

# Social Contribution Activities

## Contribution to the Local Community

### 1<sup>st</sup> Anniversary Project Commemorating the Municipalization of Yatsushiro City "Yatsushiro Kumagawa Festival"

On August 5, 2006, the "Kumagawa Festival" was held to celebrate the 1<sup>st</sup> anniversary of the Municipalization of the new "Yatsushiro City", due to a municipal merger, in Yatsushiro City, Kumamoto Prefecture. Takuma participated in the project in support of the celebration of the new city.



### The 1<sup>st</sup> Environmental Fair 2006 organized by Anamizu Town, Wajima City

On October 22, 2006, the 1<sup>st</sup> Environmental Fair was held under the slogan of "Aiming for the recycling society" organized by the Anamizu Sanitary Facility Association of Wajima City in Ishikawa Prefecture. The Company approved the content of this project and cooperated in the fair.



### Participation in the "Clean Osaka 2006" — Cleaning Campaign across the City of Osaka all together

A cleaning campaign across the City of Osaka all together has been implemented in Osaka City since fiscal 1998. In fiscal 2006, the campaign was organized from November 1 to 7. Since Takuma had had its head office based in Osaka City for a relatively long period, we participated in the cleaning event hosted by Osaka City.



### Social Contribution Activities conducted by the Head Office

- Summer Festival/Kinrakuji Seinenkai
- Autumn Festival/Kibihiko Shrine Housankai
- Autumn Festival/Kotai Shrine

### Social Contribution Activities conducted by the Harima Factory

- Co-sponsored the Arai Shrine Daikoku Festival
- Co-sponsored the International Exchange Project of the Takasago City Judo Association
- Co-sponsored the "Campaign to make a brighter society"
- Co-sponsored the Takasago City Businessman Sumo Competition

### Social Contribution Activities conducted by the Kyoto Factory

- Support for Tonoshiro Kodomokai

### Donation of Women's Office Wear as Overseas Relief Supplies

The Company donated the previous women's summer office wear of the head office to an elementary school in Nepal. In order to make effective use of the previous office wear, which were returned to the company in accordance with the switch-over, we received introductions to the NPO Hirakata-Katano International Volunteer Association (HIKIVA), which provides overseas aid, from JAM Hyogo through the Takuma Labor Union to find receiving parties. Our previous office wear was donated to Sathhiwatty college in Nepal through the aforementioned association and made the local people very happy.

\* **JAM:** Japan Association of Metal, Machinery, and Manufacturing Workers  
An industrial labor union, comprising 400,000 workers, dealing mainly in the machinery and metal industries



Sathhiwatty college in Nepal: Schoolmaster (center) and pupils in the 5<sup>th</sup> grade

### Social Contribution Activities conducted by employees

#### 1. Youth development through the popularization of karatedo

Mr. Shimamoto of the General Affairs Section of the Harima Factory contributes to the volunteer activity of teaching karatedo in the gymnasiums and elementary and junior high schools in the neighborhood of Takasago City, aiming to foster healthy minds and bodies of youngsters, based on the moral of the karatedo: "sincerity, adamancy and modesty", using his 30-year experience of karate.



#### 2. Teaching kendo at the elementary school PTA Kendo Club

Mr. Tanaka of the Thermal Equipment Design & Engineering Sect., Mechanical Design & Engineering Department participates contributes to the volunteer activity of teaching kendo at the elementary school PTA Kendo Club in Osaka City and participates in volunteer activities, including teaching kendo to elementary school pupils and organization of a kendo tournament.



#### 3. "Hanaippaiya Sakai" (There are a bunch of flowers in Sakai)

Mr. Takahashi of the CSR Department participates in a volunteer activity of flowers. This activity is to create flowerbeds and plant flowers in the public vacant ground, called "Hanaippaiya Sakai". The activity is conducted by volunteers called from each ward of Sakai City (Kita, Higashi, Minami, Nishi and Naka areas), engaging in activities from "hanazukuri (planting flowers)" and "hanakazari (creating flowerbeds)" to "hanamori (looking after flowers, including watering and weeding)".



## Contributions through NPOs

### Participation in the activities of the NPO Recycling System Center

The Recycling System Center is an incorporated nonprofit organization, established in 1992, with the aim of "an approach toward technologies and a system to promote LCA and DfE related to environmentally aware product making, in addition to the approach toward technologies and a system to reduce environmental load". Takuma supports the Recycling System Center as a key player of the activity.

