

AWaP Technical Seminar

5th August 2026

Tokyo, Japan

AWaP Technical Seminar

Agenda

Date & Time: August 5, 2026, 14:30–16:35 (JST) (2 hours and 5 minutes)

Format: In-person

Moderator: Pierre Flamand, Manager of International Affairs at Japan Sanitation Consortium (JSC)

Time	Program
14:30	Opening remarks
14:35	Challenges and Technical Needs Presented by AWaP Partner Countries (5 min. each) No transition time between speakers. Presenters: 1. Bangladesh 2. Cambodia 3. Indonesia 4. Philippines 5. (Thailand) 6. Vietnam (No Q&A session)
15:05	Technical Presentations (5 min. each) 1) Water Treatment Technologies 1. Maezawa Industries, Inc. — Chain-Type Screen Unit 2. Utsunomiya Kogyo Co., Ltd. — U-PEC Scum Removal System 3. METAWATER Co., Ltd. — METAWATER's Wastewater Treatment Solutions 4. Kubota Corporation — MBR (Membrane Bio-Reactor) 5. Fujiclean Co., Ltd. — Johkasou (Decentralized Wastewater Treatment System) Q&A (5 min)

	2) Sludge Treatment Technology 6. Nippon Steel Engineering Co., Ltd. — Sewage sludge granulation–drying technology 3) Disaster Management 7. Tokyo Keiki Inc. — Level Gauges, Water Level Meters, Flow Meters 8. Nihon Suido Consultants Co., Ltd. — Real-time Stormwater Management System Q&A (5 min) 4) Other Technologies 9. Ashimori Industry Co., Ltd. — Soft Ground Surface Treatment Method LFR 10. Hazama Ando Corporation — Corrosion Prevention Technology for Concrete Products 11. ISEKI POLY TECH, INC.—Sewer Pipe Laying by Unclemole 12. JFE Engineering Corporation — Company Profile and Wastewater Treatment Technologies for Sustainable Society Q&A (5 min)
16:30	Closing

- Presentations are delivered in English

Sewerage Technologies of Interest (1)

Country: Cambodia

Wastewater Technologies of Interest	Reasons, Challenges, Goals & Plans
1. O&M of Wastewater Treatment Plants (WWTPs)	Reason: Ensure sustainable operation of newly developed WWTPs. Challenges: Limited skilled operators and high O&M costs. Goal: Improve treatment performance and regulatory compliance for the operator.
2. Sewer Pipeline Inspection & Asset Management	Reason: Improve reliability and extend the life of sewer infrastructure. Challenges: Limited inspection technology and incomplete asset data. Goal: Establish preventive maintenance and asset management.
3. Real-time Effluent Quality Monitoring	Reason: Detect abnormal treatment conditions and maintain effluent quality. Challenges: Manual monitoring and delayed response. Goal: Achieve real-time monitoring and early warning.
*These three technologies will strengthen Cambodia's transition toward sustainable, resilient, and smart sewerage management by improving operational efficiency, protecting infrastructure assets, and ensuring consistent compliance with environmental standards.	

Sewerage technologies of interest (Example)

Country: Philippines

Please select up to three items from the "Questionnaire on Wastewater System Development and Management" to focus on and provide reasons. Additionally, share your challenges, goals, and plans related to your selections.

Sewerage Technologies of Interest: Top: Field, Bottom: Technology	Reasons for Selection
Efficiency and Cost Reduction of O&M	- As per the Philippine Clean Water Act of 2004, DPWH is mandated to formulate and subsequently implement the National Sewerage and Septage Management program (NSSMP), which aims to provide financial and technical assistance to local implementers of sewerage and septage management project. - As such, part of DPWH's mandate is to monitor the project implementation of the local implementers that have received financial assistance under the NSSMP. - For this reason, the concept of remote monitoring is of great interest to us, as this allows us to monitor NSSMP-funded projects and eventually all sanitation projects implemented by both local and private implementers in a timely and efficient manner.
Remote monitoring	

Sewerage technologies of interest (Example)

Country: Philippines

Please select up to three items from the "Questionnaire on Wastewater System Development and Management" to focus on and provide reasons. Additionally, share your challenges, goals, and plans related to your selections.

Sewerage Technologies of Interest: Top: Field, Bottom: Technology	Reasons for Selection
Improvement of Treatment Capability	● The Philippines has long struggled with issues on water supply as well as flood control. ● In order to address the above issues, the Philippine Government has adopted the principles of Integrated Water Resource Management (IWRM) in their Philippine Water Supply and Sanitation Master Plan (PWSSMP). ● For this reason, it makes sense to capacitate local implementers in utilizing treated effluent and excess storm water for other purposes aside from outrightly discharging it to receiving bodies of water, thereby hitting two birds with one stone (water supply and flood control).
Reclaimed Water	

Sewerage technologies of interest (Example)

Country: Philippines

Please select up to three items from the "Questionnaire on Wastewater System Development and Management" to focus on and provide reasons. Additionally, share your challenges, goals, and plans related to your selections.

Sewerage Technologies of Interest: Top: Field, Bottom: Technology	Reasons for Selection
Disaster Resilience Enhancement: Earthquake, Flood Response	● While sanitary sewerage is the gold standard for wastewater conveyance, the local implementers of the Philippines acknowledge their incapability of implementing sanitary sewerage projects due to their financial and technical constraints. For this reason, the local implements opt for utilizing the existing drainage to convey wastewater from the service area to the treatment facility (combined sewerage). ● However, the prevalence of flooding in the country severely hampers the efficacy of combined sewerage projects. This issue is exacerbated by the looming threat of the "Big One," a high-intensity earthquake that is predicted to occur in the coming years. ● For this reason, it is imperative that the local implementers be equipped in incorporating disaster resilience in their sanitation projects. Any technology the AWaP may introduce on this matter will help a great deal in this endeavor.
Prevention and mitigation of rain-related disasters: Gate pump, pump gate	

Sewerage technologies of interest (1)

Country: Vietnam

Please select up to three items from the "Questionnaire on Sewerage System Development and Management" to focus on and provide reasons. Additionally, share your challenges, goals, and plans related to your selections.

Wastewater Technologies of Interest: Top: Field, Bottom: Technology	Reasons for Selection
Urban Flood Control	Vietnam has over 3000 km of coastline, so many coastal cities are heavily impacted by climate change, extreme rainfall, and sea level rise. In addition, the dense river network with two tidal regimes: diurnal (in Northern and North Central regions) and semi-diurnal (in South Central and Southern regions) strongly affects the natural drainage flow in urban areas. In Vietnamese, drainage capacity of most cities is limited, leading to frequent flooding whenever it rains. Urban drainage management for urban flood control is a major concern for cities today.
Technologies related to flood mapping(creating flood map), regulation of water level in normal weather condition and during rainfall, storms, and high tides	

Supplementary information or comments:

You can add the slides if you need



Maezawa Industries, Inc.

Chain Type Screen Unit

With Large Object Avoidance Mechanism

Mesa Wanasilp

International Business Department

Contact

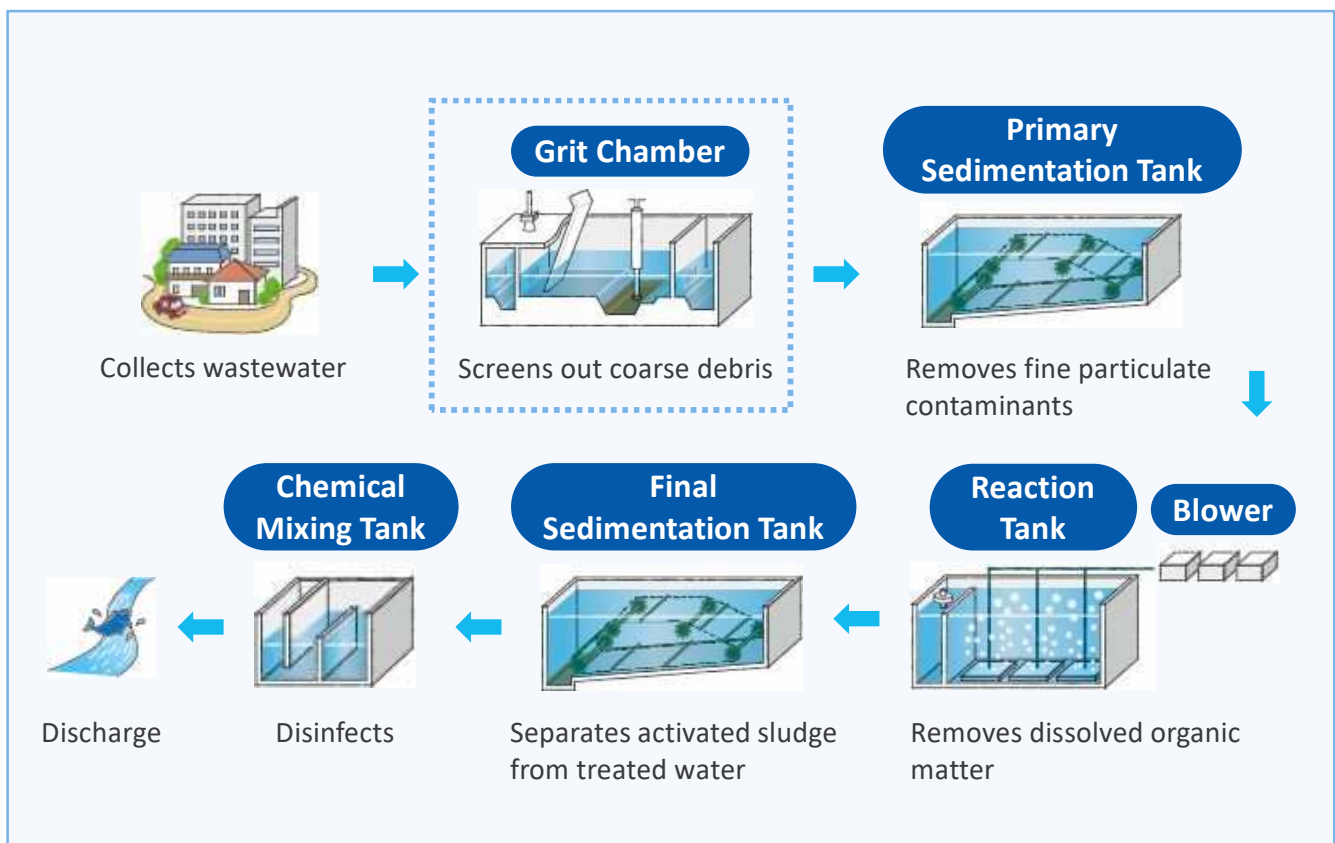


Website



mesa_wanasilp@maezawa.co.jp

1. System Placement in the Wastewater Treatment Process



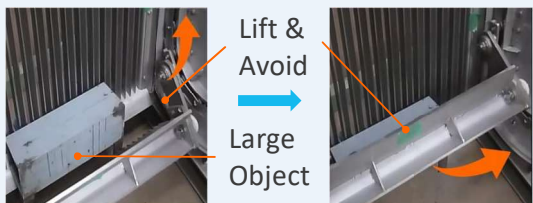
Maezawa Industries, Inc.

2. Key Features of Chain Type Screen Unit



Protective

Large Object Avoidance Mechanism



Lift & Avoid
Large Object

Easy Installation

Unit Structure

Due to a unit structure, construction period and cost can be reduced.



Easy Maintenance

Auto Greasing Unit

Lubrication is designed to only 2 points with Auto Greasing Units



Chain Guide

By eliminating sprockets & bearings in the water, there is no need for lubrication



Core Advantages

Main Materials: **Stainless Steel 304**

- ✓ **Applicable to Combined Sewer**
Resistant to sand and large debris inflow.
- ✓ **Easy Installation**
Minimizes duration and expenditures.
- ✓ **Easy Maintenance**
Simple structure, less prone to defects and easier to maintain.

3. Wonder of Wastewater Technology of Japan Project



Project Opening Ceremony (15th May 2024)

PERIOD
Aug 2023 – Mar 2025

TECHNOLOGY
Chain Type Screen Unit

TARGET COUNTRY
Thailand

DEMONSTRATION SITE
Laem Chabang Wastewater Treatment Plant
Lagoon with modified oxidation ditch (OD)

7,000
m³/Day capacity

Counterparts: Ministry of Land, Infrastructure, Transport and Tourism (Japan), Ministry of Interior (Thailand), Laem Chabang City, Wastewater Management Authority (WMA), Bangkok Metropolitan Administration (BMA)

OBJECTIVES

- ✓ Verify the system's operational stability and the effectiveness of the large object avoidance mechanism when deployed in the same environment as the previous screen.
- ✓ Demonstrate the importance of proper model selection while confirming the model's adaptability and reliability within Thailand's combined sewer systems.



Closing Seminar & Site Visit (7th Nov 2025)

4. Issues & Solutions

Existing types of screens installed in Thailand



Continuous Belt Type Wire Rope Type

Overview of Sewerage in Thailand



COVERAGE RATE

13.7%

Septic tank: 83.1% (2020)



SEWER SYSTEM

Combined

Combined sewer system



NO. OF WWTP

195

Locations (2025)



MANAGEMENT

Local Authorities

WMA, BMA



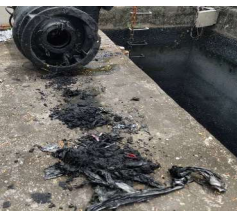
Suitable for separated sewer system



Unsuitable for combined sewer system

Many small parts, vulnerable to sand inflow

Issues caused by model selection mismatch



Equipment failures (Pump clogging)



Sand & debris accumulation



SOLUTION

Selection of a suitable screen model for combined sewer systems is crucial.

→ Chain Type Screen Unit was selected to demonstrate applicability in this environment.



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5. Demonstration Project Results

Drivability

Demonstrated stable operation during monsoon season without any shutdowns due to overloading.



Operation after heavy rain (23rd Sep 2024)



Operation during heavy rain (8th Aug 2025)

Screenings removal capacity: 4.46 m³/hr (design value)

Energy Saving

EXISTING SCREEN MOTOR OUTPUT
2.2 kW



DEMONSTRATION UNIT MOTOR OUTPUT
1.5 kW



32%
Energy-Saving Effect

Maintainability

Zero component wear after 2.5 year:

No wear observed on major components (main chain rollers, link plates, rake guide rollers, sprockets, and guide rails).

Excellent equipment condition:

Mechanical engagement (rake/screen/wiper), gear reducer, and motor all remained normal with zero abnormalities.

Stable motor performance: Actual motor current stayed well below the 3.7 A rated current, showing no signs of age-related deterioration.

15-year estimated durability: Based on the zero-wear results under **Southeast Asia's combined sewer conditions**, the equipment is estimated to have a 15-year lifespan, equivalent to standard models in Japan public works projects.



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6. Potential for Regional Adoption

A Fit for the Region's Shared Challenges

Why our screening technology applies across AWaP partner countries



Rapid urbanization
outpacing
infrastructure



Combined sewer
system still
common



Monsoon-
driven debris &
sand surges



Active
infrastructure
investment cycles

Bangladesh

Only 16%* of domestic wastewater is currently treated nationwide — major new plants are entering the design phase.

*Source: UN-Water, SDG 6 Data Portal

Cambodia

Fast-growing cities rely on combined drainage carrying heavy monsoon debris and sediment loads.

Indonesia

Many secondary cities are upgrading wastewater treatment systems with multilateral support amid frequent combined sewer overflow.

The Philippines

High typhoon and flood exposure routinely pushes large debris into combined systems during storms.

Vietnam

Aging combined sewer networks in Hanoi and HCMC face high sediment inflow from seasonal monsoon flows.



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AWaP TECHNICAL SEMINAR · AUGUST 5, 2026 · TOKYO

U-PEC Scum Removal System

Efficient removal of oil & grease-based sludge (scum)
from the sedimentation tanks you already have

Demonstrated in Ho Chi Minh City under MLIT's WOW TO JAPAN Project

Utsunomiya Industries Co., Ltd.

Ho Chi Minh City branch

The problem: scum never goes away by itself



Manual scum removal — every single day

Hazardous daily work · hours of skimmer and pump operation · excessive water and energy use



Proven at full scale — MLIT WOW TO JAPAN Project (FY2022)

Final sedimentation tank, Binh Hung WWTP (469,000 m³/day), with the Infrastructure Management Center, HCMC Department of Construction

3–5 min

to remove scum
accumulated for a day or
more

8 out of 8 test runs

approx. 90%

less return water

248.5 → 24 m³ per week

approx. 90%

less pumping power

462 → 44 kWh per week, plant-
wide

JPY 2.5M / yr

total savings in
electricity & labor (2026
prices)

roughly the price of one locally
built unit

To remove the accumulated scum, the system was operated automatically for five minutes per run. The scum detachment device and the surface flow acceleration device operated smoothly, and the flow velocity of the scum was secured. This also confirmed that the Scum Guiding Mechanism designed to suppress upward flow was functioning properly. As a result, in each run, almost all of the scum was removed within three to five minutes after the system started operating.



Accumulated scum



In operation



After treatment

Why it saves so much

One 5-minute automatic run replaces daily manual operation — from 7 runs a week to 2.

Ready for your treatment plants

- 1 Retrofit, not rebuild** — Installs in your existing primary and final sedimentation tanks and conduits — no civil works, no new land.
- 2 Affordable & locally made** — Simple structure; pipes, valves and frames can be fabricated in-country, cutting the unit cost to a fraction of the Japanese price.
- 3 Easy to keep running** — Maintenance-free acceleration device (no rotating parts); automatic operation adjustable to water level; runs on plant service water.
- 4 Trusted** — In service in Japanese treatment plants since 2008 — most recently Shibaura, Tokyo (2025) — and demonstrated in Vietnam. Patented in Japan, US, Australia and the EU.

See the real system at Binh Hung WWTP, Ho Chi Minh City

Utsunomiya Industries Co., Ltd. — "Toward a world where no one struggles with water"



METAWATER's Wastewater Treatment Solutions



August, 2026
METAWATER Co., Ltd.
International Sales & Marketing Department
International Business Division

Corporate Overview



METAWATER is a leading engineering company with unique products and wide range of experiences from product supply, EPC up to O&M service **incl. PPP projects**.

Capital	JPY 11.9 Bil. (ca. US\$ 73.4 Mil.)
Stock Market	Prime Market of Tokyo Stock Exchange (Code:9551)
Net Sales	JPY 209.8 Bil. (ca. US\$ 1.3 Bil.) (FY ended Mar. 2026)
Employees	4,228 (consolidated)
Location (JPN)	Tokyo (Head Office), Hino Office, Nagoya Office etc.
(Intl.)	Cambodia, Vietnam, Switzerland, Germany, The Netherlands, USA

Ceramic Membrane



Ozone Generator



High Rate Filtration System



PTF System



Pre-treated Trickling Filter System (PTF)



What is the PTF?

METAWATER

Pre-treated
Trickling
Filter
System
(PTF)

The main concepts are



Energy Saving

***75% less power vs. CAS**

(Example: kWh/m³)

*Treatment capacity: 20,000 m³/day



Space Saving

½ the area vs. CAS



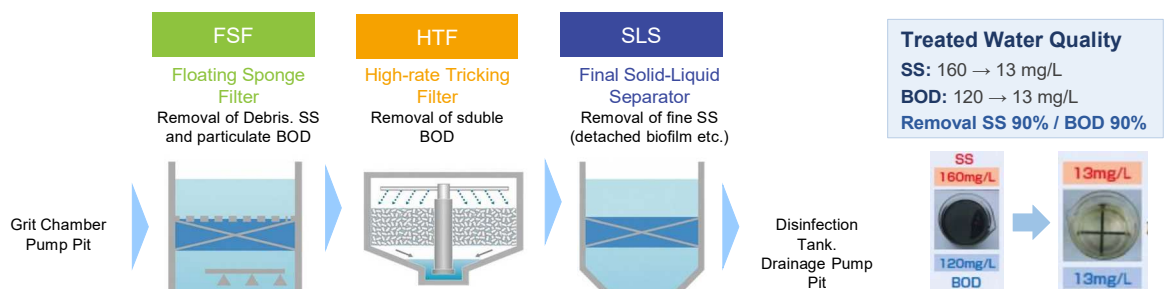
Easy Maintenance

gravity flow, no skilled operators



This is the first technology to have received the "Overseas Use Technology Verification" conducted by the Japan Sewage Works Agency in 2014.

