Eco-services

1 Product-related services
(maintenance, upgrading, repair/reform)

2 Reuse and recycling services
(collection, etc.)

3 Outsourcing services
(waste disposal, control of hazardous items, chemical treatment, facility management)

4 Management-related services
(consulting, accreditation, analysis, evaluation, etc.)

5 Others
(e-commerce, eco-tourism, hotels, information transfer, etc.)

In the *Eco-products Directory 2009*, "eco-services" refer not only "technological improvements" but also "ways to use products" and "environmental management" as well as "mechanisms that enable environmental impact reduction through financial products." Typical eco-services include vehicle sharing, where, for example, 10 people share one vehicle instead of each driving his/her own. This results in fewer vehicles on the road, thus reducing the environmental impact of travel considerably. As another example of eco-service, regular maintenance and upgrading can be performed on conventional products so that they can be used longer. In this directory, "eco-services" also refer to "eco-funds where investments are made in business firms with excellent performance in caring for the environment."

The technological development of eco-products normally requires time and money. However, eco-services often only require good ideas to promote environmental impact reduction. Eco-services have not yet been widely recognized by consumers. A system should be developed to publicize the availability and advantages of eco-services so that they permeate society, encouraging further environmental impact reduction.

ES-1-001 Product-related

returnable container managing systems

NETLOOPASS — a system using IC-tags to manage returnable containers in logistics

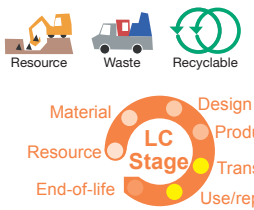
Environmental performance

From the perspective of consideration for the environment, returnable containers are frequently used for logistics between enterprises. However, there are many new problems related to management such as a lack of containers when shipping a product or an excess of containers. These problems are caused by an inability to determine the number of containers in inventory or their whereabouts.
We have developed NETLOOPASS as an optimal solution to such problems.

Product performance

By attaching IC-tags to returnable containers such as folding containers and palletes, it is possible to prevent containers from being lost, retained or purchased in excess by managing when, where and in what quantity they are shipped or returned.

Customers can choose 13.56MHz (ISO15693 Standard) or UHF (EPC global Class 1 Generation 2 Standard) IC-tags depending upon their specific needs and it is possible to use IC-tags even if the container is made of metal.



TOPPAN PRINTING CO., LTD.

1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, 101-0024, Japan
Tel +81-3-3835-5549 Fax +81-3-3835-0847
E-mail eco@toppan.co.jp
URL http://www.toppan.co.jp/english/
URL http://www.toppan.co.jp/english/csr/

Available in: We have sold our products throughout the world.

ES-1-002 Product-related

treatment of metal surfaces

High-Performance Surface Treatment Technology "TRIBEC™ Series"

Environmental performance

Various surface treatment technologies are applied to molds for extending their lives. Recently growing environmental awareness has resulted to change the type of lubricants along with other drastic modifications and has shortened the operating lifetime of molds. In an effort to improve their operating life, Hitachi Metals developed "the TRIBEC™ Series". By identifying the necessary performance attributes of each application based on an extensive analysis on mold abrasion over many years, Hitachi Metals has achieved high-performance surface treatment of molds that is operating-environment specific. "The TRIBEC™ Series" provides protection for molds used even in harsh conditions where environmentally conscious lubricating methods are used. In addition, mold abrasion can be suppressed with polishing to remove damaged portions and enables reuse of "TRIBEC™".

Products with TRIBEC™ applied

Hitachi Metals, Ltd.

SEAVANS North Building, 1-2-1, Shibaura, Minato-ku, Tokyo, 105-8614, Japan
Tel +81-3-5765-4410
E-mail hmcc@hitachi-metals.co.jp
URL http://www.hitachi-metals.co.jp/e/
URL http://www.hitachi-metals.co.jp/e/prod/prod19/p19_02.html
URL http://www.hitachi-metals.co.jp/e/corp/corp14_01.html

ES-1-003 Product-related green gifts

Present Tree

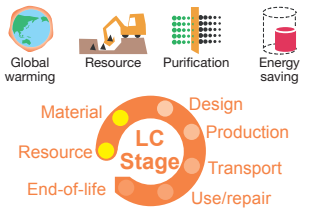
Product performance

A Present Tree is a gift that involves the delivery of a certificate detailing a planted tree, along with a message card. Trees will be planted for the reproduction of tropical forests on Kalimantan Island.

You can have two planted trees.
One of the trees is planted for recovering tropical forest.
The other is a teak, and this afforestation enables the sustainable supply of woods, and creates the employment of locals.
After ten years, the teak will be cut down and sold. The income from the teak will be paid to the owner. The income will also able to be used for reforestation or environmental conservation activities.

As another privilege, a CO_2 offset certificate comes with the Present Tree. The planted tree will become forest and that will absorb carbon dioxide. It contributes to the prevention of global warming.

The owner certificate features the owner's name, and latitude and longitude of the position where the teak sapling is planted, which is measured by GPS (Global Positioning System).



Present Tree contents

VIVO Corporation Co.,Ltd

3-5-4, Tanashicho, Nishitokyo-shi, Tokyo, 188-0011, Japan
Tel +81-42-465-7563 Fax +81-42-465-7241
E-mail info@vivo.jp
URL http://www.env-r.com/tree

Available in: Japan

ES-1-004 Product-related elevator refurbishment services

Quick Elevator Refurbishment Thanks to Addition of New Control Panel

Environmental performance

- Mitigation of climate change: Reduction in power consumption due to the change from conventional AC feedback control to inverter control.
- Efficient use of resources: Possible to perform refurbishment work without removing the existing motor, hoist, car, and platform facilities. Elimination of unnecessary replacement for the efficient utilization of existing resources.

Product performance

- Short work period: Reduced time required for transport and replacement work because of the division of the control panel into compact units.
- Reduced frequency of trouble: Change from a relay system to a microcomputer controlled system brings enhanced reliability as there are fewer replacement parts.
- Remote surveillance: Remote surveillance for 24 hours x 365 days.

Elevator Control Board Refurbishment CV260RN

TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION

5-27, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, 141-0001, Japan
Tel +81-3-5423-3330 Fax +81-3-5423-3425
URL http://www.toshiba.co.jp/index.htm
URL http://www2.toshiba-elevator.co.jp/elv/infoeng/index.jsp

ES-2-001 Reuse and recycling

retreaded tires

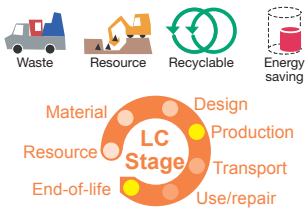
Retread tires for trucks and buses

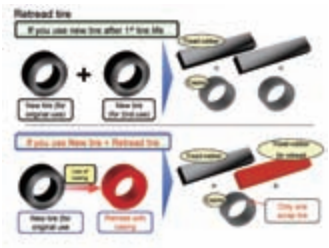
Environmental performance

Through the retreading method, CO_2 emissions and energy consumption during tire manufacturing process can be significantly reduced as well as scrap tire reduction. Bridgestone also provides new tires properly designed as a retread casing in order to maximize the value of casing and reuse efficiency. Bridgestone will make continuous effort for further public enlightenment of the Eco concept responding to social justice and the needs of customers through retread activity.

Product performance

"Retread" means attaching new tread rubber on a worn-out tire to revive tire life. There are two ways of retreading. One is assembling already cured tread (Pre-Cured Tread or PCT) on a worn-out tire, which is called "COLD" type retread, because the curing temperature is relatively low (100-120 degrees C). The other is assembling non-cured tread, which is called "HOT" type retread, because the curing temperature is relatively high (140-150 degrees C) and this is similar to new tire production.





Retread tires image

Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo, 104-8340, Japan
Tel +81-3-3563-6082 Fax +81-3-3563-1165
URL http://www.bridgestone.co.jp/english/index.html

ES-2-002 Reuse and recycling

recycling systems

Ecocement System

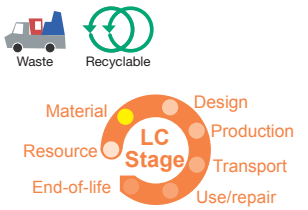
Environmental performance

Ecocement is the recycling system for incineration residues from MSW incinerators. Such residues are utilized as the major raw material of Ecocement with minimum addition of natural resources.
Characteristics of Ecocement

1. This system ensures that dioxins contained in residues are safely decomposed during high temperature in excess of 1,350°C.
2. This system includes equipment that extracts and refines heavy metals contained in the incineration residues for recycling.
3. This system contributes to decrease of landfill burden.

Product performance

Ecocement is similar in quality to ordinary Portland cement. It is utilized to redy-mixed concrete, concrete product and soil stabilizer.



Ecocement System

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan
Tel +81-3-6226-9088 Fax +81-3-6226-9172
URL http://www.taiheiyo-cement.co.jp

ES-2-003 Reuse and recycling

recycling systems

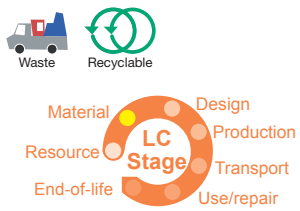
Ash Washing System

Environmental performance

Ash Washing System is a recycling system for incineration residues, otherwise known as soot & dust and bottom ash from MSW incineration, as a cement raw material. This system can be introduced at existing cement plants simply by installing pretreatment facilities of the Ash Washing system.

