

Collection of Construction Technologies

—The World-Class Technologies of Japanese Small and Medium-sized Construction Companies—



Second Edition (Revised in FY 2025)

JASMOC

Japan Association of Small and Medium-sized enterprises for Overseas Construction



MLIT

Ministry of Land, Infrastructure, Transport and Tourism

Table of Contents

1. General Construction

Saitagumi Co., Ltd.	1
Matsuyama Construction Co., Ltd.	3
Hashimotogumi Corporation	5
Hiraiwa Construction Co., Ltd.	7

2. Road

Taiyu Kensetsu Co., Ltd.	9
Okasan Livic Co., Ltd.	11
IKEE LTD.	13

3. Bridge

Kochi Marutaka Co., Ltd.	15
Koatsu Kogyo Corporation	17
Juntos Co., Ltd.	19
Kawakin Core-Tech Co., Ltd.	21
Yajima Corporation	23

4. Tunnel

Yasuda Engineering Co., Ltd.	25
Kidoh Construction Co., Ltd.	27
Chiken Enterprise Co., Ltd.	29
Sohatsu Systems Laboratory Inc.	31

5. Port

Nikken Kogaku Co., Ltd.	33
------------------------------	----

6. Ground Improvement

Onoda Chemico Co., Ltd.	35
Tenox Kyusyu Corporation	37
Honma giken Co., Ltd.	39
Murakamijuuki Co., Ltd.	41
SST Association Inc.	43
Aomi Construction Co., Ltd.	45
Heisei Technos Co., Ltd.	47
Miho Technos Co., Ltd.	49
Taiyo Kisokogyo Co., Ltd.	51
SANTO CORPORATION	53

7. Piling

Ozawa Civil Engineering and Construction Co., Ltd.	55
Endo-Ecoraise Co., Ltd.	57
Marutai Doboku Corporation	59
GIKEN SEKO CO., LTD.	61

8. Slope

Rontai Co., Ltd.	63
Takino Filter Inc.	65
Tokyo Rope Mfg. Co., Ltd.	67

9. Plant

Sanko Co., Ltd.	69
Soltec Industries Co., Ltd.	71
ITO Corporation	73
Tamada Corporation	75

10. Electricity / Communication

JESCO Holdings, Inc.	77
Yuicom Networks Co., Ltd.	79

11. Water Environment

Koken Boring Machine Co., Ltd.	81
Daiken Co., Ltd.	83
Kyowakiden Industry Co., Ltd.	85
Nissaku Co., Ltd.	87
ES-Waternet Co., Ltd.	89
Abe Nikko Kogyo Co., Ltd.	91
Sugawara Setsubi Inc.	93
TBR Co., Ltd.	95
Ogushi Drilling Co., Ltd.	97
Sawata Construction Co., Ltd.	99

12. Repair / Maintenance

Sakaegumi Corporation	101
Earth Shift Co., Ltd.	103
Toyo Kikai Co., Ltd.	105
KFC Ltd.	107
ASAHI Co., Ltd.	109
Ocean Works Asia	111

13. Equipment / Product

Toyo Kensetsu Kohki Co., Ltd.	113
Matsuzawa Kawaraten Inc.	115
ASAHI INOVEX Corp.	117

14. Boring

Sanwa Boring Co., Ltd.	119
Tone Engineering Corporation	121

15. Waterproof

Hokuto Sheet Metal Industry Co., Ltd.	123
--	-----

16. Design

Archi-Cube Inc.	125
Kazu Architect Office Co., Ltd.	127

17. Welding

Nippon Stud Welding Co., Ltd.	129
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References

JASMOC Activities	131
Index by Overseas Branches	133

Company	SAITAGUMI Co., Ltd.	Establishment	January 1923
Employees	42	Website	http://www.saita-hd.co.jp
Address	1-2-30 Hikarigaoka, Hakata District, Fukuoka City, Fukuoka 812-0874, Japan		
Contact	Name: Tadashi KAKOO	Construction	Title: Division Director
	Tel: +81-9-4622-3878	E-mail: kensetsu-amagi@saita-hd.co.jp	
Overseas Branches	Phnom Penh Office, Kingdom of Cambodia		
Possible Implementation Areas	Cambodia		
Supported Languages	English, Khmer		

Business Overview

Our company is a general construction company which mainly does business activities in Fukuoka Prefecture, and is one company in the SAITA HOLDING Group.

Main Business: Civil, Building Works, Water and Sewage Works, Paving Works, Landscaping Works

Main Clients: Ministry of Land, Infrastructure, Transport and Tourism, Water Resources Agency, Fukuoka Prefecture, Fukuoka City, Local Government

Achievements in Japan and Overseas

1993 Mar : Indus Highway Section XI 77 km (ODA Loan) in Islamic Republic of Pakistan

1994 Apr : Indus Highway Section I 59 km (ODA Loan) in Islamic Republic of Pakistan

2003 May : Access Road and Plant Yard in Islamic Republic of Afghanistan

2008 Sep : Branch Saita Cambodia Founded in Kingdom of Cambodia

2014 Mar : Sihanouk Province Referral Hospital (ODA Grant Aid) Matsuyama JV in Kingdom of Cambodia

2019 Feb : Bridges (Five) in Package I North Section on National Road No. 5 sub-contracted from Tekken, Taiyu JV in Kingdom of Cambodia

2019 Dec : Assembly Hall and Student Dormitory for Teacher Education Colleges sub-contracted from Sumitomo Mitsui in Kingdom of Cambodia



Overall View by Drone



View of Entrance

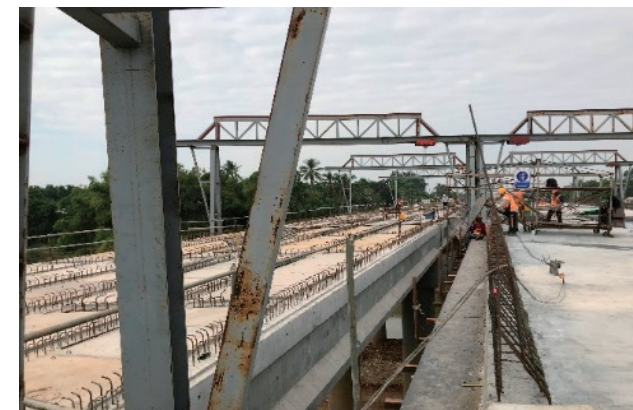
Sihanouk Province Referral Hospital Improvement Project in Kingdom of Cambodia

Work System

Branch Saita Cambodia was founded with the Phnom Penh Office, where there is one General Manager (Japanese) and 5 staff consisting of a structural engineer, mechanical engineer, electrical engineer and two office workers. The staff can use Khmer, English and Japanese, are forming close relationships with the local community and are making efforts to facilitate regional development.

General Construction in Cambodia

Please ask about anything we might be able to help you with in Cambodia



2019 Feb.: Bridges in North Section Package I on National Road No. 5 Improvement Project, Sub-contractor from Tekken, Taiyu JV in Kingdom of Cambodia



2019 Feb.: Bridges in North Section Package I on National Road No. 5 Improvement Project, Sub-contractor from Tekken, Taiyu JV in Kingdom of Cambodia

Field	General Construction Industry, Geological Survey, Topographic Survey	Category	Construction
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Technical Overview

[Features of Organization (Saita Cambodia)]

- We are organized to reduce the number of Japanese engineers to the lowest possible level and employ Cambodian engineers, achieving not only high cost performance, but also creating the opportunity to transfer technology to them and develop human resources through experience.
- Our staff are very familiar with Cambodia, have more experience in construction work in this country, can use English, Cambodian, and Japanese, gain experience by training foremen and workers, and in turn are helping in the development of Cambodia.
- Our staff has an intimate knowledge of general construction, can organize construction work, building work, civil work, water and sewage system work, pavement work, and we have a concrete batching plant and agitator trucks which enable us to supply fresh concrete.
- Our staff has experience in topographic surveys and geological surveys, and can deal with this work.

Conditions for Using Technology

Please contact us as we will reply individually to your inquiry.

Company	MATSUYAMA CONSTRUCTION Co., Ltd.		Establishment	1956
Employees	68		Website	http://www.matsuyama-k.co.jp/
Address	2-24-23 Takasago, Chuo District, Fukuoka City, Fukuoka, Japan			
Contact	Name: Mitsuru TSUDA		Title: Director	
	Tel: +81-92-533-0001		E-mail: fukuoka-eigyoubu@matsuyama-k.co.jp	
Overseas Branch		None		
Possible Implementation Areas		Cambodia, South East Asia		
Supported Languages		English		

Business Overview

We are a construction company which focuses on the business activities described below. Our main clients are the Ministry of Land, Infrastructure, Transportation and Tourism, NEXCO, local governments and electrical power companies.

- Civil Works, Building Work, Design and Construction
- Water and Sewage Water System Work
- Port Civil Work, Dredging Work
- Road Pavement Work
- Landscape Work

Other ODA Grant Aid, Accepting Trainees from Myanmar

Achievements in Japan and Overseas

Project: Sihanouk Province Referral Hospital Project in the Kingdom of Cambodia
(Total Area: 5,185 m²)

Client: Ministry of Health of Kingdom of Cambodia

Consultant: The Consortium of Azusa Sekkei Co., Ltd and INTEM Consulting Inc JV

Constructed by "Saita, Matsuyama JV" (2016 Feb.)



Overall View of Hospital



Administration Building

Work System

Project Manager: One Japanese person

Construction Engineering: One Japanese person, one Cambodian person

Deputy Manager: Four Japanese persons (Architecture, Electrical, Mechanical and Plumbing)

CAD Operator: Six Cambodian persons

Site Engineer: One Japanese person, four Cambodian persons

Safety Control: One Cambodian person

Total: 19 persons

Cambodia Building Work Centered on Quality

High Technique of Hospital Construction



Construction of the medical and surgical wards

Scope of Work

- ER, Imagery and Operation Building: 1,080 m²
 - Administration Building (2 story): 1,071 m²
 - OB/GY and Pediatric Ward Building: 1,305 m²
 - General Medicine and Surgery Ward Building: 945 m²
 - Service Building: 190 m²
 - Elevated Water Tank/Connecting Corridor: 594 m²
- Total Area: 5,185 m²

Field	General Building Works (Include External Works)	Category	Building Work (Including Mechanical & Electrical Works)
Registration, Awards	2017: Received Letter of Appreciation from Japanese Association in Cambodia		

Technical Overview

[Technical Features]

Our company takes the experience of techniques in Japan applies them in Cambodia to projects like the Sihanouk Province Referral Hospital Improvement Project. In Sihanouk Province, the Province Referral Hospital is a high level public hospital, and we are incorporating the quality needed in this improvement project to provide medical services by constructing a new facility and installing new medical equipment.

- We are directly implementing this project by ourselves. Under the supervision of a Japanese engineer, we employ local engineers to make it easier to prepare the construction equipment and tools ourselves, and can also manage and control electrical work, mechanical work and medical gas system work.
- We have assigned a total 19 Japanese engineers and local engineers persons to our construction organization, and take care to train and transfer technology to the local engineers.
- After the referral hospital was constructed, we have noticed that the quality of medical services has improved, enhancing the lives of people living in the province by providing a high level service and good health.

[Merits of Adopting Technology]

By organizing a Japanese manager and local engineers in a construction organization, it is possible to prepare the construction equipment and smoothly manage the work, reducing the construction period.

[Contributions to Solving Issues]

Through the implementation of projects, we provide technical instruction to local engineers who gain more knowledge and improve their skills in infrastructure construction in the future.

[Video Link]

<http://www.matsuyama-k.co.jp/>

Conditions for Using Technology

We will reply to you individually, so please contact us.

Company	HASHIMOTOGUMI Corporation		Establishment	1922	
Employees	280 PAX (as of April 2025)		Website	www.hashimotogumi.co.jp	
Address	Honmachi 2-chome, 2-1, Yaizu City, Shizuoka Prefecture				
Contact	PIC: MIURA Hideki		Overseas Preparatory Office		Head
	Tel: 054-627-3276		E-mail: contact@hashimotogumi.co.jp		
Overseas Branches		Vietnam (Hanoi): Local Subsidiary “HOPE E&C JSC,” established in 2019			
Possible Implementation Areas		Vietnam and neighboring countries			
Supported Languages		Vietnam [e-mail], English [e-mail]			

Business Overview

【Offices】Headquarters : Shizuoka, Branch : Tokyo, Chiba, Okinawa

【Lines of Business】

Design, construction, and supervision of civil engineering, building, electrical, and mechanical works, and other general construction-related services, Manufacture and sale of ready-mixed concrete (plant production capacity:195 m³/hour), Real estate appraisal, valuation, ownership, purchase and sale, leasing, management, brokerage, and agency services

【Turnover】 86 mil USD @156.8 [FY ending May 2025]

【Classification】

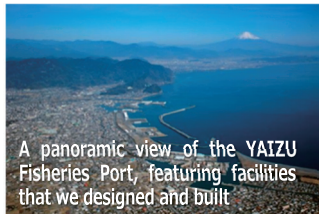
Civil Engineering : Ports, rivers, roads, land reclamation, water and sewage

Building Construction : Food factories, Large cold storage warehouses, commercial facilities, accommodation facilities, medical facilities, offices, and housing

Ownership of a 280-ton full-rotation crane vessel



Full-rotation crane vessel (280t)



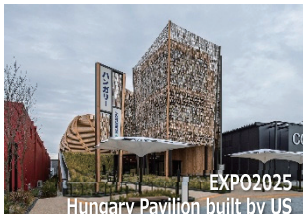
A panoramic view of the YAIZU Fisheries Port, featuring facilities that we designed and built



Office building built by US



Residential building built by US



EXPO2025 Hungary Pavilion built by US

Achievements in Japan and Overseas

【Construction Record】

2019	Vietnam	Design entrustment of Accommodation facility model house [Japan-based]
2020	Vietnam	Construction management of Underground structure temporary earth retaining wall [Japan-based]
2020	Vietnam	Construction Management of Silo repair work [HOPE E&C JSC.]
2021	China	Basic Design and Supervision work of Food Factory [Japan-based]
2021	Vietnam	Design consultancy services for a hot spring / bathing facility [Japan-based]
2022	Vietnam	Service contract with the Japan International Cooperation Agency (JICA) (Ozawa Doboku – HASHMOTOGUMI Joint Venture) "Project Formulation Survey on Disaster Prevention Technologies for Earth Dams and Levees Using Press-in Construction Methods with Silent Piler"
2024	Vietnam	Selected for the METI Global South Future-Oriented Co-Creation, etc. Project Subsidy (Ozawa Doboku– HASHMOTOGUMI Joint Venture) "Demonstration Project on the Construction of Steel Sheet Pile Cutoff Walls Using Press-in Technology to Contribute to Water Resource Security and Dam Disaster Prevention Measures"

Work System

【HASHIMOTOGUMI Corporation】Employs eight (8) Vietnamese engineers, one of whom holds a First-Class Civil Engineering Construction Management Engineer qualification.

2020: One engineer was engaged for three (3) months in construction management services for temporary earth-retaining works for underground structures under an ODA project (Ho Chi Minh City).

2025: Three (3) engineers were engaged for six (6) months in on-site construction under the METI Global South Future-Oriented Co-Creation, etc. Project Subsidy (Bac Kan Province).

【HOPE E&C JSC.】 One (1) local engineer was engaged for six (6) months in the METI subsidy project.

Design & Build services for food processing plants and logistics facilities with Japanese quality standards

Design & Build of HACCP-compliant food processing plants, ultra-low-temperature cold storage warehouses, and logistics centers



Shizuoka Cold storage Food processing plants



LOGI'Q SHIRAOKA II

Field	Architecture	Category	Design/Build/Management
Registration, Awards	FY2022 Shizuoka Prefecture Livelihood and Environment Department - Environmentally Conscious Building Award		
	Excellence Award (1 project): B.B.BOX YAIZU New Construction Project (CASBEE Rank S)		

Technical Overview

■ Technical features

- We have a long history of surveying, planning, designing, constructing, and maintaining food factories and ultra-low temperature refrigerated warehouses in Japan. In recent years, we have accumulated a lot of know-how, especially in order to HACCP (Hazard Analysis Critical Control Point).
- Has strong capabilities in logistics center construction and environmentally conscious building design and construction.
- In the design and construction stages, we, HASHIMOTOGUMI Corporation are able to take a coordinating role with consultants and electrical and equipment manufacturers to provide optimal solutions to customers.

■ Benefits of introducing technology

- Providing the same level of manufacturing circumstance in overseas countries as in Japan by realizing factories and warehouses of Japanese quality in terms of design and build.
- In particular, for Japanese companies that relocate their manufacturing bases overseas, we will provide a resolution of anxiety about design and build process management during construction.

■ Solving issues of Country adopting

- For Japanese companies planning to move their manufacturing bases overseas, Creating easy circumstance in expanding businesses for companies from the construction point of view.
- Employment creation and Ripple effect of economic in related industries by expanding business of Companies into Vietnam and neighboring countries
- Creating opportunities for local construction personnel to acquire specialized construction techniques.

■ Links and QR codes to construction videos and related materials

<https://www.youtube.com/channel/UCwhR76VEc68hqlwgMJX67mQ>

Conditions for Using Technology

- Compliance with local laws and regulations, including construction-related laws and regulations.
- Constraints related to surrounding infrastructure conditions (roads, electricity, water supply, etc.)



Company	HIRAIWA Construction Co., Ltd.		Establishment	1946
Employees	130		Website	https://www.hiraiwa.co.jp/
Address	8-19 Minamisumiyoshi, Tokorozawa-Shi, Saitama, 359-1188, Japan			
Contact	Name: Tomomi TAMAKOSHI		Sales Department	Title: Director
	Tel: +81-4-2923-2221		E-mail: tomomi-tamakoshi@hiraiwa.co.jp	
Overseas Branches		Vietnam (Ha Noi, Ho Chi Minh City)		
Possible Implementation Areas		Entire country of Vietnam		
Supported Languages		English, Vietnamese		

Business Overview

[JAPAN]

General construction industry (Building construction, engineering work, water supply facilities)

1. Specialized construction (Black kite, earth work, concrete construction)
2. Renewal construction
3. Earthquake-resistant repair work
4. Real estate transactions

[VIETNAM]

1. Design, construction and repair of factories and warehouses
2. Offices / store interiors
3. Support for selecting industrial parks
4. Application support for various licenses (ex: ERC, IRC, EIA)

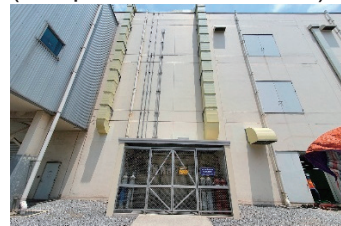
Achievements in Japan and Overseas

[The construction results in Vietnam]

Hai Phong City: Nomura-Haiphong-IZ Metal parts assembly plant enlargement construction (completed in May 2020)



Hung Yen Province: Thang Long2-IP Ceramic parts manufacturing factory interior construction (completed in June 2020)



Work System (in Vietnam)

- Resident management by Japanese engineer * Patrol management of rental factory
- Submit weekly progress reports with photos in Japanese

Realizing Japan quality factories at a low price

Vietnam: Support everything from land selection, design and construction, to follow up



We offer construction with resident management by a Japanese engineer

Field	Construction	Category	Construction method
Registration, Awards	We construct Japan quality at a low cost. As advance support of the company in Japan, we support various procedures, starting with the choice of land.		