System
Flow



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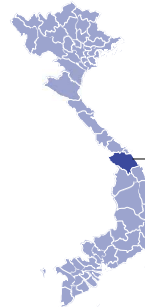
The Project for Water Quality Improvement at the Japanese Bridge in Hoi An City

METAWATER



ODA Grant Approval for Hoi An City (Dec. 2016)

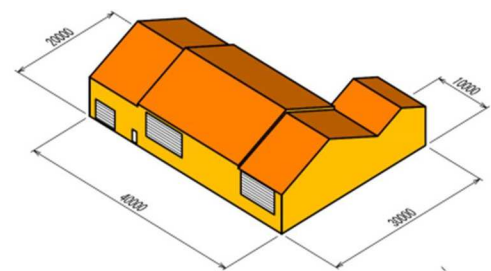
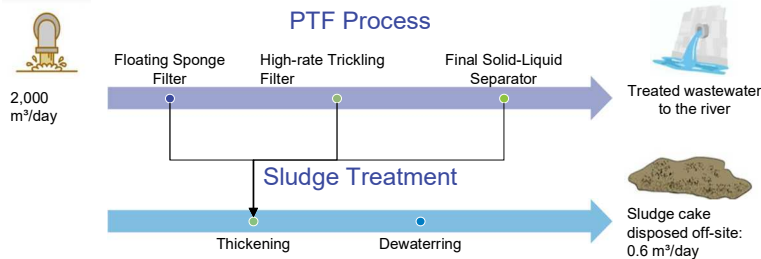
Project Name	The Project for Water Quality Improvement for Japanese Bridge Area in Hoi An City
Project Overview	- Construction of a new wastewater treatment plant (capacity: 2,000 m³/day) - Rehabilitation of existing waterways (1.6 km) - Trial operation and commissioning (including O&M training)
Project Schedule	Terms of Work Construction period: 18 months O&M instruction after equipment delivery: 6 months



Hoi An City



Around the Japanese Bridge



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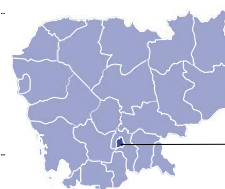
The Project for Sewerage System Development in Phnom Penh

METAWATER



ODA Grant Approval for DPWT/PPCA (Nov. 2019) ; completed and operation since Nov. 2023

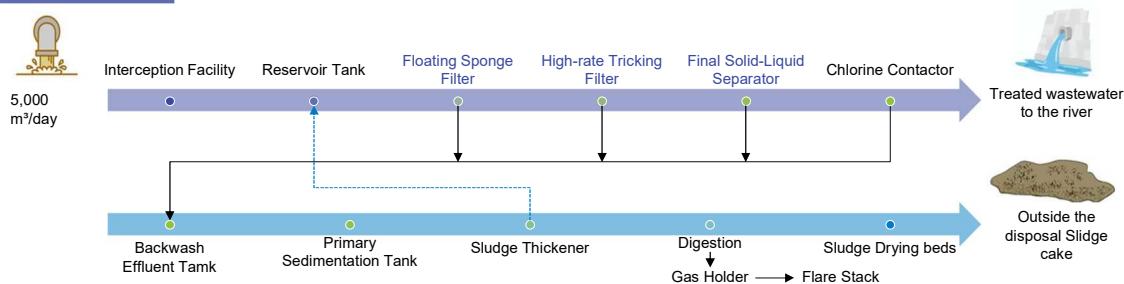
Project Name	Project for Sewerage System Development in Phnom Penh
Project Overview	- Construction of a new wastewater treatment plant (capacity: 5,000 m³/day) - Installation of new wastewater conveyance pipes (1.9 km)
Project Schedule	Terms of Work Construction period: 31.5 months



Phnom Penh



Sewerage System Development Project



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6



High Rate Filtration System (HRFS)



Effects of HRFS

METAWATER

The quality of Combined Sewer Overflow (CSO) water must be improved



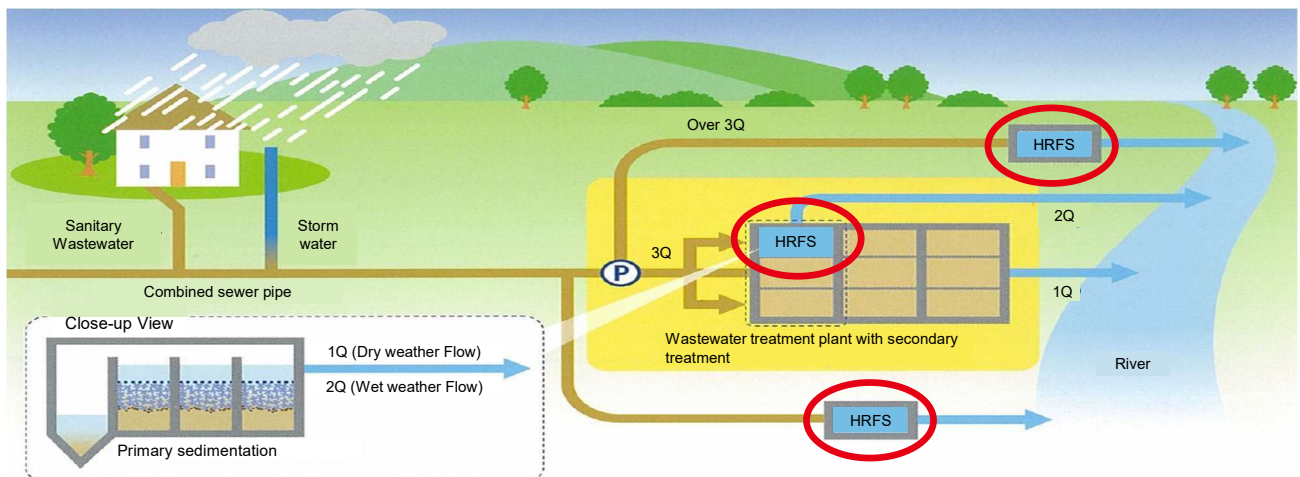
Pollutant loads must be reduced



The number of direct discharges must be reduced



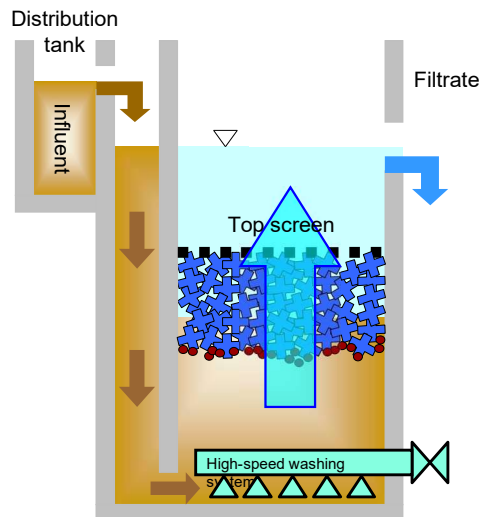
Debris must be reduced



Key Features

METAWATER

From "Sedimentation" to "Filtration" - Upflow filtration technology using floating filter media



High filtration rate

- Dry weather: 400 m/day
- Wet weather: 1,000 m/day

Removal performance equal to or better than primary sedimentation

Applicable in both dry and wet weather

- Dry: Primary treatment
- Wet: Primary treatment + CSO control

Enables continuous treatment during wet weather

Can be installed utilizing existing structures

Higher solids capture than primary sedimentation

- Higher sludge recovery
- > increased biogas production

Easy operation and maintenance

No coagulants required

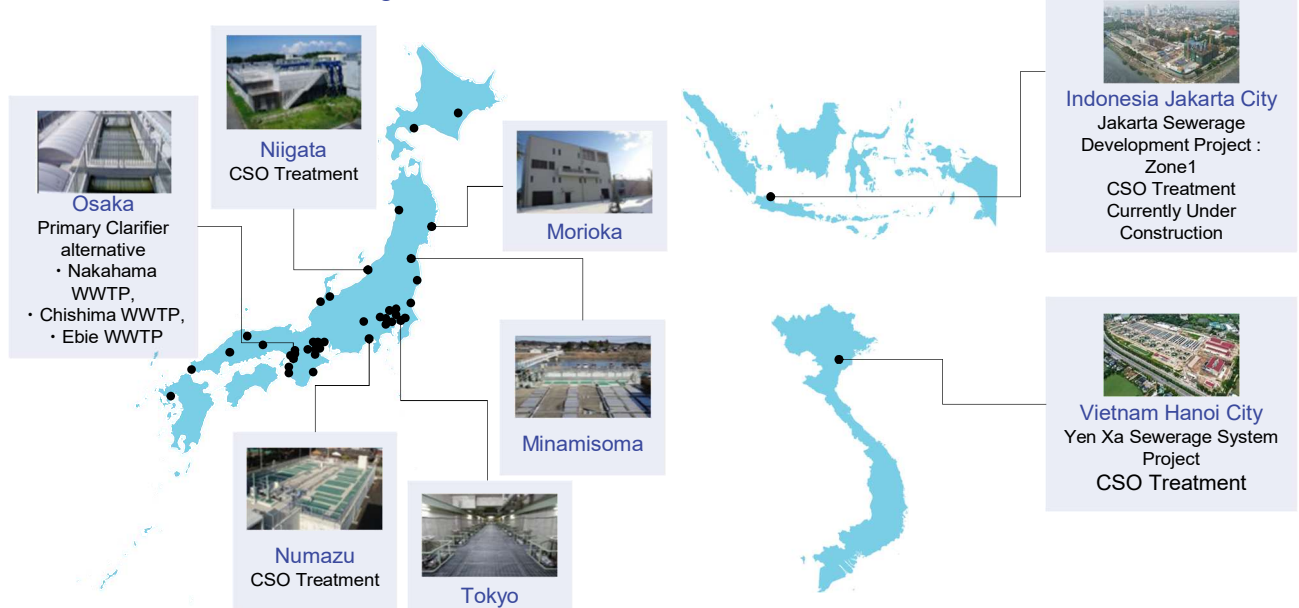
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Installation Record of HRFS

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Over 50 installations as of August 2026 *Including confirmed future projects



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Pile Cloth Media Filtration (PCMF)



Pile Cloth Media Filtration (PCMF)

METAWATER

Tertiary Treatment — water quality equal to or better than sand filtration: treated-water **TSS below 5 mg/L**



Woven, precision fibers provide strength and durability



Discrete pile fibers effectively release solids during backwash



Vertically oriented cloth media disks reduce required footprint



Each disk has six lightweight, removable segments for ease of maintenance



Low hydraulic profile



Higher solids and hydraulic loading rates

PROVEN TRACK RECORD

Over

1,000

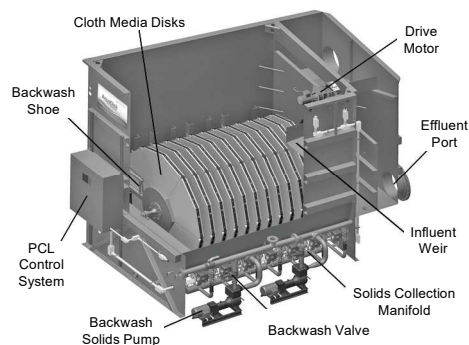
installations

worldwide (20+ years)

**SAND-FILTRATION
ALTERNATIVE**

for tertiary treatment of
sewage & industrial
wastewater

Configurations



Disk type media



Surface of Disk

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NitriStar



NitriStar - Upgrade an Existing Lagoon for Nitrification

METAWATER

$\text{NH}_4^+ \rightarrow \text{NO}_3^-$ Converting ammonia to nitrate sharply reduces toxicity and environmental impact



Existing lagoons can be reused — no new basins or civil works



Converts toxic ammonia (NH_4^+) into nitrate (NO_3^-)



Far lower toxicity — less load on receiving waters



Adds biofilm surface area and oxygen right where it is needed

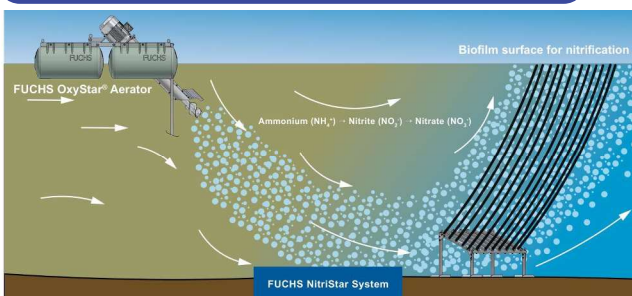


High aeration efficiency, independent of water depth



Modular design — quick to install and easy to maintain

How NitriStar upgrades existing lagoon



NitriStar module (biofilm filaments)



Biofilm surface for nitrification



A Metawater Company

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For Earth, For Life
Kubota

ON YOUR SIDE

Introduction of Kubota MBR

Corporate name **KUBOTA Corporation**

Established **1890**

Capital **¥84.1 billion**

Revenue
(consolidated) **¥3,018.9 billion**

Employees
(consolidated) **52,503**

Global expansion Over **150** areas

Overseas sales **77.3%**



Head Office building (Osaka)
Photo by: Grand Green Osaka
Developers

Head Office

Grand Green Osaka South Building
Park Tower, 5-54 Ofukacho, Kita-ku,
Osaka 530-0011, Japan
TEL.(81)-6-6648-2111

Tokyo Head Office

Kyobashi Trust Tower
1-3, Kyobashi, 2-chome, Chuo-ku,
Tokyo 104-8307, Japan
TEL.(81)-3-3245-3111

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Products

Farm & Industrial Machinery

Agriculture



Construction Machinery



Water & Environment

Ductile Iron Pipes



Engines



Weighing & Measuring Control Systems



Environmental Equipment & Plant Engineering



Materials

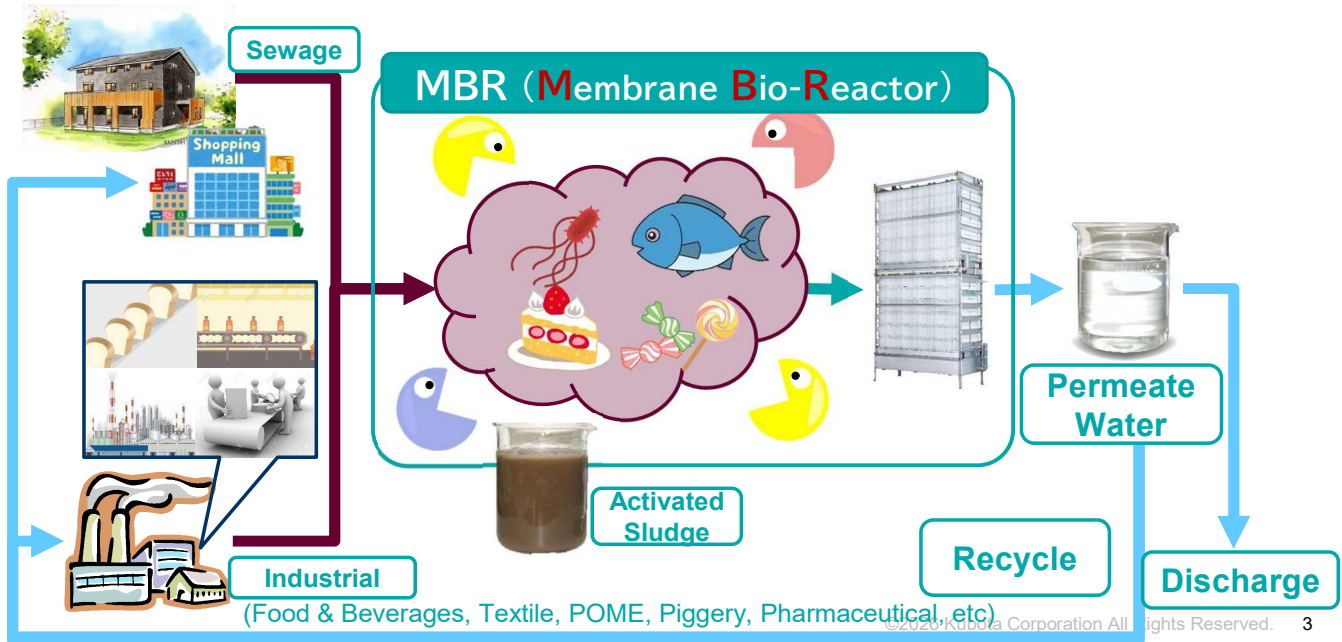


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What is MBR (Membrane Bio-Reactor)

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MBR is a kind of waste water treatment process combined with bio-treatment and membrane filtration. Membrane separates treated water and activated sludge completely and stably. The water is high effluent quality and can use for Recycle water.



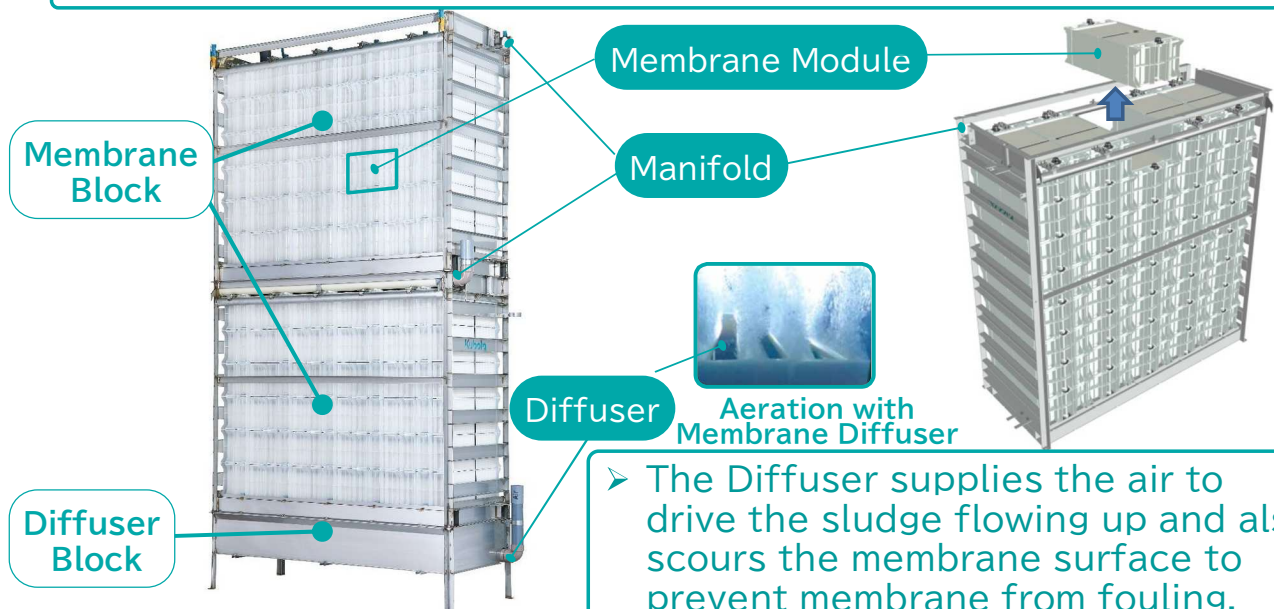
Kubota Submerge Membrane Unit

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KUBOTA SMU "SP Series"

Designed to maximize the performance of Submerged Membrane Unit

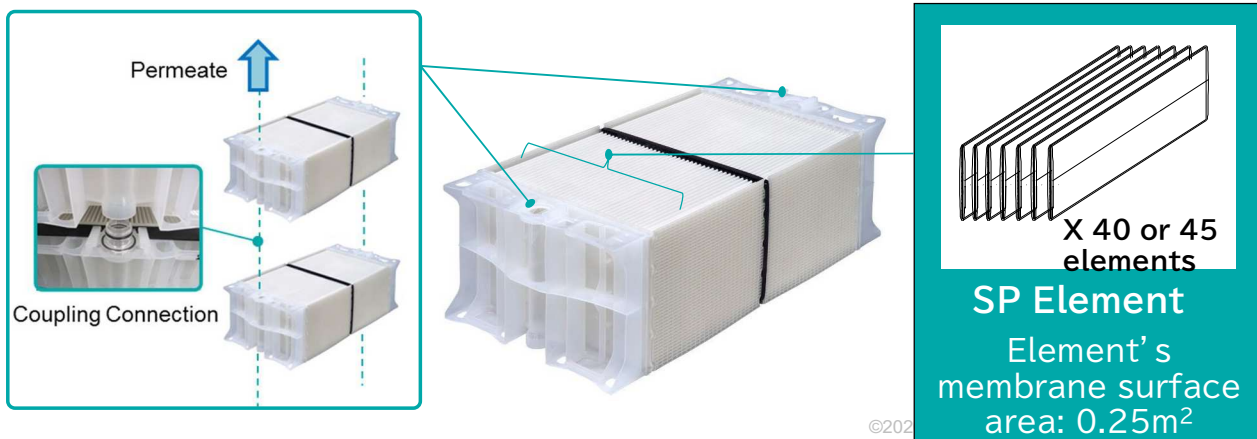
- Permeate clean water is collected through "Membrane Module" and "Manifolds"



Membrane Module "SP Series"
 Membrane Material: Chlorinated Polyvinyl Chloride (C-PVC)
 Average Pore Size: 0.2 μm
 Filtration Area: 10 or 11.25 m^2/module (SP type)

Simple structure of membrane module

- Combination of Membrane module can be easily stack by coupling connection
- Membrane module consist of **flat sheet membrane** (SP Element)



5

Advantages of Kubota MBR System

Kubota MBR System is an advanced technology, a combination of Conventional Activated Sludge process and Kubota Submerged Membrane Unit.