Characteristics of the Ash Washing System

1. Dioxins contained in the incineration residues are safely decomposed during the high temperature burning process at cement rotary kiln in excess of 1,450°C.
2. The pre-treatment of bottom ash requires only removing metals and screening other large foreign objects. Soot & dust includes many chlorides and need to be treated to remove them using water. Soot & dust and bottom ash are utilized as a cement raw material after pre-treatment



Ash Washiong System

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan
Tel +81-3-6226-9088 Fax +81-3-6226-9172
URL http://www.taiheiyo-cement.co.jp

ES-2-004 Reuse and recycling

recycling systems

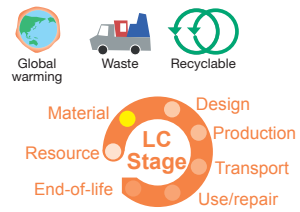
AK System

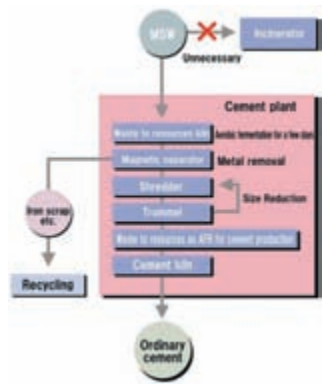
Environmental performance

AK (Applied Kiln) System recycles household garbage into raw material and alternative fuel for ordinary Portland cement production. This can be introduced at existing ordinary Portland cement plants by modification and installation of specific equipment.

Characteristics of AK System

1. MSW is directly transported to the cement plant equipped with the AK System.
2. MSW is placed into a rotary digester and is aerated and fermented around 3 days. MSW converts into a homogeneous and stable product that can be utilized as fuel and raw material for cement production.
3. The generation of dioxins is suppressed during the high temperature burning process in excess of 1,450℃.





AK System

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan
Tel +81-3-6226-9088 Fax +81-3-6226-9172
URL http://www.taiheiyo-cement.co.jp/

ES-2-005

Reuse and recycling

recycling systems

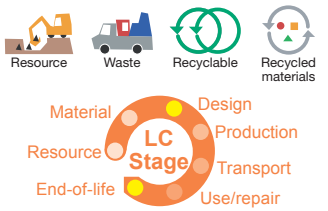
FRP Recycling Using Depolymerization Under Ordinary Pressure

Environmental performance

This technology is unique in that it does not require pretreatment (crushing, etc.) or the facilities and energy for the pressurization. This technology helps reduce processing costs and environmental load while ensuring health and safety. Moreover, the relatively long glass fibers recovered enable production of reusable FRPs with about 70% of the tensile strength of virgin FRPs.

Product performance

FRP raw materials such as thermosetting resins make FRP difficult to recycle because they cannot be decomposed after being molded. Hitachi Chemical's FRP recycling technology, which uses tripotassium phosphate as a catalyst and benzyl alcohol as a solvent, can decompose FRP at 200 degrees centigrade under ordinary pressure for about 10 hours. FRPs are readily separated into glass fibers, fillers, resins and other components, which are reprocessed into FRPs at a low cost.



FRP dissolving process

Hitachi Chemical Co., Ltd.

1500 Ogawa Chikusei-shi, Ibaraki, 308-8521, Japan
Tel +81-296-20-2304 Fax +81-296-28-4637
URL http://www.hitachi-chem.co.jp/english/index.html
URL http://www.hitachi-chem.co.jp/english/products/index.html
URL http://www.hitachi-chem.co.jp/english/csr/index.html

Available in: Japan

ES-2-006

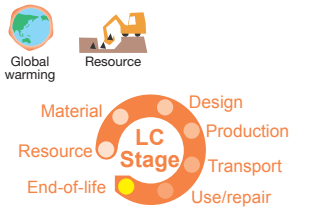
Reuse and recycling

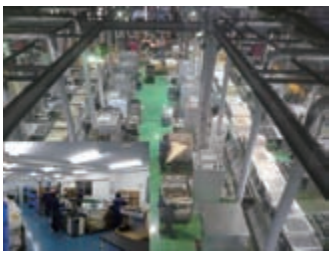
recycling systems

Recycling of Electronic Appliances Toward Recycling-oriented Society

Environmental performance

Tokyo Eco Recycle Co., Ltd. disassembles used electric appliances manually to separate valuable resources thoroughly. One step forward from an effort just to "recover resources" for environmental protection to "create resources" has achieved a new business model. Tokyo Eco, a front-runner in the world has been striving to establish a novel approach representing the recycling industry. Tokyo-Eco strives for "zero emission", which means waste going to landfill sites be reduced to zero. Our landfill ratio of 0.1% is at the top level in Japan. At the same time, information security is highly taken into account (e.g., being certified for "privacy marking") in order to promote recycling in the information society.





Recycling of PCs, washing machines, and air-conditioners

Tokyo Eco-Recycle,Ltd.

38 Wakasu, Koutou-ku, Tokyo, 136-0083, Japan
Tel +81-3-3522-6690 Fax +81-3-3522-6688
URL http://www.tokyo-eco.co.jp

ES-2-007

Reuse and recycling
recycling systems

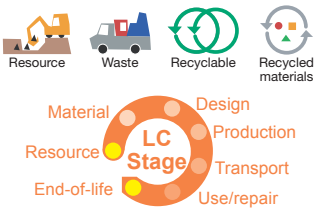
Tungsten Recycling System for Carbide Cutting Tools

Environmental performance

Tungsten is a refractory metal in its property, and tungsten carbide has high hardness at high temperature and is used for the cemented carbide cutting tools which are indispensable to metalwork a variety of parts and components in automobiles, household electric appliances, and other industries.

Tungsten is also known as one of the rare metals, and its resource in the world is very limited. Tungsten materials processed by the conventional recycling method are used in limited application areas because of its insufficient quality.

MITSUBISHI MATERIALS group has developed a new recycling method to recycle tungsten, while ensuring the high quality of recycled tungsten. At present, we are the only manufacturer that can recycle used cemented carbide by metallurgical refining process. We recycle tungsten from used cemented carbide tools and alloys collected in the manufacturing process.



JAPAN NEW METALS CO.,LTD

1-6-64 Sennari-cho, Toyonaka, Osaka, 561-0829, Japan
Tel +81-6-6333-1171 Fax +816-6331-5358
URL http://www.jnm.co.jp/eng/index.html
URL http://www.mmc.co.jp/corporate/en/csr/csr.html

Carbide Cutting Tool

Available in: Japan

ES-2-008

Reuse and recycling
recycling systems

World's first totally closed-loop recycling system for polyester

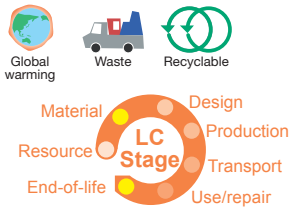
Environmental performance

The closed-loop recycling system of ECOCIRCLE™
- will produce no waste
- will suppress petroleum consumption
- will significantly reduce CO_2 emissions and energy consumption

Product performance

ECOCIRCLE™ is an advanced system that turns PET bottles and polyester products back into highly pure polyester raw material (99.99%). By separating additives and coloring agents, purity equivalent to raw material produced from petroleum can be achieved.

ECOCIRCLE™ is a Teijin Fiber trademark.



Teijin Fibers Limited

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo, 100-8585, Japan
Tel 0088-22-0175
E-mail tfj0604@teijin.co.jp
URL http://www.ecocircle.jp/index_e.html

Closed-loop recycling system

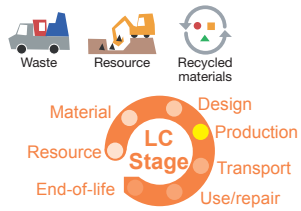
ES-2-009

Reuse and recycling
recycling systems

Tea dregs recycling system

Environmental performance

With the increase of demand for green tea beverages, the amount of tea dregs discharged during the process of production is increasing year by year. Even though the tea dregs contain a lot of functional ingredients such as polyphenol, it is easy to rot because of its containment of water and high temperature.
As a way to dispose tea dregs discharged, it can be dried out and reused. However, a large amount of energy is consumed to make it dry because of its water containment. That is not good for the environment.
As a result, most of the usage of tea dregs is for compost so far.
At ITO EN we have overcome those obstacles and succeeded in developing a technology to process the tea dregs with water in it.
Creating products made out of tea dregs such as board, gypsum-board, resin, and paper, making a good use of green tea function with the technology is "the tea dregs recycling system".



Sample (Resin with tea)

ITO EN, LTD.

21 MEKAMI, SAGARA-CHO, MAKINOHARA-SHI, SHIZUOKA-KEN, 421-0516, Japan
URL http://www.itoen.co.jp/
URL http://www.itoen.co.jp/csr/recycle/index.html
URL http://www.itoen.co.jp/csr/report/index.html

Available in: Japan

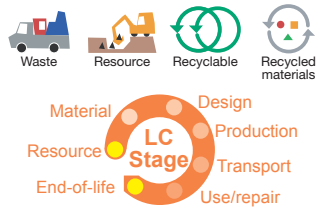
ES-2-010

Reuse and recycling
recycling systems

Efforts to achieve a higher recycling rate under the concept of compliance

Environmental performance

We strive to recycle used resources, including metals (e.g., iron and aluminum), waste office automation equipment (e.g., PCs) and automobiles. We are also actively engaged in activities to raise awareness in regard to environmental conservation. These include factory tours upon request for the general public at some of our facilities to publicize the importance of recycling.



Ishikari factory Shredder Plant

SUZUKI SHOKAI Inc.

