



Kitakyushu City

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International Projects

Explore the international water projects of Kitakyushu City!



Kitakyushu's Technology Will Change the World



A City that Vanquished Severe Pollution

Kitakyushu's Technology, Spreading Across the Globe

There are many countries across the globe that are suffering from the same water problems that Kitakyushu City once did. The technology and science of Kitakyushu, which has overcome this crisis, is now being utilized around the world.

Features of Kitakyushu City Water and Sewer Bureau's International Projects

The City of Kitakyushu is developing international projects in the field of water supply and sewage with a focus on international technical cooperation and overseas water business, with target countries and regions mainly in Asia.

1. International Technical Cooperation

International Contributions ■ Technology Transfer of Staff and Capacity Building



Dispatched **more than 200 experts** to 13 countries around the world
 Accepted **more than 6,500 trainees** from 156 countries and regions around the world
 (as of March 2021)

2. Overseas Water Business

Features of Kitakyushu's Overseas Water Business

- Abundant information and experience as a municipality with advanced technological capabilities of the private sectors.
- Strong relationship of trust with other countries established through international technical cooperation.

Kitakyushu Overseas Water Business Association (KOWBA)

Established in 2010 as one of Japan's first public-private partnership organizations with the aim of developing water business at overseas. With the diverse technical capabilities of its approximately 150 corporate members, it responds to a wide range of needs in all aspects of water supply and sewage related businesses.



Improving the World's Water Environment

Contributing to the Achievement of SDGs

"The Kitakyushu Method" for Overseas Water Business Development

Building Trust

Establishing reliable relationships with overseas counterparts.

Cooperation

Focus on technical cooperation, especially the capacity building.

Business

Generating overseas sales.

Results



Improved local staffs' skills



Improved the local living environment



Improved Kitakyushu City staffs' skills



Accelerated Kitakyushu companies' overseas expansion

Expanding Kitakyushu City's Technology and Network throughout Asia



Myanmar



Assisting to improve the operation skills of a water treatment plant in Mandalay, the second largest city in Myanmar



China



Technical cooperation with our friendship city, Dalian, based on a longstanding relationship of trust



Vietnam



Kitakyushu City's advanced technology contributes to improving the water quality in Hai Phong, Vietnam



Cambodia



"The Miracle of Phnom Penh"
One of the few cities in Asia where the tap water is drinkable!



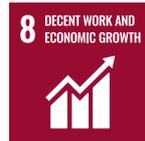
Indonesia



Contributing to the improvement of the water environment in Jakarta, the capital city of Indonesia



Goals pursued by international projects



Domestic and International Recognition Enhancing the Municipal Brand

2012

Foreign Minister's Commendations (Japanese Government)

Became the first waterworks organization to receive this award in recognition of its international cooperation projects in the field of technical cooperation, particularly in the field of waterworks in the Kingdom of Cambodia.



2017

The 1st Japan SDGs Award (Special Prize)

"Established by the Sustainable Development Goals (SDGs) Promotion Headquarters (Chairman: Prime Minister). Promoted the achievements of international technical cooperation and overseas water business by the Water and Sewer Bureau.

2017

Introduction of initiatives at the "High-Level Political Forum" at United Nation Headquarters

The then Minister of Foreign Affairs, Mr. Kishida, introduced the international technical cooperation of the Kitakyushu Water and Sewer Bureau to the world.



2018

Selected as a "Global Model City for Promoting the SDGs" by the OECD

Kitakyushu was selected as the first model city in Asia in recognition of the city's efforts in international environmental cooperation.

Cambodia



Cambodia · Phnom Penh

Activities in the Water Supply System



Water Supply Capacity Development Project in Phnom Penh Capital (1999-2006)



We dispatched our staff as experts to Phnom Penh and dramatically improved the water supply coverage rate in a short period of time. The project has been called the "Miracle of Phnom Penh" and has resulted in the city being one of the few with drinkable tap water in Asia.