Advantages of Kubota MBR System

1. Small Footprint

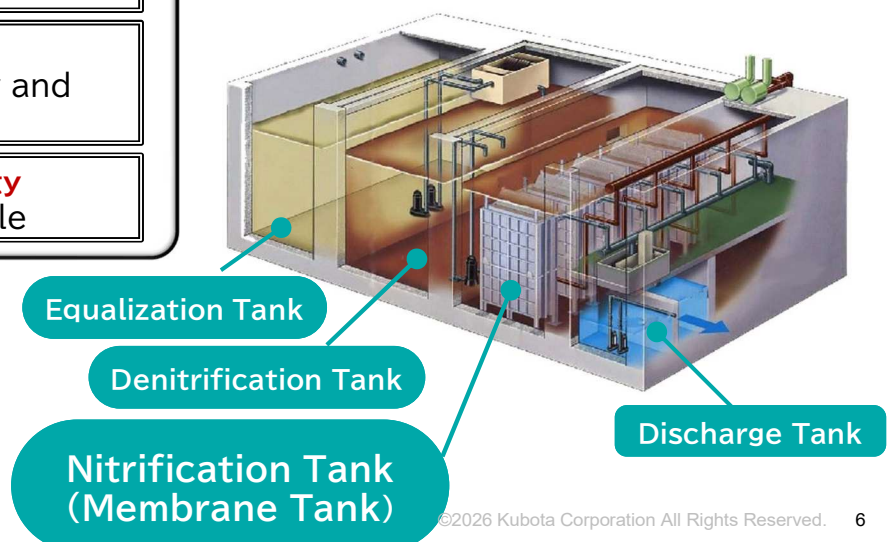
- CAPEX & Space saving
- Effective use of land

2. Easy Upgrade

- Increase of capacity and performance

3. High Effluent Quality

- Treated water recycle

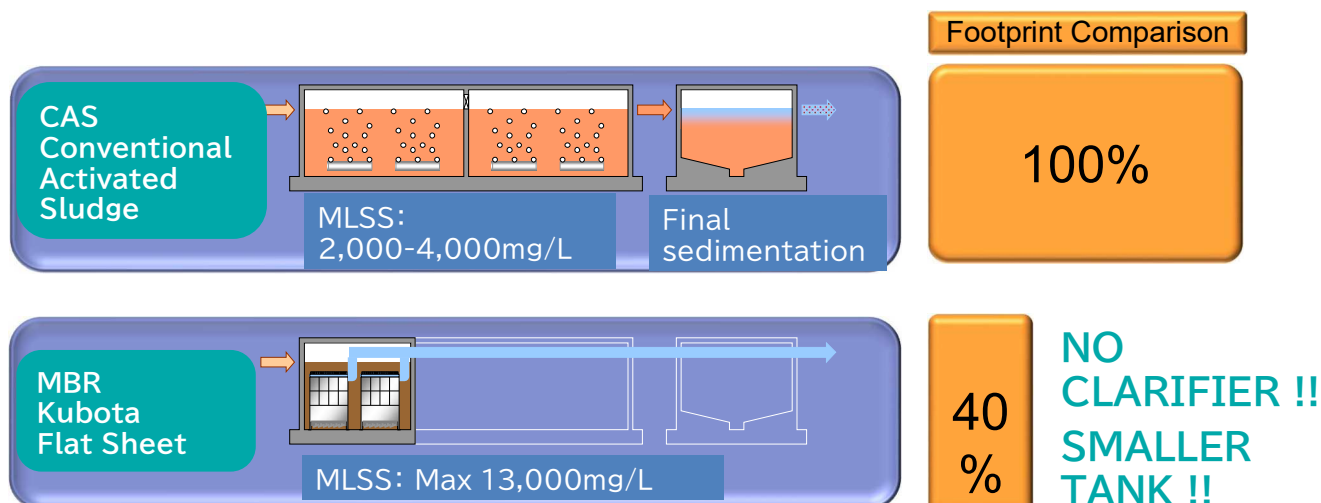


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Advantage1 :Small Footprint

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Thanks to its higher MLSS and the elimination of the final sedimentation tank, the Kubota MBR system can reduce the required footprint to about 40% of a CAS and your CAPEX.



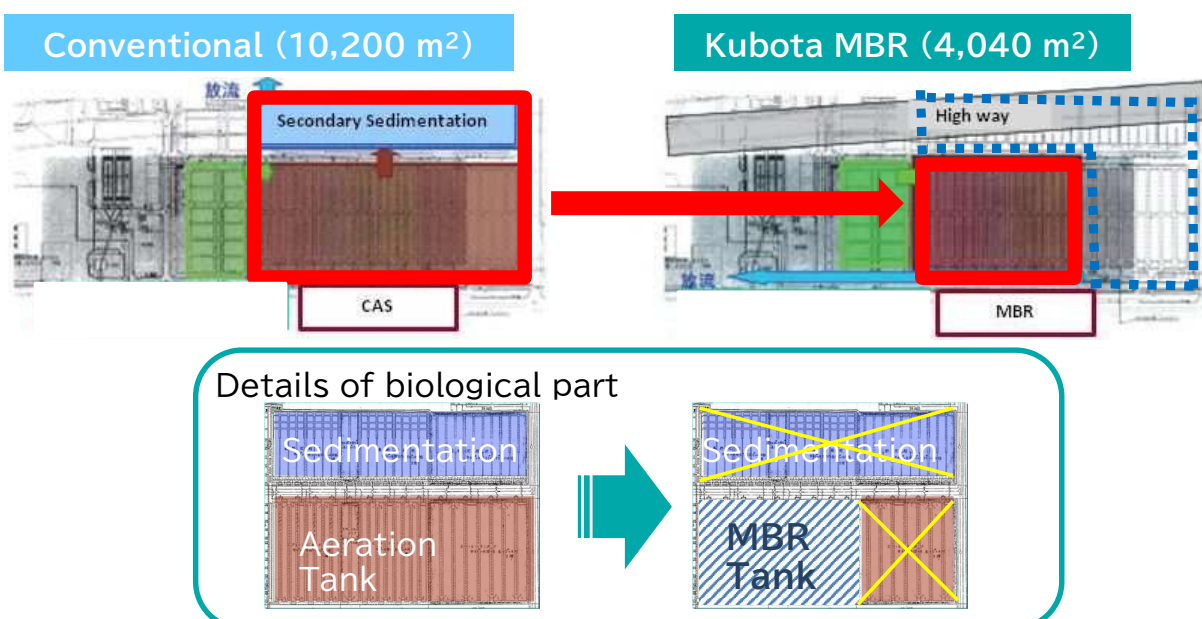
*1: CAPEX:Capital Expenditure

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Advantage1 :Small footprint

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For a 60,000 m³ per day treatment plant, the conventional system needed about 10,200 m², but the Kubota MBR system needed only 4,040 m². That is about a 60% reduction in required area.



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Advantage 2 :Easy Upgrade

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The capacity of the WWTP can be increased up to 250% with cleaner permeate by using the existing aeration tank (Easy Retrofit / Upgrade)



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Advantage 3 :High Effluent Quality

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Kubota

The effluent quality from MBR is the same as Japanese Recycle Standard.

- Project: Wastewater Recycling Plant
- Operation: March. 2007
- Capacity: 680m³/d



TOKYO
MIDTOWN



KUBOTA
MEMBRANE UNIT

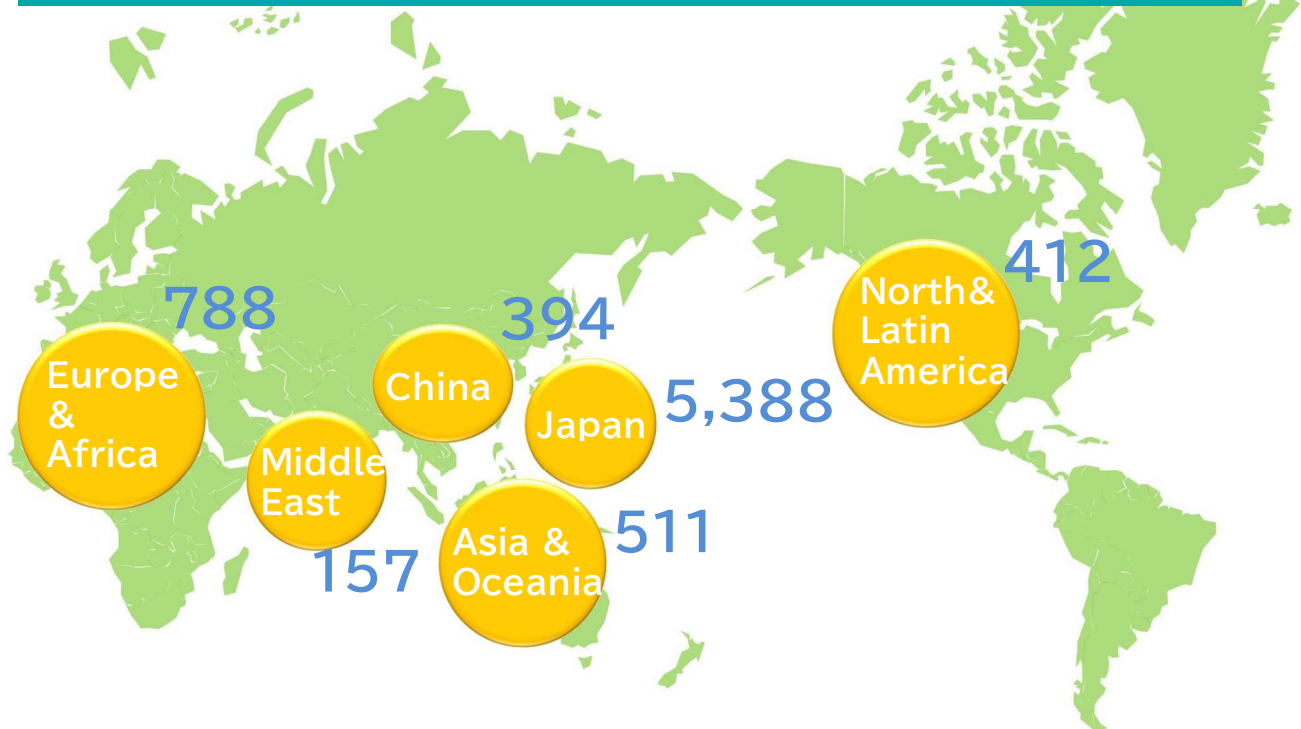


RECYCLING PLANT
OVERVIEW

Parameter	Influent	Effluent	Japanese Recycle Standard
pH	6~8	7.7	5.8-8.6
SS mg/L	215	< 1	Not specified
BOD mg/L	215	1.9	Not specified
Turbidity Degree	Not specified	< 1	< 2
Coliform count CFU/mL	Not specified	Not detected	Not detected

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Kubota MBR (SMU) has been developed since 1986 in Japan.
We have supplied the MBR all over the world.

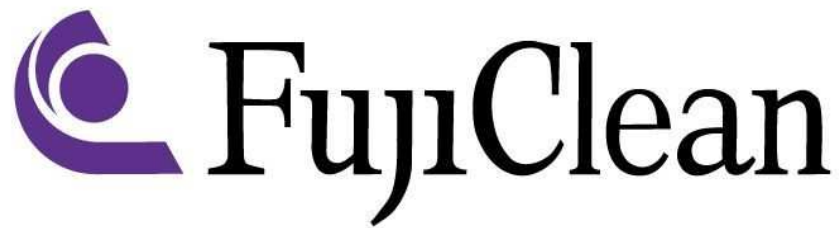


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ON YOUR SIDE

Thank you
ご視聴ありがとうございました。

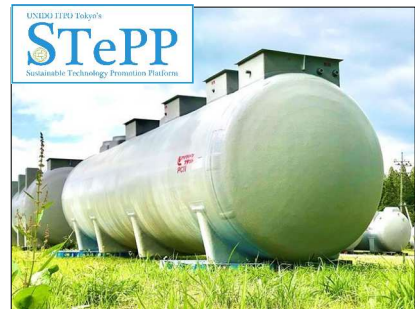


JOHKASOU, Decentralized Wastewater Treatment System

6th AWap Technical Seminar—August 5, 2026

1

Introduction



FujiClean has over 60 years of experience
developing Johkasou technologies.

No.1 of 42 % Market share in Japan millions of project histories

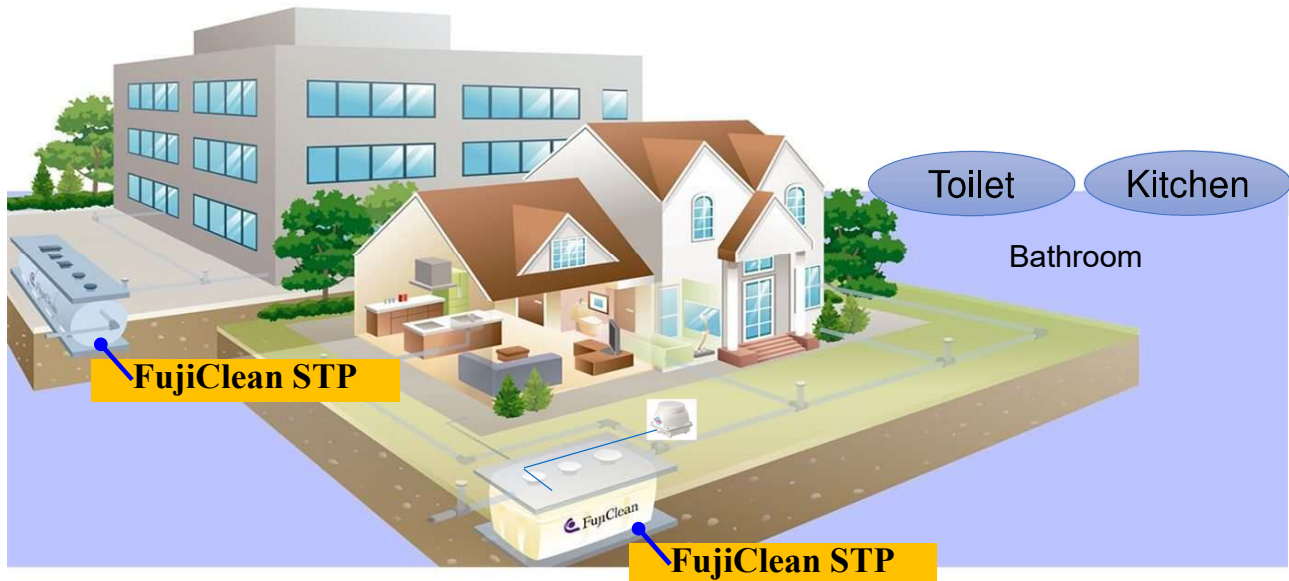
FujiClean Johkasou sales exceeding 50,000 units a year.

Certified in 4 countries, Registered in United Nations Platform



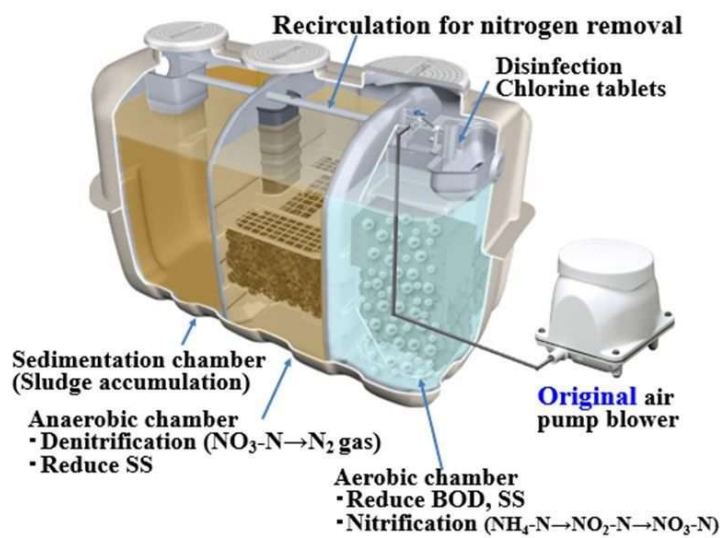
Developing an original
diaphragm air pump

2



3

Proposed Products And Technologies



- FujiClean system adopts a **biofilm method** using microorganisms.

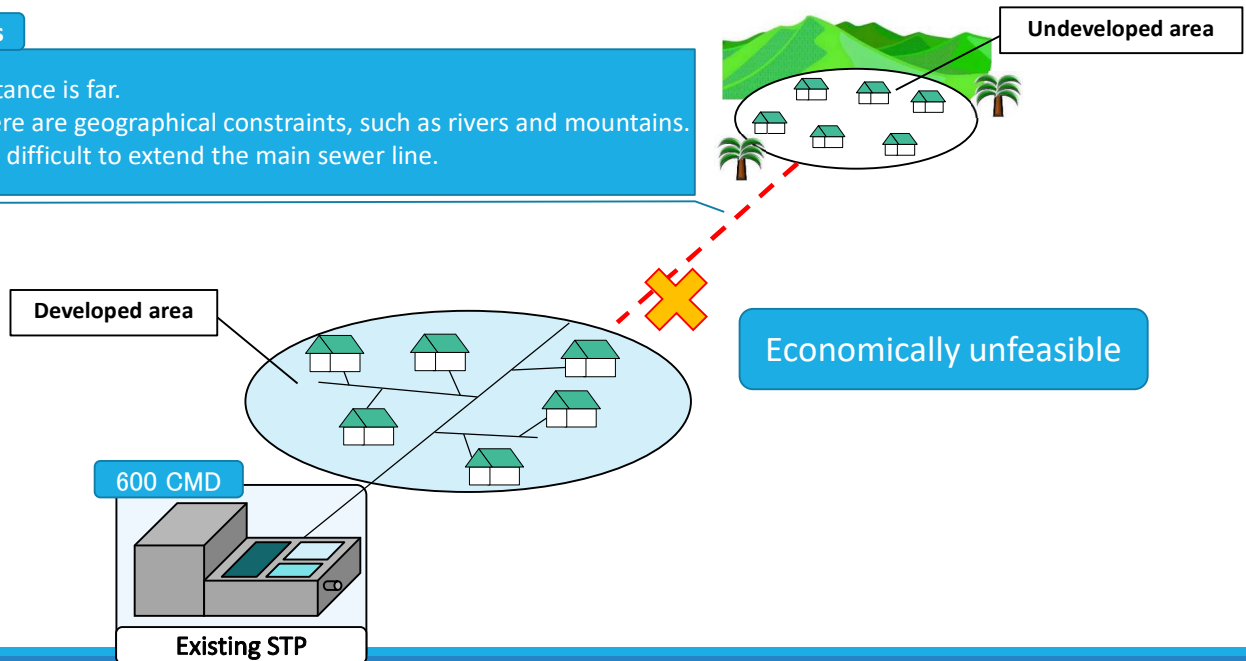
BOD can be reduced by 90%

4

Case 1: Development of areas where STP is not yet widely used

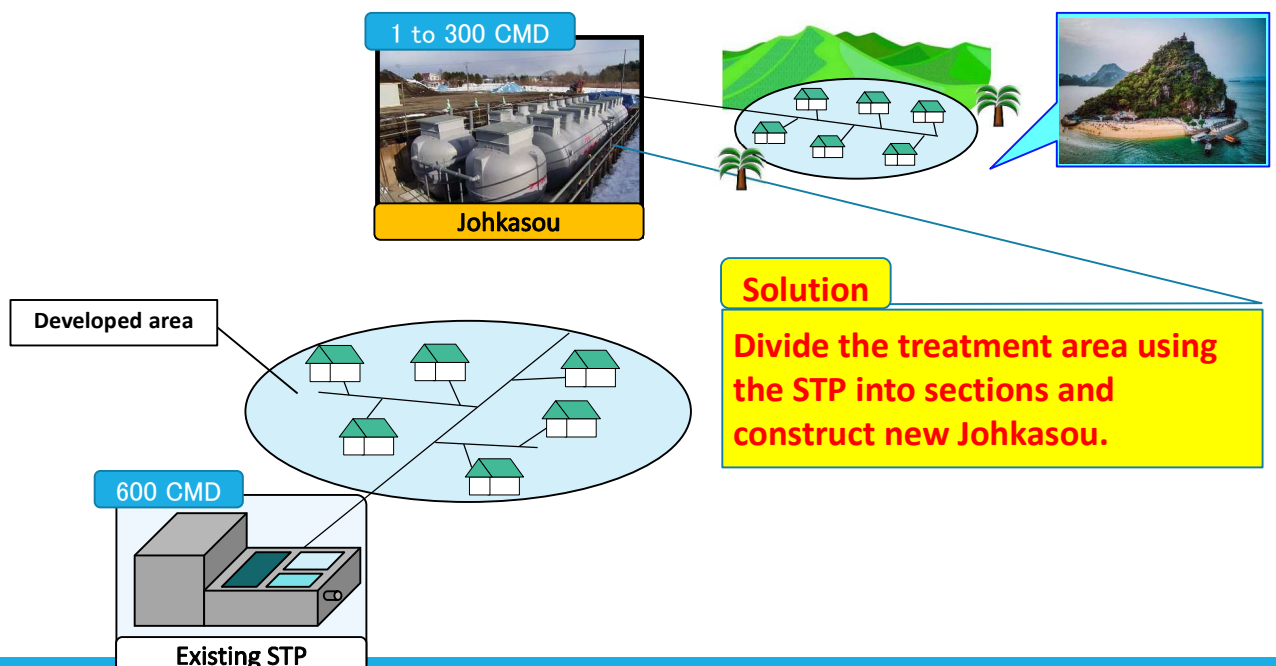
Issues

- Distance is far.
- There are geographical constraints, such as rivers and mountains.
- It is difficult to extend the main sewer line.