Nippon life Insurance Sapporo Bld 10F, 1-1 North3 West4, Chuo-ku, Sapporo-shi, Hokkaido, 060-0003, Japan
Tel +81-11-280-1281 Fax +81-11-280-8900
URL http://www.suzuki-shokai.co.jp

Available in: Japan, Asia

ES-2-011

Reuse and recycling

recycling systems

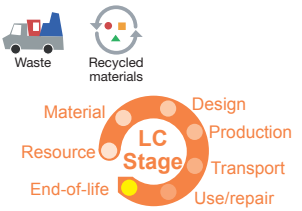
Separate collection of various kinds of metals, plastics and glass contained in shredder dust

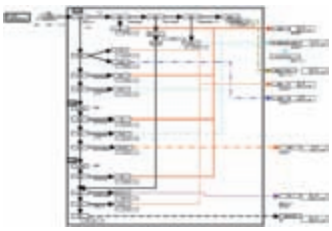
Environmental performance

Separating shredder dust generated from waste household appliances and automobiles has conventionally been considered difficult. However, efforts are now made to reduce the amount of waste for final disposal by separately collecting such dust and making effective use of it-metals and glass for material recycling (i.e., to be recycled as raw materials) and plastics for thermal recycling (i.e., energy recovery).

Product performance

The raw material, shredder dust, is sieved and subjected to manual screening, crushing, wind gravity separation, magnetic separation, nonferrous metal separation and fluidized bed gravity separation. In each of these processes, recyclable materials, including those for fuels, are extracted. Although the proportions of these recyclable materials differ depending on the type of raw material, the weight-based percentage is roughly estimated as approximately 35 to 42% for iron, copper, aluminum, other metals and glass, and 25 to 35% for plastics to be used as fuels. The amount of final disposal is approximately 30% of the original amount.





Flowchart of work processes at the shredder dust-recycling factory

R&E Co., Ltd

223-1 Tomiura-cho, Noboribetsu-shi, Hokkaido, 059-0462, Japan
Tel +81-143-80-2233 Fax +81-143-80-2232
E-mail kankyo@rande.co.jp
URL http://www.rande.co.jp

ES-3-001 Outsourcing

data deletion management

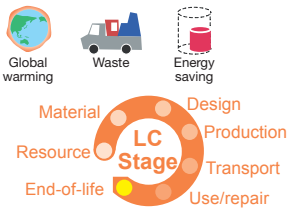
An environmentally friendly, reliable data erasure service

Environmental performance

This is an environmentally friendly data erasure service with the following characteristics:
(1) Data media are dried, dry-distilled and carbonized in a furnace using nitrogen.
(2) Data is then erased by heating with an electric heater.
(3) Combustion does not occur since oxygen is not used, thereby significantly reducing CO_2 emissions (compared with crushing and combustion after data erasure using strong magnetism).
(4) The original materials (e.g., metal) and fuel (carbide) are both recycled.
(5) External air pollution is prevented through the use of exhaust gas detoxification and deodorization devices.
(6) Carbon offsets are purchased to compensate for the CO_2 discharged during the operation of this service.
(7) Carbon offset and work completion certificates are issued.

Product performance

Completely erases data on magnetic tapes, optical discs, floppy disks and hard disks at a location designated by the client, enabling protection of information, the environment and customers.



Truck put on the equipment & Carbonized cartridge

Imation Corp. Japan

Forest Hills West Wing 18-16, Minami-Aoyama 4-Chome, Minato-ku, Tokyo, 107-0062, Japan

Available in: Tokyo metropolitan area in JAPAN *Please inquire of us about the service areas other than the above area.

ES-3-002 Outsourcing

pipe flushing services

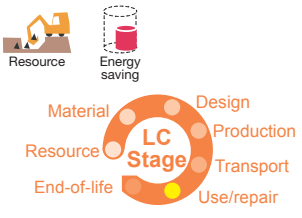
Water-saving flushing system for newly built hot and cold water pipes

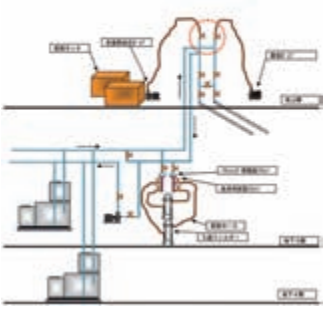
Environmental performance

The flushing method for hot and cold water pipes conserves resources by significantly reducing the volume of wash water used as well as the number of working hours involved.

Product performance

The amount of wash water used in the flushing for newly made hot and cold water pipes is significantly reduced using a transmission barrier filter. At the same time, the number of working hours involved in filling pipes with water are also reduced by using a vacuum pump. Ex.) Fewer frequncies of water changes needed: conventionally, 50 to 100 t of wash water are required to flush a pipe with a capacity of 10 t, but the new method takes only about 20 t to complete washing. The technique is expected to be used in cogeneration systems for district cooling and heating and for pipes to cool large-sized machinery.





NIHON MIZU-SHORI KOUGYOU CO.,LTD.

8-14 Sugahara-chou, Kitaku, Osaka, 530-0046, Japan
Tel +81-6-6363-6330 Fax +81-6-6363-6372
E-mail mizushori@nifty.com
URL http://www.mizu-shori.com

ES-3-003 Outsourcing

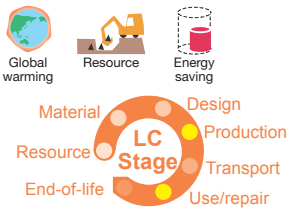
energy management services

Energy Management Service

Environmental performance

UGL Premas is a leading total asset management company in Asia. Headquartered in Singapore, with staff strength of 2000, we provide facilities management and engineering services for various types of facilities across Asia and Middle East regions.

Our Energy Centre, the first accredited ESCO, specialises in energy management solutions and procurement services. It has helped building owners identify savings of more than S$10 million annually in total.



United Premas Limited

Block 750 Oasis, Chai Chee Road Technopark @ Chai Chee #01-01, 469000, Singapore
Tel +65-6876-0088 Fax +65-6538-8146
E-mail info@ugl-premas.com
URL www.ugl-premas.com

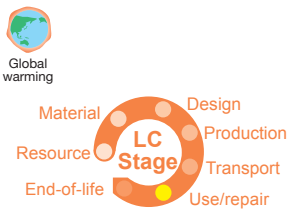
ES-3-004 Outsourcing

landfill gas collection volume evaluation

Landfill Gas Collection Volume Evaluation Method

Product performance

For successful landfill gas (LFG) collection and/or power generation projects or CDM projects, accurate evaluation of LFG emission and collection volume is crucial. Through a number of actual project experiences in Southeast Asia, Kajima developed a step-wise evaluation methodology comprising a preliminary study (Surface Methane Flux/Concentration Study), diagnosis study (Passive Gas-Well Test) and detailed study (Pumping Gas-Well Test). The preliminary study that measures methane concentration and methane flux on the landfill surface provides economical and quick assessment for further studies, the diagnosis study that measures the volume and composition of the LFG being emitted through a few small observation wells and conducts chemical analysis on waste samples provides approximate estimation of project costs, and the detailed study that pumps LFG from a few actual production wells and studies the relation between pumping power and methane concentration provides accurate LFG collection volume data and operational data.



Pumping Gas-Well Test

Kajima Corporation

6-5-11, Akasaka, Minato-ku, Tokyo, 107-8348, Japan
Tel +81-3-5544-0734 Fax +81-3-5544-1733
E-mail env-act@ml.kajima.com
URL http://www.kajima.co.jp/tech/g_warming/index.html

ES-4-001 Management-related package software

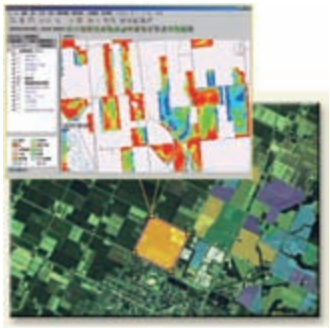
Agricultural Information Management System: GeoMation Farm

Environmental performance

1) By analyzing the relation between fertilizer and quality/quantity of a crop, farmers can judge the suitable amount of fertilizer. This leads to low environmental load.
2) By plotting scattering of the outbreak of disease or harmful insects on the farmland map, farmers can prevent and exterminate these pests with low agricultural chemicals.

Product performance

Remote sensing technology can judge the percentage of dryness of ears of wheat. By using this information, farmers can harvest only dry wheat and this leads to energy-saving drying. According to the evaluation result by SI-LCA index, CO_2 emissions for drying wheat can be reduced 33% by using "GeoMation Farm".



Agricultural Information Mgmt: GeoMation Farm

Hitachi Software Engineering Co., Ltd.

4-12-7 Higashishinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan
Tel +81-3-5780-2111
URL http://www.hitachi-sk.co.jp/english/index.html
URL http://hitachisoft.jp/geomation/farm
URL http://hitachisoft.jp/csr/index.html

Available in: Worldwide

ES-4-002 Management-related package software

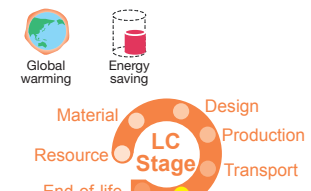
Bioinformatics Software for DNA/RNA/Amino Acid Sequence Analysis

Environmental performance

DNASIS Pro reduces man-hours by 88% by adding the function which coordinates with the reagent order site, and contributes to energy saving. The amount of CO_2 reduction for one year is 182.7kg.

Product performance

Life science research is making great advances in broad applications such as drug discovery, food safety and environmental conservation. "DNASIS Pro" bioinformatics software contributes to life science research by helping scientists be more productive. "DNASIS Pro" enables researchers edit, annotate and analyze DNA, RNA and amino acid sequences. It includes a comprehensive set of analytical tools that can be expanded with optional homology search, multiple alignment, and base calling and sequence assembly modules. Its unique, customizable features are designed to save researchers time and accelerate their life science research.