Technical Overview

[Vietnam Construction System]

① Japanese engineer

Experienced Japanese engineer resides locally and performs construction management at Japan level quality.

② Follow-up service

Japanese engineer will immediately respond to initial defects. We also carry out 1 year and 2 year inspections.

③ Japanese communication

All on-site meetings will be conducted in Japanese, and customer requests will be reflected in the construction work.

④ Report written in Japanese

Materials to be submitted to the customer and the head office in Japan will also be submitted in Japanese.

⑤ Fixed point camera

We install a fixed point camera and allow you to confirm construction progress from Japan.

⑥ Support for Japan HQ

Vietnam and Japan HQ will work together to proceed with the construction. We dispatch a Japanese engineer regularly and give tests at the company.

[Video Link]

<https://www.hiraiwa.co.jp/works/>

<https://www.facebook.com/vietnam.hiraiwa.5>

About Hiraiwa Vietnam

Hiraiwa Vietnam is a wholly owned subsidiary of Hiraiwa Corporation, which was established 74 years ago and is headquartered in Tokorozawa City, Saitama Prefecture. We have bases in Ho Chi Minh City and Hanoi, and provide Japanese quality construction by Japanese engineers at a low cost. Please feel free to contact us for anything from selecting an industrial park to supporting your business expansion.



Company	TAIYU KENSETSU CO., LTD	Establishment	1928
Employees	445	Website	http://www.taiyu.jp/
Address	5-14-2 Kanayama, Naka-ku, Nagoya, Japan		
Contact	Name: Asako Nakamura	Global Business Department	
	Tel: +81-52-881-1607	E-mail: global@taiyu.co.jp	
Overseas Branches		Vietnam (Local subsidiary)	
Possible Implementation Areas		Asian countries	
Supported Languages		English (e-mail only), Vietnamese (e-mail only)	

Business Overview

1. Construction industry
2. Manufacturing and selling materials for pavement

Our main business in Japan is road construction with a focus on pavement. Additionally, we produce and sell materials for pavement. Our main business in foreign countries is the sales of materials for pavement that we have developed ourselves. Furthermore, we are doing our best to establish a trustworthy relationship with the local governments, universities, research organizations, and private companies in these countries. Our lineup of materials for pavement consist of Asphalt modifier (TPS) for porous asphalt pavement, Anti-rutting asphalt modifier (TPP), anti-stripping agent (TFH), cement-milk modifier (STP-VN) for semi-flexible pavement, and others. We are eager to proceed with the sales of our materials through technical support to foreign governments or companies. In Vietnam, we established "TAIYU VIETNAM CO., LTD." as a sales base of our materials in February, 2018. For other countries, we are selling our products through local agencies or technical cooperation companies.

Achievements in Japan and Overseas

1. TPS sales results (as of Nov. 2025)
 - South Korea: Namhae Expressway (2001) etc., equivalent to 2,200,000 m²
 - China: Shaanxi Airport Expressway (2003) etc., equivalent to 3,380,000 m²
 - Vietnam: Phap Van – Cau Gie Expressway (2018) etc, equivalent to 630,000 m²
 - Others: Taiwan, Thailand, Kazakhstan, Indonesia, Malaysia, equivalent to 150,000 m²
2. Anti-stripping material (TFH: Tough Fix Hyper)
 - Used 3,150,000 tons of Asphalt mixture in Vietnam
3. Semi-flexible pavement modifier material (STP-VN)
 - Vietnam: equivalent to 16,000 m² (Include trial pavement)
4. 1st Japan Construction International Award (MLIT) SMEs category



Vietnam: Cau Gie – Ninh Binh Expressway (test construction, 2014)



China: Shaanxi Airport II Expressway (2009)

Work System

Engineers are dispatched from Japan for construction supervision if needed. Regarding TPS, a consortium for sales has been formed with local companies in Vietnam.

Porous asphalt pavement using asphalt modifier material "TPS"

Asphalt modifier material "TPS" can be used to construct high-performance porous asphalt pavement anytime, anywhere



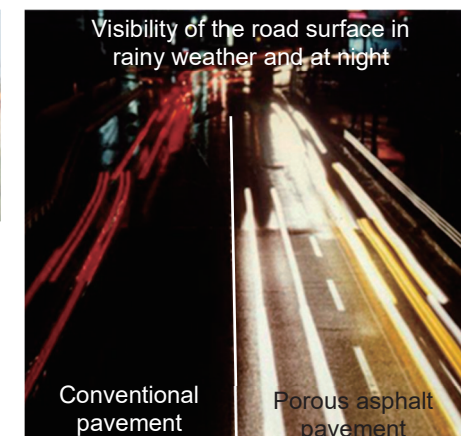
Asphalt modifier material for porous asphalt pavement -TPS



Construction situation



Construction situation



Conventional pavement

Porous asphalt pavement

Field	Pavement	Category	Materials
Registration, Awards	2014-2015 National Excellent Engineering Award (Xian Xianyang Airport Second Expressway) [China]		

Technical Overview

[Technical Features]

- Porous asphalt pavement not only has distinguished performance such as noise reduction and high durability, but also significantly improves the visibility of road surface on rainy days and at nights, and it contributes to traffic safety and driving comfort.
- The core of porous asphalt pavement uses highly modified asphalt. However, highly modified asphalt has the problem with quality deterioration during storage, making it difficult to export this material to foreign countries.
- When TPS is used, since there is no problem with quality deterioration, TPS can be exported and used anywhere.
- Based on our long-term experiences, we can provide any country with technical guidance on porous asphalt pavement in order to meet conditions in the country such as the asphalt plants, aggregates used, paving system, etc.

[Merits of Adopting Technology]

- The only task that needs to be done at the asphalt plant is to put TPS into the asphalt mixer. Special equipment is not required. (For big projects, an automatic weighing & adding equipment is provided.)
- Straight asphalt 60/80 is used as the base asphalt. TPS comprising 12% of the total asphalt is put into the mixer. Therefore, a normal asphalt mixture can be also produced in parallel with the porous asphalt mixture.
- We would be happy to provide users with technical support on material selection, mix design, etc.

[Contributions to Solving Issues]

- This technology reduces the adverse effects on economic activities such as logistics due to the rainy season and squalls. It helps to reduce traffic jams and slow driving speeds due to water splashing and the reflection of lights that occur when it rains.
- It has superior rutting resistance, crack resistance, and scattering resistance of aggregates, drainage function, and low noise function, so it is excellent for safety, the environment, and economy compared to conventional asphalt pavement.

[Video Link]

<https://youtu.be/cbGja-IMlrA> <https://youtu.be/7JmpwG8IYho>

Conditions for Using Technology

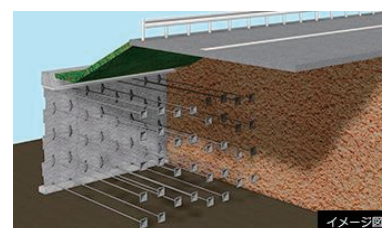
- Porous asphalt is preferable for expressways, national roads and elevated roads where there is low risk of the air voids being clogged. When porous asphalt is used on streets in cities, adequate discussions should be held on dealing with intersections.
- Even when there is concern for possible stripping by aggregates such as granite, the use of the anti-stripping agent "TFH" together with TPS eliminates the problem of stripping.

Company	OKASAN LIVIC CO., LTD.	Establishment	1971
Employees	231	Website	https://www.okasanlivic.co.jp/
Address	Nissin Build. 10F, 1-8-27 Kounan, Minato-ku, Tokyo, 108-0075, Japan		
Contact	Name: Satoshi KOBAYASHI	Project Sales Dept.	Title: Deputy Director
	Tel: +81-3-5782-9082	E-mail: kobayashi.satoshi@okasanlivic.co.jp	
Overseas Branches	Vietnam		
Possible Implementation Areas	Vietnam, Myanmar, Philippines, Indonesia		
Supported Languages	English (e-mail only), Vietnamese (e-mail only)		

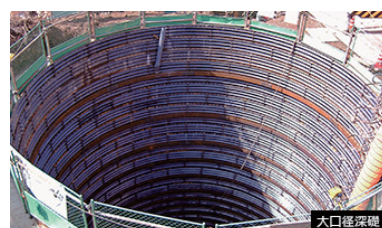
Business Overview

Construction Material Manufacturer and Supplier

- Embankments: Multi-anchored retaining walls, EDO-EPS method, Geogrid (TRIGRID EX), Paralink (High Strength Web-shaped Geosynthetic)
- Steel materials: Liner Plate, Corrugated Pipe
- Maintenance: Pipe Rehabilitation method (ARIS Liner / SW Liner), High durability fences
- Others: Takino Filter, HDPE pipe, Plastic underground water tanks etc.



Multi-anchored retaining wall



Caisson Pile (Liner Plate)

Achievements in Japan and Overseas

1. Overseas Sales

- Products: Geogrid, Paralink, Takino Filter, Liner Plate, Corrugated Pipe
- Countries: Vietnam, Philippines, Pakistan, Nepal, Honduras, Bhutan, China, South Korea

2. Overseas Expansion

2011: Ho Chi Minh City Representative Office founded

2015: OKASAN LIVIC VIETNAM CO.,LTD founded



Geogrid (Nepal)



OKASAN LIVIC VIETNAM CO., LTD.

Work System

Providing Japanese technical advisors for local contractors.

EPS (Expanded Poly-Styrol) Construction Method

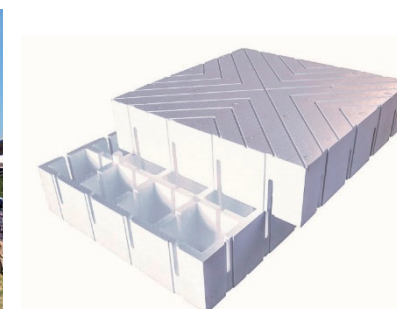
Lightweight embankment method using EPS blocks instead of soil to improve workability



Road embankment (Japan)



Field test (Vietnam)



Buoyancy-resistant block
(Reduces buoyancy by 60%)

Field	Road embankment, Backfilling of structures	Category	Method, Material
Registration, Awards	"EDO-EPS Construction Method Standard" 3rd Revised Edition (2019, Japan) Applying for Vietnamese Standard "TCCS"		

Technical Overview

[Technical Features]

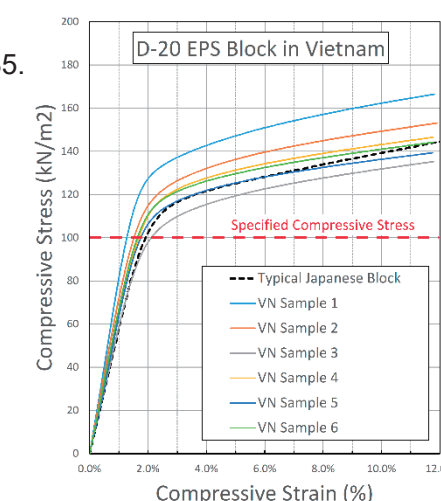
- First construction in Norway in 1972. Introduced in Japan in 1985.
- Unique technologies have been developed since then.
- Japanese quality EPS blocks can be supplied at low cost.

[Merits of Adopting Technology]

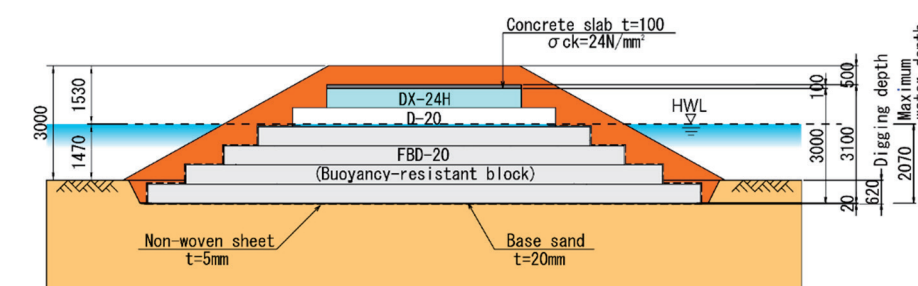
- Easy handling, easy installation without heavy machinery.
- Not restricted by depth and softness of soft layer unlike piles.
- Makes construction less costly and quicker on any ground.

[Contributions to Solving Issues]

- Prevents settlement of embankment on ultra-soft ground.
- Repairs the difference between abutment and approaching road.



Test result of EPS block manufactured in Vietnam



Application example to Mekong Delta

Conditions for Using Technology

- Buoyancy-resistant blocks can be applied in case of high groundwater.
- We can propose the best solution for any site with a track record of over 35 years.

Company Name	IKEE LTD.	Establishment	April 26, 1957
Employees	202	Website	https://www.ikee.jp/
Address	2-660-1, Minamiedo, Matsuyama, Ehime 790-0062 JAPAN		
Contact	Masaaki OKAMOTO (Mr)	Overseas Dept.	Title: Manager
	Tel: +81-89-921-3030		E-mail: info-ikeegrp@ikee.jp
Overseas Branches		Cambodia, India	
Possible Implementation Areas		ASEAN, Central Asia, West Africa, Ukraine	
Supported Languages		English	

Business Overview

We are paving specialists, handling everything from the manufacture, sale, and import/export of paving materials to the design and construction of paving projects. Our main exported paving materials are as follows:

[Pavement Repair Materials]

- All-weather, ambient-temperature pavement repair materials; special asphalt raw materials for pavement repair; manufacturing technology for final products, etc.
- Plant-mixed asphalt modifiers utilizing waste plastics; construction techniques, etc.

[Pavement-Related Technologies]

- Maintenance and Rehabilitation work, Stabilizing methods, Road surface regeneration methods (Hot In-place Recycling), etc.

Achievements in Japan and Overseas

2015 [Cambodia] Established construction company / Road survey, design, and construction
 2018 [Cambodia] Established materials manufacturing company / repair materials, special asphalt, and asphalt emulsion
 2019 [Cambodia] Traffic safety improvement works / Stabilizer works (Total length 660m, width 8.0m)
 2019–2023 [Cambodia] NH5 Improvement Project / Road Construction (Total Length 44.1km, 4 Lanes)

On-going Projects

- 【India】 PFI Pavement Construction (Road Surface Regeneration Method)
- 【Kyrgyzstan】 Pavement Repair Materials
- 【West Africa】 Pavement Repair Materials (Nigeria · Ghana)

【Ukraine】 Pavement Repair Materials (Manufacturing Technology Transfer)

*Collaboration with debris processing projects



Work System

- ✓ Construction Projects: Engineers are assigned to oversee construction and quality control.
 - ✓ India and other construction projects: Engineers are dispatched periodically and as needed to provide technical supervise.
 - ✓ Technology transfer for pavement repair materials: Engineers are dispatched as needed.
- Technical guidance and training for engineers at government agencies and partner companies.

All-weather pavement repair material (Japanese-quality)

from Road Band-Aids to Road Rehabilitation



Field	Pavement Construction	Category	Methods, Materials/Products
Registration, Awards	MLIT 8 th JAPAN Construction International Award (Mid-size & SEM category)		

Technical Overview

■ Technical Features (Characteristics)

- All-weather pavement pothole repair material.
(Can be applied in rainy conditions or when water is pooled)
- Long-term storage capability.
(Can be stored for over a year, enabling supply to remote locations via transport)
- Pressure-sensitive repair material for easy application (No construction machinery required)

■ Construction Benefits from Technology Adoption

- Enables immediate and simple repair of small potholes in the early stages of pavement damage.
- Requires no heavy construction machinery; installation possible with a minimum of one person.
- Construction possible even in rainy weather, contributing to traffic safety (accident prevention).

■ Resolving Challenges in Adopting Countries (Economic and Social Benefits for Partner Countries)

- Reduces pavement repair costs (no construction machinery or personnel required).
- Prompt repairs reduce traffic accidents and improve user convenience.
- Contributes to correcting regional disparities in road infrastructure.

■ Links/QR Codes for Construction Videos, etc.

<https://www.youtube.com/channel/UCvSBVvhK5Xh3ppw7niw5heQ>



IKEE on the web

Conditions for Using Technology

- ✓ This repair material is for asphalt concrete (AC) potholes with a diameter of 1 meter or less.
- ✓ Do not apply to damaged sections of the subbase or subgrade beneath the pothole.
✗ However, it may be used in urgent situations, but promptly repair the subgrade and other underlying layers.
- ✓ Application is possible in rainy weather, but do not apply during heavy rain or thunderstorms due to the risk of contact with passing vehicles or electric shock.

Company Name	Kochi Marutaka Co., Ltd.	Establishment	1965
Employees	160	Website	https://www.ko-marutaka.co.jp/
Address	12-31 Azono Minami-Town, Kochi City, Kochi Prefecture, Japan		
Contact	Supervisor: Moto Yoshi	Dept : Business administration	Title: Executive Officer / GM, Sales Administration Department
	Ph : 088-845-1510	E-mail: marutaka@ceres.ocn.ne.jp	
Overseas Branches	Proposal locations: Vietnam, Thailand, and Myanmar		
Possible Implementation Areas	Asia and Africa Region		
Supported Languages	Email supporting language: Chinese, Indonesian, and English		

Business Overview

1. Specialized Foundation Works (Large-Diameter Rock Drilling, Retaining and Anchor Piles, Bridge Foundation Works, Well Drilling, etc.)

2. Bridges (Design, Structural Calculation, Fabrication, and Construction of Steel Structures and Construction Machinery; General Civil Engineering; Machinery and Equipment Installation Works, etc.)