5

Case 1: Development of areas where STP is not yet widely used



6

Selection of Johkasou

Based on design information such as the building's purpose and expected number of users, we select the Johkasou.

<Term> P: people, d: day

<Waste water from Nursing home>

- The number of people that use the system 30 P
- The number of staff 15 P
- The number of meal 135 P (45*3)

<Daily hydraulic loading (m³/d)>

Toilet	1.62
Kitchen	1.01
Bath/shower	2.40
Laundry	1.80
Other (Handwash etc.)	0.24
Total	7.07 m ³ /d

Effluent loadings

BOD ₅	50 mg/l	0.35 kg/d
NO ₃	10 mg/l	0.10 kg/d
NH ₄	18 mg/l	0.13 kg/d
T-N	18 mg/l	0.13 kg/d
T-P	4 mg/l	0.03 kg/d

Example

<Influent term>

	Unit BOD loading (g/d)	Unit T-N loading (g/d)	Unit BOD loading (g/d)	Unit T-N loading (g/d)	BOD loadings (kg/d)	T-N loadings (kg/d)
Toilet	10.44	6.87	10.44	6.87	0.47	0.31
Kitchen	3.83	0.23	0.00	0.00	0.52	0.01
Bath/shower	1.00	0.00	0.00	0.00	0.03	0.00
Laundry	14.00	0.00	0.00	0.00	0.42	0.00
Other	0.80	0.00	0.00	0.00	0.02	0.00
TOTAL	30.07	7.10	10.44	6.87	1.46	0.32

Premise T-N_{in} ≈ NO₃ T-N_{in} ≈ NH₄

○ Loadings to remove

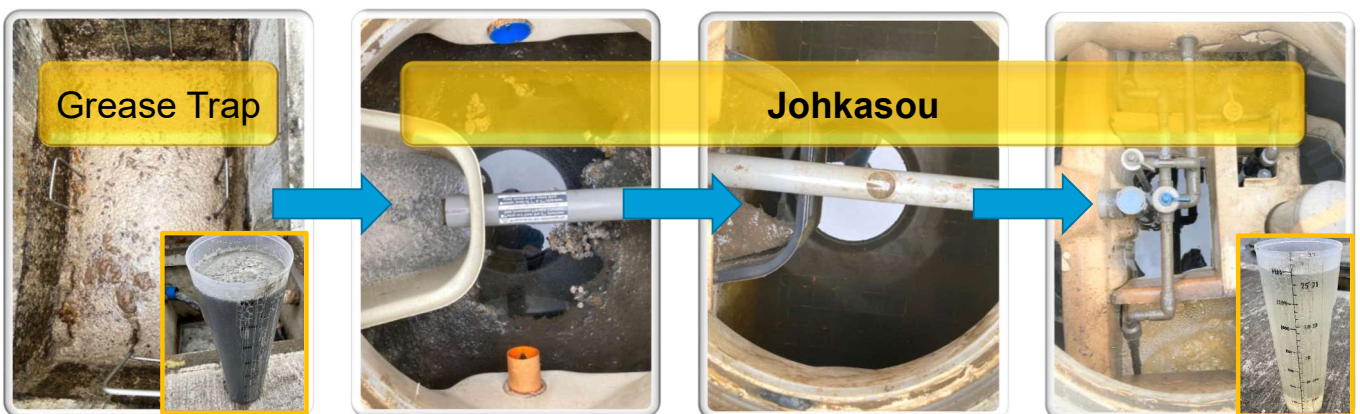
	Influent loadings	Effluent loadings	
BOD loading	1.46 kg/d	0.35 kg/d	1.11 kg/d
T-N loading	0.32 kg/d	0.13 kg/d	0.19 kg/d
NH ₄ loading	0.32 kg/d	0.03 kg/d	0.29 kg/d
T-P loading	0.03 kg/d	0.03 kg/d	0.00 kg/d



Which should be selected?

7

The Importance of Maintenance



Johkasou are systems that require maintenance. Adjusting them every few months ensures they continue to function properly.

Johkasou service life is 30+ years.

8

Thank you for your attention



JPRSI

<https://jprsi.go.jp/>
環境インフラ海外展開プラットフォーム
JAPAN PLATFORM for REDESIGN : SUSTAINABLE INFRASTRUCTURE



Find FujiClean on YouTube

Let's restore natural waterways and make them clean enough for children to play in.



NIPPON STEEL
ENGINEERING

Introduction of Sewage sludge granulation–drying technology – J-Combi™ –



2026.8

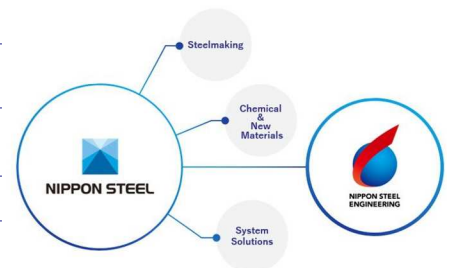
1. Company Overview



Representative Director and
President Yukito Ishiwa

Building the Future. Empowering Society.

Company Name	NIPPON STEEL ENGINEERING CO., LTD.	
Date of Establishment	1 st July 2006	The Engineering Division of former NIPPON STEEL CORPORATION has become an independent company.
Head office	Osaki Center Building, Osaki 1-5-1, Shinagawa, Tokyo 141-8604 Japan	
Capital	¥15 billion	
Employees	Non-consolidated 1,956 Consolidated 5,631 (as of March 31, 2026)	
Annual sales	¥394.4 billion (FY2025 ; consolidated)	



NIPPON STEEL ENGINEERING

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1. Company Overview(What we do)

Environment & Energy Solutions



■ Direct Melting System



■ Offshore Platforms



■ Fabrication and Installation of Foundations for Offshore Wind Turbines



■ Energy Saving CO₂ Absorption Process (ESCAP[®])



■ Coke Dry Quenching (CDQ) System



■ Geothermal Power Plants

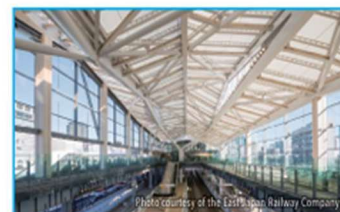
Buildings & Infrastructure



■ Logistics Facilities



■ Marine Infrastructure Development (Port Facilities & Marine Airports)



■ High-Tech Steel Structures
(Steel Frames for Skyscrapers, Special Structures, Hybrid Structures (wood + steel))



■ NS-SSB[™] (Spherical Sliding Bearings)



■ Bridge Products

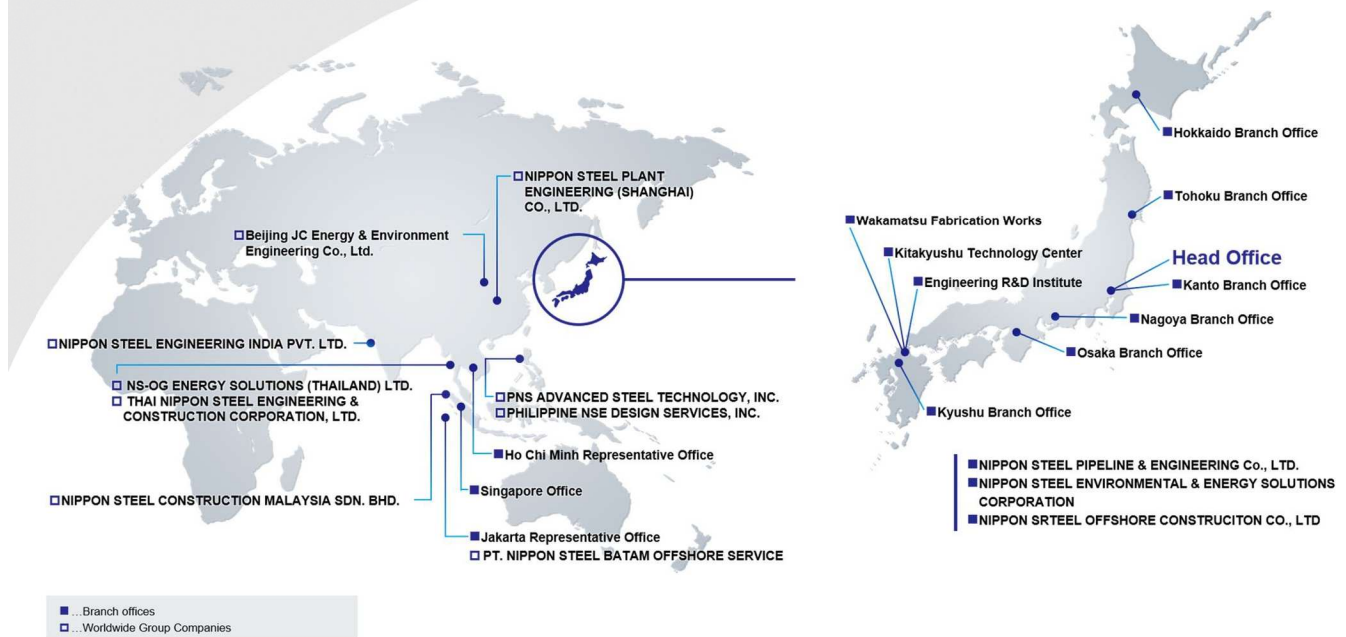


■ Standardized Buildings

NIPPON STEEL ENGINEERING

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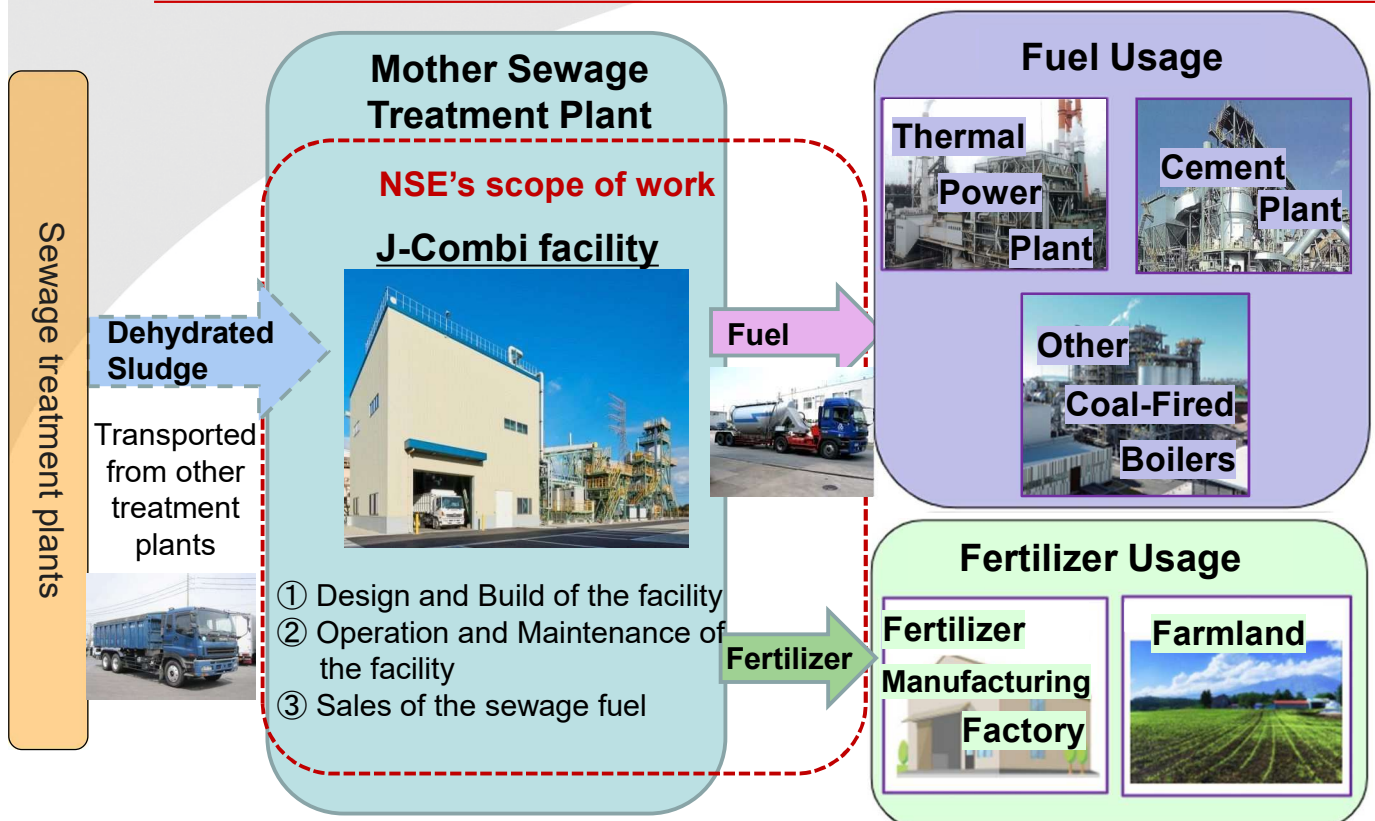
1. Company Overview(Our Network)



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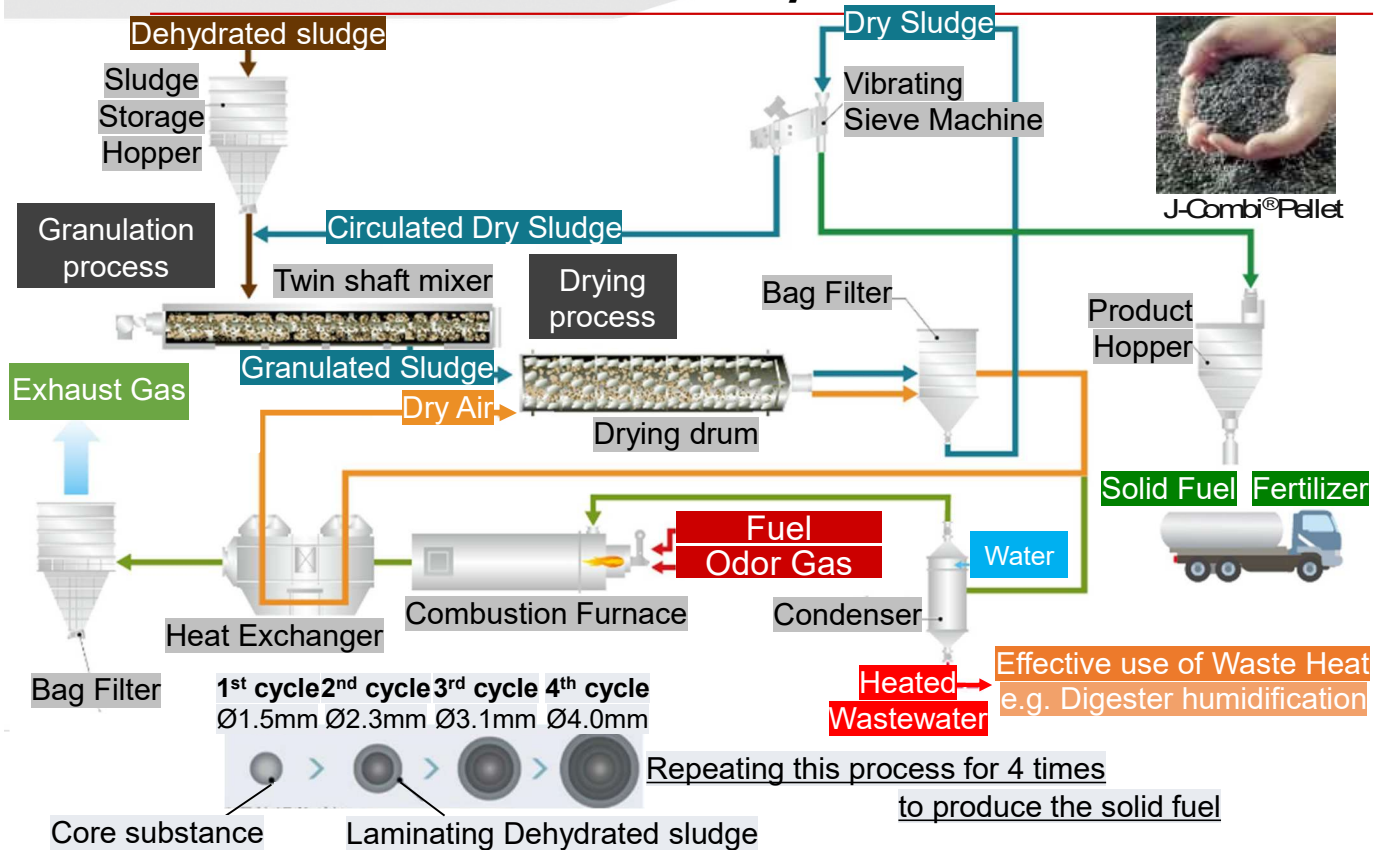
2. Business scheme of J-Combi®



NIPPON STEEL ENGINEERING

©2023 NIPPON STEEL ENGINEERING CO., LTD.

3. Process Flow of J-Combi® system

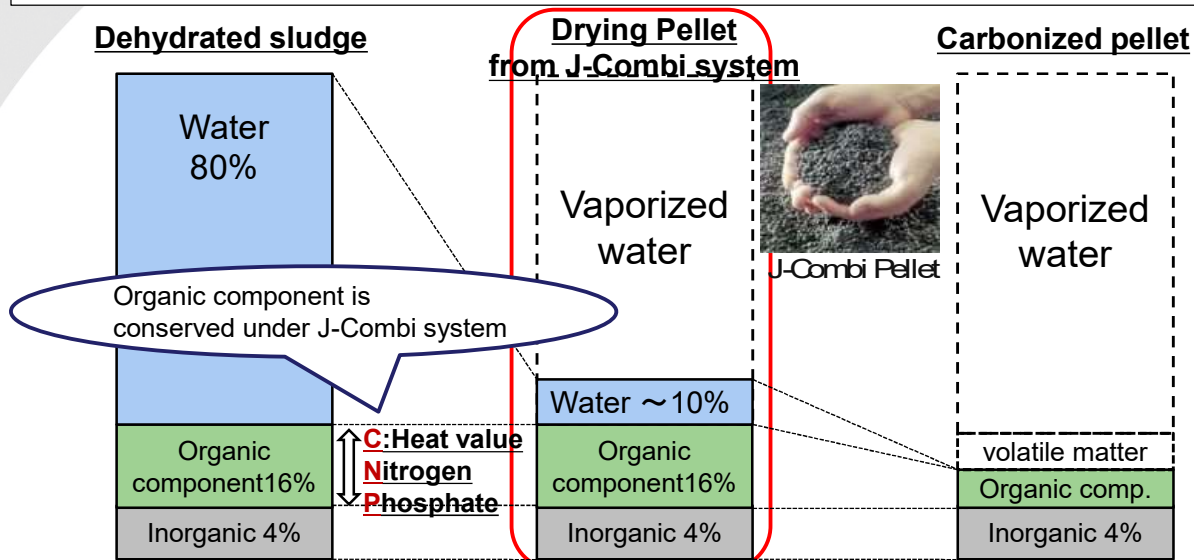


NIPPON STEEL ENGINEERING

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4. Characteristics of Sewage Pellet by J-Combi®

- Organic components are conserved under J-Combi® system
⇒ **High value both as fuel (C : heat value) and as a fertilizer resources (N and P).**
- J-Combi® pellets uniform in size approximately 1-5mm, and hardly granuled.
⇒ **Less dust and easy to handle.**
- J-Combi® pellets have low moisture content of about 10%
⇒ **The risks of spoilage and heat generation from oxidation or fermentation are minimized.**
This allows for stable long-term storage in terms of both composition and safety.