DNASIS Pro

Hitachi Software Engineering Co., Ltd.

4-12-7, Higashishinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan
Tel +81-3-5780-2111
URL http://hitachisoft.jp/products/lifescience/
URL http://hitachisoft.jp/products/lifescience/lineup/dnasis/DNASISPro/
URL http://www.miraibio.com/dnasis-max/dnasis-max-overview.html

Available in: Japan

ES-4-003 Management-related environmental management

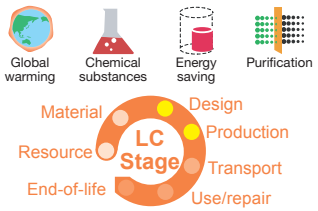
Information Collecting and Analyzing Tool Supporting Environmental Management

Environmental performance

- The system is a WEB-base scheme that is yielded from actual business needs and has an enough record about being used.
- In one platform (server), installed are three sub-systems for collecting and analyzing the information, for controlling waste with the administration of agents, and for monitoring chemical substances. "ECO Rates" is a total package in which each sub-system is connected each other.
- We offer "version up" service every year to conform to the latest law and acts.
- "Add on" operation and customization of the function can be arranged so as to meet the customer's business uses. In addition, we support the customers on the whole from the introduction of system to the practical use policy and operative rules.

Product performance

"ECO Rates" supports, as a real managing system, the information management that is the base of the environment management.



ECO Rates Integrated Environmental Information system

Mitsubishi Electric Corporation

2-7-3, Marunouchi, Chiyoda-ku, Tokyo, 100-8310, Japan
Tel +81-3-3218-9024 Fax +81-3-3218-2465
E-mail eqd.eco@pj.MitsubishiElectric.co.jp
URL http://global.mitsubishielectric.com/index.html
URL http://global.mitsubishielectric.com/company/csr/environment/products/index.html
URL http://global.mitsubishielectric.com/company/csr/index.html

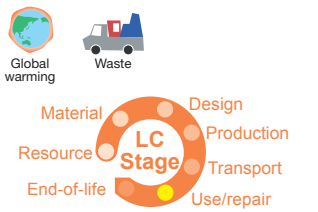
Available in: Japan

ES-4-004 Management-related environmental education content

Environment Education Contents Series "Environmental Communication Club"

Environmental performance

"Environmental Communications Club" is an environmental educational package for understanding global environmental problems and the negative environmental impact, and for considering the environment. Contents include animation and games. Users can enjoy and learn about environmental issues. These contents are used for study by school children's class trips to the garbage incinerator and the recycling plaza of the municipality.



Various Contents

TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-Shi, 212-8551, Japan
Tel +81-44-548-7711 Fax +81-44-548-7884
E-mail eco.master@toshiba-tpsc.co.jp
URL http://www.toshiba-tpsc.co.jp/english/company/act.htm
URL http://www.toshiba.co.jp/env/en/report/index.htm

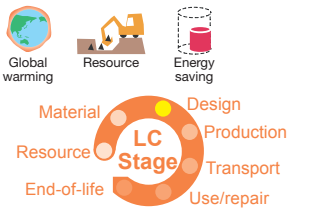
ES-4-005 Management-related

LCA software

LCA software "JEMAI-LCA Pro"

Environmental performance

JEMAI-LCA Pro is LCA software developed by the National Institute of Advanced Industrial Science and Technology (AIST) and Japan Environmental Management Association for Industry (JEMAI). The JEMAI-LCA series has been available since 2000, and over 1000 copies have been sold, occupying the largest share in Japan's LCA software market. Now, an English version is available. The software is equipped with the following functions: -A modifiable inventory database containing a wide range of processes with resource consumption and emissions. -New data adding through a process sheet or visual input output sheet. -Process tree management. -Estimation of environmental impact in overseas countries using electricity data and an import model of 200 countries/regions. -Inventory analysis and impact assessment including Japanese and European methods. -Report writing support based on the format outlined in the ISO 14040s specifications.



JEMAI-LCA Pro

Japan Environmental Management Association for Industry (JEMAI)

2-1 Kajicho 2-chome, Chiyoda-ku, Tokyo, 101-0044, Japan
Tel +81-3-5209-7708 Fax +81-3-5209-7716
E-mail jemai-lca@jemai.or.jp
URL http://www.jemai.or.jp/
URL http://www.jemai.or.jp/CACHE/lca_details_lcaobj198.cfm

Available in: Worldwide

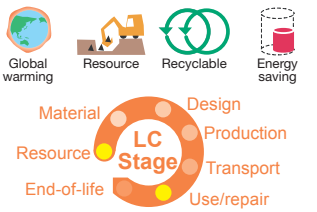
ES-4-006 Management-related

LCA software

Life Cycle Assessment Software "Easy-LCA"

Environmental performance

Easy-LCA is a supporting tool to conduct life cycle assessment (LCA) effectively. It evaluates quantitatively the influence of the product on the environment at the stage of design, and combines scientifically the results with the analysis and improvement of the product.
Main features
- The latest database based on the economical statistics table of fiscal year 2000 (published in 2004) has been included.
- Assessment of the discharge of environmental loading is possible according to the distinction of units and parts.
- Comparison of an old product and the new one is possible
- Impact evaluation
- Inventory evaluation of 30 kinds of products including CO_2 / NO_x / SO_x is possible.



Easy-LCA screens

TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-Shi, 212-8551, Japan
Tel +81-44-548-7711 Fax +81-44-548-7884
E-mail eco.master@toshiba-tpsc.co.jp
URL http://www.toshiba-tpsc.co.jp/english/company/act.htm
URL http://www.toshiba.co.jp/env/en/report/index.htm

ES-4-007 Management-related library systems

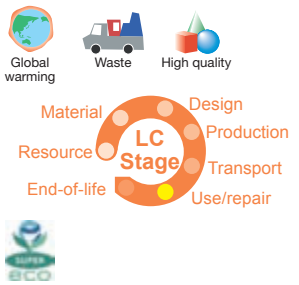
A library system "Livre"

Environmental performance

We can reduce CO_2 of 66.6% by using "Livre".

Product performance

Livre is library system, which Hitachi Systems & Services, Ltd. offers.
The characteristics of "Livre" are as follows.
- Enables easy operation for the loan and the return of the library book.
- Enables quick search for books.
- Provides variety of statistics associated with the library operation.



Main Menu of "Livre"

Hitachi Systems & Services, Ltd.

Nagoya Lucent Tower, 6-1 Ushijima-cho Nishi-ku, Nagoya, 451-6028, Japan
Tel +81-52-569-2128 Fax +81-52-569-2132
E-mail livre-sales@hitachi-system.co.jp
URL http://www.hitachi-system.co.jp/lvr/

ES-4-008 Management-related document solutions

Document Solution "LIBINITY"

Environmental performance

LIBINITY is a unified brand of the document solution of Hitachi Systems & Services, Ltd.
It reduces the consumption of paper, which leads to the reduction of the CO_2 emission associated with the transportation of the paper by 42.3%. This reduction is achieved by replacing distribution of conventional paper with information sharing on the WWW.

Product performance

LIBINITY ECM is characterized by "SCALABILITY" changing a system scale by step-by-step expansion depending on the number of the documents / the users. It can enable all customers' document systems to realize "COMPLIANCE", "SECURITY", "RELIABILITY" easily. "LIBINITY Millemasse" is a high-performance filing system to keep a large quantity of documents and images for unification. It easily realizes high document management at a low cost.

Screen image of "LIBINITY Millemasse"

Hitachi Systems & Services, Ltd.

JR Shinagawa East Building, 2-18-1 Konan, Minato-ku, Tokyo, 108-8250, Japan
Tel +81-3-3763-3264 Fax +81-3-3763-3291
E-mail libinity@hitachi-system.co.jp
URL http://www.hitachi-system.co.jp/libinity/

ES-4-009 Management-related energy saving solutions

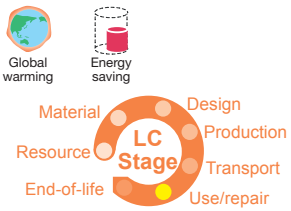
Office HVAC for Comfort and Energy Saving

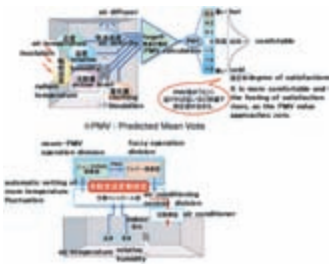
Environmental performance

- Mitigation of climate change: 10-20% reduction of energy consumption by the reduced consumption of cool water, hot water and fan power and the prevention of excessive cooling and heating.
- Efficient use of resources: Control is executed by software. Minimization of hardware means resource saving in the manufacturing phase.

Product performance

- Comfortable environment: Air-conditioning control based on Predicted Mean Vote (PMV) to maintain a comfortable indoor environment.