◇ Proprietary Technology

① SqC Pier Method is a method for temporary bridges and platforms using steel pipe piles as support columns. There are two approaches: the Top-Panel-First Installation Method, in which factory-prefabricated upper panels are installed first followed by the installation of supporting piles (steel pipes); and the Pile-Cap Method, in which the supporting piles (steel pipes) are installed first and the upper structure is connected via pile head caps.

② Long-Span, Long-Length Bridge: The superstructure beams use a pin-joint connection to enable rapid installation and removal, prioritizing bridge erection speed. The pin structure is reusable, reducing costs. By using long girders, the need for piers is eliminated, improving both safety and environmental performance. (NETIS: SK-SK-220004-A)

③ Assembleable Self-Propelled Barge: Unlike conventional barges that require tugboats, this barge is equipped with two engines and can self-propel. It can transport up to 41 tons on water (depending on draft) and can carry cranes, backhoes, and heavy machinery attachments. It is a four-part assembly design for land transport, allowing transportation with one trailer and three large trucks, and can be assembled quickly on site. (NETIS: SK-160002-A)

Achievements in Japan and Overseas

- 2016–2019: Pakistan – N70 Highway Rehabilitation Project
Construction Details: Bridge length 381.0 m / Bridge width 8.0 m / 231 steel pipe piles
- 2016: Uganda – Nile River Cable-Stayed Bridge, Full-Rotation Top-Down DH Method, Casing Extraction Work
Construction Details: Pile length 23 m / 27 steel pipe piles, Φ630 mm
- 2017: Conducted project feasibility survey as part of the JICA Small and Medium Enterprise Support Program
- 2020: Selected for the JICA Dissemination, Demonstration, and Commercialization Project
- 2025: Following the JICA Small and Medium Enterprise Support Program, two dredging machines were delivered to the site.

Work System

- In Pakistan and Uganda, technical instructors were dispatched to train local workers.
- In Myanmar, a monastic school is scheduled to open next year. Using this as a base, we will provide human resource development to address labor shortages in Japan.
- The trained Myanmar workers and engineers will be deployed to third countries.
- In the Philippines, amphibious excavators are being utilized for river environmental management.

SqC pier method

Safe and high-quality temporary bridges and platforms can be installed quickly, even on steep terrain.



Field	Bridge Construction	Category	Construction Method
Registration, Awards	NETIS : QS-020042-VE		
	Manufacturing Nippon Award, Shikoku of Economy, Trade and Industry Commissioner's Award, Regional Invention Award		

Technical Overview

■ Technical Features

• SqC pier method is a construction technique for temporary bridges and platforms using steel pipe piles as support columns, which requires no foundation work and utilizes factory-prefabricated main components that are sequentially installed on site by manual assembly; it can be carried out either by installing the prefabricated upper panels first followed by the supporting piles (top-panel-first installation method) or by installing the supporting piles first and connecting the upper structure via pile head caps (pile-cap method).

• Temporary bridges and platforms for bridge construction, road construction, dam construction, tunnel construction, and disaster recovery works.

■ Construction Advantages of Technology Implementation

① Shortened Construction Period through Improved Workability: By utilizing factory-fabricated steel components, on-site assembly man-hours are reduced, improving workability and shortening the overall construction period.

② Improved Safety and Quality Assurance: By installing the superstructure first, high-altitude work is reduced, enabling safer construction. In addition, reducing on-site assembly work—which is difficult to perform with high precision—allows for improved quality.

③ Wide Applicability: This method can be applied in all areas where supporting piles can be installed, including silt, sand, soft rock, and hard rock.

■ Addressing Challenges in the Implementing Country

In regions prone to natural disasters such as landslides, the rapid restoration of roads and bridges is critical to sustaining economic activity. This method effectively addresses these challenges by enabling the prompt construction of high-quality temporary bridges and platforms, even on steep or elevated terrain. Furthermore, owing to their superior quality, these structures can potentially serve as permanent installations.

■ Construction Video Links <https://www.ko-marutaka.co.jp>

Conditions for Using Technology

Natural Conditions: None

Site Conditions: Access roads are required for transporting materials and equipment to the site. A crawler crane assembly yard (can also be on the road) is necessary, as well as a temporary yard. Regarding soil conditions, the method is applicable within the range where piles can be installed. Longest Span Achieved in Previous Projects : 12.0 m or more (Top-Panel-First Installation Method), 16.0 m or more (Pile-Cap Method), 28.0 m (Long-Span Large Bridge)

Company	Koatsu Kogyo Corporation		Establishment	1959
Employees	264		Website	https://www.koatsuind.co.jp
Address	5-17-5 Ishiki, Kagoshima-shi, Kagoshima			
Contact	Name: Hiroki Sugimoto		Overseas Business Division	Sales Division Manager
	Tel: 03-3436-1331		Email: infotokyo@koatsuind.co.jp	
Overseas Branches		None		
Project Implemented Areas		Kyrgyz, Sri Lanka, Indonesia, Vietnam, Haiti, Togo		
Supported Languages		Japanese, English (email only)		

Business Overview

1. Design and construction of PC bridges and PC tanks, civil engineering work, foundation pile driving, etc.
2. Design, manufacture and sale of concrete products
3. Rental of concrete product molds
4. Manufacture and sale of building materials
5. Design, construction, supervision and contracting for civil engineering and construction works
6. Purchase, sale, rental, exchange and management of real estate and other brokerage business
7. Residential land development and land development business

Achievements in Japan and Overseas

<PC bridge construction subcontracted from major construction company>



Project for Reconstruction of Kok-Art River Bridge on Bishkek-Osh Road in Kyrgyz

Post-tensioned 3-span continuous T-girder bridge
Length: 89m

Project for Construction of Kara and Koumongou Bridges in Republic of Togo

Kara Bridge Koumongou Bridge
Post-tensioned type Post-tensioned type
Kara Bridge
3-span continuous T-girder bridge, Length 120m
Koumongou Bridge
4-span continuous T-girder bridge, Length 160m

Work System

We have a total of about 60 serious, hardworking and enthusiastic engineers in Japan and abroad, including some with experience of working overseas.
The erection equipment is brought from Japan. (We have an excellent performance record in Kyrgyz, Togo and Haiti.)
We accept technical interns in Japan in an endeavor to train engineers.

Total Construction of Prestressed Concrete Bridges

Construction of post-tensioned and pre-tensioned prestressed concrete bridges



Photo-1

Photo-2

Photo-3

Photo-1: Yonotsugawa Bridge, Length 18.65m, PC Modified Pi-Shaped Rigid Frame Bridge with Inclined Struts
Photo-2: Machihara Ohashi (Piers P4–P9), Length 195m, PC5-span Continuous Composite Bridge
Photo-3: Akune-Takaono No.1 Bridge, Length 164m, PC 3-span Continuous Rigid-Frame Box Girder

Field	Bridge construction	Category	Construction
Registration, Awards	Kyushu Regional Development Bureau-Certificate of Excellent Construction Performance Company 2025		
	Kagoshima Prefecture Civil Engineering Department - Award for Excellent Construction Works and Excellent Engineers 2025		

Technical Overview

[Technical Features]

By prestressing the concrete, the durability and watertightness of the components are improved, resulting in fewer cracks due to load which is concrete's biggest weakness. As well as lower life-cycle costs, reducing the section of the components enables the span to be extended while reducing the weight of the components.

[Merits of Adopting Technology]

- Components can easily be made in any shape and with any section.
- Reducing on-site work by the use of pre-cast components saves manpower and shortens the work period.

[Contributions to Solving Issues]

- Work and costs involved in long-term repairs are reduced by improved life-cycle costs.
- The proportion of equipment, materials and manpower procured in the vicinity of the construction site is increased, thus giving back to the local economy.
- Prestressed concrete technology and bridge construction technology are transferred to local human resources.

■Construction equipment and prestressed concrete manufacturing plants

Double girder



Cantilever erection



PC slab production



Pre-tensioned girder



Conditions for Using Technology

Consideration of weather conditions or restricted work space may be necessary.

Company	Juntos Co., Ltd	Establishment	1991
Employees	50	Website	http://www.juntos.co.jp
Address	4F 7-2 Hakataeki-Chuogai, Hakata-ku, Fukuoka City, Fukuoka, Japan		
Contact	Name: Takashi KATABUCHI	Administration	Title: Manager
	Tel: +81-9-2412-7053	E-mail: katabuchi@juntos.co.jp	
Overseas Branches	None		
Possible Implementation Areas	Southeast Asia, India, Africa		
Supported Languages	English, Vietnamese		

Business Overview

We are a professional company that consistently designs, constructs and maintains bridges.

1. Bridge planning, Bridge type selection, Detailed design, Construction planning
2. Dynamic & Static Analysis, FEM (Finite Element Method) Analysis
3. Detailed investigation of bridges, Superstructure non-destructive investigation
4. Bridge repair design, Bridge seismic reinforcement design
5. Drawings, Quantity calculation, Checking
6. Concrete bridge superstructure work, Bridge repair work, Construction Management

We design according to the standards of the country, and carry out surveys and construction management work overseas.

Achievements in Japan and Overseas

[Bridge design work results in Japan]

- Superstructure design, Substructure design, Seismic design: Annual average number of bridges handled; 200
- Detailed investigation, Repair design: Annual average number of bridges handled; 200

[Representative Bridge design work in overseas]

[Malaysia] Type: 9 span connecting T girder bridge

- Responsible work: Load bearing capacity check
- Standards: BS
- Language: English

[Myanmar] Type: 9 span connection component bridge

- Responsible work: Superstructure design, Drawings
- Standards: AASHTO LRFD
- Language: English



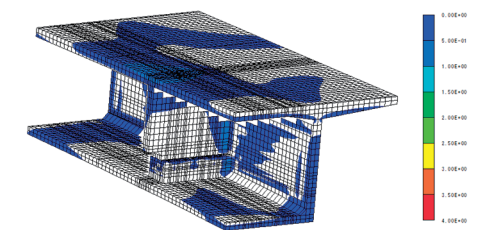
Work System

Experienced construction managers and investigators will be engaged locally upon request.

Please contact us.

Design, Construction and Investigation of Concrete Bridges

We perform design, construction management, and damage investigation for concrete bridges



Field

Bridge construction, Construction management, Bridge design, Bridges

Technical Overview

[Technical Features]

Engineers with a lot of experience in Japan respond in the following fields,

- Concrete bridge superstructure design
- Damage investigation, Repair design, Reinforcement design of existing bridges
- Concrete bridge superstructure construction management

We have the following design software and design in-house,

- TDAPⅢ (Non-linear dynamic analysis of arbitrary structures)
- UC-BRIDGE (Placed girder structural design)
- MIDAS/Civil (Arbitrary bridge design, Seismic design), 50 other bridge design related software packages

[Merits of Adopting Technology]

- Various designs meet the design standards of the country.
- We help shorten the required period because we can handle design and construction all at once.
- Specialized bridge engineers will be engaged locally.

[Contributions to Solving Issues]

- In particular, we can accurately grasp the condition of the existing bridge and propose optimal repair plans and preventive maintenance plans.

Conditions for Using Technology

Steel bridges cannot be designed.

Company	Kawakin Core -Tech Co., Ltd.		Establishment	February 13, 2009
Employees	212		Website	https://kawakinco.jp/en/
Address	2-2-7 Kawaguchi, Kawaguchi city, Saitama, Japan			
Contact	Name: Mayuko SUGANO		International Division	Title: Sales Assistant
	Tel: +81 48-259-1117		Contact us: https://kawakinco.jp/en/contact/	
Overseas Branches		Vietnam (Hanoi), Turkey (Istanbul)		
Possible Implementation Areas		Worldwide (Main Area: Asia)		

Business Overview

1. Manufacture and sale of bridge components (bearings, expansion joints, catch basin etc.)
2. Manufacture and sale of seismic isolation, vibration control, and earthquake-resistant devices for buildings

Proprietary Technology – TAPS Method

TAPS is a plasma arc spraying process that uses a highly corrosion-resistant Al-Mg alloy to form a protective coating on metal surfaces, providing excellent anti-corrosion performance for bridge components such as bearings (steel and rubber), expansion joints, and dampers.

Achievements in Japan and Overseas

History

2012: Established Kawakin Core-Tech Vietnam Co., Ltd. in Hanoi, Vietnam.

2016: Dynamic Isolation Systems, Inc. (DIS) in the United States joined the Kawakin HD Group.

2023: Established an office in Istanbul, Turkey, and supplied building dampers for our first project in Turkey.



Figure 1. Anti-corrosion work using the TAPS method



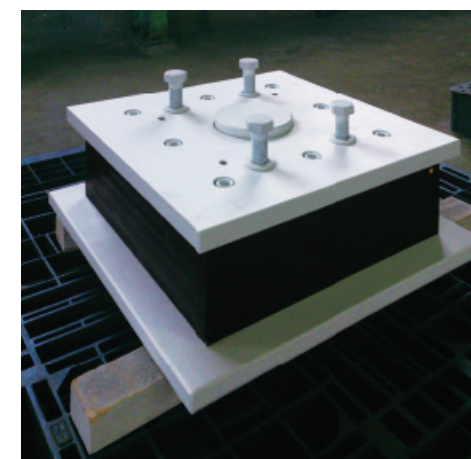
Figure 2. Example project delivery: Jamuna Railway Bridge, Bangladesh

Work System

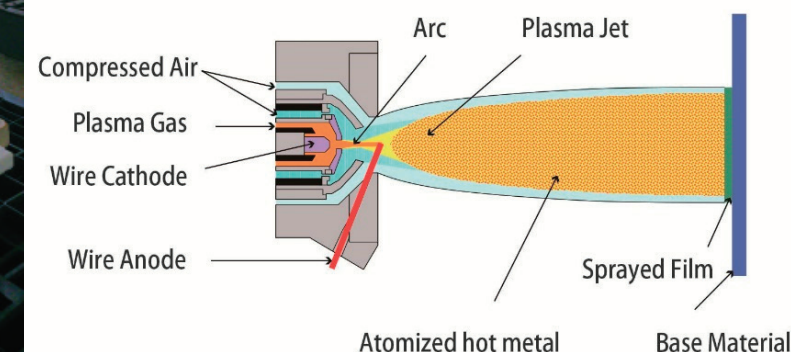
- Vietnam: Factory (est. 2012) near Hanoi, supported by a design and engineering office in the city.
- Integrated manufacturing: In-house production of bearings, expansion joints and other bridge components, with TAPS anti-corrosion coating. Using biaxial testing machine for performance test of the bearing.
- Global support: Seismic isolation and vibration control products also supplied from U.S. group company Dynamic Isolation Systems, Inc. (DIS).

TAPS – Al-Mg Plasma Arc Thermal Spray

Highly durable anti-corrosion protection system for harsh environments



Mechanism of Spraying Method



Field	Bridge construction	Category	Corrosion protection method
Registration, Awards	Jointly developed by three companies in Japan, including West Nippon Expressway Company Limited.		

Technology Overview

TAPS is an advanced corrosion protection technology with high durability in which modified arc welding equipment is used with compressed air to melt and project an aluminum and magnesium alloy wire onto a steel surface to create a protective coating.

[Advantages of Adopting Technology]

<Durability> In accelerated cyclic corrosion tests simulating marine environments, the results showed that the Al-Mg plasma arc thermal spray coating is six times more durable than hot-dip galvanizing, and it is capable of providing excellent corrosion protection under marine environments for more than 100 years.

<Cost savings> The maintenance cost is much lower than the conventional method, making it more economical when considering the life cycle cost of the structure.

<Applicability> TAPS can be applied to a wide range of steel parts such as high-strength bolts (including the threads) without affecting their mechanical properties.

<Portable equipment> It is possible to apply the TAPS anti-corrosion coating directly at the construction site.

<Extensive track record> Critical bridge components such as bridge bearings and expansion joints in the Japanese highway system are protected against corrosion with TAPS. This technology has also been applied on bridges located in harsh environments in Bangladesh, the Philippines, etc.

Conditions for Using Technology

- Highly durable anti-corrosion coating especially suitable for coastal areas.
- Applicable to high-strength bolts to meet a variety of requirements.
- Provides superior corrosion protection for critical bridge components such as bridge bearings and expansion joints.



Company Name	Yajima Corporation	Establishment	May 1, 1993
Employees	20	Website	https://yajimagumi.jp
Address	2-1-14,Heian,Kita-ku,Nagoya-shi,Aichi,Japan		
Contact	Name: Kazuho Tanioku	Construction Department	Title: Director
	Tel: +81-80-2616-5295	E-mail: yajimagumi-kazuho@wing.ocn.ne.jp	
Overseas Branches		None	
Possible Implementation Areas		Worldwide (Main Area : Asia)	
Supported Languages		English	

Business Overview

This is a specialized job that involves a wide range of special construction and work related to bridges. It can be broadly divided into construction work and safety management.

Specialized bridge construction workers are responsible for the specific construction work involved in Building and repairing bridges.

They also understand the importance of safety management and thoroughly implement safety measures on-site.

Their work involves transporting bridge girder components to the construction site by trailer and assembling them on-site using large heavy machinery.

We utilize our specialized technology to carry out precise construction work on site safety and reliably.

Achievements in Japan and Overseas

International projects



2017 : Construction of the Katchpur Bridge in Bangladesh (Bridge length:400m)

2021 : Construction of the Janam Railway Bridge (Bridge length:2550m)

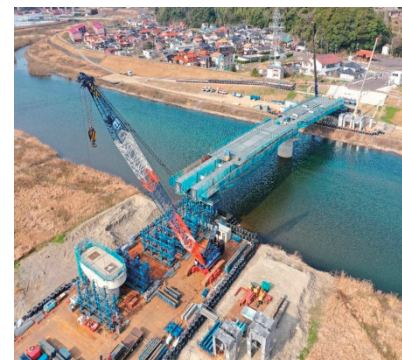
Work System

We have many staff members who are familiar with overseas projects and have established a construction system that can flexibly respond to local conditions.

Please feel free to contact us.

Bridge construction method Total

Total solutions supported by safety



Shintakatsuno Bridge



Fujiyoshidakita Bridge



Shinshinharada Bridge

Field	Bridge construction	Category	construction
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Technical Overview

【Technical Features】

We have the technology and experience to handle a variety of specialized bridge construction methods, including launching, cable erection, floating crane, and traveling crane erection.

【Merits of Adopting Technology】

We provide consistent support for projects, from preliminary construction planning and preliminary Design to safety measures and construction management, ensuring safe and reliable erection even Under strict constraints.