NIPPON STEEL ENGINEERING

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5. Fuel Characteristics of J-Combi® Dried Pellets

Item		Unit	Drying Pellet by J-Combi®	Carbonized pellet*	Coal
Chara cteris tic	Shape	—	Granular(1~5 mm)	Cylindrical shape	—
	Calorific Value (Undigested)	MJ/kg-DS	19~20	18~21	26MJ/kg (Regular)
	Calorific Value (Digested)	MJ/kg-DS	12~16	10~16	
	Product Recovery Rate	%	22	16	—
	Smell	—	Fertilizer-like smell	Tar-like smell	—
Meas ured Item	Volatile Matter	Wt%-DS	74.1	55.1	26.8
	Fixed Carbon	Wt%-DS	12.7	20.4	56.0
	Ash	Wt%-DS	13.2	24.5	14.5
	Moisture	Wt%-WET	Less than10	Less than5	8
	HGI	—	20~30	30~50	40~60
	Carbon(c)	Wt%-DS	46.7	41.6	85.1
	Hydrogen(H)	Wt%-DS	6.6	3.9	5.1
	Nitrogen(N)	Wt%-DS	5.1	3.0	1.6
	Oxygen(O)	Wt%-DS	29.2	5.9	7.9
	Sulfur(TS)	Wt%-DS	0.8	0.3	0.4
	Chloride(TCI)	Wt%-DS	0.1	0.1	0.02

*From materials of the Japan Sewerage Works Agency

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8

6. Reference projects (1/2)

NSE has been conducting eight projects in Japan under DBO* scheme.

*Design-Build-Operate

	Kitakyushu city, Fukuoka pref	Fukuyama city, Hiroshima pref	Nagoya city, Aichi pref	Fukuoka city, Fukuoka pref
Cap	70ton/day × 1 line	72ton/day × 1line	100ton/day × 2line	50ton/day × 2line
Term	2015Fy~ for 20years	2017Fy~ for 20years	2020Fy~ for 20years	2021Fy~ for 20years
Sewa ge	Undigested sewage	Digested/Undigested sewage	Undigested sewage	Digested sewage
Fuel	Digestive gas	Digestive gas	Natural gas	Digestive gas
Area	6,344m ² (122m × 52m)	3,150m ² (45m × 70m)	2,720m ² (68m × 40m)	3,850m ² (35m × 110m)
Appea rance				

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9

6. Reference projects (2/2)

NSE has been conducting eight projects in Japan under DBO* scheme.

*Design-Build-Operate

	Oita city, Oita pref.	Matsuyama city, Ehime pref.	Amagasaki city, Hyogo pref	Kusatsu city, Shiga pref
Cap	90ton/day × 1line	90ton/day × 1line	140ton/day × 2line	125t/day × 1line
Term	2022Fy~ for 20years	2022Fy~ for 20years	2021Fy~ (DB scheme)	2026Fy~ for 20years
Sewage	Undigested sewage	Digested/Undigested sewage	Digested sewage	Digested/Undigested sewage
Fuel	LNG	Digestive/Natural gas	Digestive/Natural gas	Digestive/Natural gas
Area	2,379m ² (39m × 61m)	2,750m ² (50m × 55m)	4,060m ² (58m × 70m)	1,364m ² (44m × 31m)
Appearance				

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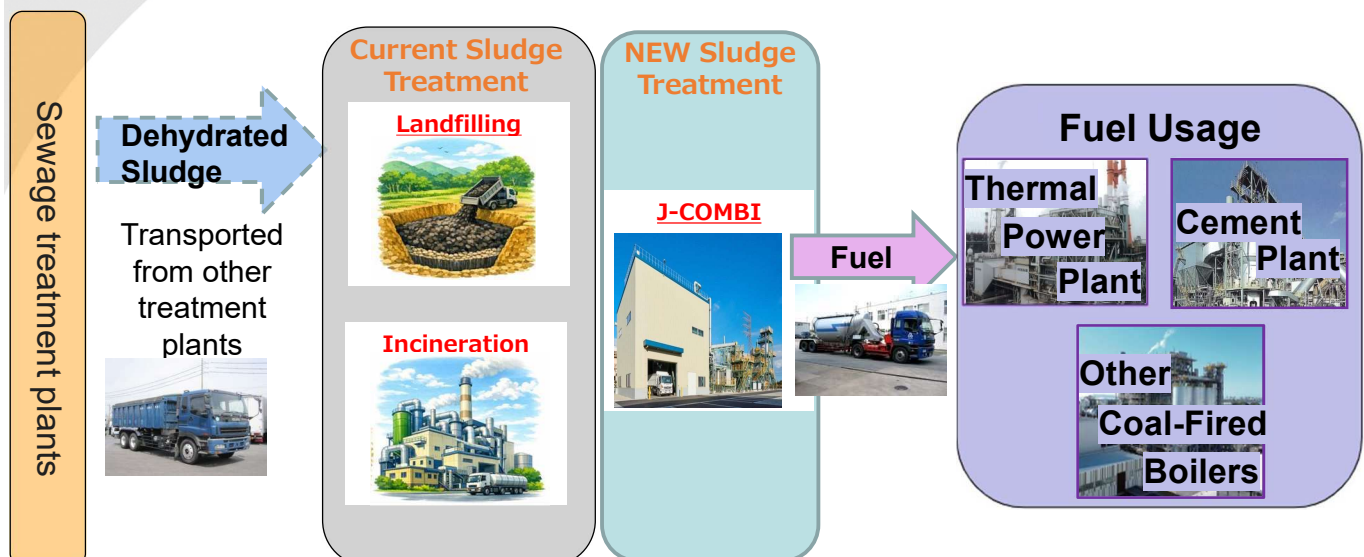
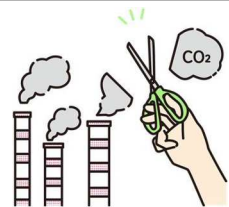
10

7. Estimated CO₂ Reduction Benefits

Estimated CO₂ Emission Reduction through J-Combi Implementation

(Assumed Case: 90 t/day, 330 operating days/year)

- ◆ Coal substitution: **9,331 t-CO₂/year**
 - ◆ Avoided landfill emissions: **10,649 t-CO₂/year**
 - ◆ Additional emissions from J-Combi operation: **(2,636–7,287) t-CO₂/year**
- ⇒ **Net Reduction: Approximately 12,000–17,000 t-CO₂/year**



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Thank you for your attention



日鉄エンジニアリング
NIPPON STEEL ENGINEERING



Business Contact(E-mail)

NIPPON STEEL ENGINEERING

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TOKYO
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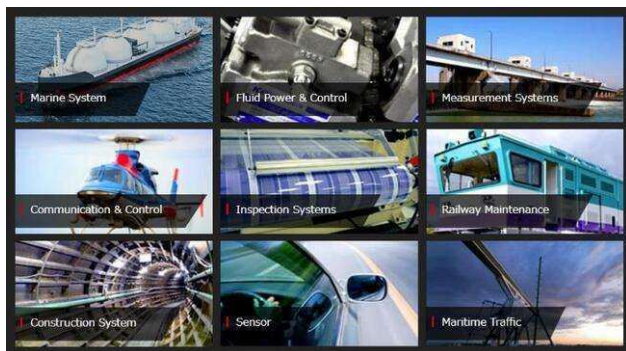
Company Introduction



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TOKYO KEIKI INC.

Established May 1, 1896
Capital 7,217 million yen
Employees (Group) 1,500 (approx.)
Head Office Haneda Airport, Ohta-Ku, Tokyo
Stock Listing TSE "Prime Market" (code:7721)

**Company**

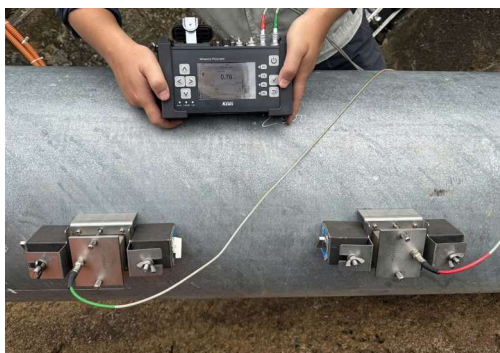
- Marine Systems Company
- **Measurement Systems Company**
- Fluid Power & Control Systems Company
- Inspection Systems Company
- Electronics Systems Company
- Communication & Control Systems Company

Business

- Marine equipment
- **Fluid management equipment**
- Hydraulic & control equipment
- Industrial radio control system
- Printing inspection systems
- Defense systems
- RF Products, Sensors

YouTube https://www.youtube.com/watch?v=vGa_9z9q6as

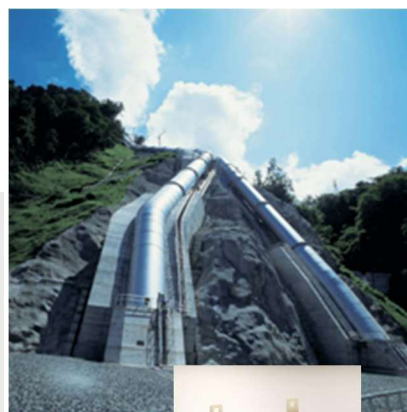
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Fluid Management

Portable Ultrasonic Flow Meter



Non-contacting radar Level Gauge



Stationary Ultrasonic Flow Meter

**Supporting the Effective Utilization of Fluid Resource with
Highly Advanced Measuring Techniques**

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Flow Research, Inc.
27 Water Street
Wakefield, MA 01880
(781) 245-3200
(781) 224-7552 (fax)
www.flowresearch.com

Ultrasonic Flowmeter Study Overview

Flow Research has conducted a study on the size of the ultrasonic flowmeter market. The study is called "The Ultrasonic Flowmeter Study Overview".

The study includes the following:

- Worldwide market
- Market growth
- Industries and areas
- A product analysis
- Strategies to use
- Company profile

The study also examines the growing use of ultrasonic flowmeters for gas flow measurement. Commonly used for natural gas, it is a fast growing market, especially with the increased popularity of natural gas as an energy source, and due to the rising price of both oil and natural gas.

This study also looks at the growth in the hybrid flowmeter market.

Hybrid flow measurement is a new frontier for ultrasonic flowmeters. Currently, this market is dominated by differential pressure (DP) and vortex flowmeters. However, as the technology improves, this is becoming a growth area for ultrasonic flowmeters.

Steam flow measurement is a new frontier for ultrasonic flowmeters. Currently, this market is dominated by differential pressure (DP) and vortex flowmeters. However, as the technology improves, this is becoming a growth area for ultrasonic flowmeters.

Background of Study

There are two main types of ultrasonic flowmeters: transit time and Doppler. A transit time ultrasonic flowmeter has both a sender and a receiver. It sends two ultrasonic signals across a pipe at an angle: one with the flow, and one against the flow. The meter then measures the "transit time" of each signal. When the ultrasonic signal travels with the flow, it travels faster than when it travels against the flow. The difference between the two transit times is proportional to flow rate.

Doppler flowmeters also send an ultrasonic signal across a pipe. Instead of tracking the time the signal takes to cross to the other side, a Doppler flowmeter relies on having the signal reflected by particles in the flow stream. These particles are traveling at the same speed as the flow. As the signal passes through the stream, its frequency shifts in proportion to the mean velocity of the fluid. A receiver detects the reflected signal and measures its frequency. It then calculates the flow by comparing the transmitted and received frequencies. Doppler ultrasonic flowmeters are not used with dirty liquids or slurries. They are not used to measure gas or steam flow.

Ultrasonic flowmeters were first introduced for industrial use in 1963 by Tokyo Keiki (which later became Tokimec) in Japan. Tokimec is located in Tokyo, Japan. In 1972, Controlotron (now Emerson) introduced its first ultrasonic flowmeter. It was used to measure the flow of oil.

Source: The World Market for Ultrasonic Flowmeters, 3rd Edition
Flow Research, Inc.

ULTRASONIC FLOWMETERS

MANY PATHS TO SUCCESSFUL FLOW MEASUREMENT

BY JESSE YODER

Some ultrasonic flowmeters send out two signals and have one receiver. The receiver measures the time it takes the ultrasonic signal to travel across the pipe and how long it takes the signal to travel back. The difference between the two transit times is proportional to flow rate. On the other hand, when the signal travels against the flow it takes longer. The difference between the two transit times is proportional to flow rate.

Transit time flowmeters work best with clean fluids. However, much expense has been made in adapting transit time flowmeters to fluids that contain some impurities. Doppler-based meters, for example, actually measure impurities in the liquid to operate properly.

Doppler flowmeters send an ultrasonic signal across a pipe, but the signal goes only part way. Instead of sending the signal to the other side of the pipe, a Doppler flowmeter relies on having the signal reflected by particles in the flow stream. These particles are traveling at the same speed as the flow. As the signal passes through the stream, its frequency shifts in proportion to the mean velocity of the fluid. A receiver detects the reflected signal and measures its frequency. It then calculates the flow by comparing the transmitted and received frequencies. Doppler ultrasonic flowmeters are not used with dirty liquids or slurries. They are not used to measure gas or steam flow.

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Source: The World Market for Ultrasonic Flowmeters, 3rd Edition
Flow Research, Inc.

How It All Began

The story of ultrasonic flowmeters began in 1963, when Tokyo Keiki introduced them in Japan for industrial use. Since that time, Tokyo Keiki has become Tokimec (www.tokimec.co.jp), and the company still offers ultrasonic flowmeters for sale. Tokimec is located in Tokyo, Japan. However, much has changed in the days since ultrasonic flowmeters were first introduced.

Ultrasonic flowmeters were first introduced for industrial use in 1963 by Tokyo Keiki (which later became Tokimec) in Japan. Tokimec is located in Tokyo, Japan. In 1972, Controlotron (now Emerson) introduced its first ultrasonic flowmeter. It was used to measure the flow of oil.

Source: The World Market for Ultrasonic Flowmeters, 3rd Edition
Flow Research, Inc.

used with dirty liquids or slurries. They are not used to measure gas or steam flow.

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Overview-The World Market for Ultrasonic Flowmeters, 3rd Edition
Flow Research, Inc.

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Variety pipe size coverage



High accuracy reference meters

- Calibration system : Weighing / Master Meter
- Uncertainty : **0.07%**
- Applicable pipe dia : DN50 ~ DN600
- Maximum Flowrate: 2000m³/h Max.
- Over Head height : 25m (0.25MPa)
- Applicable Cert. : JCSS / **ISO 17025**



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Stationary Ultrasonic Flowmeter UW-10

TOKYO
KEIKI



Transit Time Differential method
Clamp-On , non-intrusive installation

**Permanent flow measurement for
DN25mm – DN6000mm pipe**



Hydro power plant DN3000 pipe



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Portable Ultrasonic Flowmeter UW-30P

TOKYO
KEIKI



3 in 1 Meter (DN13mm-DN5000mm)
- Flow meter
- Mass meter
- Heat meter

Weather-proof IP65 (main unit)
Sensor water proof IP68
USB Data transfer
Report output function



Temporary flow measurement for metal / non-metal pipe



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Battery-Powered Clamp-on ultrasonic flowmeter for liquid UC-1

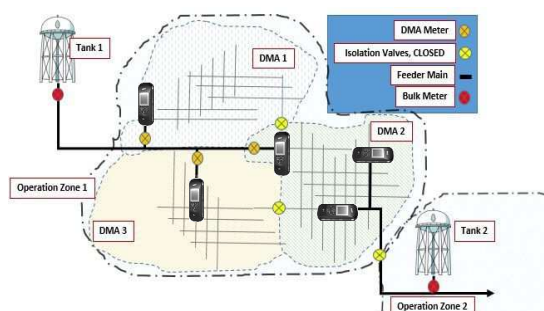
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**Long term flow monitoring by
10 years battery life**



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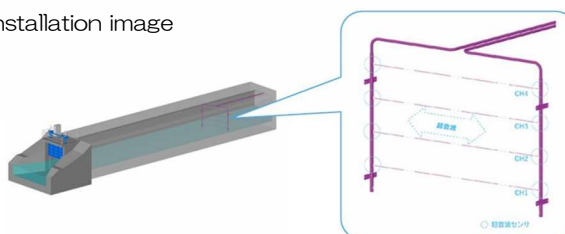
Gate control by Ultrasonic Flow direction detector UD-10S / UD-10L

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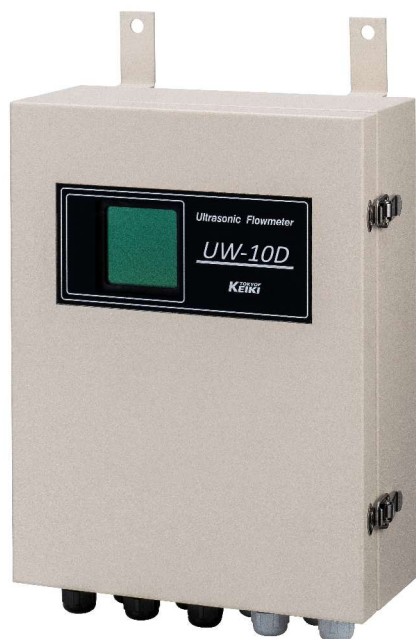


**Flow direction detecting by
ultrasonic sensors**

Installation image



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Ultrasonic Pulse Doppler Radar Gauge Available **UW-10D**

Dimensions of Circular type: Inner diameter ϕ 250 ~ 5000mm

Dimensions of Rectangular: Width 250 ~ 5000mm

- Ultrasonic Pulse Doppler
- Radar Level Gauge available for Level Measurement
- Open Channel
- High Accuracy : $\pm 3\%$ of full scale
- Measuring Range : -5 ~ +5m/s (Velocity)
- : 0 ~ +5000mm (level)
- Multi Path measuring available (Option)
- Wide View LCD
- Power Consumption < 30VDC or AC180V – 264V

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Open Channel for Sewage Water

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UVH-3000
UW-10D

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K-band Non-contacting Radar Gauge KRG-10

TOKYO
KEIKI



PTFE Sealing antenna



Cone antenna

2 Wired Radar (4-20mA +HART)
26GHz Radar Frequency
Easy Installation with any Flange

Non-contacting tank level measurement by radar



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Non-contacting Radar Gauge MW-10/11

TOKYO KEIKI

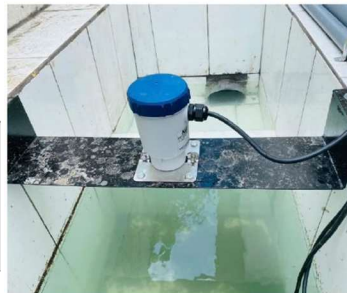
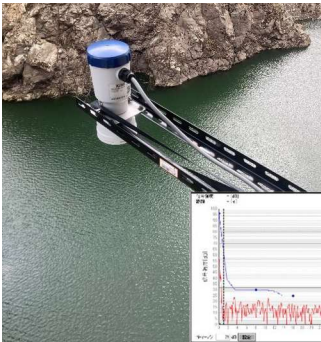


Light weight, easy design for mounting
Narrow beam for small channels
Flowmeter for open channel

**Long range measurement
with 80GHz frequency radar**

Radar Level Gauge Application Report 173

- Weir Flow Measurement -



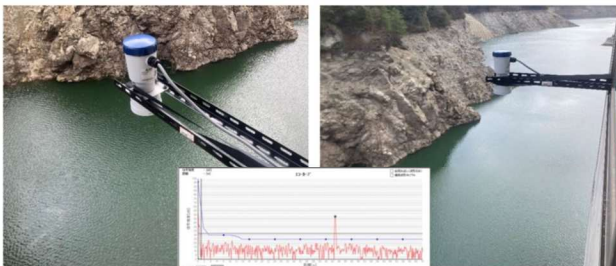
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EXAMPLES

TOKYO KEIKI

Radar Level Gauge Application Report 119

- Hydro Power Plant Water Level Monitoring -



Radar Level Gauge Application Report 085

- Sea Water Level Monitoring -



Microwave Level Gauge Application Report 137

- Combination of Rainfall Gauge and River Water Monitoring -



Microwave Level Gauge Application Report 139

- Combination of Rainfall Gauge and River Water Monitoring -



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River level monitoring~Warning signals of flooding~

TOKYO
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Flood monitoring ~Standalone system~

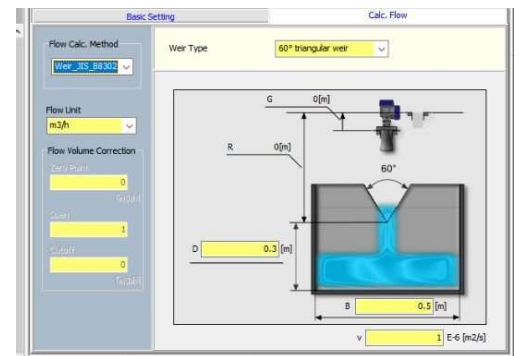
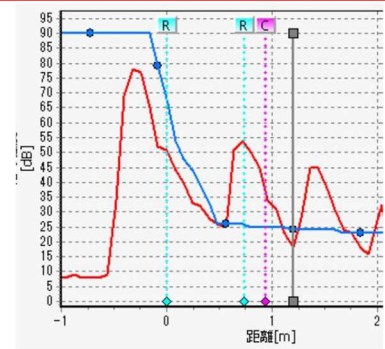
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Weir Flow Measurement