Neuro-PMV Control

TOSHIBA CORPORATION Social Infrastructure Systems Company

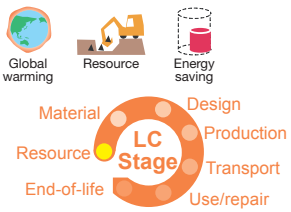
1-1, Shibaura 1-Chome, Minato-Ku, Tokyo, 105-8001, Japan
Tel +81-3-3457-4368 Fax +81-3-5444-9280
URL http://www.toshiba.co.jp/index.htm
URL http://www.toshiba.co.jp/env/en/report/index.htm

ES-4-010 Management-related consulting services for geothermal and hydraulic power generation

Consulting service for geothermal and hydraulic power generation

Environmental performance

Mitsubishi Materials has long been actively involved in geothermal and hydraulic energy development and utilization acquired through our own underground resources business.
We have six hydroelectric power plants (approx. 17MW total) and two geothermal power plants (59.5MW total) in Japan. Geothermal power generation utilizes steam energy extracted from underground by drilling wells as deep as 2,000 meters.
It requires specialized techniques and technology to utilize effectively this kind of high temperature-underground resources in all stages of site survey, drilling, and maintenance of output power.
We have acquired the necessary techniques and technology through our direct involvement in developing and operating our two geothermal power plants. With this experience, we are actively participating in geothermal area surveys and technological development projects at home and abroad.



Ohnuma Geothermal Power Plant (9.5MW)

Mitsubishi Materials Corporation (Geothermal & Electric Power Center)

1-297, Kitabukuro-cho, Omiya-ku, Saitama-shi, Saitama, 330-8508, Japan
Tel +81-48-641-5624 Fax +81-48-641-5632
URL http://www.mmc.co.jp/corporate/en/index.html
URL http://www.mmc.co.jp/corporate/en/corporate/business/energy.html
URL http://www.mmc.co.jp/corporate/en/csr/csr.html

Available in: Global

ES-4-011 Management-related energy services

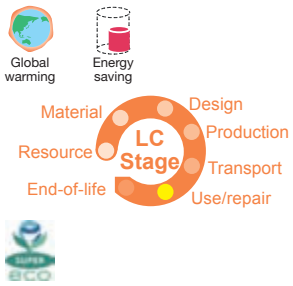
ESCO (Energy Service Company)

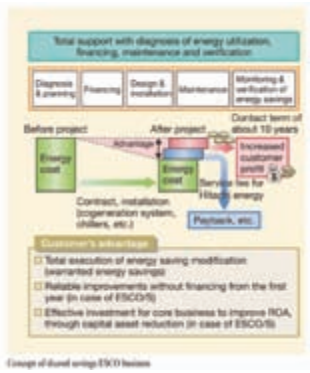
Environmental performance

In projects undertaken between 2000 and 2007, we have achieved an aggregated reduction of approximately 220,000 tons per year of CO_2 emissions.

Product performance

The ESCO business forms a new business scheme that offers comprehensive services for energy saving to customers, and covers the cost required for repairing relevant equipment with a budget saved by energy saving. The service includes energy saving diagnosis, energy saving proposal, equipment installation, finance, and maintenance. The project aims to substantially reduce energy consumption and CO_2 emissions. Taking advantage of the Group's collective strengths, Hitachi has already achieved remarkable successes in a wide variety of sites, including factories, hospitals, office buildings, and research facilities.





ESCO (Energy Service Company)

Hitachi, Ltd., Urban Planning and Development Systems

14-1, Sotokanda 4-chome, Chiyoda-ku, Tokyo, 101-8010, Japan
Tel +81-3-3620-1040 Fax +81-3-5697-2624
E-mail info.toshi.bk@hitachi.com
URL http://www.hitachi.co.jp/products/urban/energy/index.html

Available in: Japan, Philippines, Thailand, Singapore

ES-4-012 Management-related wastewater management

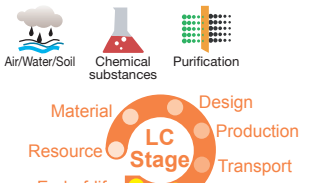
Wastewater Treatment Technology—MSABP™, HiPOx™ and ELCAT™

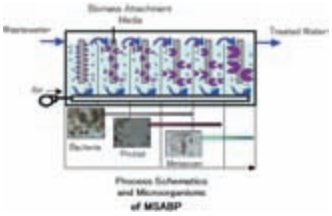
Environmental performance

We deliver a total solution for water recycle/reuse though our environment-friendly technologies.

Product performance

1) MSABP: Multi-stage bioprocess utilizing micro-organism food chain
   * No waste sludge, small foot print and low operating cost (less energy and CO_2)
   * System performance is consistent under large load fluctuations
   * Likely applicable to food/petroleum/chemical/pharmaceutical industries
2) HiPOx™: Innovative Advanced Oxidation Process (AOP) using hydrogen peroxide and multiple ozone injection
   * Decomposes 1,4-Dioxane, PPCPs and EDCs, etc.
3) ELCAT™: Electro-catalytic wastewater treatment process
   * High treatment capability for toxic, non-biodegradable materials
4) Carbon Fiber (CF) for wastewater treatment
   * CF naturally attracts living organisms and cleans up waste water





Teijin Limited

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo, 100-8585, Japan
Tel +81-3-3506-4593
E-mail to.nishikawa@teijin.co.jp
URL http://www.teijin.co.jp/english/index.html

ES-5-001 Others

LCA system integration

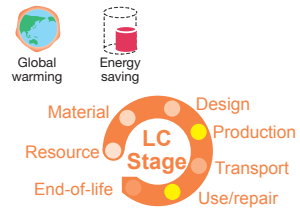
System Integration Life Cycle Assessment "SI-LCA"

Environmental performance

Quantitative evaluation methodology on the environmental load of system & service products has become increasingly important. Hitachi has developed "SI-LCA" (System Integration - Life Cycle Assessment) which is an environmental impact assessment methodology and a software program for the purpose of evaluating the effects on CO_2 emission of SI products and service over the entire life cycle.

Product performance

SI-LCA (System Integration - Life Cycle Assessment) has three features:
(1) SI-LCA evaluates 10 lifecycle stages: procurement, design, shipment, transportation, installation, field operation, usage, maintenance, collection and recycling.
(2) SI-LCA evaluates the environmental impact of hardware, software and services.
(3) SI-LCA evaluates quantitatively both positive effect such as a reduction in the movement of people/mass and negative effects such as energy consumption during operation.



SI-LCA target stages

Hitachi, Ltd.

Hitachi Omori 2nd Bldg., 27-18, Minami Oi 6-chome, Shinagawa-ku, Tokyo, 140-8572, Japan
Tel +81-3-5471-2745 Fax +81-3-5471-2746

Available in: Japan

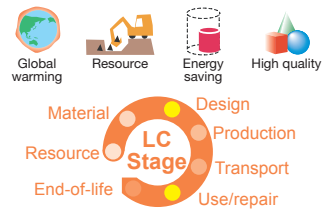
ES-5-002 Others

railway cars

E2-Series of Railcars Conserved Energy

Environmental performance

As for energy consumption, by making improvements such as reduction in the weight of railcar bodies, the Shinkansen's energy consumption was reduced by about 30% compared to 20 years ago. Regenerative brakes utilize energy generated during the braking, and return this electricity to the overhead wires.



E2-series for Asama and Hayate Shinkansen trains

East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan
Tel +81-3-5334-1122
E-mail eco@jreast.co.jp
URL http//www.jreast.co.jp/eco/

Available in: Touhoku, Jouetsu, Nagano Shinkansen

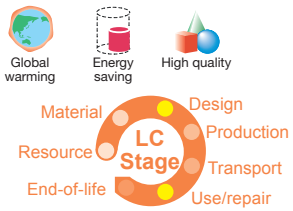
ES-5-003 Others

rail transportation services

The series N700 with enhanced energy efficiency

Environmental performance

The Tokaido and Sanyo Shinkansen, playing an important role in the main intercity transportation in Japan, can be regarded as a transportation mode with more energy-efficient performance (e.g. lower CO_2 emissions per unit carriage of passengers) compared with other transportation modes such as airplanes. The Series N700, newly developed and commercially launched in the summer 2007 with the three concepts of "The fastest cutting edge rolling stock", "Superior comfort", and "Superior environmental performance", realized further energy efficiency, for example, by reducing air resistance as a result of the thorough pursuit of smooth body surface by developing a new nose shape and cover-all hood, and by introducing the body inclining system. JR Central and JR West plan to introduce 96 trainsets over the five years ending FY2011.



Series N700

Central Japan Railway Company / West Japan Railway Company

Central Japan Railway Company
JR Central Towers, 1-1-4, Meieki, Nakamura-ku, Nagoya, Aichi, 450-6101,Japan
URL http://jr-central.co.jp
West Japan Railway Company
4-24, Shibata 2-chome, Kita-ku, Osaka,530-8341,Japan
URL http://www.westjr.co.jp

Available in: Tokaido and Sanyo Shinkansen

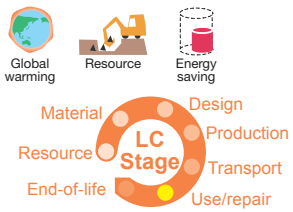
ES-5-004 Others

rail transportation services

Operation of the world's first diesel hybrid railcar

Environmental performance

In July 2007, the world's first diesel hybrid railcars, the Kiha E200 Type, entered service on the Koumi Line. Diesel hybrid railcars operate efficiently by using electricity generated by a diesel engine to charge a battery which reduces emissions and by regenerative brakes, which charge the battery when braking. Efficiency in tests was approximately 20% better than a standard diesel railcar*. The diesel hybrid railcar is quiet when idling at a station (approx. 30dB). Hazardous substances in the exhaust, such as NOx and graphite, are reduced approximately 60%.
*Results are based on test runs on level ground. On the Koumi Line, which has steep grades, efficiency improved by approximately 10%.