【Contributions to Solving Issues】

- Special construction methods such as launching erection can be used to optimize temporary Structures and traffic restrictions, shortening the construction period.
- High-quality steel bridges. The introduction of appropriate construction management techniques Improves durability and maintainability.
- Practical techniques such as erection planning, construction steps, safety management, high-strength bolt management, and welding management are shared through on-the-job training and other training.
- This directly contributes to the development of next-generation infrastructure.

Conditions for Using Technology

If there are limitations on weather conditions or construction space, we can adapt to any conditions by considering the construction method.

Company	Yasuda Engineering Co., Ltd.	Establishment	1975
Employees	175	Website	http://www.yasuda-eng.co.jp
Address	3-2-26, Shiogusa, Naniwa-Ward, Osaka City, 556-0024, Japan		
Contact	Name: Shigero HAYASHI	Construction Business Division	Development Leader
	Tel: +81-6-6561-5788	E-mail: yasuda-kaigai@yasuda-eng.co.jp	
Overseas Branches	Vietnam (Hanoi, HCMC), Korea (Seoul)		
Possible Implementation Areas	South East Asia (Vietnam, Myanmar, Indonesia)		
Supported Languages	English (e-mail only)		

Business Overview

1. Pipe Jacking
2. General Construction
3. Real Estate Business

- Ranking of Sales <Category of Pipe Jacking>
Within top 2 every year for specialized contractors
- 1st Japan Construction International Award (MLIT) SMEs category

[Pipe Jacking]

Technology for construction of urban tunnels with an inner diameter of 0.3 to 3.0 m. It is used for pipelines such as water and sewage, gas, electric power, and telecommunications.

The RC pipe is connected to the follow-on of the TBM, and the tunnel is built by pushing it into the ground with a hydraulic jack installed in the driving shaft.

On roads where ground transportation and underground objections are congested, the social burden can be reduced compared to the cut and cover tunneling method.

[Original Technology]

- (1) Jyat method: Small diameter pipe jacking method which is equipped with high resolution CCD camera and LED target can be curved construction.
- (2) Milling Mole Method: Milling Mole machine equipped with magnetic survey sensor, special bits and hyperslow jack can cut and pass through steel obstructions like sheet pile or left RC pile in the ground. Won ISTT Award 2012.

Achievements in Japan and Overseas

2013: Jakarta City, Indonesia “Ciliwung River Underground discharge Channel Project”
φ3500 mm ΣL=1.3 km ×2

2015: Vietnam “Binh Duong Sewerage Project” φ300 mm ΣL=500 m

2015: Ho Chi Minh City, Vietnam “Sewerage Project Package G”
φ300 – 1800 mm ΣL=24.7 km

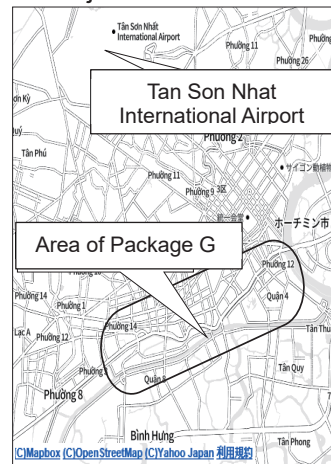
2020: Hanoi City, Vietnam “Yen Xa Sewerage System Project PK-1,2”
φ600 – 2200 mm ΣL=13.4 km



Showing construction site



Maintenance Factory



Work System

- 50 Japanese Engineers were dispatched to Package G project at the peak, and about 80 Vietnamese workers were trained.
- Transported pipe jacking machines from Japan and set up maintenance factory in the suburbs of HCMC.
- Slurry type machines of small diameter(φ300 – 600 mm) and high-density slurry type machines for φ800 – 2000 mm were transported to Vietnam.
- Local company was established in Vietnam. We trained Vietnam staff there and sent them to a project in Japan.
- At the same time, well-trained staffs and workers will be sent to third countries (Indonesia, Myanmar) to drive development of the business.

High-density slurry type pipe jacking method

Technology for constructing sewage and other utility pipelines by minimizing traffic impact on busy roads



High-density slurry type pipe jacking machine in Vietnam



Showing project site in HCMC

Field	Urban Tunnel	Category	Method
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Technical Overview

[Technical Features]

(Yasuda Engineering can handle slurry type, earth pressure type and small diameter pipe jacking.)

High-density slurry type pipe jacking method consists of the following 5 technologies.

1. High-density slurry is injected into the face, and it can excavate without moving ground surface while stabilizing the ground.
2. Equipped with an air-type pinch valve, it can take into the machine up to a gravel diameter of about 1/4 of the machine diameter.
3. By excavating with a slightly larger diameter than the outer diameter of the pipe and filling lubricant into the overcut portion, the frictional force with the ground is reduced, and long-distance construction of 500 m or more and sharply curved pipe jacking construction such as R30 m are possible.
4. It can handle a variety of soils such as sand, gravel, and clay, as well as boulder formations such as 200 mm class.
5. It can respond to direct connection to the existing structure or other various conditions.

[Merits of Adopting Technology]

- Even on roads with busy traffic, it can build a pipe without affecting traffic except for the shaft part.
- As long-distance pipe jacking is possible, the number of shafts can be minimized, and the impact on traffic can be further reduced.

[Contributions to Solving Issues]

- In cities in developing countries where ground transportation development is moving ahead and underground infrastructure development is lagging behind, business can be carried out while suppressing economic and environmental losses due to traffic hindrance.
- Education on and transfer of construction methods and management technologies to local engineers and workers can be performed.

[Video Link]

<http://www.yasuda-eng.co.jp/>

Conditions for Using Technology

- Not applicable to urban tunnels with an inner diameter of 800 mm or less. Maximum size is up to 3000 mm.
- Since the excavated soil is muddy with a high water content, it is necessary to secure an appropriate disposal site.
- Difficult to construct in deep areas where groundwater pressures is above 0.25 Mpa.

Company	Kidoh Construction Co., Ltd.	Establishment	29 October 1946
Employees	103	Website	http://www.kidoh.co.jp/
Address	4-6-31 Fukushima, Fukushima-ku, Osaka-shi, Osaka, 553-0003, Japan		
Contact	Name: Mitsuo KARIYA	Overseas Business	Title: General Manager
	Tel: +81-3-5289-4773	E-mail: mi.kariya@kidoh.co.jp	
Overseas Branches	Indonesia (DKI Jakarta), Taiwan (Taipei)		
Possible Implementation Areas	Indonesia, Myanmar, Vietnam, Cambodia, Hong Kong, Philippines, Malaysia, Singapore, Taiwan etc.		
Supported Languages	English, Bahasa (Indonesia), Chinese (e-mail only)		

Business Overview

1. Construction by pipe-jacking method for water, sewage and other lifeline pipelines ($\phi 0.2$ m~ $\phi 4.0$ m)
 2. Underpasses, utility tunnels, large boxes, shield construction
 3. PC bridge construction
 4. PC tank construction
 5. Other civil engineering construction and other such work
- * In 1948, we performed the first pipe-jacking work in Japan, and now have a track record exceeding 2,500 km in total. We have a top rank in the world, especially for long-distance and curve pipe-jacking. Kidoh Construction has the #1 domestic share for pipe-jacking work.

Achievements in Japan and Overseas

- JAPAN: Total Jacking Length: More than 2,535 km (2018)
Total Water Storage Tanks: 1,010 units (2018)
1st Japan Construction International Award (MLIT) SMEs category (2018)
- TAIWAN: From Incorporation in 2006, total pipeline length of 16,000 m (2019)
- HONG KONG: Expansion by Taiwan Kidoh Engineering from 2012
- VIETNAM: $\phi 1500$ mm, 200 m $\times$ 1 span (2008)
- INDONESIA: $\phi 3500$ mm, 570 m $\times$ 2 span (2015), $\phi 1800$ mm, 260 m $\times$ 1 span (2012)
- MYANMAR: $\phi 1100$ mm, 815 m $\times$ 1 span: Bago River-Crossing (2019)



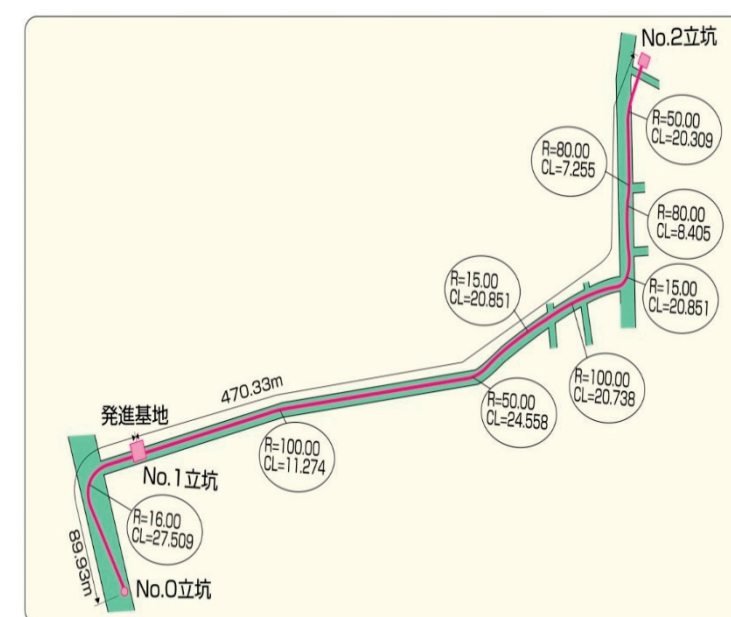
Work System

Past Track Record:

- In Indonesia, we arranged equipment from Japan and dispatched up to 13 Japanese engineers, who collaborated with local workers. Currently, two local engineers are being trained.
- In Taiwan, Japanese engineers and local workers jointly work in construction.
- In Myanmar, jacking equipment and other items were shipped from Japan and 3 Japanese engineers were dispatched, who collaborated with local workers.

Ultimate Method

The Ultimate Method makes it possible to excavate tunnels for an extremely long distance and sharp curves with low propulsion power and high accuracy



Field	Pipe-jacking Construction	Category	Method
Registration, Awards	1994: CENPRA Curve System (Ultimate Method System) Received Technology Certification from Sewerage New Technology Promotion Organization. 1995: CENPRA Curve System won NO-DIG Award.		

Technical Overview

[Technical Features]

- By utilizing a special widening ring and the ULTIMATE Lubricant Injection System (ULIS), it is possible to jack an ultra-long distance of 1 km or more by reducing the peripheral resistance.
- Sudden-Curve line pipe jacking is realized by adopting the GYRO Compass and CENPRA Curve System.

[Merits of Adopting Technology]

- By making long distance, sudden-curve line pipe jacking possible and reducing the number of shafts, the total cost is reduced and the project period is shortened.
- Reducing the number of shafts lead to a reduction in traffic congestion, reduction in social losses and reduction in carbon dioxide due to congestion.

[Contributions to Solving Issues]

- Improves road conditions (chronic congestion) in overcrowded urban areas in Southeast Asian countries.
- Infrastructure development such as water and sewage that has been delayed due to rapid growth can contribute to the development of local companies and the transfer of technology.

[Video Link]

<http://www.kidoh.co.jp/>

Conditions for Using Technology

- Rocks, megaliths and other factors need to be considered for soil type.
- Need to pay attention to the quality of jacking pipe for long-distance or curved-line pipe jacking for overseas projects.

Company Name	CHIKEN ENTERPRISE	Establishment	June 18,1980	
Employees	150	Website	https://www.ckn.co.jp/	
Address	1-4-1 Bawari Cho Kariya City Aichi Prefecture			
Contact	Name: Kameshima		Management headquarters	Manager
	Tel: +81-90-5112-1789		E-mail: info@ckn.co.jp	
Overseas Branches		Jakarta Indonesia		
Possible Implementation Areas		ASEAN		
Supported Languages		English Indonesian Vietnam Portugal		

Business Overview

■ Jacking Work ■ Pipe Rehabilitation Work ■ Ground Improvement Work ■ Slope and Landslide Prevention Work ■ Machinery Leasing

◇Nikkei Construction Ranking by Field (Sales) <Jacking Works>

8th in 2023, 8th in 2024, 9th in 2025

◇Proprietary Technology

① Pass Method: The Pass Method is a low-load-bearing, two-stage jacking method that is uniquely capable of jacking through water-logged sand layers compared to conventional methods. In addition to its traditional features of high-precision launching, compatibility with a wide range of soil types, and launching from small shafts, the entire system has been made lighter through further improvements to the surveying system (first stage) and excavation head (second stage). The compact, low-load-bearing, two-stage PVC mud system enables launching from shafts with diameters of 1.5m to 2.0m.

Compatible with VP and VM PVC jacking pipes with nominal diameters of 200mm to 350mm.

Furthermore, with regard to the soil quality to be handled, it is focused on highly destructive soil with high water pressure and permeability, and with a jacking length of 60m or more, which is difficult to handle with the conventional speeder method.

② MM Hole Method:

MM Hole is a highly versatile, innovative manhole construction method that rotates the concrete member and presses it directly into the ground, making it suitable for use in jacking construction shafts and other applications.

Because the reinforced concrete body is pressed in directly, no temporary retaining wall is required, and therefore there is no need to remove retaining sheet piles. This significantly shortens construction time and is highly economical.

Achievements in Japan and Overseas

2016: Construction work for the "Urgent Water Sector Improvement Project for Communities Hosting Syrian Refugees in Northern Regions" in Jordan

2018: Construction work for the "Balqa Governorate Water Supply Network Rehabilitation and Expansion Project" in Jordan

2019: "Yangon Metropolitan Water Supply Development Project (ICB-2) [Steel Sheath Pipe Jacking Work]" in Myanmar

2017: Selected for the JICA Small and Medium Enterprise Support Project "Indonesia Small-Diameter Jacking Method Feasibility Study"

2019: JICA Small and Medium Enterprise Support Project "Indonesia Small-Diameter Jacking Method Dissemination, Demonstration, and Commercialization Project"

2022: Construction work for the "Ciliwung River Diversion Channel Construction Project in DKI Jakarta" in Indonesia

2022: Construction work for the "Bekasi City Water Supply Construction Project" in Indonesia

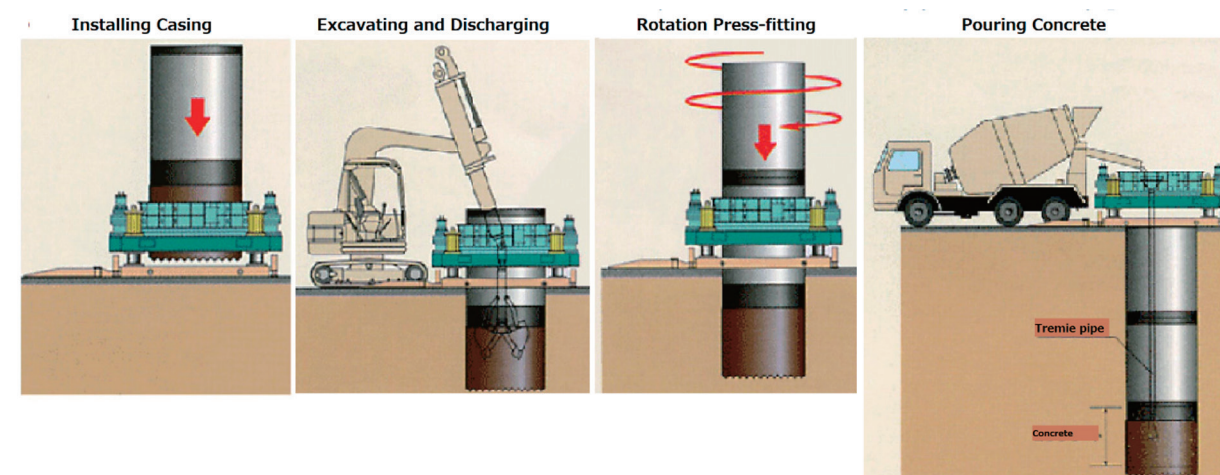
2024: Construction work for the "Jakarta Sewerage Project Zone 1" in Indonesia

Work System

We are currently recruiting and training five managerial candidates and 20 construction staff locally in Indonesia.

MM Hole

Speedy Space saving Safety Manhole Construction



Field	City tunnel	Category	Method/Material
Registration, Awards	Japan Construction Technology Certification (Civil engineering materials / products / technologies, road maintenance technology) Examination number No.0224		

Technical Overview

Technology Features

The MM hole is a revolutionary multipurpose manhole construction method that is used for pipe jacking shafts by directly press-fitting concrete materials into the ground with rotation.

Benefits of Technology Implementation

- Cost saving due to shorter construction period
No need for the earth retaining sheet pile. Therefore, the construction period is greatly shortened, and it is cost saving.
- No need for cutting entrance ring
The entrance ring is pre-installed. (Applicable pipe nominal diameter 500 or less)
- High-precision construction
All-around press-fitting machine (ART machine) enables installation without misalignment.

Solving the issues of the implementing country

Since there is little vibration and noise, it can be constructed in a short period of time even in urban areas near underground buried objects and houses.