Objectives	1993 (before cooperation)	2006 (cooperation completed)
Water Supply Coverage Rate	25%	90%
Water Supply Duration	10hours	24hours
Non-Revenue Water (leakage + theft)rate	72%	8%

Water Supply Capacity Development Project in Local Cities (2007-2018)

We have implemented a project to develop technical and business management personnel at public waterworks in eight local cities, including Siem Reap Province, known for the World Heritage Site, Angkor Wat.

As a result, we have achieved significant improvement in water quality, 24-hour water supply, and profitability in a single year in all target cities.



Valve operation guidance in a local city

Water supply administrative capacity improvement project (2018-)

In cooperation with the Ministry of Industry, Science, Technology and Innovation (MISTI), which is in charge of water supply administration in Cambodia, we are supporting the strengthening of the organizational structure and human resource development in order to improve water supply capacity throughout Cambodia.



Technical supervision (pump vibration measurement)



Discussing ideas with government officials

The Miracle of Phnom Penh ~Water Supply Reform that Stunned the World~

In the 1990s, Phnom Penh's water supply infrastructure had been devastated by the civil war that had lasted for more than 20 years, and more than 70% of the tap water produced at water treatment plants did not reach homes due to water leakage and illegal resale of stolen water. Women and children had to go far away every day to fetch water, and many children could not go to school. In addition water-related diseases were spreading and the sanitation environment was deteriorating.

In 1999, at the request of the Japanese government, Kitakyushu City began dispatching experts to the area. The local officials, hoping for the restoration of their homeland, worked earnestly, and the water supply in Phnom Penh improved dramatically in a short period of time. This achievement has been called the "Miracle of Phnom Penh" and has attracted attention from around the world.



Technical cooperation with Kitakyushu City



Environmental Education in Phnom Penh Capital (2017-2019)

Although the water supply system in Phnom Penh Capital has been dramatically improved, the citizens' awareness of the environment issue was still low. There was no end to the dumping of garbage onto the streets and into the waterways that run through the city.

Therefore, in order to help people understand the importance of sewerage maintenance, Kitakyushu City collaborated with local elementary schools to raise awareness among citizens through environmental education classes and waterway cleaning activities.



Condition when the project began (August 2017)



Improvements after the project ended (December 2019)

Sewerage Capacity Development Project (2019-)

In preparation for the launch of a full-fledged sewerage projects in Phnom Penh Capital, we provided assistance for the formulation of legal systems and the construction of organizational structures, as well as promoting employee empowerment for those in charge of the planning of the sewerage systems.



Kitakyushu City staff explaining the sewerage project

Phnom Penh Capital Administration's Sewage Treatment Plant Development Plan

Despite the fact that Phnom Penh is a large city with a population of over 2 million, it does not yet have a public sewage treatment plant. As a result, sewage and rainwater flow through the city's many waterways and directly into rivers and lakes.

In November 2019, a project to build the first public sewage treatment plant in Phnom Penh was launched with Japanese assistance. The city of Kitakyushu is currently participating in the project to design, operate, and maintain the sewage treatment plant, which is scheduled for completion in 2024.



A lake with a blackened surface due to the flow of domestic wastewater



Image of the completed public sewage treatment plant to be constructed in Phnom Penh

Vietnam



Vietnam : Hai Phong

Activities in the Water Supply System



Kitakyushu's invented advanced water purification technology

The city of Hai Phong, Vietnam, a sister city of Kitakyushu, located downstream from a large river, has in recent years been suffering from the deterioration of river water quality due to rapid economic development.

To address this issue, Kitakyushu's own environmentally friendly advanced water purification technology, Upward Biological Contact Filtration (U-BCF), has been deployed across the ocean in Hai Phong.



Kitakyushu Meister providing welding instruction at the water treatment plant

U-BCF Development Strategy in Vietnam

2010

Step 1

JICA Partnership Program

Installation of a pilot plant of U-BCF in Hai Phong City, Vietnam. Transfer of related water purification technology.



Confirmation of the effectiveness of U-BCF as a result of a one-year verification survey



2013

Step 2

Installation at the small-scale water treatment plant

Hai Phong City installed U-BCF at a small-scale water treatment plant (5,000 m³/day) with its own funds.