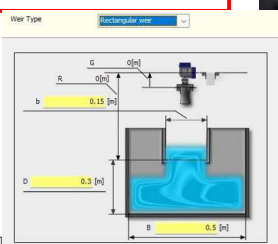
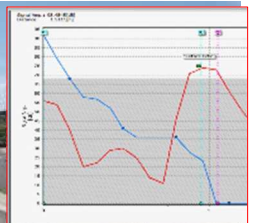
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KEIKI



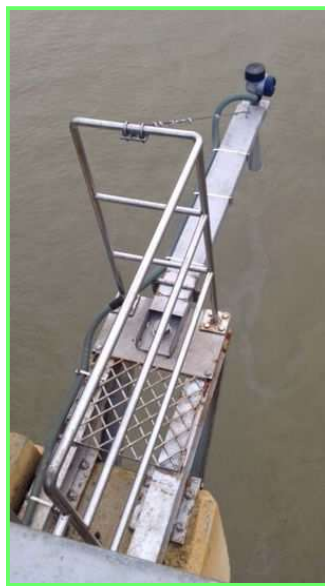
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Weir Flow Measurement

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Hybrid Non-contacting level gauge HC-10



Principle	Pulse Radar (5.8GHz/35μV/m@3m)	
Antenna	Microstrip antenna	Beam Angle E plane 50°/H plane 23°
Measuring range	-8m~+10m	Level over non-contacting radar device will be "Minus"
Accuracy (Radar)	+/-10mm	+0.3m~+10m Resolution 1mm (Digital)
Accuracy (Pressure)	+/-50mm	-8m~+0.3m Resolution 1mm (Digital)
Interval	1 sec	
Power Supply	DC16V~36V	2 wire (Looped-powered)
Temperature	-20℃~+70℃	
Material	Main body Antenna Pressure gauge	SCS14 Hard PVC (Heat resistance) SUS316L / Resin
Applicable size	Over 200R	Or over φ400
Other grade	Lightening EMC directive Vibration IP Class	IEC61000-4-5LV4 EN61000-4-4/4-6 IEC60068-2-6/1G IEC60529 IP68(10m/24h)

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@Normal time

Non-contacting radar
measures water level

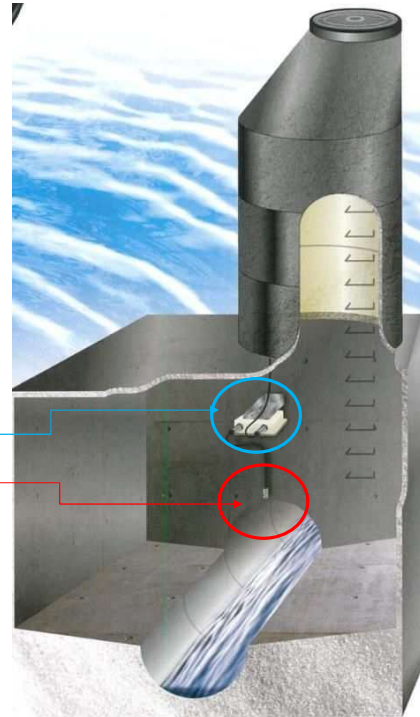
⇒ **Least maintenance**

@ Emergency time

Non-contacting radar

+ Pressure gauge

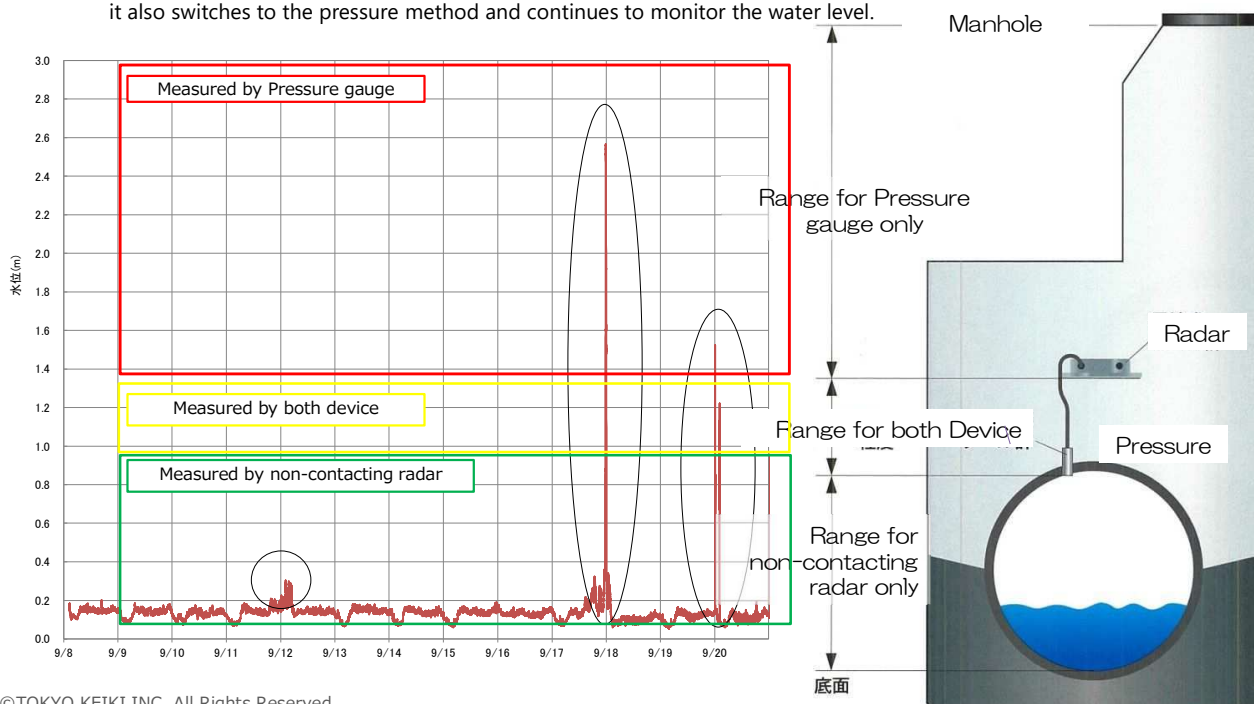
⇒ **Continuous measurement**



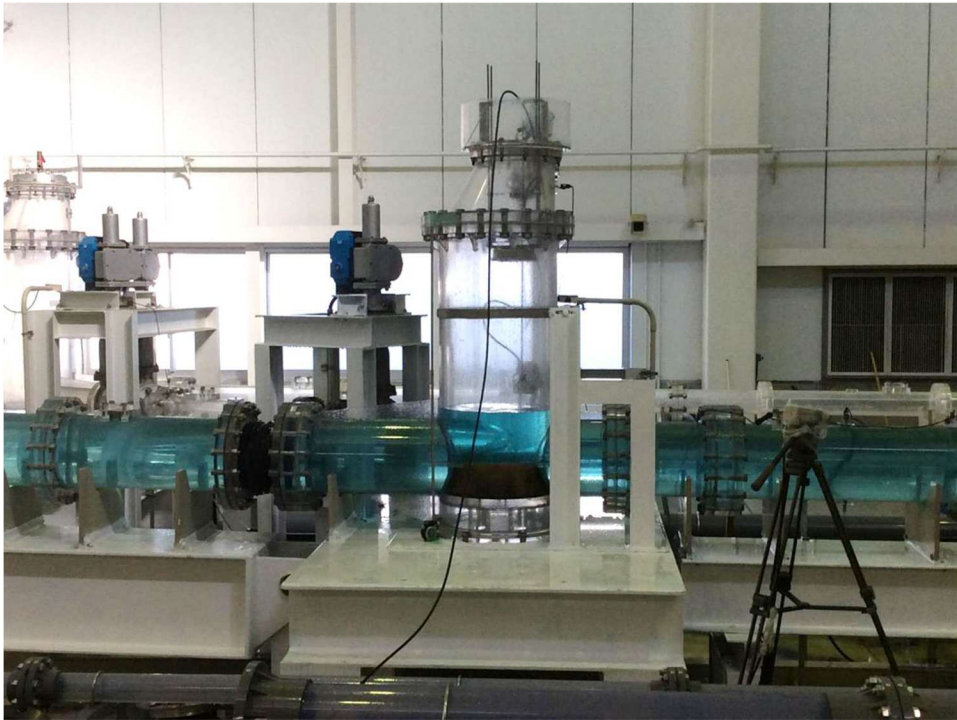
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2 way measurement

In normal times, it monitors with a non-contact radar level gauge that emphasizes maintainability, and in the event of flooding, it also switches to the pressure method and continues to monitor the water level.



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Underground Sewage

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Underground Sewage

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Thank you for your attention

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20210701 NM

Asia Wastewater Management Partnership (AWaP)

5 August 2026

Nihon Suido Consultants Co., Ltd.

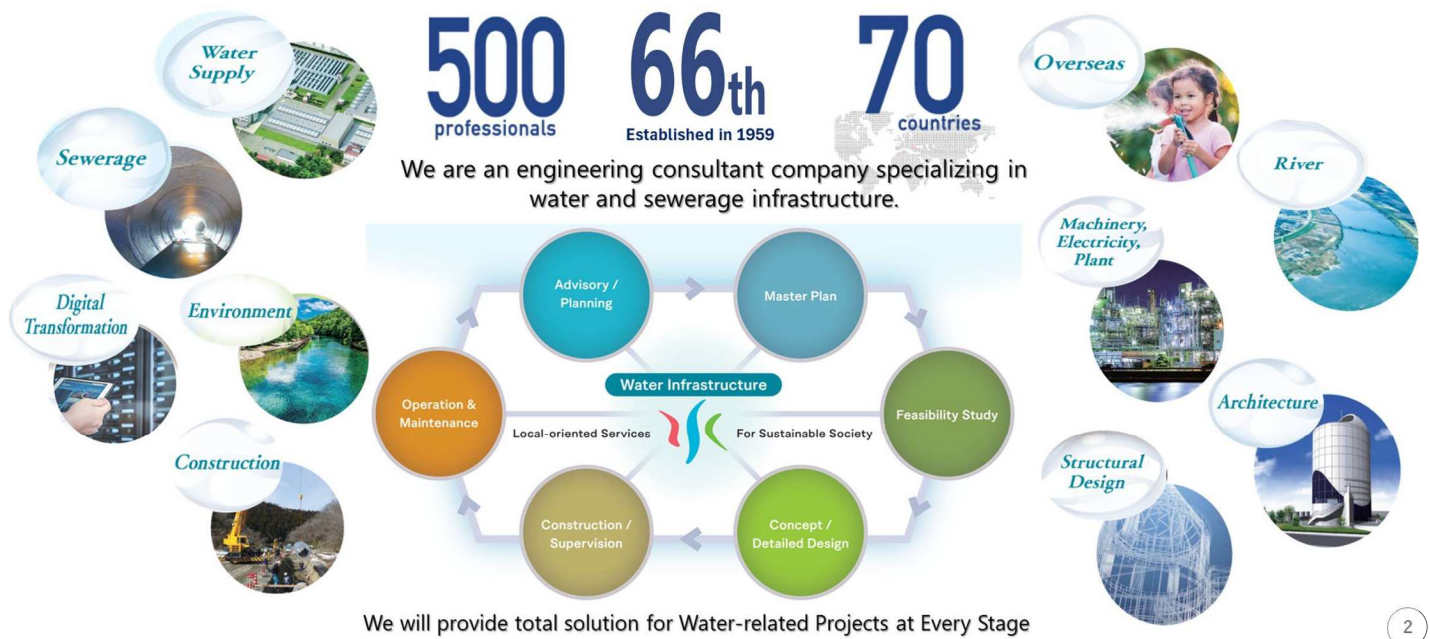
Real-time Stormwater Management System Utilizing SAR Satellite

**Overseas Management Division
Business Development Headquarters**

**TOBE Tatsuya
Professional Engineer (Civil)
Senior Manager for Project Strategy**

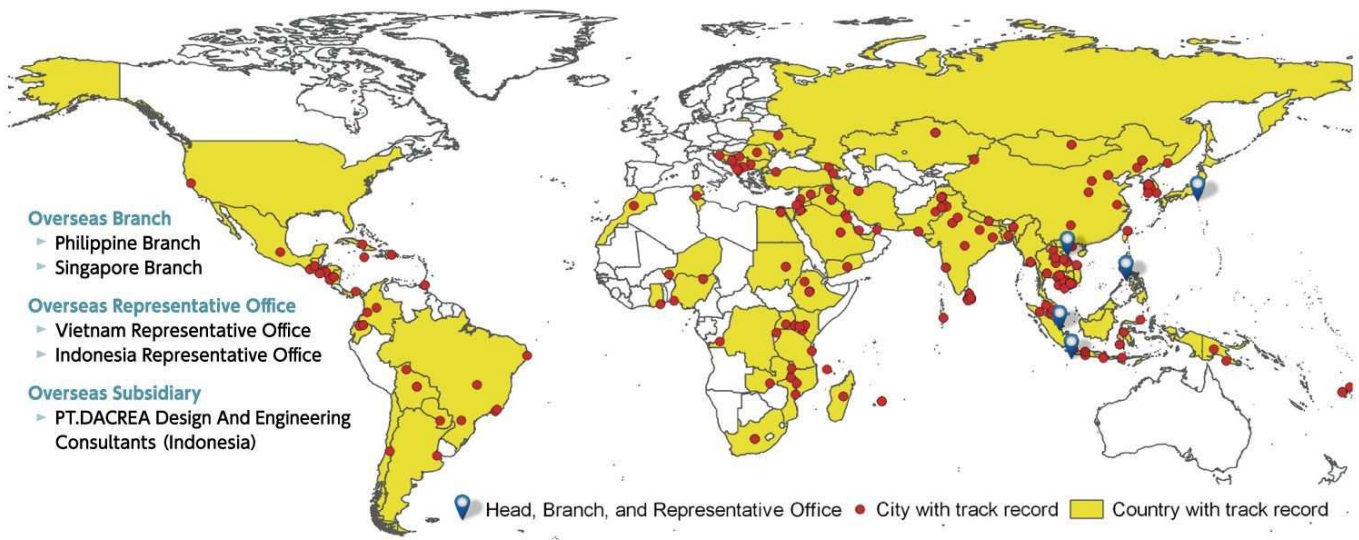
Nihon Suido Consultants Co., Ltd.
Water and Environmental Consultants

Company Profile of NSC



2

Our Presence in the World

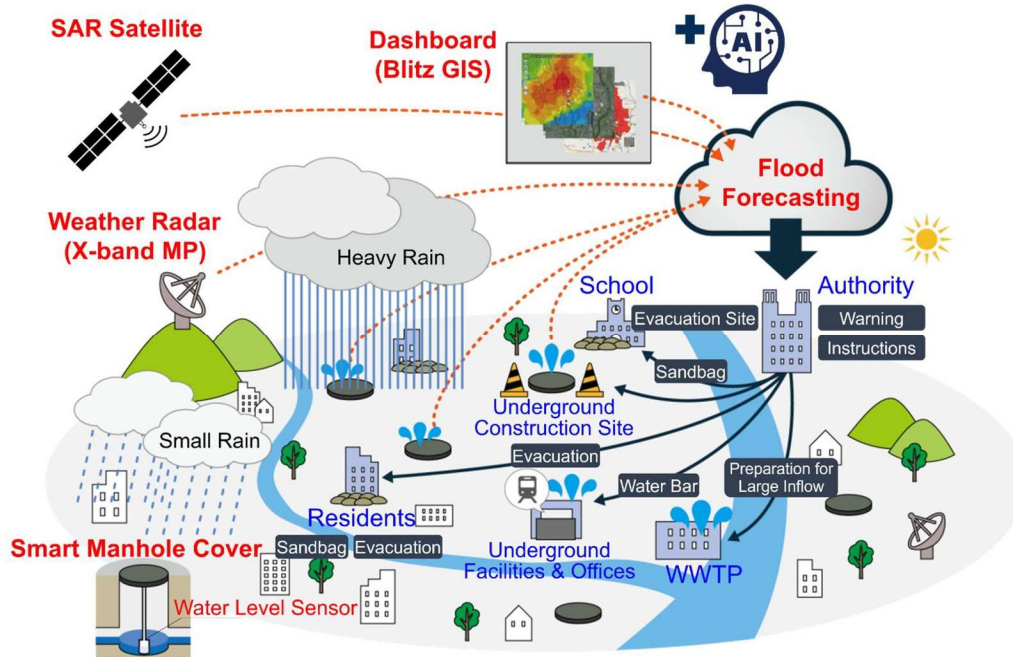


- Establishment Year : 1959
- Number of Staff : 668
- ISO 9001:2015, ISO 14001:2015, ISO/IEC 27001:2022, ISO 55001:2014 registered

(as of Dec 2025)

3

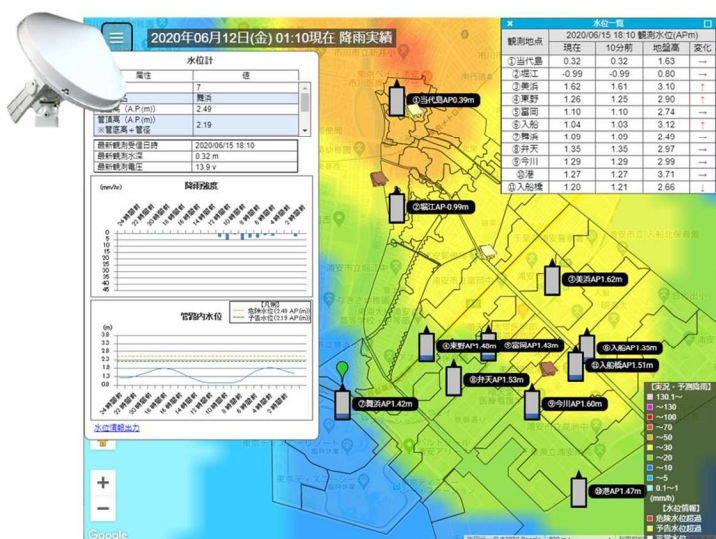
Real-time Stormwater Management System



4

2. Stormwater Management System

Rainfall information (weather radar) & water level: Real-time observation



Alert Notification (E-mail)

Water Level Alert(Tulip Drive: Tul01s)

Alert@nissulcon-rd-dashboard.link
宛先: 伊藤 達也 (Tobe Tatsuya)

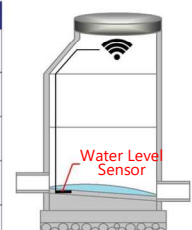
● 保持: アイテム10年保持ポリシー (10 年) 有効期限: 2034/10/05 (木) 23:35

The water level has been over the Hazardous Water Level (Pipe Crown Level)

[Over Hazardous Water Level (0.9 m)]
10:30 PM, 07/10/2024 at Tulip Drive: Tul01s, Observed Water Level: 1.127 m

Alert Symbol in Blitz-GIS

Water Level	Condition	Symbol
Flooding	Over Flooding Water Level (Ground Level)	
Hazardous	Over Hazardous Water Level (Pipe Crown Level)	
Normal	Water Flow over 80% of Pipe Crown Height	
	Water Flow over 20% of Pipe Crown Height	
	Water Flow below 20% of Pipe Crown Height	