#### Message from Mr. Wakamura, Chairman of the organization

In fiscal 2006, we launched a project supporting the creation of new technology and service, contributing to reduce the global environmental load, such as greenhouse gases and waste, while strengthening regional industries. This project implements the construction of demonstration test equipment, as well as trial testing, by formulating a consortium with a combination of local companies, research institutes including universities and nationwide companies. The Recycling System Center, designated as a promotional organization of the project, was established in 1992 whereby organizations such as the Osaka Prefectural Government, Osaka Municipal Government and environmental related companies gathered together and were authorized as an incorporated nonprofit organization in 2002. In fiscal 2006, four projects were thus acknowledged and simultaneously got underway, receiving public assistance. The actual workforce of the center comprises loaned workers from each company as well as younger consultants. Takuma has been a core member of the center since its establishment, providing continuous support, including the dispatch of engineers to the center over a long period of time.

### Participation in the NPO Japan Association for the United Nations World Food Programme as a councilor

The Japan Association for the United Nations World Food Programme aims to contribute to global society in terms of both mental and material aspects of Japanese society by prevailing as well as enlightening the principles and activities of the United Nations World Food Programme, making it its mission to eradicate global starvation while also aspiring to create world peace, in Japan. Despite having enough provisions to feed 6.4 billion people in the world, 852 million people still suffer from hunger and nutritional deficiency. One child under 5 years old dies of hunger every 5 seconds. In poor countries, women and children are left to bear the burden. Meanwhile, we are able to support starving children by providing school meals with 20 yen a day. Takuma agrees with the principles of the association and supports them as a corporate member.



Photo:WFP/AK Brodeur



## The "Takuma" course in Hokkaido University

As a further part of our CSR (corporate social responsibility), Takuma launched an endowed course in Hokkaido University in 2002. It is officially entitled the "Recyclable Resources Assessment (Takuma) Laboratory" (hereinafter referred to as the Hokudai Takuma Laboratory) as part of the "Study of Resource recycling Program" of the graduate school of engineering of Hokkaido University. The Company contributed to this activity for five years, from April 2002 until the end of March 2007.

### 1 The Outline of the Hokudai Takuma Laboratory

The aim of launching the laboratory involved laying an academic foundation capable of evaluating efficiency, reasonableness and limits from various perspectives, such as resource conservation, environmental load and social acceptability, reflecting the trend of promoting to create a recycling society and treating assets in the form of "recyclable resources" from the discharged material as waste.

As well as research exchange among on-campus related research groups, symposia and extension mini-seminars were proactively organized as part of the research activities in order to ensure exchanges and discussions with a number of people, including municipal officials, general citizens and researchers from other areas of study, while also benefiting from broadly transmitted information, using a class newsletter as well as a website.

The staff members of the laboratory are Prof. Masaru Tanaka (visiting professor at the university, also serving as a professor of the graduate school of Okayama University), Mr. Yoshitada Kakuta (associate professor), and in addition, thanks to the great support of the staff members of the Laboratory of Solid Waste Disposal Engineering, Hokkaido University (Prof. Nobutoshi Tanaka (deceased), Prof. Toshihiko Matsuto, Mr. Yasumasa Tojo (instructor) and Mr. Takayuki Matsuo (technical specialist)) and many students, we have been successful in promoting our activities.

### 2 Previous Activities

#### Regular Symposia

#### May 2002

'The Method of Environmental Impact Assessment with LCA and the Issues of a Recycling Society'

Dr. Atsushi Inaba  
Director, Research Center for Life Cycle Assessment, National Institute of Advanced Industrial Science and Technology (Currently, Professor of Research into Artifacts, Center for Engineering, The University of Tokyo)

**July 2003** 'From the perspective of recycling production' "Life Cycle Design for Resource Recycling"

Dr. Yasushi Umeda  
Associate Professor, Graduate School of Engineering, Tokyo Metropolitan University (Currently, Professor of Graduate School of Engineering, Osaka University)

"Aiming for Resource Productivity Improvement"

Dr. Keiichi Ishihara  
Professor, Graduate School of Energy Science, Kyoto University

#### July 2004

'Environmental Policy: Partnership and Resources Recycling' "Strategies and Practices for Creating Environmental Municipalities"

Mr. Naoki Masuhara  
Deputy Secretary General, The Coalition of Local Governments for Environmental Initiative, Japan

"Environmental Policy driven by Citizens"

Mr. Hideyuki Takahashi  
Associate Professor, Faculty of Policy Studies, Iwate Prefectural University