U-BCF installed at the VinhBao Water Treatment Plant in Hai Phong City



U-BCF was proven to be exportable to emerging countries

2018

Step 3

Installation at the main water treatment plant (100,000 m³/day)

Japan's grant aid will be used to develop U-BCF and make it a model case for the spread of U-BCF in Vietnam.



U-BCF installed at the An Duong Water Treatment Plant in Hai Phong City

Horizontal expansion to promote U-BCF in Vietnam

2020

Step 4

Promoting the installation of U-BCF at water treatment plants throughout Vietnam

The U-BCF will be installed at water treatment plants throughout Vietnam, which is facing water quality problems, to realize a win-win water business between Japan and Vietnam.

Six cities in Vietnam where U-BCF verification surveys were conducted



Expanding throughout to all of Southeast Asia starting from Vietnam!

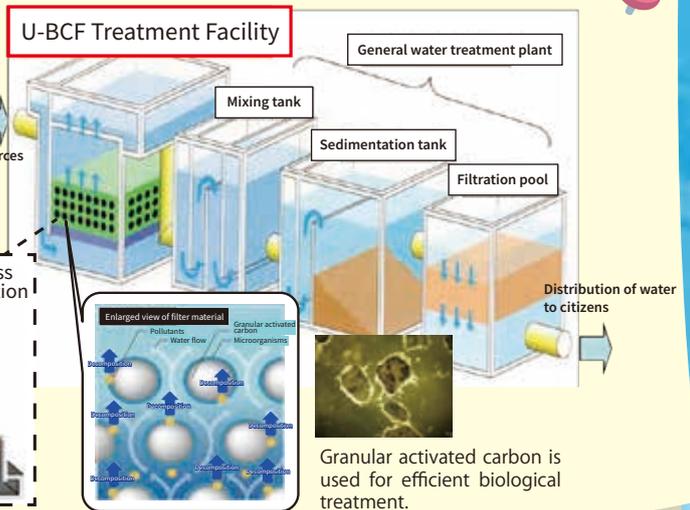
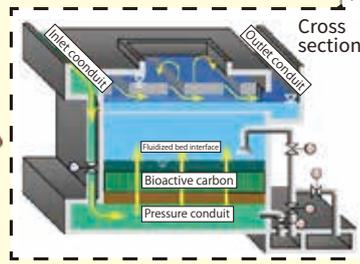
Kitakyushu City's Invented Development Upward Biological Contact Filtration (U-BCF)

This is a technology that applies the natural purification action of microorganisms inherent in rivers to make them more efficient. It can be configured with simple equipment, consumes little power, and is environmentally friendly.

Cost Comparison

Compared to Ozonation

- Construction cost: approx. 1/2
- Operation cost: approx. 1/20



Granular activated carbon is used for efficient biological treatment.

Activities in the Sewage System



Moving towards the improvement of sewerage maintenance and operation ability in Hai Phong City.

■ Challenges

The city of Hai Phong in Vietnam is a port city located near the World Heritage Site of Ha Long Bay. With its rapid urbanization, the amount of wastewater from homes and factories in the port city is rapidly increasing.



Ha Long Bay (World Heritage Site)
Water pollution has become an issue in recent years



A polluted river in Hai Phong City

■ Approaches

- **Supervising the Maintenance and Management of Pump Stations (2012-2014)**
Developing a manual for maintenance and management of pump stations.
- **Supervising the maintenance and management of sewerage culverts (2014-2017)**
Developing a manual for operation and maintenance of sewerage pipelines.
- **Sewage Treatment Plant Operation and Management (2018-)**



Technical training in Hai Phong City

The first sewage treatment plant in Hai Phong City starts a full-scale operation in 2021. This is expected to greatly improve the water environment in Hai Phong.

Kitakyushu City continues to support the efficient operation and management of sewage treatment plants overseas as well, utilizing the technology and science that has helped the public and private sectors overcome issues such as the deterioration of the water environment and flooding damage.



Vinh Nien Sewage Treatment Plant, the first sewage treatment plant in Hai Phong City

Myanmar



Myanmar · Mandalay

Activities in the Water Supply System



Technical Cooperation in Mandalay City

Mandalay City is the second largest city in Myanmar with a population of 1.2 million.