The world's first diesel hybrid railcar Kiha E200 Type

East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan
Tel +81-3-5334-1122
URL http://www.jreast.co.jp/eco/

Available in: Koumi Line

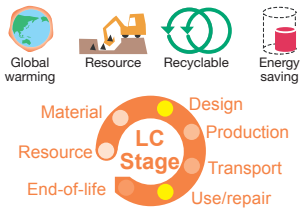
ES-5-005 Others

rail transportation services

Environmentally Friendly E231 Series

Environmental performance

The E231 series reduces operational energy consumption by 50% compared to that of the 103 series, and in terms of weight, 90% of the E231 series railcar can be recycled. Servicing the Yamanote, Takasaki, Utsunomiya, and other metropolitan lines, the E231 series currently realizes the most environmentally friendly design.



E231 series run on the Utsunomiya Line

East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan
Tel +81-3-5334-1122
E-mail eco@jreast.co.jp
URL http://www.jreast.co.jp/eco/

Available in: Metropolitan areas

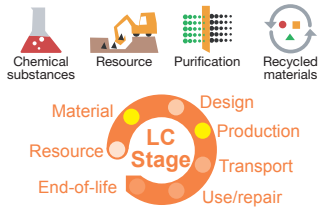
ES-5-006 Others

new year's cards

Eco Green New Year's Cards (name-printing service available)

Environmental performance

We develop environmentally friendly products. In 1988 in Hokkaido, we introduced an on-demand printer that uses only the amount of paper absolutely necessary to print New Year's cards. In 2004, we launched Cardbox — an e-commerce website for greeting cards and New Year's cards. Through these efforts, we have extricated ourselves from the conventional flow of business, which is characterized by significant print loss, and succeeded in labor savings. In 2008, we initiated a carbon offset business through afforestation and launched Green Eco New Year's Cards as part of the business. We also offer a name-printing service (for promotional products) on the Cardbox website and at retail stores nationwide. Using part of the proceeds from these sales, we plant trees in Nenga-no Mori (the New Year's Card Forest) in Hokkaido's Bihoro town, thereby offsetting approximately two kilograms of CO_2 for every 10 cards. In 2008, we sold 95,000 cards with a projected offset of about 19,000 kg of CO_2 in the autumn of 2009.



Green Eco New Year's Cards

Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

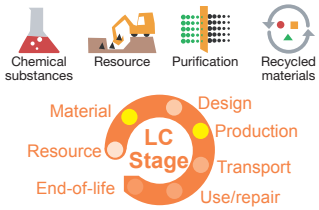
ES-5-007 Others

new year's cards

Eco Green New Year's Cards (postcards)

Environmental performance

When we initiated a carbon offset business in 2008, we launched carbon offset-type Green Eco New Year's Cards in bags— a conventional way of selling cards — along with an opportunity for consumers to participate in afforestation initiatives. Specifically, we sold sets of three ecologically designed New Year's cards with lottery numbers and QR codes. The QR codes enable card recipients to see that approximately 400 grams of CO_2 is absorbed per card through afforestation. In 2008, 2,500 sets were sold at supermarkets, bookstores, fancy goods stores, etc. nationwide with a projected offset of about 5,000 kg of CO_2 by the autumn of 2009.



Green Eco New Year's Cards

Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

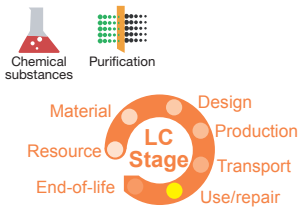
ES-5-008 Others

printing services

Waterless printing

Environmental performance

Pripress Center Corporation promotes environmentally friendly eco printing methods, and recommends waterless printing as part of these efforts.
Unlike the conventional method of offset printing, no dampening solution is used in this process. This enables printing without waste water and the adverse environmental effects associated with it.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

Butterfly mark

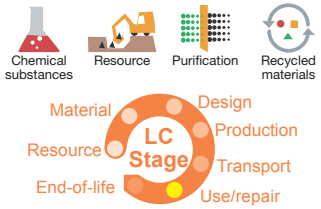
ES-5-009 Others

printing services

Soy ink

Environmental performance

Pripress Center Corporation promotes the provision of environmentally friendly products and services, and recommends printing with soy ink as part of these efforts.
Soy ink is produced by replacing some of the petroleum solvents contained in conventional ink with a natural material extracted from soybeans. As it contains very low levels of volatile organic compounds (VOCs), it helps to prevent air pollution and improve work environments.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

PRINTED WITH SOY INK ™
Trademark of American Soybean Association

Available in: Japan

Soy sticker

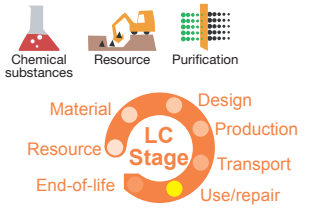
ES-5-010 Others

printing services

Non-VOC ink

Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and recommends printing with non-VOC ink as part of these efforts.
Non-VOC ink exerts a lower burden on the environment, as all petroleum solvents contained in conventional ink are replaced with vegetable-derived alternatives.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

Publications printed using non-VOC ink

ES-5-011

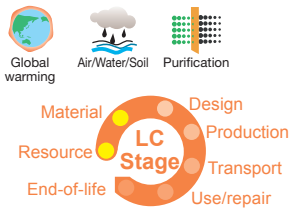
Others

printing services

Use of environmentally friendly printing paper

Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and recommends printing on paper certified by the Forest Stewardship Council (FSC) or paper produced from thinned wood as part of these efforts.
It is also important in terms of effective resource management to use paper containing materials from forests certified by the FSC as being properly managed for environmental conservation and paper produced from thinned wood, which is generated as a result of thinning out stumpage that grows densely in the course of forest development.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Publications printed using paper produced from thinned wood

Available in: Japan

ES-5-012

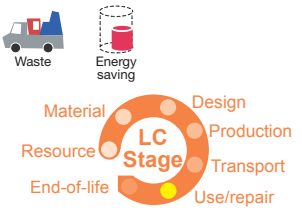
Others

printing services

On-demand printing

Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and on-demand printing is one aspect of these efforts.
Unlike conventional offset printing, on-demand printing uses no printing plates, and the process is carried out directly onto the paper. Elimination of the need to make plates means lower energy consumption and higher material conservation. In addition, it is also possible to perform various types of printing in small lots (a process that is inefficient in offset printing), making the technique economically effective too.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Examples of products printed using on-demand printing

Available in: Japan

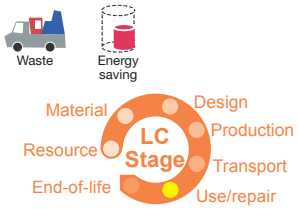
ES-5-013 Others

website constructuring services

KANTANET

Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and the KANTANET business blog is part of these efforts.
Printed materials are a familiar and easy-to-read medium, and represent an effective and indispensable tool for disseminating information. However, page space is limited, and the resources consumed increase as the amount of information rises. The company recommends that websites also be used in the interests of resource conservation for situations in which printed materials are not absolutely necessary.



Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

KANTANET

Classified index of goods and services

Classified index of goods and services

Eco-materials

Metals

Polymers

Natural materials

Foam

Ceramics and glass

Composites

Others

Eco-components

Construction components

Electrical and electronic components

Semiconductor related devices and component

Machine parts

Automobile parts

Packaging

Others

Eco-products

Home electric appliances/lighting

Carriers/automobiles

OA/IT equipment

Office supplies/furniture

Apparel/textiles

Household goods and equipment

Building and civil engineering

Machines and equipment

Others

Eco-services

Product-related services

Reuse and recycling services

Outsourcing services

Management-related services

Others

Company list

Company list

A

B

C

EM: Eco-materisls EC: Eco-components EP: Eco-products ES: Eco-services

D

E

F

G

H

I

J

K

L

M

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T

U

V

W

Members list

APO Green Productivity Advisory Committee

(as of 1 February 2009)

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Mr. Teisuke Kitayama	Chairman of the Board Sumitomo Mitsui Banking Corporation

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Mr. Etsuhiko Shoyama	Chairman Hitachi, Ltd.
Mr. Kazuyoshi Terashima	Former Vice President of Ebara Corporation

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Mr. Koichi Yamane	Deputy General Executive Environmental Sustainability Office JVC KENWOOD Holdings, Inc.

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Mr. Yuichiro Yamaguchi	Manager Environment Department Osaka Gas Co., Ltd.
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Mr. Hiroshi Uramoto	Senior Management Corporate Environment Division Ricoh Company, Ltd.
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Mr. Teruyuki Hayashi	President Seibu Landscape Co., Ltd.
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Mr. Masayasu Taniguchi	General Manager Environmental Management Group, CSR Department Sekisui Chemical Co., Ltd.
Mr. Yuji Kodama	Senior Manager Environment Improving Department Sekisui House Ltd.
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Dr. Tatsumi Sato	General Manager Global Environmental Management Department Shimadzu Corporation
Mr. Ryo Sasaki	President Shinagawa Chemical Ind. Co., Ltd.
Mr. Seiichi Jimbo	Deputy General Manager Environmental Affairs Department Sony Corporation

Mr. Koji Sato	General Manager CSR Department Sumitomo Mitsui Banking Corporation
Dr. Masamitsu Takaya	Executive General Manager Environmental Affairs Department Suntory Limited
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Mr. Kyoji Tomita	Manager Environment Department Tokyo Gas Co., Ltd.
Mr. Shinichi Sanbongi	General Manager Corporate Marketing Planning Department Toray Industries, Inc.
Mr. Kiyoshi Sanehira	General Manager Corporate Environment Management Division Toshiba Corporation
Mr. Hiroyuki Kimura	Manager Product Planning Promotion Department, Marketing Planning Division TOTO LTD.
Mr. Tetsuo Miyazawa	General Manager Environment Department Toyo Seikan Kaisha, Ltd.
Mr. Yoshihiro Ando	Group Manager Public Affairs Group, Environmental Affairs Division Toyota Motor Corporation
Mr. Yukihiro Kumagai	General Manager CSR Department, Environment Promotion Office Unicharm Corporation
Mr. Toshiroh Ikegami	Director Urban Gauss Inc.