Construction video links

• <https://www.nicovideo.jp/watch/sm4500929>

Conditions for Using Technology

It is applicable for a wide range of soil types. (For welded joints and non-welded joints)

Soil Type	Scope	Note
Sandy soil	$N \leq 50$	Note: Additional measures may be required in the following cases: Soil with unstable excavation bottom, ground with low bearing capacity, aquifer, consolidated clay and bedrock, etc.
Cohesive soil	$N \leq 30$	
Gravel soil	$N \leq 50$	

SO  HATSU

Company	Sohatsu Systems Laboratory Inc.	Establishment	2000
Employees	25	Website	http://www.sohatsu.com/
Address	San-nomiya Denden Bldg. 64, Naniwa-machi, Chuo-ku, Kobe, 650-0035, Japan		
Contact	Name: M. WAKAMATSU	Operations Department	Title: Manager
	Tel: +81-78-325-3320	E-mail: mariko@sohatsu.com	
Overseas Branches	Nepal		
Possible Implementation Areas	Global		
Supported Languages	English, Taiwanese, Mandarin, Nepali, French, German		

Business Overview				
[Target Systems] 1. Road Tunnel Ventilation Control Systems 2. Road Traffic Monitoring Systems 3. Subway Ventilation Control Systems Market Needs ↔ Sohatsu Systems Laboratory Creativity, Leadership Various Identities ↔ Technological Seeds [Business] Planning/Analysis: Energy Saving, Maintenance, Fire Safety, Risk Analysis, Simulation Experiment: Field Test, Simulation Research & Development: Software, Hardware, System Development Manufacture & Construction: Sensor, Ventilation Control Panel, Jet-fan Inverter Panel, Sensor Unit, Control Unit, Signal Unit Maintenance: Equipment, System, Data Diagnosis, Repair, Overhaul, Periodic Inspection, Remote Maintenance <tr> <th>Achievements in Japan and Overseas</th></tr> <tr> <td> [Shipping Record] • Road Tunnel, Over 15 years Jet-fans, Variable Speed Controller JINV (Japan) • Applicable to All Jet-fan manufacturers • Market Share 100% (Variable Speed Controller, Japan) • Expansion to large exhaust fans(2023~) • JICA ODA PROJECT (Nepal, the Philippines) [Appraisal] • 13th ISAVVT Best Paper Award • Certification (Japan): NETIS, JAPAN BRAND PROJECT, Invention Award, Manufacturing Award • PIARC Member of Tunnel Committee • Collaborative Research : Hanoi University of Science and Technology, ITST Vietnam </td></tr> <tr> <th>Work System</th></tr> <tr> <td> • Business Model (Fabless): Local Partnership (Australia) • Core Technology (DFSA Filter): JAPAN Made (Credibility, Identity) </td></tr>	Achievements in Japan and Overseas	[Shipping Record] • Road Tunnel, Over 15 years Jet-fans, Variable Speed Controller JINV (Japan) • Applicable to All Jet-fan manufacturers • Market Share 100% (Variable Speed Controller, Japan) • Expansion to large exhaust fans(2023~) • JICA ODA PROJECT (Nepal, the Philippines) [Appraisal] • 13th ISAVVT Best Paper Award • Certification (Japan): NETIS, JAPAN BRAND PROJECT, Invention Award, Manufacturing Award • PIARC Member of Tunnel Committee • Collaborative Research : Hanoi University of Science and Technology, ITST Vietnam	Work System	• Business Model (Fabless): Local Partnership (Australia) • Core Technology (DFSA Filter): JAPAN Made (Credibility, Identity)
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Work System				
• Business Model (Fabless): Local Partnership (Australia) • Core Technology (DFSA Filter): JAPAN Made (Credibility, Identity)				

Road Tunnel Inverter Control System JINV

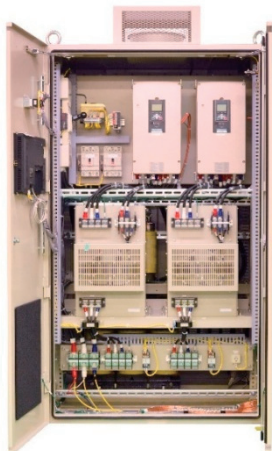
Tunnel Ventilation Control System - Energy Saving, Fire Safety, Noise Free, Low Cost-



Jet-fan



Jet-fan Inverter Control Panel



Field	Tunnel Ventilation	Category	System
Registration, Awards	NETIS: KK-130014 Patent No. 5300775, Invention Award, Manufacturing Award 13th ISAVVT Best Paper Award, JAPAN BRAND PROJECT Compliant Australian Standard		

Technical Overview

[Technical Features]

• Noise Filter DFSA: Independently Developed to Realize Jet-fan Inverter Control

• Reduce The Life Cycle Cost: Energy Saving-Over 30%, Versatility with Peripherals

• Emergency Ventilation Control: Safe Evacuation of Passengers

[Merits of Adopting Technology]

• Cable Length up to 2,000 m: Realized through Technology of DFSA

• Non Shielded Cable, Versatile Motor (Our Technologies): Shielded Cable, Special Motor (Competitor's Technologies)

• Any Type of Fans, Any Manufacturer

• Many Type of Simulations: From Planning to Maintenance

• Variety of Line up (30kW to 600kW)

[Contributions to Solving Issues]

• (Developing Country) Low Quality Air Environment in Tunnel (smoke density and air condition): Optimization, Unstable power Supply. Energy Saving and low load Ventilation Control. Necessity of Localization (Cost and Technology).

• (Mountains Areas) Higher Fire Risk (Steep Slope): Emergency Ventilation Control

• (Urban Areas) Complicated Structure and Long Length Tunnel (Need Higher Technology): Ventilation Control for Fire safety, and High Temperature Countermeasures.

Conditions for Using Technology

• Two Way Traffic with Jet fan and Axial fan

Company	NIKKEN KOGAKU CO., LTD.		Establishment	1964
Employees	98		Website	https://www.nikken-kogaku.co.jp/English/
Address	17F Nittochinishishinjuku Bldg., 6-10-1 Nishishinjuku, Shinjuku-ku, Tokyo 160-0023, Japan			
Contact	Name: Yosuke TOGA		International Division	Title: Manager
	Tel: +81-3-6361-0028		E-mail: int-div@nikken-kogaku.co.jp	
Overseas Branches		Vietnam (Hanoi City)		
Possible Implementation Areas		East Asia, Southeast Asia, South Asia		
Supported Languages		English (e-mail)		

Business Overview

1. Leasing and product sales of formwork for fabrication of wave-dissipating blocks and footing-protection blocks
2. Leasing and product sales of formwork for fabrication of river revetment blocks, etc.
3. Sales of Geosynthetics (Geotextile etc.)
4. Sales of fieldstone products

[Main Business Development and Activities in Overseas Markets]

- Supply of formworks for fabrication of “wave-dissipating blocks” and “footing-protection blocks”
- Dispatch supervisors to the site and provide technical guidance to construction contractors
- Business contract and technical support for hydraulic model experiments

[Record of Awards]

- May 2013: First Place Winner for “PIANC De Paepe-Willems Award” (first award in Asia)
Target technology: Breakwater reinforcement method “SUBPLEO FRAME (SPF)”
- June 2014: Second Place Winner for “PIANC World Congress in San Francisco, YP Award”
Target technology: Concrete containing amino acid “Environmentally Active Concrete (EAC)”
- March 2019: Received “The 2nd JAPAN Construction International Award” SMEs Category



Achievements in Japan and Overseas

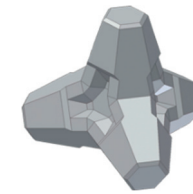
Construction Period	Project Name	Procuring Entity	Summary of the Construction
2012	South Korea: Pohang Young-il Bay South Breakwater	Pohang Regional Office of Oceans and Fisheries	Breakwater, Armor block for rubble mound. Fabrication and installation work of STONE-BLOCK 10t.
2014	Vietnam: Nghi Son Refinery and Petrochemical Complex Project, Route Neuve	Nghi Son Refinery Petrochemical Ltd.	Breakwater, Wave-dissipating blocks. Fabrication and installation work of RAKUNA-IV 8t, 12t.
2018	Vietnam: Chan May Port Breakwater Construction Project	Thua Thien Hue province	Breakwater, Wave-dissipating Blocks. Fabrication and installation work of RAKUNA-IV 16t, 32t.

Work System

We do not contract for construction work directly, but manufacture formworks for the fabrication of wave-dissipating blocks locally, such as in Vietnam, and supply them to the construction site after concluding a contract with a construction company that includes the use of industrial property rights. Also, in order to ensure the quality of Japanese technology, we dispatch supervisors to the site at the start of fabrication and installation of the blocks to provide technical guidance and advice directly to the construction company, as well as guidance based on relevant manuals and guidelines.

Wave-dissipating Block “RAKUNA-IV”

New type of wave dissipating block with 4 hollows on the joint part of 4 legs



RAKUNA-IV



Breakwater for Chan May Port in Vietnam



Breakwater for Nghi Son refinery in Vietnam

Field	Ports and harbors, Fishing ports, Coasts, Rivers	Category	Products
Registration, Awards	NETIS: HRK-080001-VE Vietnam National technical Standard: TCVN 9901: 2014, TCCS 02: 2017, TCVN 11736: 2017		

Technical Overview

[Technical Features]

1. Compared to conventional products, the hollows and leg toes interlock with each other, which suppresses damage transmission and improves wave-resistant stability.
2. The hollows increase the surface roughness, which reduces the energy of the waves and improves the wave-dissipating effect.
3. The characteristic large hollows increase the porosity, reducing the number of blocks used, and improving economic efficiency.
4. There are many corners in the hollow, which helps the implantation and growth of algae, and the tranquility of the hollow provides a habitat for marine creatures.
5. The formwork structure is simple, block fabrication is easy, and high-quality construction is possible according to the guidelines for installation.
6. It is possible to design appropriately according to the construction site conditions by conducting hydraulic model experiments.

[Merits of Adopting Technology]

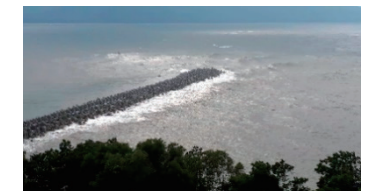
- Compared to general wave-dissipating blocks overseas and those in Europe and the United States, the structure is flexible, resilient, and tough due to the high stability of the blocks and the double-layer installation method. Therefore, it is hard for the blocks to be destroyed and they have high safety.
- Since the number of blocks used is reduced due to the high porosity, the amount of concrete used can be reduced and the block fabrication/installation work period can be shortened. Shortening of the construction period will lead to reducing the burden on the environment.

[Contributions to Solving Issues]

Constructing a highly safe breakwater in ports developed in developing countries reduces the risk of stopping operation of the port. In addition, it is easy to maintain and can reduce maintenance costs, so the life cycle cost is excellent.

[Video Link]

https://www.youtube.com/watch?v=l_2F8pKlb0A
<https://www.youtube.com/watch?v=qIJg3oFqjFg>
<https://www.youtube.com/watch?v=ObNiIXKyB1k>



Conditions for Using Technology

- We conduct hydraulic model experiments to determine the suitable type of breakwater (caisson breakwater, sloping breakwater) to make the appropriate design possible.
- In addition to the design standards in Japan, it is possible to design based on overseas standards such as BS6349.

Company	Onoda Chemico Co., Ltd.		Establishment	1964
Employees	365		Website	http://www.chemico.co.jp
Address	Crest Takebashi Bldg., 3-21, Kanda Nishiki-cho, Chiyoda-ku, Tokyo, Japan			
Contact	Name:Nang Hnin Hnin Wai	International Business Division		Title: -
	Tel: +81-6-6484-7761		E-mail: nang@chemico.co.jp	
Overseas Branches		Vietnam, Myanmar		
Possible Implementation Areas		Vietnam, Myanmar, etc.		
Supported Languages		English, Vietnamese, Burmese (e-mail only)		

Business Overview

We are a special construction company engaged mainly in ground improvement. Centering on design, sales, construction, testing, and technical development for ground improvement, we undertake the following:

1. Ground improvement, lightweight material earthworks, and other specialized civil engineering work as the main contractor or subcontractor
2. Design, estimation, and consulting for specialized civil engineering work
3. Special concreting (manufacture, sales and repair of super-fast-setting concrete)
4. Shield tunneling (backfilling, foam injection, eruption prevention, soil/sand transformation system, etc.)

Of all ground improvement, we are particularly good at solidifying soft ground with a cement-based solidification material. We have diverse high-quality methods that we have developed independently, thereby contributing to infrastructure enhancement and recovery from earthquakes both in Japan and abroad in the fields of foundation work, seismic measure, liquefaction protection, and other measures for structures.

Achievements in Japan and Overseas

2006: Vietnam
Saigon East-West Highway Construction Project PK2 (JMM method)
To prevent of sliding of levee and shore bank, and to increase passive earth pressure, we carried out from water floating barge.
On land, we executed the project to prevent the road embankment from subsiding.

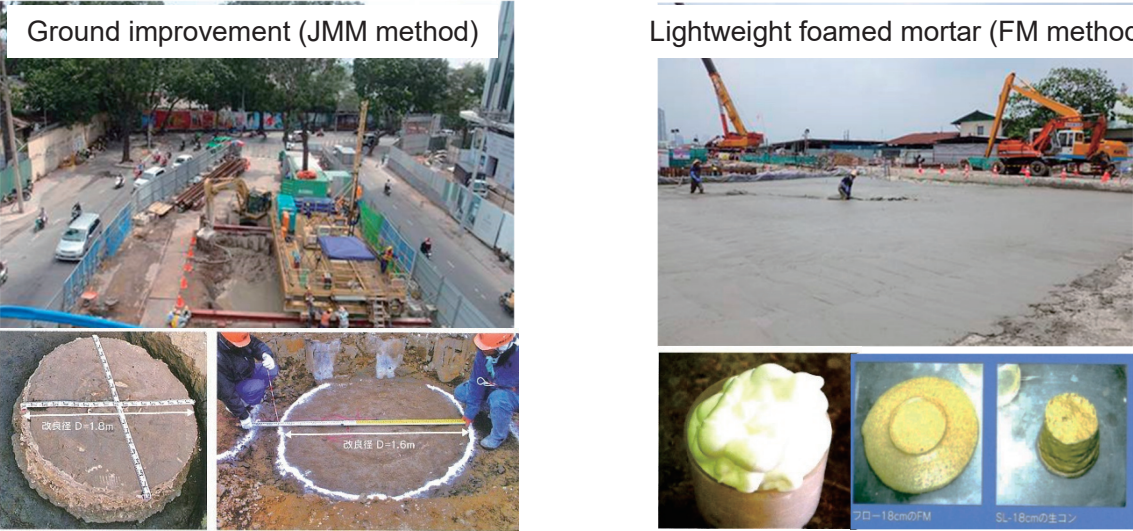
2015 to 2019: Vietnam
HCMC Urban Railroad #1 Construction Project, Zone 1B
(JMM method, FM method)
The FM method was used for the zone in front of the Opera House and the new building worksite for Ba Son Station.
In the subway cut-and-cover zone, the bottom ground was improved with the JMM method.

Work System

- In 2016, an office was opened in Yangon, Myanmar. In 2017, a local subsidiary was set up in Ho Chi Minh, Vietnam.
- The HCMC Subway Construction, Zone 1b, was undertaken by 10 Japanese engineers and 20 Vietnamese workers.
- We employed and trained HCMC resident personnel (2 Japanese and 2 local recruits) and personnel who underwent practical skill training (4 local workers living in Japan).

JMM Method, Onoda FM Method

Methods for improving soft ground to achieve maximum effect with minimum equipment



Field	Civil engineering and architecture in general	Category	Methods, materials
Registration, Awards	JMM method: former KT-030041-V, partially recommended for fiscal 2014		

Technical Overview

[Technical Features]
JMM method:
• Combining concepts and experience of jet grouting and mechanical mixing, this method constructs large-diameter (ø1.2–1.9 m) columns, making it suitable for all kinds of soft ground. The rod head and work execution can be modified with different ones to enable the machine to access the displacement object.
• By a special travelling slide base machine with a boring machine is used to achieve high mobility, low vibration and low noise. A self-travelling construction machine type is also available, which offers efficient construction.

FM method:
• Cement milk or mortar is injected with foam produced with a special device to manufacture foamed lightweight material.
• Unit weight can be set freely between 0.5 and 1.2 kN/m².

[Merits of Adopting Technology]
JMM method:
• Construction is now possible in narrow spaces inaccessible with large three-point pile drivers and in soft ground with low bearing capacity. Moreover, high-pressure jetting enables contact execution of each column, and can therefore be used to increase the earth pressure balance of retaining walls, to reinforce objects, and for many other purposes.

FM method:
• This method uses types of soil and sand more lightweight than those applied for embank, thereby reducing consolidation settlement due to rises in embank loads. Carried out with a highly flowable material, this method can be used to fill cavities of certain sizes.

[Contributions to Solving Issues]
• JMM method: Effective for ground improvement in urban districts and other areas with limitations on construction conditions.
• FM method: Effective for consolidation settlement measure by offering a lightweight material for embank in Southeast Asia, where soft marine clays are widespread.

Conditions for Using Technology
• Inapplicable to areas with no cement supply. The FM method requires that an applicable foaming agent be imported from Japan.
• In principle, the column diameter and strength for the JMM method should be set based on the results of in-situ trial tests.

Company	TENOX KYUSYU CORPORATION	Establishment	December 1987
Employees	160	Website	https://www.tnx.co.jp/
Address	5F Kubara Honke Tenjin Bldg, 4-1-11 Tenjin, Chuo-ku, Fukuoka City, Fukuoka, Japan		
Contact	Name: Jin Yeonho	Overseas Department	Title: Assistant Manager
	Tel: +81-78-325-3320	E-mail: mariko@sohatsu.com	
Overseas Branches	Vietnam, Myanmar, Cambodia (Corporation), Korea (Branch)		
Possible Implementation Areas	South-East Asia, Korea		
Supported Languages	English, Korean		

Business Overview

We are a company that specializes in foundation work, centered on the ground improvement method. We have developed and attained vast technological capabilities to carry out foundation work to support structures for both buildings and civil engineering structures. We have developed distinctive ground improvement methods (Teno-column method, Column Approach method, Multi-wall method, CCC method), piling methods (TN method, CMJ method), and steel piping methods (ATT column method, EAZET method) which are "Eco-friendly". We are capable of providing a complete foundation work system from engineering and procurement service to construction.

Achievements in Japan and Overseas

1. We entered Vietnam in 2003 with the introduction of ground improvement technology (Teno-column method), and expanded this work as a widely used method for the building foundation and civil engineering fields.
2. We have completed various projects such as ODA and private projects in Vietnam, Myanmar and Singapore, and accumulated vast overseas experience as described below.