However, water services are still in the process of development, with a water supply coverage rate of 70%. Kitakyushu City is promoting technical cooperation by providing on-site guidance and accepting trainees.

- **The project for improving of capacity on water treatment plant operation (2013-2016)**

The city of Mandalay is facing issues such as inadequate disinfection of tap water, so we provided chlorine generation equipment and guidance on operation and maintenance management.

- **Operation and Maintenance Guidance Project for Water Treatment Plants with Rapid Sand Filtration System(2020-)**

Mandalay City has introduced a rapid sand filtration plant to meet the rapidly increasing demand for water. However, Mandalay City does not have sufficient knowledge on the operation and management of the rapid sand filtration system and has not been able to treat the expected amount of treated water.

Therefore, Kitakyushu City, which is very acquainted with the filtration system, will provide technical guidance.



Water treatment plant for technical cooperation



Preliminary survey and confirmation of filter sand

Public Relations and Educational Activities for Citizens Youth Training on Water and Sewer

Since 2017, the Water and Sewer Bureau has been working with high school students in Kitakyushu City to distribute information on the results of international projects to a wide range of citizens.



Training flow

High school students are dispatched overseas!
They report what they have learned there to the citizens of Kitakyushu City!

Domestic training



Training at water and sewerage facilities in the city.



Dispatch Overseas



Visiting sites in Cambodia and Vietnam for observation.



Report on Results



Presentation of the results at Eco-Life Stage.

China



China · Dalian

Activities in the Sewage System



Technical Cooperation in Dalian City

We have been exchanging with Dalian, a friendship city of Kitakyushu in various fields such as economics and culture, and in the field of sewerage we have also been exchanging information on a regular basis.

In 2020, we held the first working-level online exchange meeting in the sewerage field. We will continue to provide opportunities for both sides to cooperate with each other in considering the future of urban infrastructure projects.



Dalian City



Kitakyushu City

Online Conference with Dalian City

Indonesia



Indonesia · Jakarta

Activities in the Sewage System



Technical Cooperation in Jakarta City (2015~2018)

As a result of the rapid urbanization that has accompanied the economic growth of Jakarta, the capital city of Indonesia, the development of urban infrastructure for the population has lagged behind, and the sewerage coverage rate is only 4%.

In order to promote the development of sewerage systems, Kitakyushu City sent its staff for a long period of time to support the formulation of medium- and long-term plans for sewerage system development and to support the formulation of ordinances and standards related to sewerage system projects.

Currently, projects such as the construction of sewage treatment plants and pipelines are in progress.



Pollution Status of Jakarta City Rivers



Meeting with the experts and counterparts

Water Plaza Kitakyushu Energy-Saving and Environmentally Friendly Water Circulation Solutions

Since 2010, Water Plaza Kitakyushu has been conducting demonstrative experiments of a desalination system that combines membrane treatment technology for seawater desalination with sewage treatment as part of its efforts to save energy and reduce environmental impact. In 2020, an experimental facility using this technology will be built in the Republic of South Africa, and other results have been shown.



Demonstrative experiments area

Kitakyushu Overseas Water Business Association (KOWBA)

Purpose of Establishment

To actively promote initiatives for the overseas water business through public-private partnerships.

Organization

148 corporate members	:81 local companies, 67 out-of-city companies (as of March 1, 2021)
4 municipality bureaus	:Water and Sewer Bureau, Planning and Coordination Bureau, Environment Bureau, Industry and Economics Bureau
9 related organizations	:KitakyushuCCI, JICA Kyushu, JBIC, DJB, JWVA, GCUS, JETRO, SME SUPPORT JAPAN Kyushu Headquarters, Kitakyushu Asian Center for Low Carbon
4 professors as academic experts	:Ministry of Internal Affairs and Communications, Ministry of Health, Labor and Welfare, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism, Japan Sewage Works Agency, Japan Institute of Wastewater Engineering and Technology
6 organizations as observers	
Establishment	: August 31, 2010

Board Members

- Chairman
- Vice Presidents (2 personnel)
- Auditors (2 personnel)

Executive Committee (to provide opinions, etc. for KOWBA's smooth operations)