APO Green Productivity Advisory Committee
for Establishment of Eco Products Database

(as of 1 February 2009)

Chairperson

Prof. Ryoichi Yamamoto — Professor
Institute of Industrial Science & International Research Center for Sustainable Materials
University of Tokyo

Members

Mr. Takeshi Kurashige — Producer
Social & Environmental Management Department
Asahi Breweries, Ltd.

Mr. Shuji Kato — Director
Member of the Board Chief, Social Responsibility Officer
Bic Camera, Inc.

Mr. Takashi Tobe — Associate Staff Manager
Environment Communications Department, Environment Planning Center, Environment Headquarters
Canon Inc.

Mr. Yasushi Iwao — General Manager
Marketing Department
Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd

Mr. Tadashi Matsui — Vice President
Environment and Safety
Kao Corporation

Mr. Shinichi Saitou — Group Leader
Environment Group, Corporate Social Responsibility Division
Kokuyo Co., Ltd

Mr. Teruo Furuyama — Senior Manager
Technical Group, Environmental Affairs Division
Nippon Steel Corporation

Mr. Shogo Saegusa — Deputy General Manager
Environment Management Group, Global Government Affairs Department, Environmental and Safety Technologies, Technology Development Division
Nissan Motor Co., Ltd.

Mr. Yasuhiro Maruyama	General Manager Sustainable Management Office, Environment Management Department Oji Paper Co., Ltd.
Dr. Narito Shibaike	Manager Environmental Planning Group, Corporate Environmental Affairs Division Panasonic Corporation
Mr. Hiroshi Uramoto	Senior Management Corporate Environment Division Ricoh Company, Ltd.
Dr. Hiroshi Morimoto	Executive Officer, Group General Manager Environmental Protection Group Sharp Corporation
Mr. Koji Sato	General Manager CSR Division Sumitomo Mitsui Banking Corporation
Mr. Yoshitane Hirata	Specialist Corporate Environment Management Division Toshiba Corporation
Mr. Michio Hiruta	General Manager Corporate Environmental Sustainability Group Mitsubishi Electric Corporation
Mr. Kenichi Nakajima	Chairman Re-Tem Corporation

Eco-products Directory 2009 Working Group

(as of 1 February 2009)

Chairperson

Dr. Norihiro Itsubo	Associate Professor Faculty of Environmental and Information Studies, Musashi Institute of Technology

Members

Mr. Gakuji Fukatsu	Secretariat Green Purchasing Network (GPN)
Mr. Masayuki Kanzaki	Ecoleaf Office Japan Environmental Management Association for Industry (JEMAI)
Mr. Yoshikazu Kihira	Program Officer Industry Department Asian Productivity Organization (APO)
Dr. Keijiro Masui	Senior Research Scientist, Environmentally Conscious Design and Manufacturing Group Advanced Manufacturing Research Institute National Institute of Advanced Industrial Science and Technology (AIST)
Dr. Tateki Mizuno	Special Researcher Society of Non-Traditional Technology (SNTT)
Mr. Katsuyuki Nakano	LCA Development Office Japan Environmental Management Association for Industry (JEMAI)
Ms. Miho Oshima	Manager, Eco Mark Office, Promotion & International Cooperation Section Japan Environment Association (JEA)
Ms. Wakako Suetsugu	Society of Non-Traditional Technology (SNTT)
Ms. Shoko Tsuda	General Manager Society of Non-Traditional Technology (SNTT)

Related organizations

(as of 1 February 2009)

Eco Mark Office, Japan Environment Association (JEA)

Eco Mark Office, Japan Environment Association (JEA)
Bakurocho Daiichi BLDG., 1-4-16 Nihonbashi Bakurocho, Chuo-ku, Tokyo, 103-0002 JAPAN
Tel: +81-3-5643-6255 Fax: +81-3-5643-6257
E-mail: ecomark@japan.email.ne.jp
http://www.ecomark.jp/english/index.html

Ecomaterials Forum, The Society of Non-Traditional Technology (SNTT)

Shinbashi-Amano Bldg. 6F, 1-5-10 Nishishinbashi, Minato-ku, Tokyo, 105-0003 JAPAN
Tel: +81-3-3503-4681 Fax: +81-3-3597-0535
E-mail: ecomat@sntt.or.jp
http://www.sntt.or.jp/Eng.html

Green Purchasing Network (GPN)

Cosmos Aoyama, 5-53-67, Jingumae, Shibuya-ku, Tokyo, 150-0001 JAPAN
Tel: +81-3-3406-5155 Fax: +81-3-3406-5190
E-mail: gpn@net.email.ne.jp
http://www.gpn.jp/English/index.html

Japan Environmental Management Association for Industry (JEMAI)

Mitsui-sumitomo Building 6F/7F, 2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo, 101-0044 JAPAN
E-mail: webmaster@jemai.or.jp
http://www.jemai.or.jp/english/index.cfm

National Institute of Advanced Industrial Science and Technology (AIST)

1-2-1 Namiki, Tsukuba, Ibaraki, 305-8564 JAPAN
http://www.aist.go.jp/index_en.html

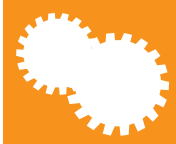
Special Project on Eco Efficiency and Eco Design (SPEEED)

Fe-209, 4-6-1, Komaba, Meguro-ku, Tokyo, 153-8904 JAPAN
Tel: +81-3-5452-6098 (ext. 57780) Fax: +81-3-5452-6305
E-mail: speeed17@iis.u-tokyo.ac.jp
http://www.speeed.org/index.htm

The Institute of Life Cycle Assessment, Japan (ILCAJ)

Shinbashi-Amano Bldg. 6F, 1-5-10 Nishishinbashi, Minato-ku, Tokyo, 105-0003 JAPAN
Tel: +81-3-3503-4681 Fax: +81-3-3597-0535
E-mail: ilcaj@sntt.or.jp

PR space for environmental programs



Mitsubishi Electric Co., Ltd.

Nano-ionics Materials Group,
Fuel Cell Materials Center,
National Institute for Materials Science

Saraya Co., Ltd.

Nihon Mizusyori Kougyou Co., Ltd.

Pripress Center Co., Ltd.

Nikken Sekkei Ltd.

Hitachi Co., Ltd.

MITSUBISHI ELECTRIC

Changes for the Better

Mitsubishi Electric Group

Environmental Vision 2021

Environmental Vision 2021 is the long-term environmental management vision of the Mitsubishi Electric Group. It establishes a framework for realizing a sustainable planet, and defines long-term initiatives to prevent global warming and to create a recycling-based society

Making Positive Contributions to the Earth and its People through Technology and Action

- Reduce CO_2 emissions from product usage by 30%
- Reduce total CO_2 emissions from production by 30%
- Aim to reduce CO_2 emissions from power generation

- Reduce, reuse and recycle products (3Rs)
- Zero emissions from manufacturing

Vision Progress

Preventing Global Warming

The Mitsubishi Electric Group intends to expand its global warming prevention-related business to achieve sales of 1,300 billion yen in fiscal 2016 (ending March 31, 2016) and reduce over 5.1 million tons of annual carbon dioxide (CO_2) emissions.

- **Photovoltaic Power Generation System Business**
  Achieve global sales of 250 billion yen in fiscal 2016 from a 50 billion-yen sales in fiscal 2008 (ended March 31, 2008), and to reduce 350,000 tons[1] of annual CO_2 emissions.

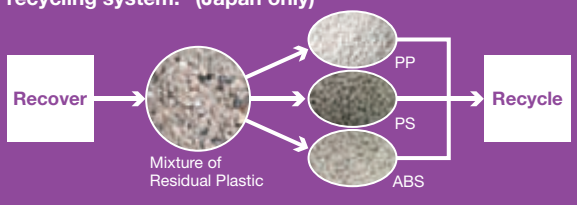

Photovoltaic Modules (PV-TD190MF5)

- **Heat Pump-related Business**
  Reduce 750,000 tons[2] of annual CO_2 emissions in fiscal 2016.
- **Power Device Business**
  Reduce 4,000,000 tons[3] of annual CO_2 emissions in fiscal 2016.

1 The amount of CO_2 reduction is calculated from annual electricity generated by PV cells expected to be sold in fiscal 2016.
2 The amount of CO_2 reduction is based on the estimated total number of heat pump related products sold in fiscal 2016.
3 The amount of CO_2 reduction is based on the estimated total number of power devices sold in fiscal 2016.

Creating a Recycling-based Society

Autumn 2009 will see a large-scale, high-purity, recycling of mixed plastics from used home appliances and the three main plastics through Mitsubishi Electric's "closed-loop recycling system." (Japan only)



Environmental Awareness

Mitsubishi Electric is promoting outdoor classroom, woodland preservation, and forest nurturing activities among children in Japan.