Singapore, Thomson East Coast Line T228 Project

No.	Project Name	Client	Place	Period	Construction Method	Vol.
Vietnam						
1	SP-PSA Thi Vai Container Terminal	Penta Ocean	Thi Vai	2008/1~2008/7	Deep Soil Mixing	180,000m ³
2	Sao Mai-Ben Dinh Port Basement	PVO-MS	Vung Tau	2011/5~2011/7	Deep Soil Mixing	177,000m ³
3	TBO Tan Son Nhat - Binh Loi Outer Ring Road Project2	GS Engineering & Construction Corp	HCM	2011/12~2012/2	Deep Soil Mixing	152,000m ³
4	Duyen Hai 1	Guangdong Electric Power Design Institute	Tra Vinh	2013/6~2014/6	Deep Soil Mixing	233,000m ³
Singapore						
5	Marina Coastal Expressway C483	Samsung C&T	Marina South	2009/4~2012/4	Deep Soil Mixing	570,000m ³
6	Common Services Tunnel MCO2	Singapore Piling Pte Ltd	Marina South	2010/8~2012/2	Deep Soil Mixing	44,000m ³
7	Thomson East Coast Line T228	Nishimatsu Construction Co., Ltd.	Marina South	2015/1~2016/11	Deep Soil Mixing	140,000m ³
Myanmar						
8	New Taketa Bridge	Tokyo Construction Co.Ltd.	Yangon	2015/8~2016/4	Deep Soil Mixing	13,400m ³

Overseas achievements (mainly large-scale)

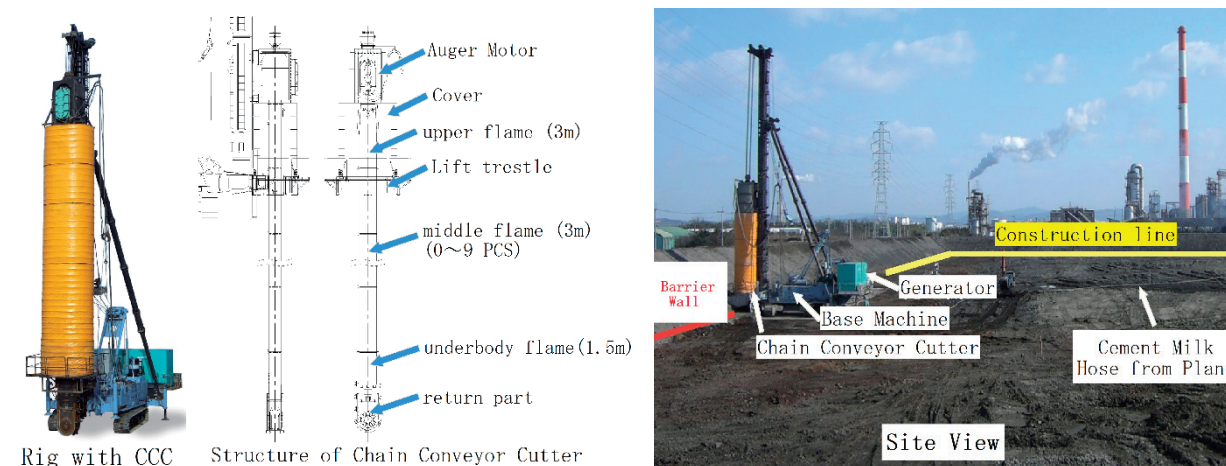
3. We continue to conduct sales activities with a focus on Southeast Asia.

Work System

1. We have a dedicated team which provides foundation work in Vietnam with machinery, materials and skilled local staff. The Vietnamese manpower and resources are able to support work in the South-East Asia area. For projects in Singapore, we are able to coordinate manpower and materials from Japan and Vietnam to tap on the high technical skill and economic viability. This consists of the essential materials & engineers from Japan & skilled labor and materials from Vietnam.
2. We can flexibly reconfigure resources to suit the construction conditions and technical difficulties we may encounter on site.

"CCC Method" Chain Conveyor Cutter Method

Ground improvement method - Excavates and Agitates Ground by Rotating Scraper connected to Chain Conveyor (vertical direction)



Field	Earth retaining, impermeable work, ground Improvement work	Category	Construction Method
Registration, Awards	NETIS registration number: QSK-120005-V		

Technical Overview

[Technical Features]

1. Direct stirring & mixing method: Capable of creating seamless improved ground even in different geological layers.
2. Rectangular column: Effective improvement rate (practically 100%).
3. Able to improve the ground regardless of the hardness of the ground. → Able to penetrate & mix in ground with a maximum N value of 100.

[Merits of Adopting Technology]

1. Able to achieve consistent and uniform improved ground as the work is performed in the vertical direction with a chain conveyor cutter.
2. Can be installed even on ground with a support layer hardness of N value 100.
3. The amount of solidifying material (i.e., Cement), is reduced since the vertical chain conveyor cutter ground improvement method is able to achieve uniform quality.

[Contributions to Solving Issues]

When earth retaining and the foundation for the structure are both required, the earth retaining work can be performed using the CCC (chain conveyor cutter) method, and with the same resources, the foundation work using the Deep Soil Mixing Method can be performed (only by changing the auger motor attachment). This achieves an effective and productive combination.

[Video Link]

<http://ccc-kyokai.com/index.html>

Conditions for Using Technology

[Conditions related to the natural environment]

- Can be constructed under most weather conditions throughout Japan.
- Fall prevention measures for the rig are required in adverse weather conditions.
- Construction under freezing conditions requires mitigation measures to prevent freezing of water.

[Conditions related to Work Area]

- The footprint size of the machine, i.e. DH658 standard, is about 50 m² (5 m x 10 m).
- The plant, silo, pump & ETC installation area occupies around 200 m² with a flexible configuration according to the location of materials.

HONMA			
Company	Honma giken Co., Ltd	Establishment	1987
Employees	39	Website	http://www.honmagiken.co.jp
Address	983-3 Teraji, Nishi-ku, Niigata-city, Niigata 950-1104, Japan		
Contact	Name: Akihiro ITO	EngineeringSales Department	Title: TechnicalSales director
	Tel: +81-25-233-6181	E-mail: itoua@honmagiken.co.jp	
Overseas Branches		None	
Possible Implementation Areas		Vietnam (We have experience in field inspection)	
Supported Languages		English (e-mail only)	

Business Overview

We are a specialized contractor for construction industry and ground improvement work.
e.g.: Soil stabilization, solidification of soft soils and construction of underground continuous walls
We own suitable machines and manage construction in-house as described below:

- Ground improvement work
 - Dry jet mixing method: 2 units (Maximum penetration depth: 33 m)
 - GI column method (Single-auger deep soil mixing): 1 unit (Maximum construction depth: 24.5 m)
 - Double Mixing method (Single-auger deep soil mixing): 1 unit (Maximum construction depth: 10 m)
 - PowerBlender method (Shallow-middle Range Mechanical Mixing): 4 units (Maximum construction depth: 8 m)
 - Compaction Grouting Denver-system: 4 units(Liquefaction counter measuring method)
- Mud treatment work
 - MUDIX method (Continuous mud treatment method) 1 unit
- Underground continuous wall construction work (Excavation Support wall/Water-cut off wall etc.)
 - Trench cutting re-mixing deep wall method 2 units (Maximum construction depth: 60 m, Wall thickness: 550 to 1000 mm)

Achievements in Japan and Overseas

[MUDIX method] processing capability: 100 m³/h

Applications: To solidify and reuse dredged soil

Past achievements for rivers and port in Japan:

- Ibaraki port Hitachi District, 3rd wharf
- Second class river: Ishikawa River
- First class river: Toyonogata River

[PowerBlender method]

Applications: To improve soft soil in the original position or use pre-improved soft soil for embankments

- Asahi Atsumi Road: Hihara area Improvement work No. 2
- Niigata port, West port area: Embankment work for waste disposal areas No. 7 and No. 8
- Oodori River: 3-year project for ground improvement work



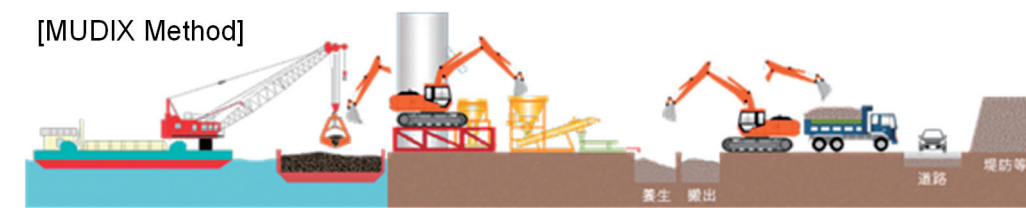
Work System

- Dispatch of Japanese engineers and technicians
- Consider development of local human resources

MUDIX METHOD, POWER BLENDER METHOD

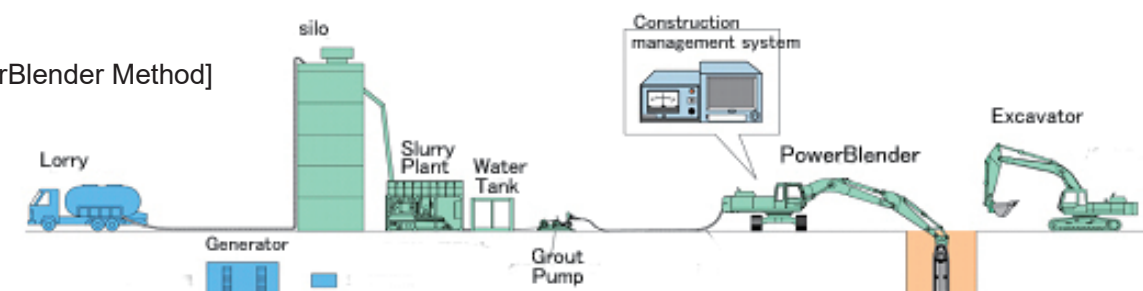
These methods can be applied for soft ground and dredged soil

[MUDIX Method]



Drilling→Soil carrier→Soil-gathering→Solidification→Curing→Carry out→Reuse

[PowerBlender Method]



Field	Weak ground/soil treatment	Category	Method
Registration, Awards	Power blender method NETIS: QS-180038-VE、QS-210068-VE		

Technical Overview

1. MUDIX METHOD

[Technical Features]

This method continuously and efficiently mixes soft mud with stabilizing agent in a cylindrical mixing chamber.

- * Since the stirring efficiency is good and powder / granular material is used, the amount of stabilizing agent added is decreased and the strength is quickly developed.

[Merits of Adopting Technology]

- * Safety and non-polluting: The agent is completely contained, and noise and vibration are minimized, making it relatively safe.

[Contributions to Solving Issues]

- * This is an effective method for dredging/landfilling ports/rivers with reused-dredged soil.

[Video Link] <https://www.deidoken.gr.jp/>

2. POWER BLENDER METHOD

[Technical Features]

This is a construction method in which soft soil is moved horizontally while stirring in the vertical direction while improving material is added to improve the ground.

- * By continuously stirring in the vertical direction, it is possible to improve the soil even in multi-layered ground.

[Merits of Adopting Technology]

This method provides mobility even under difficult conditions with conventional mechanical agitation methods, such as on narrow sites and sloping terrain.

[Contributions to Solving Issues]

- * This method can improve the ground in the original location and increase the ground strength around existing and new structures at a low cost.

[Video Link] <http://www.power-blender.com/>

Conditions for Using Technology

None in particular. We will consider the detailed construction plan for each case and provide our response.

Company	Murakamijuuki Co.,Ltd	Establishment	May 1962
Employees	68	Website	http://www.murakamijuuki.co.jp/
Address	515 Ikenobe Mikicho, Kitagun, Kagawa, 761-0701, Japan		
Contact	Name: Shusaku MURAKAMI	Title: President	
	Tel: +81-87-813-5576	E-mail: s-murakami@murakamijuuki.co.jp	
Overseas Branches		Vietnam (Ho Chi Minh City)	
Possible Implementation Areas		Vietnam	
Supported Languages		English (e-mail only)	

Business Overview

Murakamijuuki is a nationwide construction company, which is based in Kagawa, Japan and work as a contractor for foundation works below, transportation and crane works mainly for public works contracted by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), local governments, etc.

1. Construction of cast-in-site diaphragm wall
2. Construction of ground improvement
3. Construction of pile driving and pile pulling

In addition to our many achievements especially in cast-in-site diaphragm wall construction all over Japan, we have an excellent track record overseas in special ground conditions including cohesive soil and limestone. In November 2019, the ground improvement technology (MITS Construction Method) was developed in Vietnam, and was expected that it is highly suitable for the soft soil of Mekong delta region. The Ministry of Transport of Vietnam issued TCVN (Technical Standard in Vietnam) certificate to the technology. We are aiming to receive local construction orders and build relationships with local partners.

Achievements in Japan and Overseas

2011: Established Vietnam Office based on overseas expansion plan

2014: Participated in MLIT-led delegation to Vietnam

“Feasibility Survey with the Private Sector for Utilizing Japanese Technologies in ODA Projects for Introduction of Soil Improvement Technology for Mekong Delta Waterway Revetment Construction” of Japan International Cooperation Agency (JICA)

June 2016: “Verification Survey with the Private Sector for Disseminating Japanese Technologies for Soil Improvement Technology for Mekong Delta Waterway Revetment Construction” of JICA

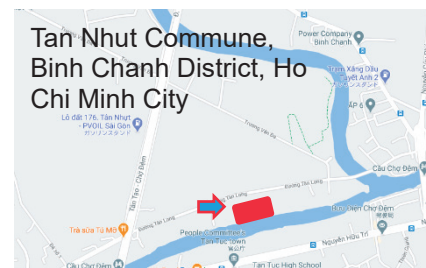
December 2018: Trial construction was implemented in Vietnam

November 2019: Ministry of Transport of Vietnam has issued TCVN (Technical Standard in Vietnam) certificate to the MITS Construction Method

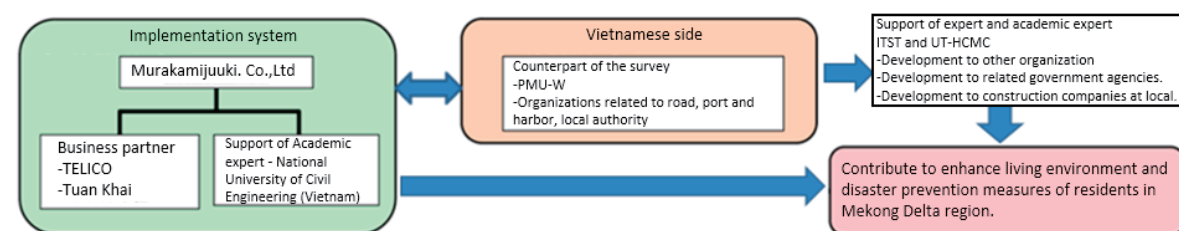


Trial site→

←Construction site



Work System



MITS Construction Method CMS System

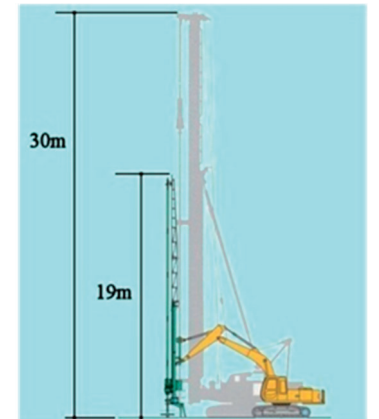
Ground improvement construction method that mixing efficiency is enhanced and base machine is downsized by combining the special mixing blade and middle pressure injection of cement slurry



Revetment Construction



Construction from the barge



Drawing of MITS method

Field	Ground improvement	Category	Construction method
Registration, Awards	- Ministry of Transport: NETIS QS-000013-V, Technology of promotion of utilization in 2011, Technology for comparison of design in 2012		
	- Advanced Technology Center: Advanced Construction Technology and Technology Review Certification, Technology Certification No.2301 acquired on 20th September 2011		
	- Ministry of Transport in Vietnam: Technical Specification No.2163/QD-BGTVT issued on 18th November 2019		

Technical Overview

[Technical Features]

MITS method has features of both mechanical mixing method and jet-grouting method. It is the deep mixing method that mechanical mixing blade drills and mixes, and simultaneously cement slurry is injected with middle pressure under 15Mpa. It can create improved soil-cement column with high uniformity in short time. The main features are shown below.

- a. By combining mixing blade and middle pressure injection, its base machine can be downsized, and improvement diameter can be increased.
- b. By combining mixing and injection, co-rotation of improvement ground does not occur, and displacement of surrounding ground is curbed.
- c. Quality of improved soil-cement column is enhanced because of middle pressure injection mixing and forward/reverse rotation of mixing blade.
- d. Increasing mixing efficiency, construction time is shortened. And advantageous in economic efficiency is increased.
- e. It can work flexibly to create improved soil-cement columns for middle-deep depth with low pollution.

[Merits of Adopting Technology]

It can construct in the narrow site or from barge because machinery is downsized.

[Video Link]

<https://www.youtube.com/watch?v=guSQeYYc4fM>

Conditions for Using Technology

- It can create column with improvement diameter 500 to 1,600 mm for weak clay soil ground.
- In large sized construction which 2 axis type machines can construct without problems, construction efficiency and economic efficiency become worse since the drill mechanism is one axe type.
- The construction method is dedicated for weak soil. (It is possibility that it cannot agitate and penetrate when gravel or sand soil with high N value are in the soil characteristics)

Company	SST Association Inc.		Establishment	2001
Employees	26		Website	http://www.sstkyokai.co.jp
Address	862-1 Yamadabashi, Ichihara, Chiba 290-0021, Japan			
Contact	Name:Minoru KIKUCHI	Technical Center	Senior Executive Officer, Director of FC Businesses	
	Tel: +81-436-23-7771		E-mail: kikuti@sstkyokai.co.jp	
Overseas Branches		Vietnam (Hanoi) etc. (under consideration)		
Possible Implementation Areas		Vietnam etc. (under consideration)		
Supported Languages		English (e-mail only), Vietnamese		

Business Overview

Using the SST Method, a column-type ground improvement technology developed by SST Association Inc., we are engaged in the following business.

- (1) Development of technology related to the SST Method
- (2) Training of engineers in the design and implementation of the SST Method
- (3) Dissemination of the SST Method
- (4) Contract work using the SST Method



Achievements in Japan and Overseas

[Domestic performance]

Over 2,500 ground improvement projects for building structures and civil engineering structures (April 2006 to September 2025)



[Surveys in Vietnam]

November 2017 to present: Field surveys, discussions with Vietnam Institute for Building Science and Technology (IBST), FS survey (currently underway)

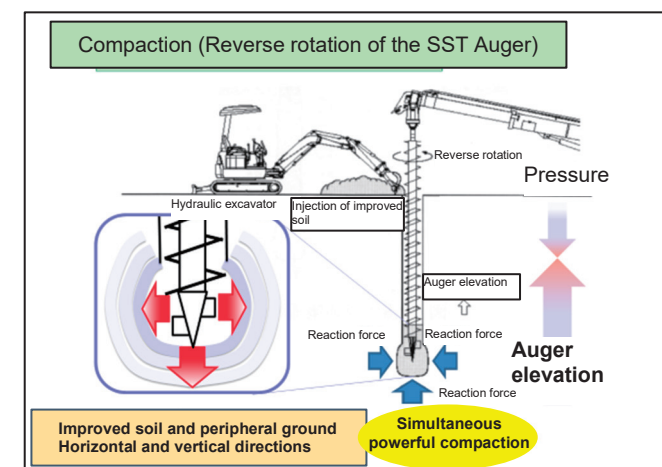
October 2018 to July 2019: Laboratory unconfined compression test using local soil conducted jointly with National University of Civil Engineering

Work System

- A team of 3 technical workers works with one set of equipment (dedicated auger, drilling and pole-erecting vehicle, hydraulic excavator).
- 4 Vietnamese employed as engineers are currently receiving in-house training.
- We are considering establishing a Vietnamese subsidiary and developing a work system for bringing in dedicated augers, etc. from Japan.