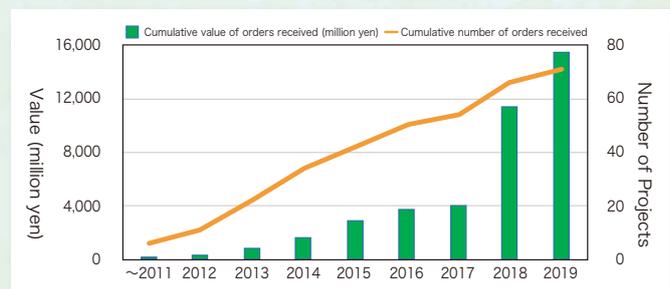
- Secretary General: Vice President (1 personnel)
- Committee members: About 10 personnel
- Vice Chairman: 1 company as representative of all corporate member



-Examples of Business Achievements-



Water supply system expansion project in Kampong Thom, Cambodia



Number of Projects and Contract Amount Received by Corporate Members

Activities

Strengthening cooperation with foreign governments and related organizations



January 2016
Signed a Memorandum of Understanding with the Ministry of Industry and Handicrafts of Cambodia, Kitakyushu City, and KOWBA

Business exchange with foreign dignitaries who visits Kitakyushu City



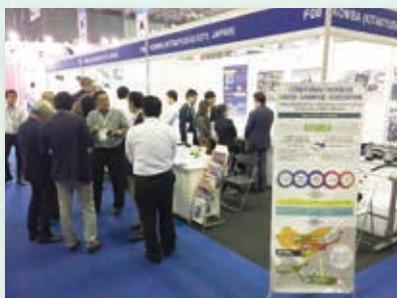
July 2018
Held an international exchange meeting in the field of sewage (representatives from six countries)

Held an annual seminar in Cambodia



December 2018
Held Japan-Cambodia Water and Sewer Seminar

Participated in overseas exhibitions



November 2019 Exhibited at Viet Water Ho Chi Minh

Proactively promoting information



March 2021
Published in the Waterworks Industry Newspaper and renewed our website



Kitakyushu City Overseas Business Support Center

The Kitakyushu Overseas Business Support Centers are operated in cooperation with the Kitakyushu City Water and Sewer Bureau, the Phnom Penh Water Supply Authority (PPWSA), the Hai Phong Water Joint Stock Company (HPW), and KOWBA for the purpose of supporting the overseas water business of KOWBA corporate members, and provides strong support for the overseas business development of corporate members that do not have their own local offices. Local contracted staff members are stationed in both offices.

Main Functions of the Support Center

- Office space for rent
- Provision of meeting rooms
- Assistance in arranging local interpreters and transportation and others

Phnom Penh Center, Cambodia

The office is located on the ground floor of the main building, part of PPWSA's vast premises, and has been in operation since October 2015. Its location is in the center of Phnom Penh making it very convenient to get around.



Haiphong Center, Vietnam

The office is located on the ground floor of the main building of HPW, and has been in operation since April 2016. It is blessed with a good location. It is well equipped with exhibition booths for company products.



Kitakyushu City will contribute to the improvement of the world's water environment by mobilizing the wisdom of the public and private sectors to achieve the SDG principle of "leave no one behind".



Contacts:

**International Project Division,
Kitakyushu City Water and Sewer Bureau,**

5F, West Wing, Kokurakita Ward Office Building, 1-1 Ohtemachi,
Kokurakita Ward, Kitakyushu City,
803-8510 JAPAN

TEL: +81-(0)93-582-3111 FAX: +81-(0)93-582-2088

E-mail: sui-jigyoku@city.kitakyushu.lg.jp

URL: <https://kitaq-water-intl.jp>

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Kitakyushu Overseas Water Business Association,

5F, West Wing, Kokurakita Ward Office Building, 1-1 Ohtemachi,
Kokurakita Ward, Kitakyushu City,
803-8510 JAPAN

TEL: +81-(0)93-581-2166 FAX: +81-(0)93-581-2160

E-mail: kowba@kitaq-water-intl.jp

URL: <https://kitaq-water-intl.jp>