"Creating a Popular-Participation-Type Recycling Society"

Mr. Masaharu Yagishita  
Professor, Graduate School of Environmental Studies, Nagoya University (Currently, Professor of Graduate School of Global Environmental Studies, Sophia University)

#### June 2005

'How do you treat other plastic waste?' "Current Situation of Recycling of 'Other Plastics' in the Containers and Packaging Recycling Law and its Problems"

Mr. Hiroshi Katsumata  
Executive Director, Plastic Waste Management Institute

"Analysis of the Present State of Collecting other Plastic Waste"

Dr. Toshihiko Matsuto  
Assistant Professor, Graduate School of Engineering, Hokkaido University (Currently, Professor of Graduate School of Engineering, Hokkaido University)

"Approaches toward Containers and Packaging Recycling in Kutchan Town"

Mr. Eiji Nishie  
Environmental Department of Kutchan Town, Hokkaido

"Problems of Incineration and Generation of Hazardous Chemical Substances in the Process of Plastic Waste Treatment"

Mr. Toshikazu Fujiwara  
Secretary-general of Tokyo-area networks for "Stop the dioxin pollution"

"Containers and Packaging Recycling toward Creating a Recycling Society"

Mr. Tatsuo Higashi  
Steering Committee, Kurukuru Network Hokkaido

#### Extension Mini-Seminars

#### The 1<sup>st</sup> Seminar (June 2002)

"Research and Development Strategies toward a Recycling Society — Necessary Research Project"  
Dr. Masaru Tanaka, Visiting Professor

#### The 2<sup>nd</sup> Seminar (August 2002)

"Considering Waste Tax"  
Dr. Masaru Tanaka, Visiting Professor

#### The 3<sup>rd</sup> Seminar (December 2002)

"Maintenance of Waste Treatment Facilities by Introducing PFI — what are the problems in the present state?"  
Dr. Masaru Tanaka, Visiting Professor

#### "After Experiencing PFI Project"

Dr. Nobutoshi Tanaka, Professor of Graduate School of Engineering

#### The 4<sup>th</sup> Seminar (March 2003)

"The Recent Trends and Social Needs in Waste Related Research"  
Dr. Masaru Tanaka, Visiting Professor

#### The 5<sup>th</sup> Seminar (July 2003)

"International Cooperation in the Waste Sector"  
Dr. Masaru Tanaka, Visiting Professor

#### The 6<sup>th</sup> Seminar (October 2003)

"Consider the Illegal Dumping Issue"  
Dr. Masaru Tanaka, Visiting Professor

#### The 7<sup>th</sup> Seminar (December 2003)

"Yardstick of the Recycling Society"  
Dr. Masaru Tanaka, Visiting Professor  
"Assess the Advantages of Municipal Solid Waste Treatment"  
Dr. Toshihiko Matsuto, Associate Professor, Graduate School of Engineering

#### The 8<sup>th</sup> Seminar (March 2004)

Report on the research activities in fiscal 2003

#### The 9<sup>th</sup> Seminar (June 2004)

"Intravenous Environment Business Model"  
Mr. Masafumi Tanaka, Senior Executive Director, ORIX Eco Services Corporation

#### The 10<sup>th</sup> Seminar (August 2004)

"Strategic Waste Management toward a Recycling Society"  
Dr. Masaru Tanaka, Visiting Professor

#### The 11<sup>th</sup> Seminar (December 2004)

"Consider the Intravenous Environment Business Model II"  
Dr. Masaru Tanaka, Visiting Professor  
"Introduction of Business Examples of Power Generation using Woody Biomass and a Heat Supply System"  
Yoshitada Kakuta, Special-Appointment Assistant Professor  
Dr. Yoshitada Kakuta, Associate Professor

#### The 12<sup>th</sup> Seminar (March 2005)

"Strategic Management of Medical Waste"  
Dr. Masaru Tanaka, Visiting Professor

#### The 13<sup>th</sup> Seminar (September 2005)

"Illegal Dumping and Administrative Responsibility"  
Dr. Masaru Tanaka, Visiting Professor  
"Handling of Illegal Dumping by Local Governments — Study of Public Administration with Incrementalism"  
Mr. Toru Miyamoto, Associate Professor of Hokkaido University Public Policy School

#### The 14<sup>th</sup> Seminar (December 2005)

"Consider a Recycling Society with the Key Word 'mottainai'"  
Dr. Masaru Tanaka, Visiting Professor

#### The 15<sup>th</sup> Seminar (March 2006)

"Consider the Intravenous Environment Business Model III"  
Mr. Yosuke Kiminami, CEO, Recycle One, Inc.