5

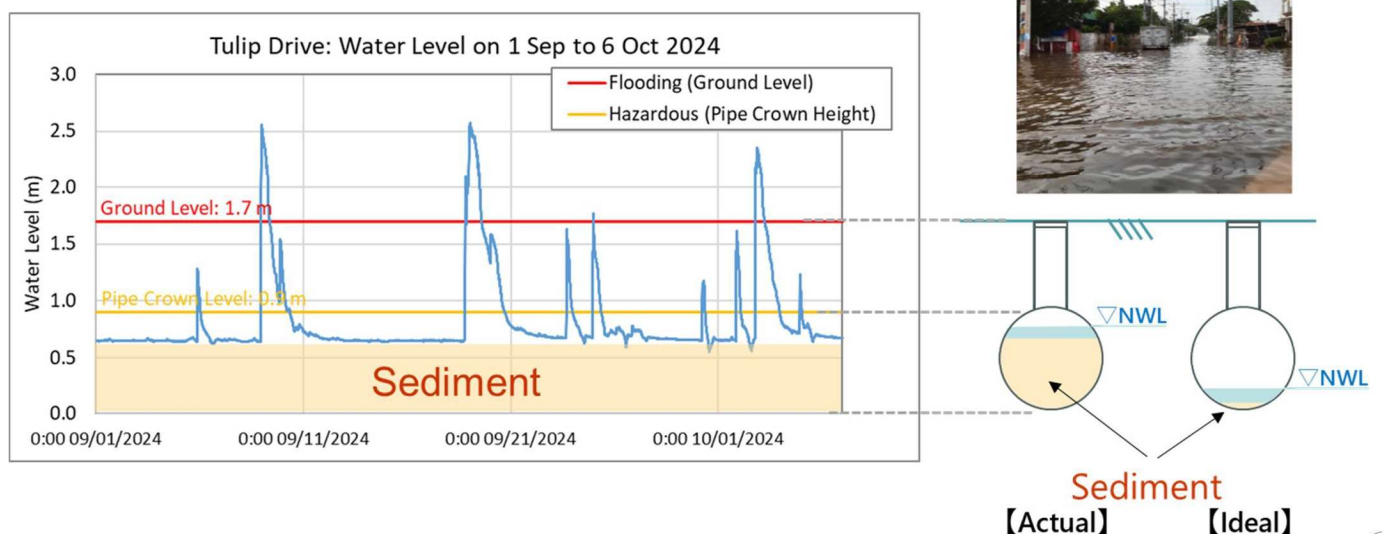
Stormwater Management System in Davao, Philippines



6

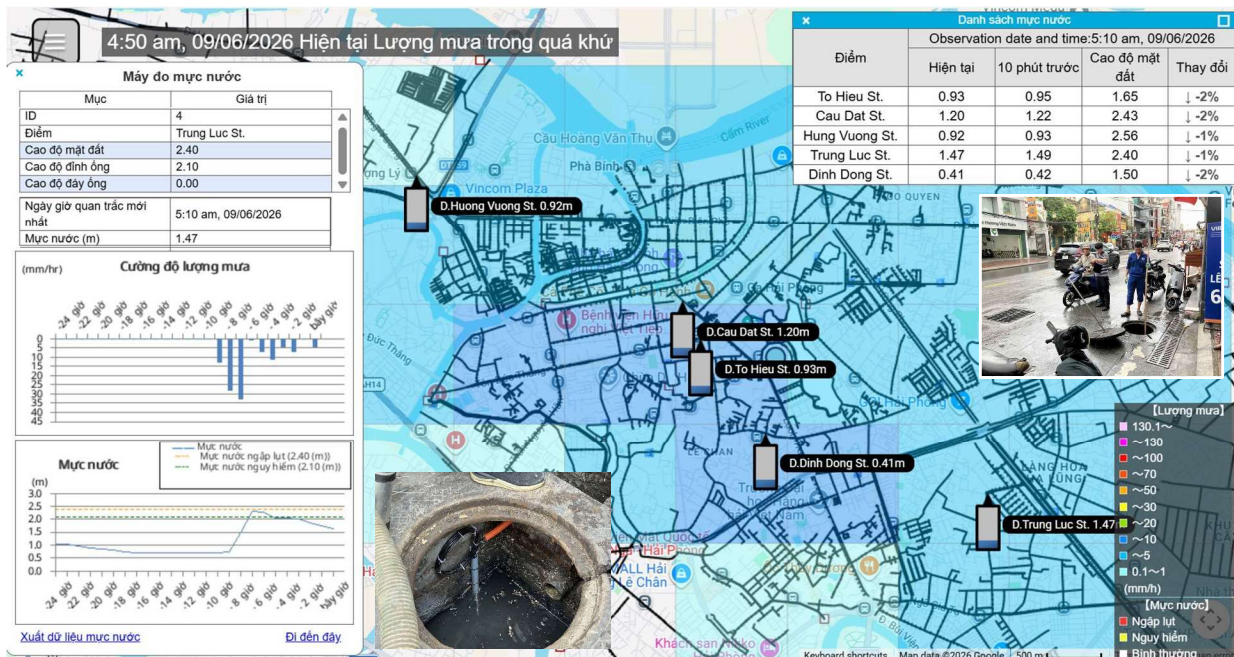
Real-time Monitoring: Water Level in Davao

Monitoring of Heavy Flood during Sep and Oct 2024 at Tulip



7

WoW To Japan: Demonstration Project in Hai Phong, Vietnam



8

Benefits of Real-time Stormwater Management System

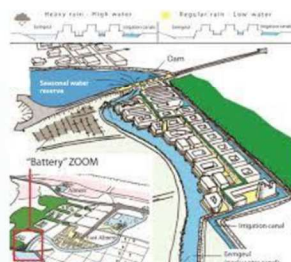
Flood Prevention and Mitigation

- Assessment of flood damage
- Rapid flood response (e.g. effective deployment of operators, pump trucks, water bars and sandbags)
- Disaster recovery response



Flood Control Master Plan and Design

- Improvement of accuracy of flood simulation
- Update of flood control master plan and design for flood control facility



Promotion of Maintenance/Cleaning

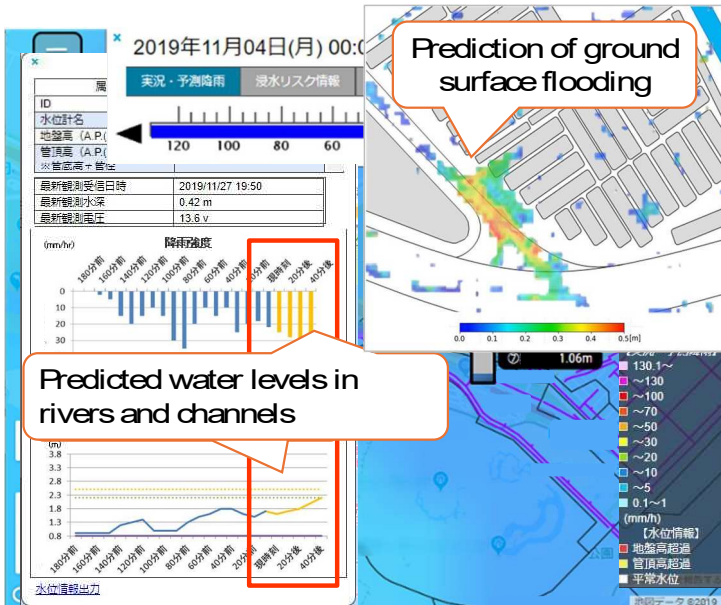
- Visualize the sedimentation conditions inside drainage
- Prioritize the drainage for maintenance/cleaning



9

High Resolution Flood Risk Reporting

1. Real-time Flood Forecasting



2. Flooded area map using SAR satellite (semi-real time)



3. Disaster Information from Social Media



10

Nihon Suido Consultants

Head Office:

Address. Shinjuku Square Tower, 6-22-1, Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-1122, Japan
TEL. +81-3-5323-6200 FAX. +81-3-5323-6480
URL. <https://www.nissuicon.co.jp/en/>

Philippine Branch Office:

Address. Suite 56, Level 24, Philippine Stock Exchange Tower, One Bonifacio High Street, 5th Avenue cor. 28th Street, Bonifacio Global City, 1630 Taguig City, Philippines
TEL. +63-2-8538-5163

11

Soft ground surface treatment method LFR

Ashimori Industry Co.,Ltd

ABOUT ASHIMORI



Ashimori Industry Co., Ltd. is a textile processing manufacturer that handles a wide range of textile products, including its core businesses of seat belts, airbags, Partem pipeline rehabilitation technology, and fire hoses.



After laying the civil engineering sheet, a geo-jacket with a diameter of 100 mm is placed in a grid pattern. Special mortar is filled inside this jacket to form a reinforcing frame. After the mortar hardens, crushed stone is spread evenly and compacted to form an improved roadbed.



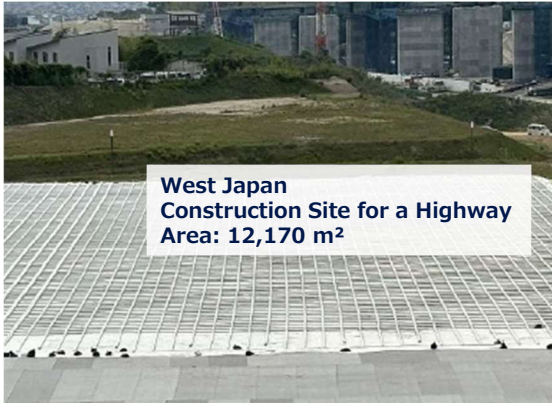
Even on roads built on soft ground, applying LFR enables a gradually improvement from an unstable pre-construction condition to a stable road structure with highly constructability.



East Japan
Construction Site for a Highway
Area: 5,383 m²



Thai Land
Construction Below the Coastline
Area: 2,280 m²



West Japan
Construction Site for a Highway
Area: 12,170 m²



Central Japan
Construction Site for wind power
Area: 22,700 m²

Corrosion prevention technology for concrete products

*For extended life
and road subsidence prevention.*



HAZAMA ANDO
CORPORATION

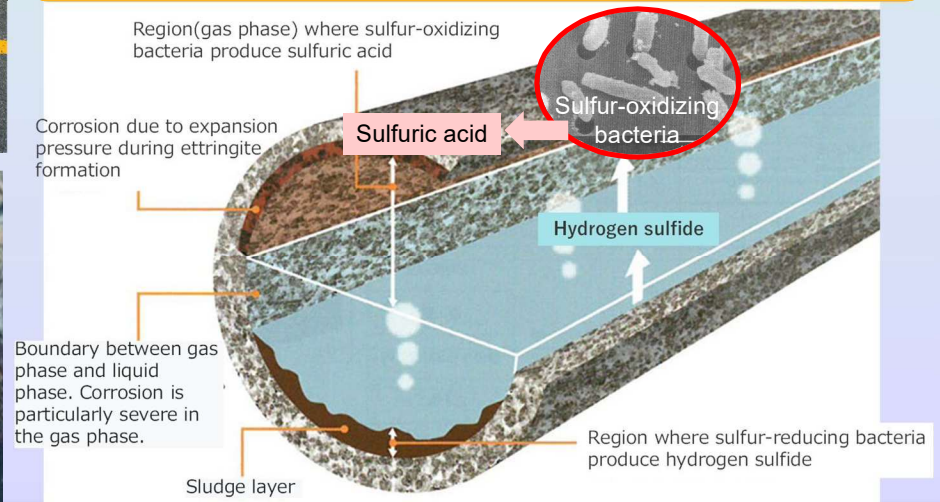
Accidents caused by sag of roads, corrosion of sewage pipes, etc.

- Mechanism to sag roads by pipe corrosion: Biogenic corrosion



Places where corrosion are obvious ;

- Sewage facilities→Sewer pipes, Manholes, etc.
- Drainage pits of office buildings, etc.

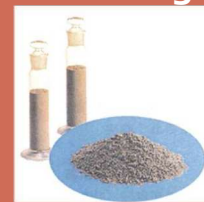


Overview

Our antimicrobial agent inhibits the activity of **sulfur-oxidizing bacteria** that cause **sulfuric acid deterioration of concrete**.

Key benefit

- Prevents formation of sulfuric acid
- Provide uniform protection; distributed throughout
- Easily added during batching; no special equipment



antimicrobial agent



[Results in Japan].

- Construction Technology Review & Certification (Sewerage Technology) - technology
- Corrosion Resistant Reinforced Concrete Products (Japan Sewage Works Association Type II Certified Materials and Equipment)



[Products: **more than 20 years of experience**,

with a total of **200,000 tons of concrete delivered**].

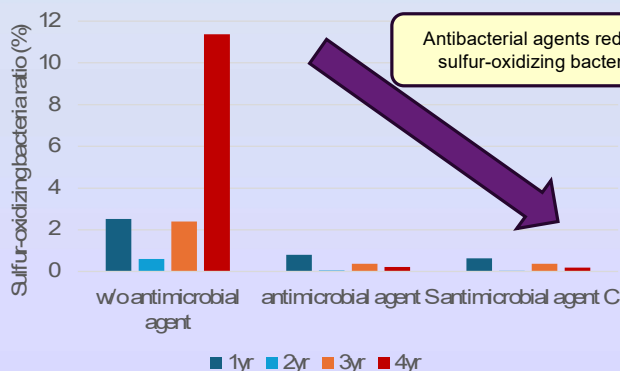
Our overseas demonstration project has been selected for the **Ministry of Land, Infrastructure, Transport and Tourism's "WOW TO JAPAN" Project.**

In Haiphong City, Vietnam, we achieved production of concrete products made from local materials that satisfy Japanese specifications.

https://www.mlit.go.jp/mizukokudo/sewage/mizukokudo_sewage_tk_000723.html

Comparison of antimicrobial activity in the Vietnam Demonstration Trial

(bacterial community on manhole surfaces)



Variety uses of antibacterial agents

Simply adding antimicrobial agents to concrete during production extends its lifespan.

Compared with paint-type lining, the overall construction period is shorter.

Corrosion rate $\leq 25\%$ of ordinary concrete at hydrogen sulfide $\leq 50\text{ppm}$ in Japan.

(Certificated by Japan Institute of Wastewater Engineering and Technology)

Cast in place concrete manholes



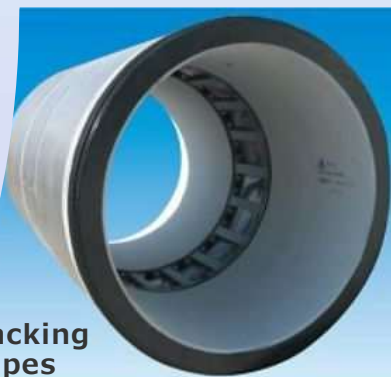
Hume pipes



Assembly manholes



Jacking pipes



BOX culverts



ISEKI POLY TECH, INC.

Our Company

Our company, ISEKI POLY TECH, INC.

Item	Contents
Name	ISEKI POLY TECH, INC.
Established	June 18 th , 1971
Capital	JPY 60,000,000 (USD400,000)
Parent Company	EXEO Group
CEO	Yutaka Odawara
Number of Employees	70
Head Office	Tennoz First Tower 6F Higashi-Shinagawa 2-2-4, Shinagawa, Tokyo, 140-0002, Japan
Kansai Office	EXEO X-Base Bldg. A 10F, 2-2-10, Uchihonmachi, Chuo-ku, Osaka-shi, Osaka 540-0026, Japan
Chiba Factory	Sakado 1448-1, Sakura, Chiba, 285-0078, Japan
Nara Factory	Fujiyama 2-1153-2, Kashiba, Nara, 639-0243, Japan



Sales Record

Why ISEKI?

ISEKI has been contributing to our client's success **microtunneling construction projects** through reliable machine quality, practical construction knowhow, and achieve long-term cost efficiency.

This is why ISEKI has delivered **over 3,000** machine worldwide.



ISEKI PROJECT IN INDONESIA

+3000
unit

Mesin Microtunnelling ISEKI sudah terjual lebih dari 3000 unit dan telah menggali ribuan kilometer di seluruh dunia termasuk di Indonesia.

Pekanbaru

Medan Optimization Zone 10
Sewerage Network
 Diameter : 600 mm & 800 mm
 Distance : 2100 meter

Makasar

**Jakarta Zone 0, Mega Kuningan
Sewerage Network**
Diameter : 600 mm & 800 mm
Distance : >6000 meter

Medan

**Medan Optimization Zone 10
Sewerage Network**
Diameter : 600 mm & 800 mm
Distance : 2100 meter

Mega Kuningan

**Jakarta Zone 0, Mega Kuningan
Sewerage Network**
Diameter : 600 mm & 800 mm
Distance : >6000 meter

Gatot Subroto

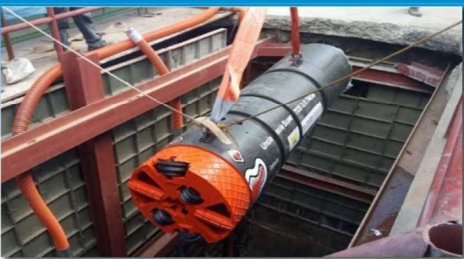
**Jakarta Zone 0, Gatsu Asia Africa
Sewerage Network**
Diameter : 450 mm, 600 mm, 800 mm
Distance : >5000 meter

Cawang

Sodetan Ciliwung Kanal Banjir Timur
Flood Diversion Tunnel
Diameter : 3500 mm
Distance : 2400 meter

Senayan

**Jica Pilot Survey For Pipe-Jacking
Sewerage Works**
Diameter : 1000 mm
Distance : 306 meter



Camarin Project
Machine : TCS500
Jacking Pipe : Steel Pipe Φ700mm
Total Jacking Distance : 229m
(160m+69m)
Soil Condition : Rock



Quezon City Project
Machine : TCC800/TCK1000
Jacking Pipe : Steel Pipe Φ1000mm
Total Jacking Distance : 2058m
Soil Condition : Sandstone (N-value : 50 or more)



Pasig Project
Machine : TCC900
Jacking Pipe : Steel Pipe Φ1200mm
Total Jacking Distance : 1000m
(longest : 150m/drive)
Soil Condition : Silt (N-value : 2-3)




Unclemole Φ200-Φ3500



PVC Compatible Tunneling Machine (Unclemole V)



Long Distance and Curve Compatible Tunneling Machine (Unclemole L)



Retractable Tunneling Machine (Unclemole Shuttle)



PVC and Rock Compatible Tunneling Machine (Unclemole V)



Eccentric Rotation Type Tunneling Machine (Unclemole)



Rock Compatible Tunneling Machine (Unclemole Super)

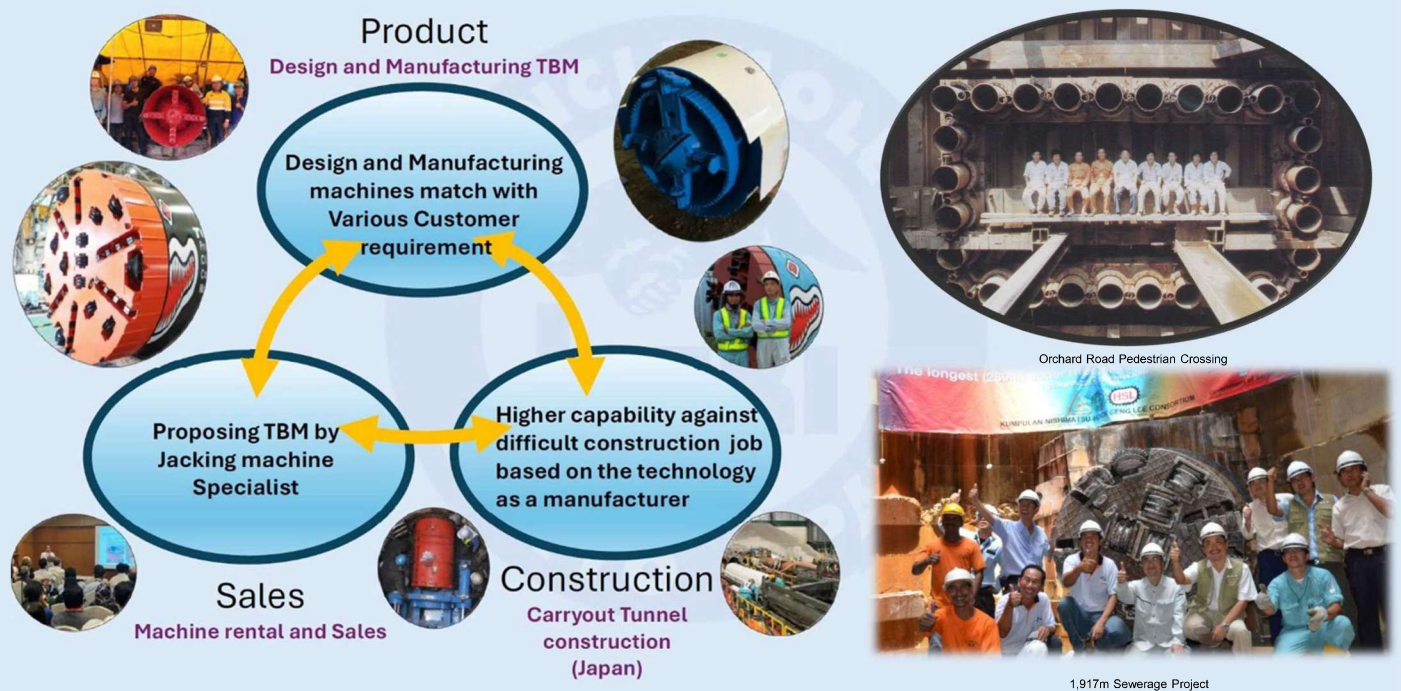


Splittable for Launch and Rock Compatible Tunneling Machine (Unclemole Super Jr.)



