures

Due to the impact of the Great East Japan Earthquake, the government has issued an Electricity Supply-Demand Measure in Summer to reduce maximum power usage between July and September, on business days from 9:00 a.m. to 8:00 p.m., to 15% below the peak usage of summer 2010. Kajima established plans that mandate a target of a 15% or greater reduction at all workplaces within the area served by the Tokyo Electric Power Company, including at construction sites, the Head Office, and branch offices. Moreover, we are calling for the conservation of electricity at home in our Tokyo-area company housing, cooperating with the Tokyo Wards' energy conservation awareness programs aimed at households.

Targets for Fiscal 2011

In fiscal 2011, the final year of our medium-term plan, we will strive to ensure that we achieve our medium-term goals. We have also begun consideration of our next medium-term targets for fiscal 2012 onward. With great changes taking place throughout society, including a rethinking of long-term energy supply and demand planning after the recent disaster, and new international cooperative frameworks to combat global warming, we will make Kajima's role and its aims clear and straightforward.

Priority Issue 1: Global Warming Prevention

Our targets are to reduce CO₂ emissions over the life cycle of structures (from construction to dismantling) to 30% below fiscal 1990 levels, and CO₂ emissions from construction (per unit of value) to 16% below fiscal 1990 levels, by means of design. We will continue to enhance ZEB and other new initiatives aimed at achieving a low carbon society.

Priority Issue 2: Resource Recycling and Effective use

Although we achieved our medium-term target of a 5% final disposal rate, we will make efforts to further achieve zero emissions. We will also promote green procurement with a focus on five priority items (cement, concrete, molds, OA flooring, and carpet tiles), making efforts toward more effective resource recycling through manufacturer recycling programs.

Priority Issue 3: Hazardous Substance Management

We will undertake proactive and voluntary initiatives to strengthen our management of soil contamination and other construction-related environmental issues. In dealing with new issues, we will introduce our own standards as needed regardless of whether regulations are in place, and will work toward prevention of environmental incidents.

Priority Issue 4: Conservation of Biodiversity

We will move ahead with our plan for conserving biodiversity in urban areas through increasing our number of construction projects that consider biodiversity.