#### The 16<sup>th</sup> Seminar (June 2006)

"Consider the Intravenous Environment Business Model IV — Case Study of Waste Recycling"  
Mr. Takashi Fujii, Mizuho Information & Research Institute, Inc.



Extension Mini-Seminar



**3 Having the achievements of our activities published in books**

Through five years of research activities, we have been discussing topics such as what we should do toward creating a recycling society and what kind of viewpoints would be important to assess the same with a number of people. In order to make a much wider audience aware of these valuable achievements, we have summarized them into two books as a commemorative publication. The outline of the books is described as follows:

**"Prescription toward a Recycling Society — Resource Recycling and Waste Management"**  
(Chuohoki Publishers)

This book is comprised of six chapters and advocates consideration and active actions in broad areas toward creating a recycling society, using keywords such as strategic management, LCA, the acceptability of residents, environmentally aware production, resource productivity, PFI projects, business model, citizen participation, environmental local governments, medical waste, plastic waste recycling and illegal dumping.

- Chapter 1: Strategies toward Creating a Recycling Society
- Chapter 2: Yardstick of the Recycling Society
- Chapter 3: Life Cycle Design and Resources Productivity Improvement
- Chapter 4: Intravenous Environment Business Model
- Chapter 5: Environmental Policy and Partnership
- Chapter 6: Challenges of Waste Treatment

**"Basic Knowledge of the Evaluation Method of a Recycling Society"** (Gihodo Shuppan)

This book allows the reader to learn the evaluation method of recycling from the basics, including the basic concepts of tools, particularly important for evaluating a recycling society and recycling resources, as well as applications, aiming to ensure as large an audience as possible understand the issues.

- Chapter 1: What is a recycling society?
- Chapter 2: Material Flow Analysis
- Chapter 3: Environmental Impact Assessment (Environmental Assessment)
- Chapter 4: Risk Assessment
- Chapter 5: Life Cycle Assessment
- Chapter 6: Analysis of Costs and Benefits
- Chapter 7: Environmental Management and Social Responsibility

We hope these books could be used, by not only specialists and students learning at undergraduate and graduate schools of universities, but also as many people as possible, including local government officials, employers, NPOs/NGOs and general citizens, helping enhance awareness, as well as inducing actions toward global environmental conservation and creating a sustainable society.

**■ After completing the Hokudai Takuma Laboratory**

When I look back at these five years following the completion of the Hokudai Takuma Laboratory, I feel compelled to express my thanks once again for the encounters with many people and support I received. Although I feel heartbroken at the sudden and tragic loss of Professor Nobutoshi Tanaka, who performed many services as a caretaker, in March 2005, I thank all the relevant people once again for achieving to complete the laboratory without any troubles. Thank you very much.



**Yoshitada Kakuta**  
Former associate professor,  
Graduate School of Engineering,  
Hokkaido University  
(Currently, Tokyo Technology  
Research & Planning Department,  
Takuma Tokyo Office)

**Exhibits**

**Sewage Works Exhibition '06**

The Sewage Works Exhibition '06 was held at the INTEX Osaka, Nanko, Osaka for four days from July 25 through 28, 2006.

The Company exhibited in the category of water treatment/advanced treatment equipment and sludge treatment equipment. Real rotary drum thickener machines were exhibited, while exhibiting the Bio Blade Mix and multi module-type Uniflo Sand Filter in the form of a model and a favorable reputation was built up.

The Sewage Works Exhibition is held in Tokyo or a local city on an annual basis and plays an important role in generating awareness of our company technologies. We have received many inquiries about the rotary drum thickener machines exhibited this year, from visitors to the Exhibition.



**N-EXPO 2006**

With the catch phrase of "Challenges toward environmental revolution, preserving the future of humans and the earth", the N-EXPO 2006 was held from September 7 through 9, 2006 at the INTEX Osaka.

The Company participated in the exhibition, using panels as well as video presentations, with a female navigator, introducing companies which implement industrial waste treatment and woody biomass power generation projects featuring Takuma participation, as well as introducing technologies of woody biomass power plants and biogas recovery plants. Biomass attracted considerable attention and references to Biopower Katsuta Co., Ltd., which has been making good progress since March 2001, while inquiries regarding woody biomass power plants and biogas recovery plants were also noteworthy.



**Accomplishment of the Science of Recyclable Resources Assessment (Takuma) Laboratory**