SST Method

Powerful compaction in both horizontal and vertical directions creates high-strength columns



The SST Method in operation

Field	Ground improvement	Category	Method
Registration, Awards	NETIS: KT-150002-VR / Building Technology Performance Certificate: GBRC Performance Certificate No. 11-06 Rev. 3 (Mod. 2)		

Technical Overview

[Technical Features]

- The dedicated auger is designed to excavate the ground efficiently in forward rotation and strongly compact and backfill in reverse rotation.
- The material for ground improvement is not just conventional cement-based solidifying materials; sand is added for higher density compaction.
- The SST Method is not an underground agitation system, but a displacement system and work can be carried out while visually checking the excavated soil and the condition of the drilling hole from above ground.

[Merits of Adopting Technology]

- High-powered compaction creates high-strength, high-bearing columns, enabling a reduced total number and length of columns.
- As the work can be performed with compact equipment without the need for plant facilities, it can be done in confined sites.
- As the improved soil and surrounding ground are strongly compressed by compaction, there is basically no surplus soil other than unsuitable soil.
- As the robustness by compaction is apparent immediately afterward, the curing period required with conventional methods is unnecessary, resulting in a shorter work period.
- By carrying out the work with visual checks from above ground, the quality of the columns is improved and the work can be managed certainly.
- The SST Method can be applied to soils such as organic soil and soft ground conditions outside the scope of conventional methods.

[Contributions to Solving Issues]

- Cost reductions and shorter work periods promote the development of housing and social infrastructures.
- The method is effective especially on confined sites where conventional methods are difficult and sites where the bearing capacity of piles is not required.
- As the work can be performed with just a dedicated auger and a machine to power it, the method can be introduced easily and at low cost.

[Video Link]

<https://www.youtube.com/embed/fsKgcNznaU0?rel=0>

Conditions for Using Technology

- Improvement depth: up to 12 m, long-term ground contact pressure: 300 kN/m² or less (if more, check by static loading test)
- Minimum 2.5 m access path and 4 m × 10 m work space are required.
- The distance from the neighborhood boundary to the center of the column must be more than 600 mm.

Company	AOMI Construction Co., Ltd.	Establishment	1917
Employees	347	Website	https://www.aomi.co.jp
Address	Sumitomo Realty & Development Ochanomizu-building, 2-3 Sotokanda, 2-Chome, Chiyoda-ku, Tokyo, 101-0021, Japan		
Contact	Name: Katsumi OOKORI	Soil Improvement Department	Title: Manager
	Tel: +81-3-5209-7876	E-mail: jiban@aomi.co.jp	
Overseas Branches	None		
Possible Implementation Areas	Southeast Asian countries		
Supported Languages	English		

Business Overview

Our core businesses are marine civil engineering, land civil engineering, and soil improvement. We are one of the leading marine constructors in Japan, and excel in marine civil engineering and construction of port facilities. We have been engaged in marine civil engineering and developed the land in Japan surrounded by the sea since our foundation.

Marine civil engineering: Landfill dredging, port maintenance and breakwater construction

Land civil engineering: Roads, tunnels, water and sewage systems, river maintenance

Soil improvement: Methods to improve soft ground (liquefaction countermeasures)

[Original Technology]

Our soil improvement methods that suppress and prevent liquefaction, fluidization, and sandblasting which occur during earthquakes include a density-increasing method that increases the strength of the ground and a method that solidifies the ground and suppresses underground stress. With our soil improvement technology, we will reduce the impact of disasters and damage caused by earthquakes.

Link: <https://www.aomi.co.jp/en/tech/index.html>

Achievements in Japan and Overseas

[Domestic Achievements]

- Tokyo International Airport
- Kansai International Airport
- Chubu Centrair International Airport

[Overseas Achievements]

- Immersed Tunnel Foundation Work in Hong Kong and Macao
- Connecting Bridge (People's Republic of China)
- Immersed Tunnel Foundation Work for Busan Port (Republic of Korea)
- Construction Work for Ehoala Port (Republic of Madagascar)



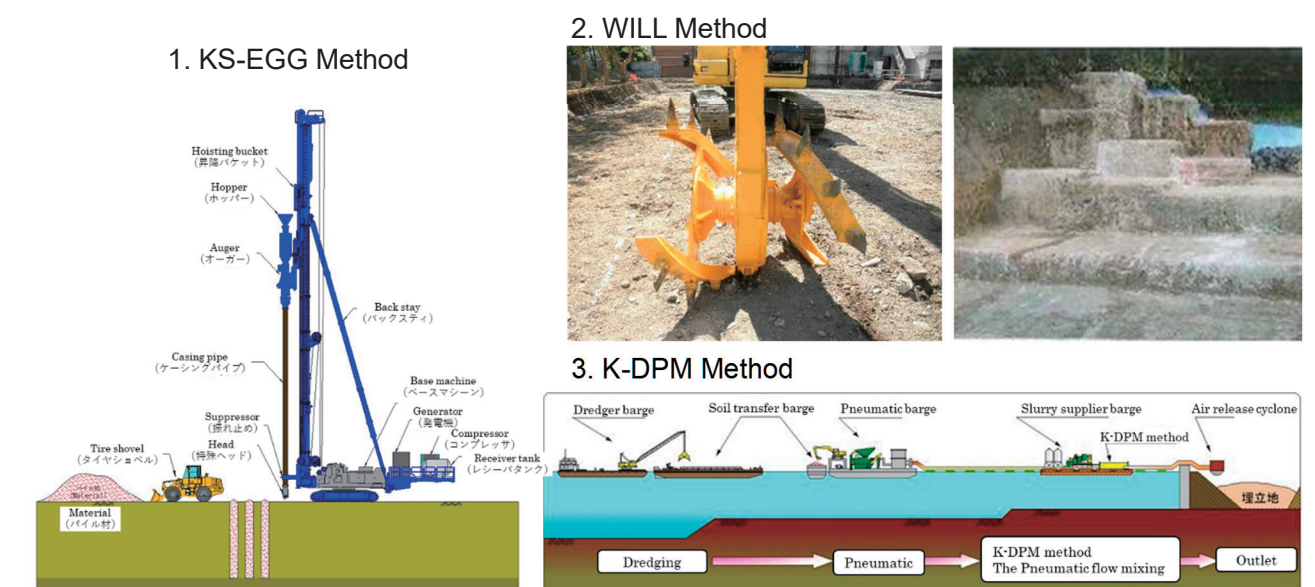
Hong-Kong Macao
Connecting Bridge

Work System

Please feel free to send us an inquiry.

1. KS-EGG Method 2. WILL Method 3. K-DPM Method

Advanced technical knowhow for marine civil engineering and soil improvement



Field	Soil Improvement	Category	Method
Registration, Awards	1. NETIS: KTK-180001-A 3. NETIS: QS-090004-VE (Semi recommended technology 2019)		

Technical Overview

[Technical Features]

1. KS-EGG Method

The KS-EGG method is a low-noise, vibration-free SCP method on land.

This is one density improvement method to improve the stability of the ground, such as increasing the bearing capacity of viscous ground as a measure against liquefaction of sandy ground.

2. WILL Method

This method uses a special stirring blade attached to the tip of a backhoe type base machine to inject a cement slurry into the soft ground while forcibly agitating and mixing in-situ soil to form a stable improver. This allows not only soft and viscous ground, but also sandy ground and gravel ground with an N value exceeding 30 to be accommodated, with a middle layer improvement of up to 10 m depth (Up to 13 m).

3. K-DPM Method

The K-DPM method is one solidification method for the purpose of recycling dredged soil. A mixed loading section is installed diagonally in the middle of the pumping pipe, and cement slurry is added to the dredged soil that is pumped as plug flow from the solidifying material supply shaft installed in the center of the mixing section. By expanding the mixing section and installing it diagonally, a large turbulent flow is generated in the mixing section, enabling uniform mixing by means of stirring.

[Contributions to Solving Issues]

Utilizing our know-how and achievements in marine civil engineering and soil improvement technology over many year, we make contributions to infrastructure development and construction, especially in the fields of ports and airports, reclaimed land and artificial island construction.

Company	Heisei Technos Co., Ltd.		Establishment	1989
Employees	15		Website	https://heisei1.jp
Address	2-8-9 Hishie, Higashiosaka City, Osaka 578-0984, Japan			
Contact	Name: Tetsuya FUJITA		Development Department, Construction Division	Title: Development Leader
	Tel: +81-72-966-5585		E-mail: info@heisei1.com	
Overseas Branches		None		
Possible Implementation Areas		Anywhere in the world		
Supported Languages		English (e-mail only)		

Business Overview

- Subsidence rehabilitation and rectification
- Strengthening of ground bearing capacity

Achievements in Japan and Overseas

We have a long and proven track record in subsidence rectification, including releveing buildings and other structures affected by the Great Hanshin Earthquake, Chuetsu Earthquake, Tohoku Earthquake and Kumamoto Earthquake.

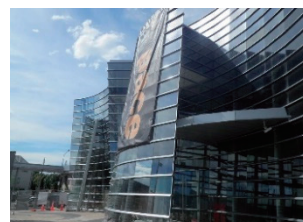
In addition to releveing structures affected by consolidation settlement of reclaimed land or soft ground or construction of adjacent buildings, in recent years JOG technology is employed as the standard method of releveing Japan Railways tracks, a task which requires advanced technical capabilities.



Taipei Public Library



Taipei department store



New Zealand art gallery



NZ 7-storey apartment building

[Business Performance (orders received)]

Taiwan: Foundation improvement for Taipei Public Library Songshan Branch (June 2013), and other works

Korea: Construction and ground reinforcement of Smart Techno Tower and building restoration (July 2016), and other works

New Zealand: Releveling of Christchurch supermarket building (September 2013), and other works

UK and Europe: Various works since 2015

Work System

[Taiwan]

- The machines were stored in a local rental warehouse and 4 or 5 Japanese staff members were dispatched as needed. Chemicals were exported from Japan when required.
- Assistant workers were employed locally for cement mixing and other jobs.

[Korea]

- Initially, in 2000 it was intended to send equipment from Japan and dispatch 2 or 3 employees to work as contractors, but later it was decided that a local specialized construction company would purchase the machines and the Japanese staff would receive a royalty as technical advisors. However, since 2004 domestic construction work in Korea has been outsourced to a local specialized construction company.

[New Zealand]

- On the occasion of the Canterbury earthquake in 2011, Heisei Technos formed a business partnership with a construction company headquartered in Australia.
- Equipment was leased and, depending on the project, Japanese staff were dispatched as needed to provide construction guidance.

JOG (Jacking on Grout) Method

An efficient way of releveing sunken or tilted structures



Box culvert

General housing - Before/After releveing

JR tracks

Field	Chemical grouting	Category	Construction method
Registration, Awards	NETIS registration number: KK-100010-A Ground Engineering Award from Kansai Branch of Japanese Geotechnical Society, 2004		

Technical Overview

[Technical Features]

- JOG is a jacking method using grout that eliminates the complex work processes required with more traditional methods. This groundbreaking and efficient way of robustly releveing and rehabilitating structures affected by differential settlement involves injecting a special grout through 20 to 40 mm diameter holes at fixed intervals in an injection pipe installed in the foundation.

[Merits of Adopting Technology]

- JOG is a Heisei Technos patented technology that enables precision releveing to the nearest millimeter of both light and heavy loads.
- JOG is not only highly effective for subsidence rectification, but also for rectifying differential settlement induced by soft ground or liquefaction. (The improvement effect is similar to that of the top-shaped concrete block foundation method.)

[Contributions to Solving Issues]

- Compared with demolishing and rebuilding structures, time and cost are greatly reduced.
- Work is completed in a short time even in factories, warehouses and other businesses that continue to operate while the work is under way.
- Only the target structure can be restored without affecting the adjacent structures.
- JOG is a structure-friendly leveling method that applies no unreasonable localized force.

[Video Link]

<https://heisei1.jp>

Conditions for Using Technology

- It is difficult to apply the JOG method if the foundation and piles are connected. (Depending on the situation, JOG leveling may be possible by cutting off the edge.)
- As the grout is injected immediately beneath the foundation, the foundation slab must be of a certain width. (JOG is not suitable for continuous footing foundations.)
- The rigidity of the structure is maintained.

Company	Miho Technos Co., Ltd.	Establishment	July 30, 1958
Employees	192	Website	https://www.miho.co.jp
Address	25 Showamachi, Yonago City, Tottori, 683-0037, Japan		
Contact	Name: Masakazu HASHIMOTO	Land Support Division, Basic Technology Office	Title: Director
	Tel: +81-859-30-4100	E-mail: m.hashimoto@miho.co.jp	
Overseas Branches	None		
Possible Implementation Areas	Vietnam		
Supported Languages	Japanese		

Business Overview

- General construction industry
 - Ground improvement work
 - Sales, brokerage and management of real estate
 - No. 1 sales as local general contractor in Tottori prefecture (2019)
 - Original technology (Belong to association)
- 3SG Construction method (Mechanical stirring type deep mixing treatment method)
- Selection by Ministry of Economy, Trade and Industry Regional future leader
 - Weekly diamond, 1,100 general contractors nationwide, No. 44 in "Momentum Construction Company Ranking" in the "power to survive" ranking (December 2016)



Construction scenery with 3SG Construction method

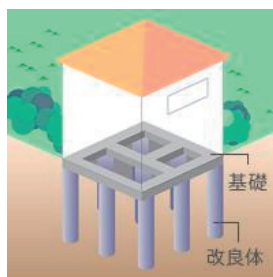
Achievements in Japan and Overseas

3SG Construction method

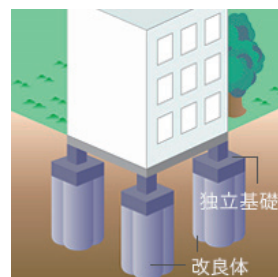
(GBRC Performance proof No. 07-21-2, NETIS Registration No. KK-180052-A)

Based on the deep mixing treatment method for which there are many achievements in the past, the 3SG Construction method has been reborn as a higher quality method with new patented technology. Currently, there is strong demand for technological support in society, and acquisition of the GBRC Performance proof and NETIS reliable construction methods enables usage nationwide.

* Completed 9,909 construction projects in Japan (As of November 2020)



Low-rise buildings



Medium-rise building

Work System

We are training Vietnamese workers and engineers in Japan to respond to the shortage of workers in Japan. In the future, we will promote and commercialize the 3SG Construction method with Vietnamese workers and engineers by establishing a local corporation and conducting training.

3SG Construction Method

Deep mixing treatment method with outstanding quality and technology that supports ground safety



Field	Foundation and reinforcement of buildings, structures and civil engineering, basics of embankment, stabilization measures for retaining walls	Category	Deep mixing, treatment method, slurry stirrer
Registration, Awards	GBRC Performance proof No. 07-21-2, Japanese Patent No. 4125310 NETIS Registration No. KK-180052-A		

Technical Overview

[Technical Features]

With the mechanical stirring type deep mixing treatment method (Slurry stirrer), slurry discharge ports are provided above and below the stirring blade. Discharge is provided from below when excavating and stirring, and discharge is provided from above when pulling up and stirring. By discharging the slurry, this technology enhances the efficiency of improving the structure.

[Merits of Adopting Technology]

- Quality improvement by improving the uniaxial compression strength of piles, and the process is shortened by improving the efficiency of structure improvement.
- Improved economic efficiency by reducing labor costs due to shortening of process, and achieving construction in a narrower space.
- Because the slurry discharge port can be switched up and down, it is expected that variations in strength can be reduced.
- About 3 people per construction team, with no need for large-scale temporary construction.

[Contributions to Solving Issues]

- In narrow areas such as developed urban areas, ground improvement work can be done
- Buildings can accommodate houses and low-rise buildings (up to RC4F)

[Video Link]

3SG Construction Method Association HP: <http://www.sss-g.com/>

NETIS HP: <https://www.netis.mlit.go.jp/netis/pubsearch/details?regNo=KK-180052%20>

Conditions for Using Technology

- Specifications: Maximum depth 20.5 m, Pile diameter $\phi 400$ mm - 1,300 mm
- Not applicable for ground with many gravel layers and boulders, ground containing acidity and sulfates, ground with strong groundwater, spring water, underground water or industrial waste, ground where underground obstacles have accumulated.

Company	Taiyo Kisokogyo Co., Ltd.		Establishment	May 3, 1958
Employees	220		Website	http://www.taiyoukiso.co.jp
Address	107 Yanamori-cho, Nakagawa-ku, Nagoya, Aichi, 454-0871, Japan			
Contact	Name: Toshiya MUTSUGA	Sales & Marketing Division		Director and General Manager
	Tel: +81-52-362-6351		E-mail: main@taiyoukiso.co.jp	
Overseas Branches		None		
Possible Implementation Areas		Southeast Asia (Other areas will be discussed separately)		
Supported Languages		English (e-mail only)		

Business Overview

General construction

- Special civil engineering work
Underground work (diaphragm walls, removal of underground obstacles, ground improvement, propulsion, contaminated soil treatment, geological surveys, etc.)
Slope stabilization, solar power plant installation
- Building work



Diaphragm wall construction



Slope stabilization

Achievements in Japan and Overseas

- Contract work
Taiwan: Propulsion work (2 projects)
Dia.1800 mm mud density system L=276 m
Dia.1000 mm mud density system L=300 m
Democratic Republic of the Congo:
Ground improvement work (1 project)
Deep mixing method
Dia.1000 mm L=5.1-7.1 m×403 columns
- Technical guidance in diaphragm walls (TRD method)
China (Tianjin, Shanghai, Wuhan, Qingdao/7 projects)
USA (Florida/2 projects)



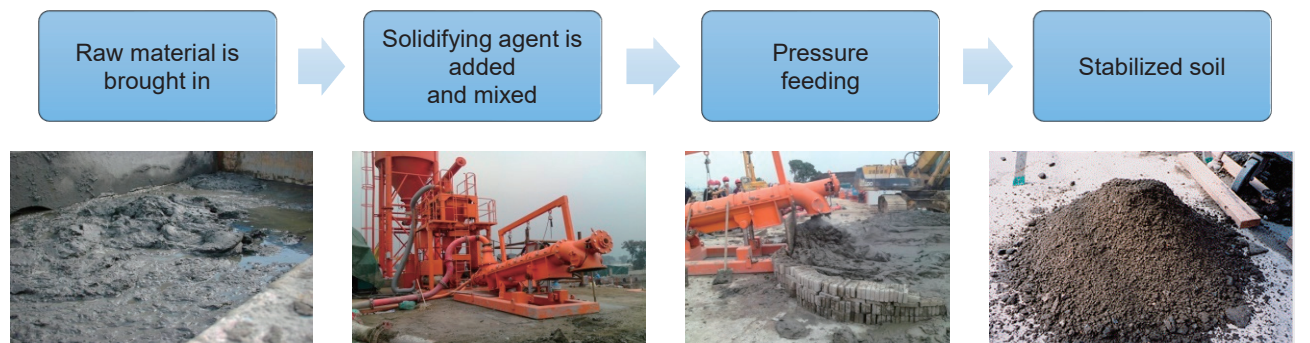
Tianjin, China
Diaphragm wall construction

Work System

- Special machinery is brought from Japan and general purpose machines are procured locally.
- Construction managers, heavy equipment operators and machine maintenance instructors are dispatched from Japan and human resources are trained through technical instruction for local workers.