Mitsubishi Electric Outdoor Classroom


Woodland Preservation Activities


Mt. Fuji Afforestation Activities

Nano-structured electrolytes and electrodes

Key Word : Fuel cell, micro-analysis, nano-ionics materials

独立行政法人　物質・材料研究機構

Back-ground

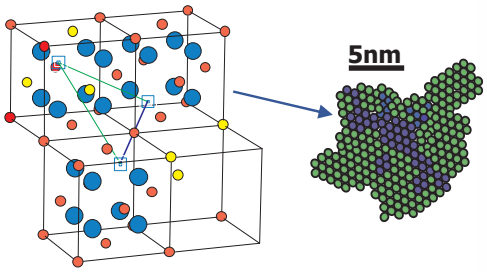
Fuel cells have been developed as a clean and efficient power source for generating electricity from a variety of fuels. Solid electrolytes and electrodes are key materials in fuel cell devices. High quality electrolytes and electrodes have to be designed for development of our sustainable society.

Current Issues

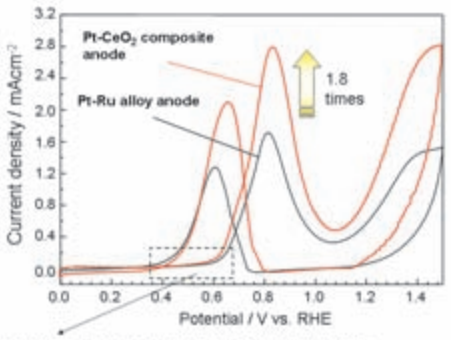
To use fuel cells in our society, the quality and stability of fuel cell materials should be improved. For a design of high quality fuel cell materials, the nano-structural feature in fuel cell materials has to be designed at atomic scale.

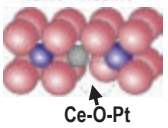
Advanced Research Topics

Electrolyte and electrode performance was conspicuously improved by a design of micro-structure of electrolytes and interfacial layer of electrodes at atomic scale.



We successfully improved the conductivity and reduction resistance of doped CeO_2 solid electrolytes by a design of nano-domain structures.





The electrode performance was improved by a formation of Ce-O-Pt clusters into the interfacial layer of electrodes.

Publications

- Ou D R, Mori T, Ye F, Zou J, and Drennan J, Physical Review B 77, (2008).
- Takahashi M, Mori T, Ye F, Vinu A, Kobayashi H, and Drennan J, J.Am.Ceram.Soc., Vol.90(4), pp.1291-1294 (2007).

Awards

- Australia Academy of Science Award (August.1999)
- Ministry of Education, Culture, Sports, Science and Technology (MEXT) Award, Prospective patent, 2001

Summary

- Nano-domain structure design of electrolytes
- Nano-cluster interface design of electrodes
- Long time durability vs. nano-structure change
- Combination of processing route design and microanalysis

Research outcome

- A design of high quality doped CeO_2 solid electrolytes
- A design of nano-structured electrodes

燃料電池材料センター　ナノイオニクス材料グループ　（モリ　トシユキ）
E-mail : MORI.Toshiyuki @ nims.go.jp
URL : http://fuelcellmaterials.jp/en/modules/myinfo3/index.php?uid=3

SARAYA is working to create the Green Corridor to connect divided habitats and save the local wildlife from extinction along the Kinabatangan River in Malaysia on the island of Borneo, an area that provides SARAYA with raw ingredients.

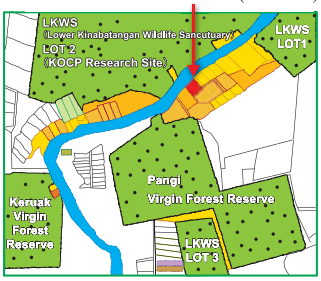
Protecting the Environments of Our Supply Centers

Saraya donates 1% of Yashinomi Detergent sales to the Borneo Conservation Trust

In Borneo, the expansion of oil palm plantations has led to the loss of precious rainforest that supports the livelihood of many unique and threatened species.
It is here, where Saraya acquires palm oil to make the popular Yashinomi Detergent, we exercise environmental conservation efforts.

Oil Palm Fruit

Kinabatangan River along
the first Green Corridor lands (5.3 acres)



Virgin Forest Reserve

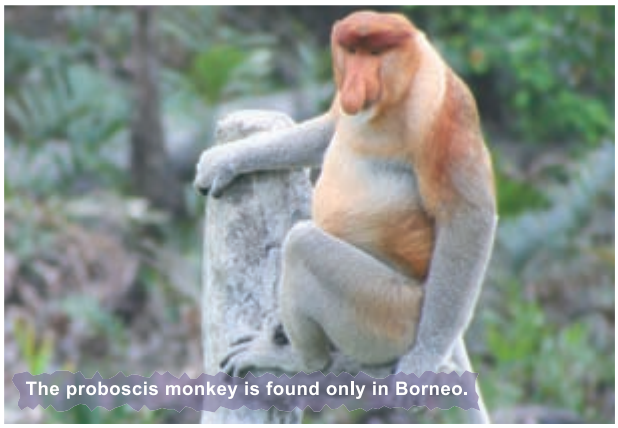
The Borneo Conservation Trust is the official trust authorized by Sabah, Malaysia which focuses on creating a Green Corridor by obtaining the rights to precious land along the rivers and protecting them from plantation development so wild animals can migrate freely across the island.

BORNEO CONSERVATION TRUST

Wildlife of Borneo Island on the IUCN※ Red List of Endangered Species

※ International Union for Conservation of Nature and Natural Resources

Deforestation leaves many orangutans orphaned. This rescued orangutan will be released to the wild after maturing.



The proboscis monkey is found only in Borneo.

The Borneo elephant is an affectionate animal and has strong family bonds.
They would surround their young to protect them from any sign of danger.

SARAYA http://www.saraya.com/

Borneo Conservation Trust
http://www.borneoconservationtrust.org.my/
info@borneoconservationtrust.org.my

Sciencing Services

To be a company serving to our community by seeking into air and water scientifically... Water and Air bring us a plenty of blessings and profits. Through unique activities of our business, "General Maintenance of Air and Water" of various facilities, we, Nihon Mizu-shori Kougyou, are committed to contribute to make working and living environment clean and comfortable for people in our society.

"General Maintenance of Air and Water"

NIHON MIZU-SHORI KOUGYOU CO., LTD.

日本水処理工業株式会社

http://www.mizu-shori.com/

Compatibility between environmental conservation and economic development

1. Halving CO_2 emissions

We are committed to working together with our customers, employees, their families and other stakeholders toward halving CO_2 emissions by 2020 to help fight global warming.

2. Paper - a finite resource

As a printing company, we provide our customers with large amounts of paper. To offset this, we also engage in philanthropic activities such as forest development and paper recycling to help reduce the burden on society as a whole.

3. Compatibility between environmental conservation and economic development

As a supplier, we aspire to provide reasonably priced products at low cost while maintaining appropriate profit levels by manufacturing the best possible products using environmentally friendly manufacturing methods.

Environmentally friendly printing

Pripress Center Corporation promotes environmentally friendly eco printing.

Waterless printing

Unlike the conventional method of offset printing, no dampening solution is used in this process. This enables printing without waste water and the adverse environmental effects associated with it.

Soy ink

Soy ink is produced by replacing 20% or more of the petroleum solvents contained in conventional ink with a natural material extracted from soybeans.

VOC-free ink

Non-VOC ink exerts a lower burden on the environment, as all petroleum solvents that evaporate into the air are replaced with vegetable-derived alternatives.

Use of thinned wood

Identification marking for products made using thinned wood is performed for goods certified as contributing to the effective utilization of this material.

Use of thinned wood generated in Hokkaido

Efforts to protect forests in Hokkaido are promoted by using products that carry the mark for thinned wood generated in Hokkaido.

Green Purchasing Network printing services

Systematic activities are underway based on the Purchasing Guidelines for Offset Printing Service established by the Green Purchasing Network (GPN).

Pripress Center Corporation was awarded Forest Stewardship Council (FSC) Certification in January 2009.

■Inquiries

PRIPRESS CENTER
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http://www.pripress.co.jp

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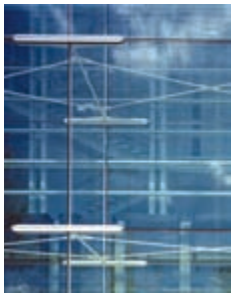
GREEN

Our aim is to ensure user comfort and achieve net-zero energy consumption for a sustainable future.

ICONIC

We create iconic designs that in the course of time become scenic landmarks. It's a timeless architecture.

HIGH-TECH



We pursue the creation of attractive architectural spaces through innovative technologies.

INTEGRATIVE

In our exploration of design potential, we create new values through the active integration of diverse concepts.

NIKKEN SEKKEI

Nikken Sekkei is a Japan-based comprehensive consulting firm providing city and urban planning, architectural design, structural engineering, mechanical & electrical engineering and landscape design as well as peer review services.

- One stop services
- Approximately 2,300 specialist staff
- Established in 1900
- 109 years in business
- Accomplishment of over 20,000 projects
- Global activities in more than 40 countries

http://www.nikken.co.jp

For the future of our irreplaceable planet,
the Hitachi Group established a long-term plan, "Environmental Vision 2025,"
to contribute to an annual reduction in CO_2 emissions of
100 million tons through Hitachi products and services by FY2025.

The Hitachi Group promotes environmental management based on
the Vision featuring three important pillars,
"Prevention of Global Warming," "Resource Recycling," and
"Ecosystem Conservation," to realize an environmentally
sound and sustainable society.

The Hitachi tree, which grows big by freely expanding its branches, is a symbol of the collective strength, growth and power of the Hitachi Group. It has been used in Japanese TV commercials since the 1970s.

「The Hitachi Tree」
Type / Monkey Pod Tree　Botanical name / SAMANEA SAMAN
Location / Moanalua Garden Park,Oahu,Hawaii

http://www.hitachi.com/environment/

HITACHI
Inspire the Next