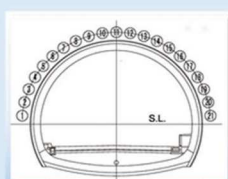
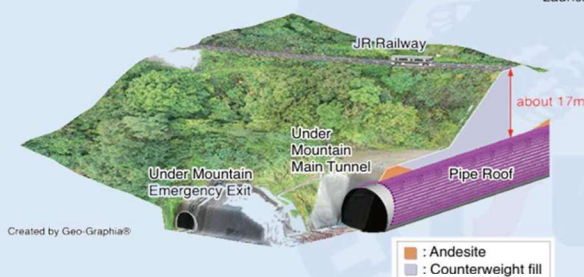
Splittable for Launch Tunneling Machine (Unclemole Mini)

Want to work with ISEKI

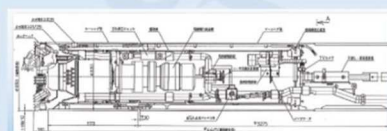


Piperoof Construction

Construction Name : Ohnuma Tunnel Under Mountain Section Construction
 Construction Site : Niyama, Nanae-cho, Kameda-gun, Hokkaido
 Client : Hakodate Road Office, Hokkaido Development and Construction Department, Hokkaido Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism
 Contractor : Shimizu-Miyasaka-Morikawa Joint Venture
 Pipe Type and Diameter : Steel Pipe $\Phi 812.8\text{mm}$
 Jacking Distance : 91m-95m x 21 Pipes = 1968m
 Soil Type : Counterweight fill (soil cement), sandy silt mixed with gravel, humus and humic soil, andesite (with large gravels) and pyroclastic breccia



Cross-Section of Pipe Roof



Product Outline Drawing



Launching Frame



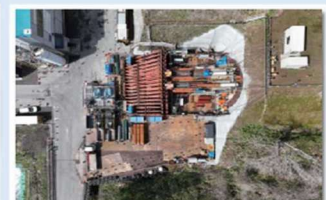
Construction Site



The Machine "Uncle mole Shuttle"



Construction Site



Construction Site



Slurry Treatment Plant



Completion of Construction

Virtual Training Simulator

Key Features

Real-Time Monitoring System

Dedicated second-window display for live monitoring of the machine operating underground

Real-time visualization of machine status and tunneling conditions

Authentic Control Experience

Customized physical control board designed to replicate actual microtunneling machine controls

User-friendly interface for intuitive operation and training efficiency

Advanced Machine Simulation

Real-time flow and pressure calculations

Dynamic hydraulic jack and facility animations

Fully functional valve control system

Articulation jack driving system simulation

Safety & Error Management

Integrated warning and error notification system

Operational mistake detection for enhanced training and safety awareness

Soil Condition Selection

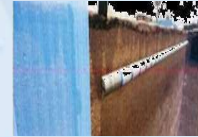
Ability to simulate different ground conditions

Scenes inside the Simulations



Hands-On Machine Control

Experience realistic machine operation with a dedicated controller.



Real-Time Underground Monitoring

Track machine activity and operating status as the simulation runs.



Real-Time Underground Monitoring

Explore the underground work area from a realistic first-person view.



See the Whole Jobsite at a Glance

View the shaft, treatment plant, and jacking pipes from above.

7. Thank you

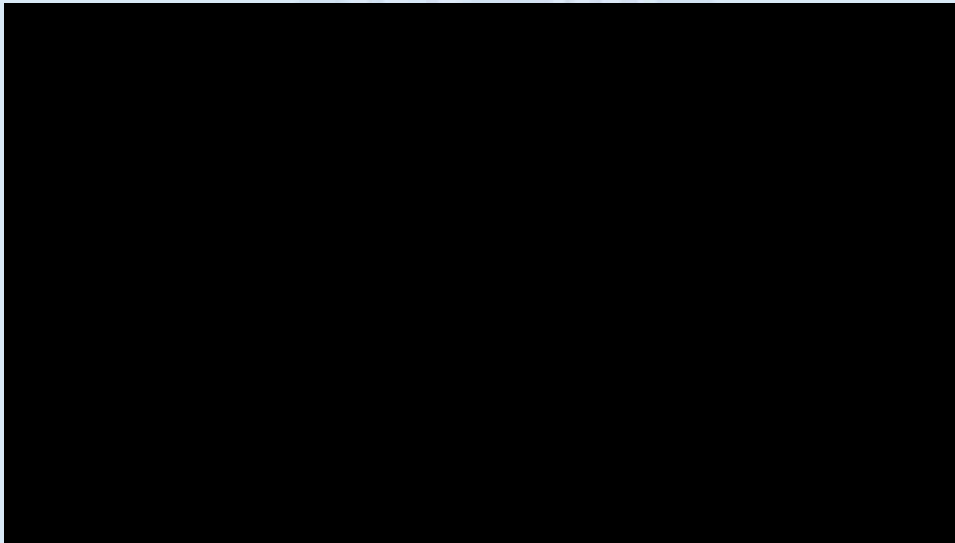
Thank you for your attention



Company Web Site

Virtual Training Simulator

Virtual Training Simulator



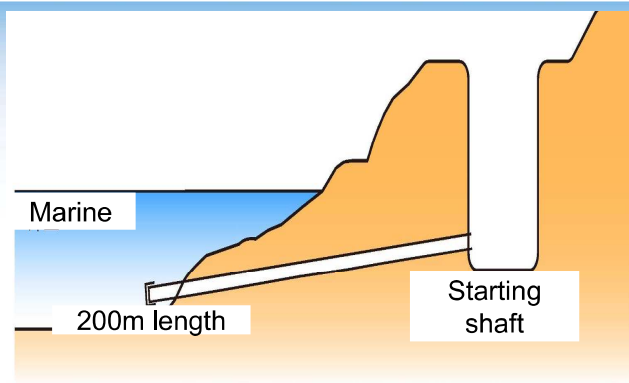
EXEO

MARINE SHUTTLE

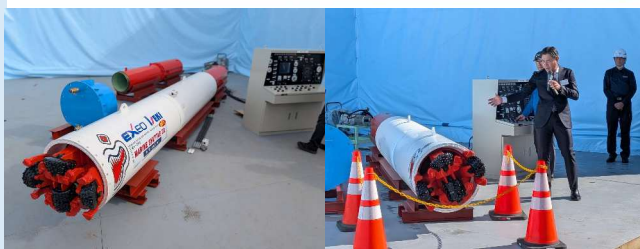
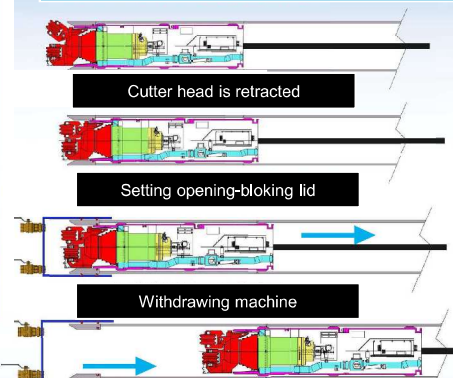
New MTBM

ISEKI

Long distance underwater arrival with small diameter MTBM



Recovery procedure





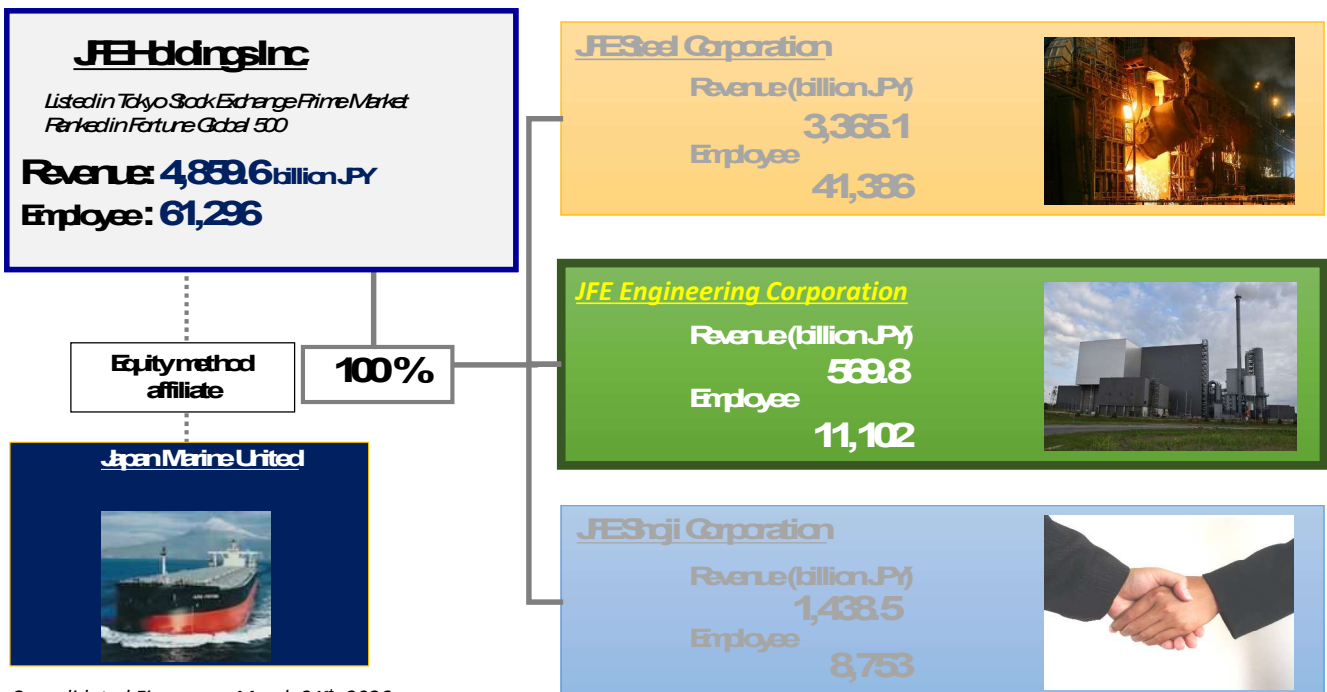
Company Profile and Wastewater Treatment Technologies for Sustainable Society

5th August 2026

Yujiro Tsutsui
Manager,
Sales & Marketing, Overseas Business
JFE Engineering Corporation

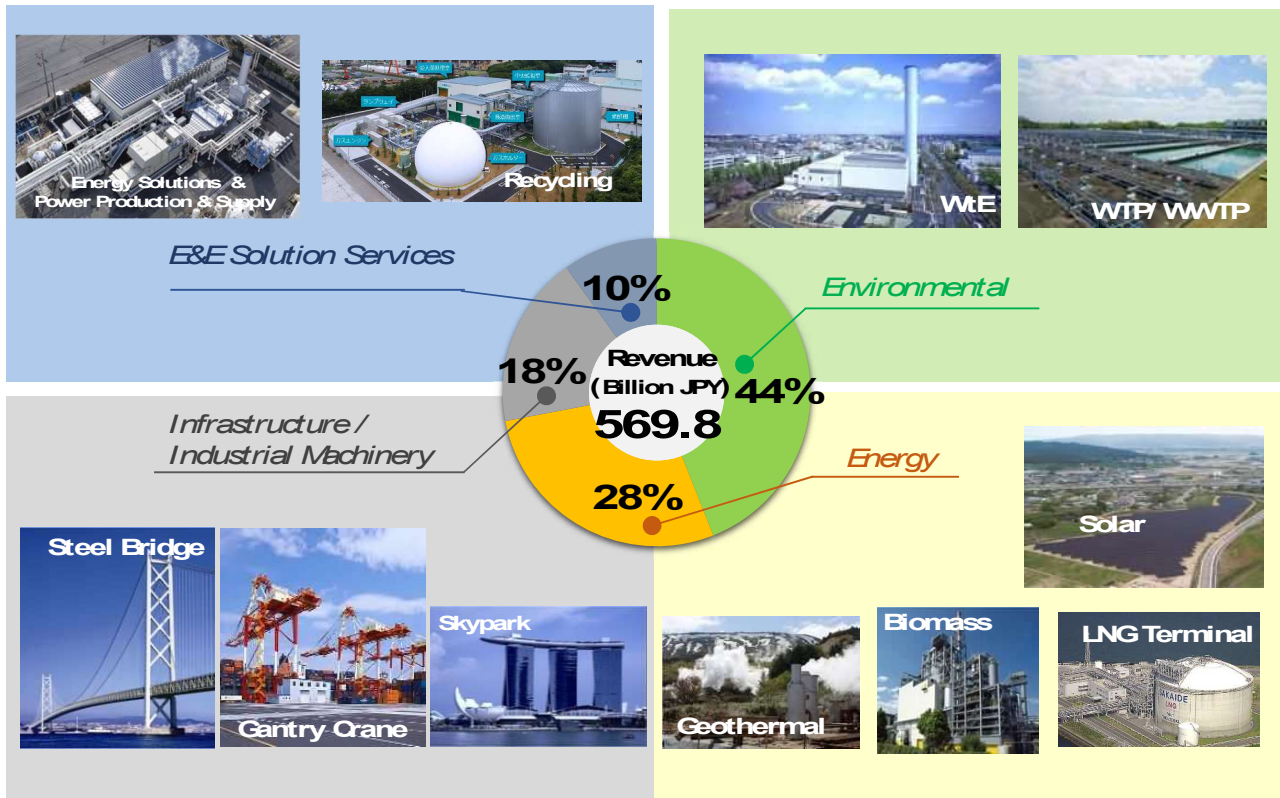


JFE Group

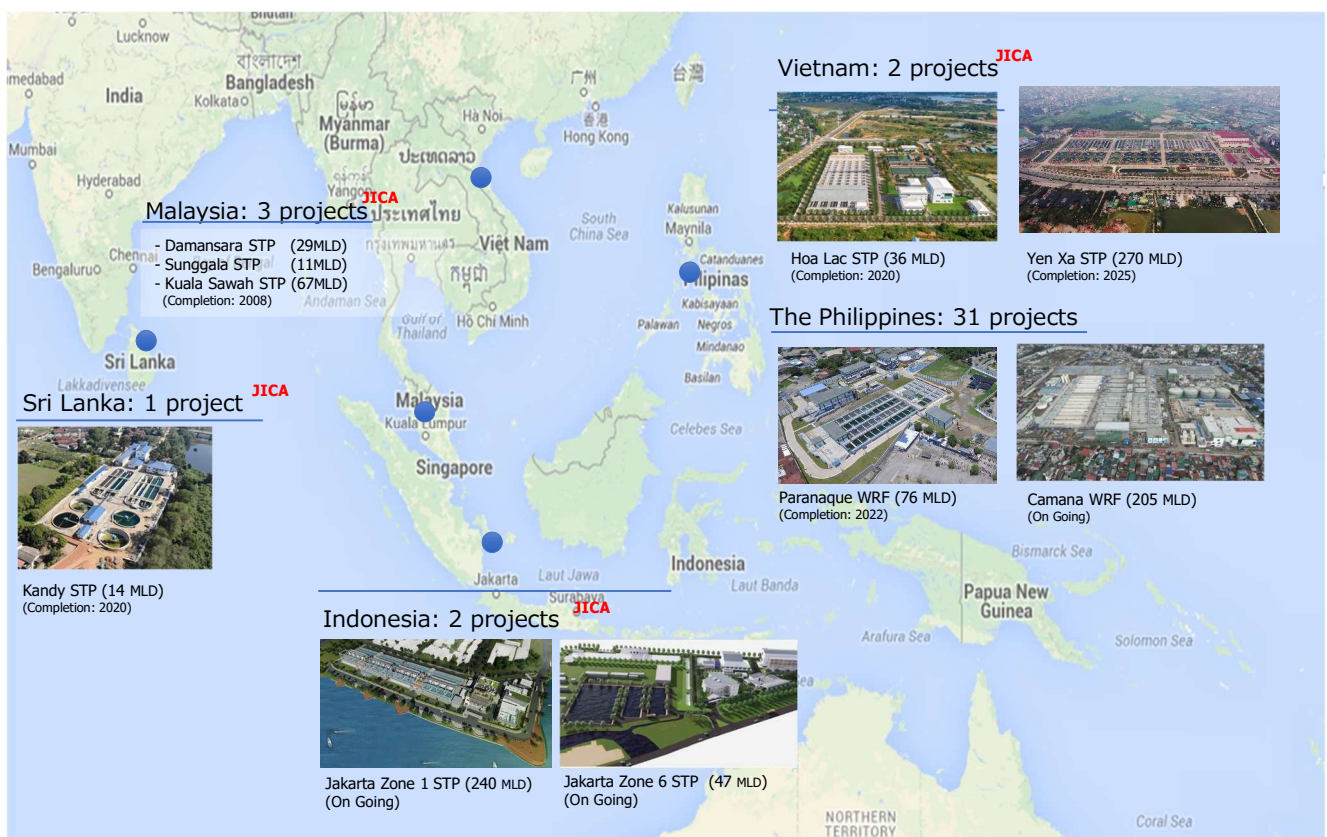


Consolidated Figures on March 31st, 2026

Business Portfolio of JFE Engineering



JFE's Track Record in Asia

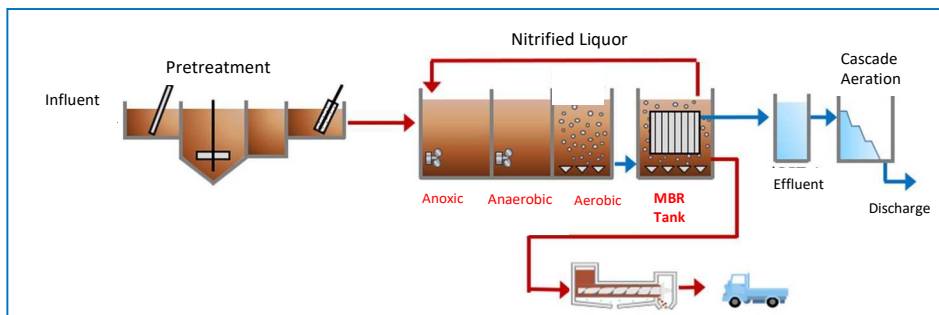


Jakarta Sewerage Development Project



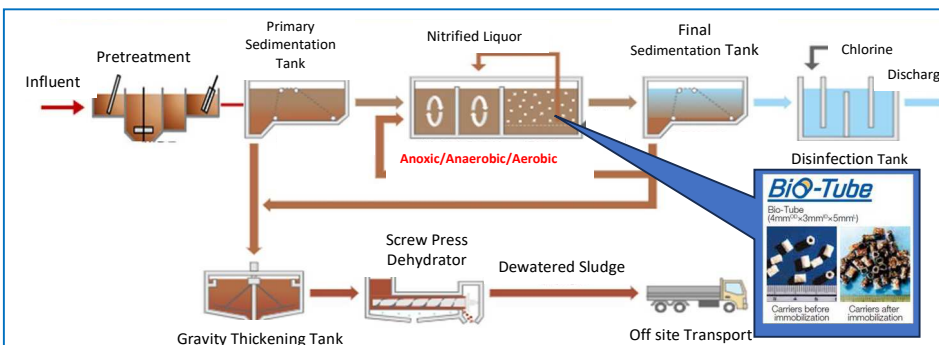
ZONE 1

Client	Ministry of Public Works and Housing
Location	DKI Jakarta
Process	A2O+MBR
Capacity	240,000m3/day
Fund	JICA ODA loan



ZONE 6

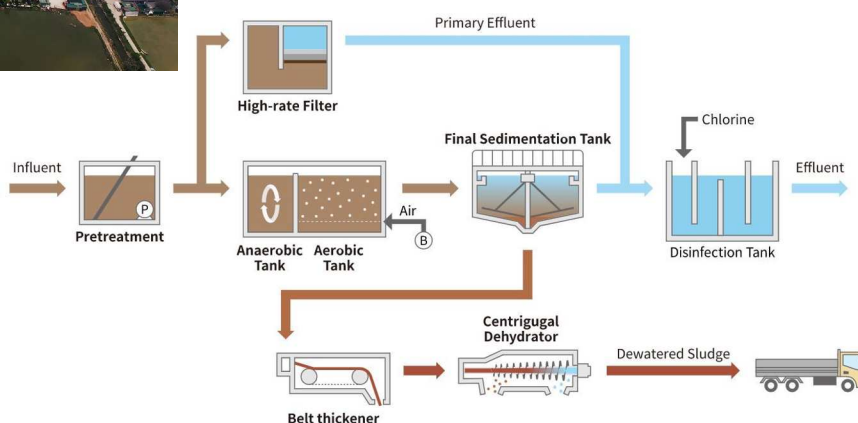
Client	Ministry of Public Works and Housing
Location	DKI Jakarta
Process	A2O+IFAS
Capacity	47,000m3/day
Fund	JICA ODA loan



Yen Xa Sewage Treatment Plant



Client	Hanoi City
Location	Hanoi, Vietnam
Process	Anaerobic-Aerobic process
Capacity	270,000m3/day
Funding	JICA ODA loan





Thank you