Excavated mud and gravel recycling system (Pipe processing system)

Ground improvement technology turns excavated mud and dredged soil into suitable material for embankments and banking



Technical Overview

[Pipe processing system]

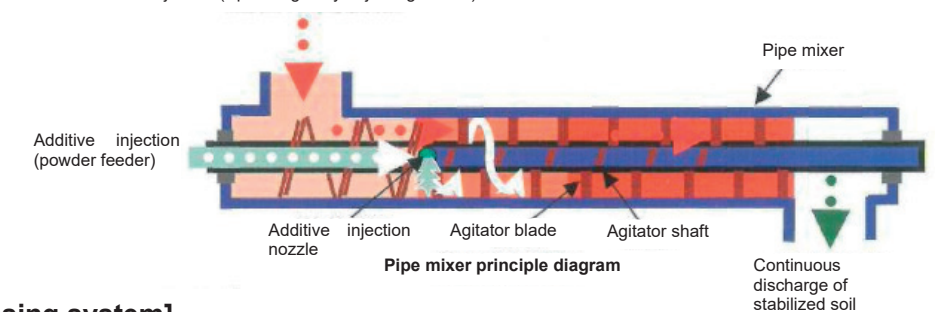
This highly efficient mixing system continuously mixes the excavated mud and dredged soil with powder or liquid additives inside the pipe during the pressure feed process. As the process is continuous with no inhibiting of the speed of the mud flow in the pipe, high-volume mixing is possible with light, compact equipment. The system turns excavated mud, dredged soil, etc. into suitable material for embankments or banking at the site.

[Principle of pipe mixer]

The gravel and additives are shear stirred and forcibly mixed by the agitator blades attached to the shaft which rotates inside the pipe at high speed.

The additives are injected directly into the pipe mixer from the injection nozzle on the agitator shaft for a highly efficient stirring effect.

Gravel injection (Specific gravity adjusting device)



[Features of pipe processing system]

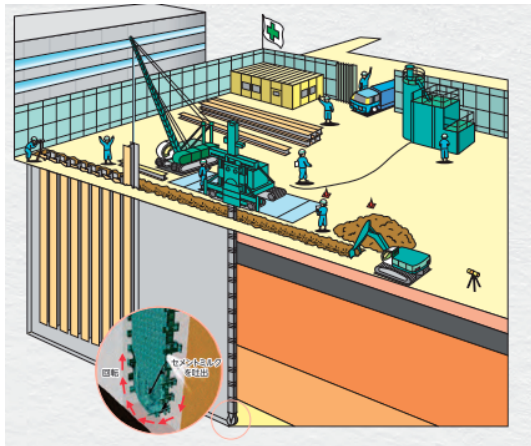
1. Continuous mixing enables large-scale processing with a compact system.
2. As the plant is movable, the cost of transporting mud, stabilized soil, etc. is reduced.
3. The additives are discharged by the pipe mixer shaft for an excellent agitating effect.
4. The specific gravity of the stabilized soil is kept constant by the specific gravity adjusting device.
5. The powder feeder ensures high quality, stable kneading of powders.
6. Both powder and liquid additives can be applied.
7. As the additives are supplied inside the pressure feed pipe, heavy metals can also be handled.

Conditions for Using Technology

- If the mixture contains pebbles, driftwood, waste, etc. bigger than 20 mm, sorting will be necessary.
- The plant yard must be approx. 30 m × 50 m = 1,500 m².

Company Name	SANTO CORPORATION		Establishment	1954
Employees	126		Website	https://www.santo.co.jp/
Address	480 KAMIMAGARI RITTO CITY SHIGA PREFECTURE 520-3022 JAPN			
Contact	Name:TOSHIMI FUJIMOTO		Overseas Business	Title:assistant general kanager
	Tel: +81-77-553-1111		E-mail: tfujimoto@santo.co.jp	
Overseas Branches		None		
Possible Implementation Areas		Vietnam		
Supported Languages		English and Vietnam		

Business Overview
We are a specialized contractor in construction and ground improvement works, particularly in diaphragm wall installation. With our own fleet of machinery, all project management and construction activities are performed by our in-house technicians. 1.Diaphragm Wall Construction. (Retaining walls, Cut-off walls, etc.) • TRD Method (Uniform-Thickness Soil-Cement Diaphragm Wall): 2 units • TRD Method - Inclined Installation: 1 unit TRD Method  TRD Method - Inclined Installation 
Achievements in Japan and Overseas
◆ TRD Method Used mainly for retaining and cut-off walls; effective under low headroom conditions. Extensive experience nationwide. ◎ 泉岳寺駅地区再開発工事 (Retaining wall construction for the underground concourse expansion) ◎ 石神井公園駅前再開発工事 (Foundation earth-retaining work associated with condominium construction) ◎ 鶴見清掃工場流動化対策工事 (Foundation earth-retaining work associated with the reconstruction of the waste treatment plant) ◎ 札幌大通西4南地区再開発工事 (Earth-retaining work associated with the construction of a multi-purpose business facility) ◎ 八重洲一丁目北地区再開発工事 (Earth-retaining work associated with the construction of a multi-purpose business facility) ◆ TRD Method - Inclined Installation Applied to protect levees from erosion without altering natural riverbanks. Performed on river projects in Japan. ◎ Shonai River Levee Cut-off Improvement Project
Work System
Deployment of qualified Japanese engineers and certified skilled personnel Capability to implement on-site training programs and technical workforce development as required

TRD Method			
Excavation is possible even in hard ground with low headroom.			
1. Installation of the cutter post ↓ 2. Excavation and soil mixing ↓ 3. Install the structural core material ↓ 4. Relocation after completion of the improved column ↓ 5. Extraction of the cutter post			
Field	Ground Improvement	Category	Method
Registration, Awards	TRD Method		

Technical Overview

TRD Method

■Technical Features

The TRD method constructs underground wall-shaped soil–cement structures by horizontally moving a cutter post installed in the ground, excavating the soil with cutter bits mounted on a cutter chain, and simultaneously mixing the in-situ soil with a hardening slurry in the vertical direction.

■ Construction Advantages of Introducing the TRD Method

- Low machine height ensures operational stability and enables construction under restricted headroom.
- High excavation capacity allows efficient cutting even in hard ground conditions.
- A dedicated construction management system enables real-time monitoring of verticality.
- Joint-free walls provide excellent water-sealing performance.
- Structural members can be installed at arbitrary intervals.
- Insertion of special elements including steel panels, precast concrete panels, and sheet materials, is possible.
- Capable of mixing and homogenizing all types of soils.
- Produces improved ground with minimal variability in quality.

■ How the Technology Addresses Challenges in the Target Country (Economic and Social Benefits)

This method improves in-situ ground conditions and constructs homogeneous soil-cement walls that function as earth-retaining and cut-off walls. This contributes to enhanced construction safety, reduced groundwater-related risks, and improved durability and reliability of civil engineering infrastructure.

■ Construction Video and Other Links/QR Code

https://www.santo.co.jp/app/wp-content/themes/santo/img/technology/trd/construction_procedure.mp4

Conditions for Using Technology
None in particular. However, the construction plan will be reviewed for each project, and the appropriate approach will be determined accordingly.

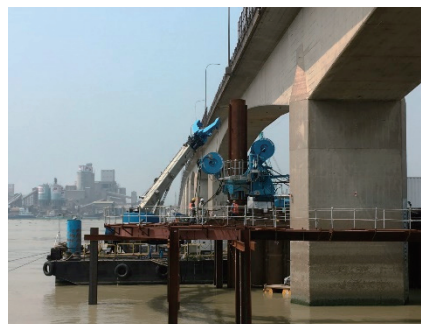
Company	Ozawa Civil Engineering and Construction Co., Ltd.	Establishment	June 2 nd , 1913
Employees	68	Website	http://www.ozawa-doboku.co.jp/
Address	6 Morita Cho, Chuo Ward, Hamamatsu City, Shizuoka Prefecture, Japan		
Contact	Name: Tomohisa OZAWA	Title: President & CEO	
	Tel: +81-53-453-2891	E-mail: tomohisa@ozawa-doboku.co.jp	
Overseas Branches		Vietnam (Hanoi)	
Possible Implementation Areas		Please ask.	
Supported Languages		Vietnamese (phone, e-mail), English (e-mail only)	

Business Overview

Ozawa Civil Engineering and Construction Co. Ltd. is a company with a history of more than 100 years which was founded in 1913. Since the introduction of the pile machine in 1957, we have specialized as professional contractors for earth retaining and basic pile work (foundation pile work), and at present our primary business is in the field of 'press-in piling' using the Silent Piler® manufactured by GIKEN Ltd. With our highly experienced employees and a large variety of cutting-edge special machinery and equipment, we have gained much experience and accumulated many achievements while successfully facing various soil conditions, adapting to different working environments and fulfilling customers' requirements, and have thus been highly evaluated. Furthermore, we became a GTOSS member and acquired GM1 category classification offered by Giken Engineering Group in March 2014 in order to contribute to the development of social infrastructure by making full use of special construction technology. We are expanding the scope of our activities nationwide, centering on Hamamatsu City, Shizuoka Prefecture, which has been our base since our foundation. In addition, the locations where we can utilize the construction technology we have developed so far is not limited to domestic locations, and we are now actively developing activities for overseas projects.

Achievements in Japan and Overseas

March 2017 -present:	Participated in Japanese Official Development Assistance project (The Kanchpur, Meghna and Gmmti 2nd Bridges Construction and Existing Bridge Rehabilitation Project) in Bangladesh (Foundation for steel pipe sheet pile well (press-in installation with steel pipe piler))
February 2019:	Established a joint venture in Hanoi, Vietnam (Through a joint venture of 3 companies including Hashimotogumi Corporation)
January 2020 -present:	Earth retaining works (steel sheet pile press-in installation by Silent Piler) at Ben Thanh Central Station on Ho Chi Minh Metro Line 1 (CP1a)



Work in in Bangladesh



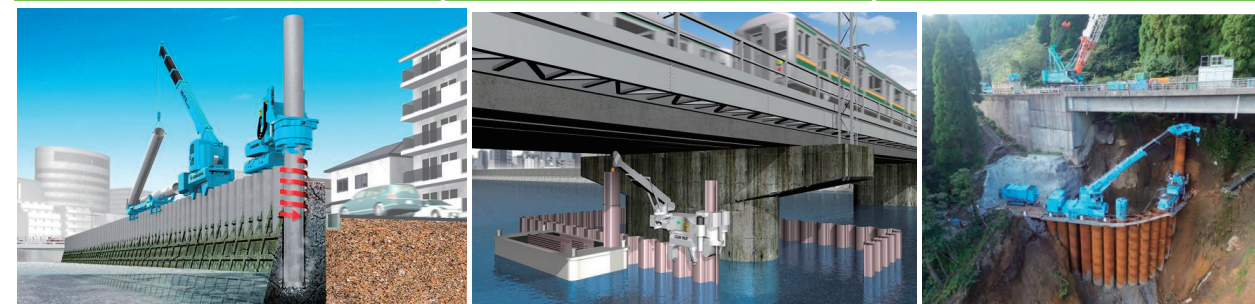
Work in Ho Chi Minh

Work System

In the above two projects, our employees were assigned to stay in the country to carry out press-in work (including welding work). In the future, we aim to build a human resource development system for "globalization," which employs Vietnamese employees in Japan and assigns them to overseas construction work after learning construction techniques which are accepted in the Japanese market.

Pile press-in method

Noise-free and vibration-free press-in method that fundamentally solves the construction pollution that was previously inevitable for piling work.



Construction of revetments without removing existing revetments

Pier reinforcement under bridge girder

Disaster restoration

Field	Disaster prevention, environment, transportation, flood control	Category	Construction method
Registration, Awards	NETIS registration number: SK -190009 -A, SK -170006 -A Registered as GIKEN Ltd. 2016 Japan Society of Civil Engineers Award for Technology "Underwater steel sheet pile Press-in method in narrow space below railway bridge" Rotary cutting press-in machine "Gyro Piler": The fifth "Monodzukuri Nippon Grand Award", "Minister of Economy, Trade and Industry Prize"		

Technical Overview

[Technical Features]

This noiseless and vibration-free pile driving method has fundamentally solved the construction pollution caused by noise and vibration by using the press-in principle, which was inevitable with ordinary pile driving.

Since the reaction force is obtained from the existing piles, the weight of the press-in machine itself is not required, enabling the construction machine to be made lightweight and compact.

[Merits of Adopting Technology]

- Can be applied to various field circumstances such as narrow areas, and under girders of bridges where overhead clearance is restricted.
- Vibration has little impact on neighboring buildings, so it is effective for construction in close proximity to buildings in urban areas.
- By operating all machinery and equipment on finished piles, "construction without temporary work" can be realized, which eliminates the need for temporary work such as temporary piers and roads, enabling all processes to be completed on the piles alone.
- By adopting the press-in method, the total construction cost can be reduced by eliminating the temporary structures required with the conventional method.
- Safe without risk of overturning because the press-in machine is always held by the press-fitted pile.
- Construction can be carried out without restricting the working hours even in areas where traffic is heavy and putting restrictions such as road closures in place are difficult even at night.
- Precise control of press-in piles enables construction of complicated construction shapes with high accuracy.
- High-quality finished piles can be constructed by checking and controlling the performance of piles in process.

[Video Link]

https://www.giken.com/en/video_gallery/

[Our Business Relationship with GIKEN Ltd.]

GIKEN Ltd. is a company that designs, manufactures, and sells Silent Piler®, a pile press-in and extraction machine, and holds various patents related to the press-in method.

Ozawa Civil Engineering and Construction Co. Ltd. aims to popularize the press-in method in Vietnam and other countries as a user, and GIKEN Ltd. supports each user in order to widely spread the method throughout Japan and overseas.

Conditions for Using Technology

Please consult us.

Company	Endo-Ecoraise Co., Ltd.	Establishment	April 30, 1975	
Employees	45	Website	https://www.endo-er.co.jp	
Address	6-27-16 Nishiarai, Adachi-ku, Tokyo, Japan			
Contact	Name: Tomoya ONO		Department: Construction	Title: Manager
	Tel: +81-3-3897-6292		E-mail: info@endo-er.co.jp	
Overseas Branches		None		
Possible Implementation Areas		Vietnam		

Business Overview

[Standing pile construction]

- Steel pipe (φ900 mm - φ5000 mm) L-Mole Method
- Steel sheet pilings (Hard soil possible)

[Propulsion work]

[Liquefaction countermeasure work]

- Groundwater lowering method (Gaiamole Method)

[General civil engineering work]

Achievements in Japan and Overseas

2016: Great deep standing pile, Tokyo sewage work station order

Pile dia.: φ2590 mm, Depth: 26.2 m, Soil quality: Sandy earth ($N \geq 50$)

2017: Second-grade river, Disaster recovery, Unosumai floodgate construction

Steel pile (IV×15M), hard soil ($N \geq 300$)

2017/18: Liquefaction countermeasure work, Chiba-order

Standing piles: 137 (φ1500 mm - φ2500 mm), Propulsion length: 5,733 m



φ3000 standing pile



Disaster recovery (steel pile)



Liquefaction countermeasure work

Work System

We employ 8 technical intern trainees (including specified skilled workers) from Vietnam and Myanmar, also an engineer who graduated from Ho Chi Minh City University of Technology will join us. We intend to expand our business to overseas by developing human resources and technique succession.

L Mole Method (Standing pile)

Vibrationless Low-noise Machine, Standardized work, Reduces construction work period



LMV2000R All-around Machine



Hard bit

Field

Sewage system, City Gas, Obstacle removal, Obstacle removal

Technical Overview

[Technical Features]

- Excavation by workers and soil retaining are not needed, enabling safe construction.
- Excavation and soil retaining are performed at the same time.
- Press-in machine and excavator are integrated type, and self-propelled movement and installation can be performed easily.

[Merits of Adopting Technology]

- Construction period and construction costs can be reduced since no supplementary construction work is needed.
- A lot of works are standardized or eliminated compared to conventional construction techniques.
- Even unskilled workers can build safely with high quality.

[Contributions to Solving Issues]

- Effective for city engineering by using propelled work (reducing road traffic obstacles).
- Can be used for various types of work, depending on the concept.

Conditions for Using Technology

- Restricted to less than 6 m in height
- Soil exploration is needed.

Company	Marutai Doboku Corporation		Establishment	13 December, 1962	
Employees	Employees:136 Workers: 171		Website	https://marutaidoboku.co.jp/	
Address	Zip code 134-8631, 3-5-17 Kitakasai Edogawa-ku Tokyo Japan				
Contact	Sagiri Yaura	Section : Technical Division		Position : Senior Staff	
	03-3689-4111		Mail : gijutu@marutaidoboku.co.jp		
Possible Implementation Areas		All over the world			
Supported Languages		English Vietnamese Burmese Chinese			

Business Overview

- 1、Pile driving/extraction
- 2、General civil engineering
- 3、Sales and repair of construction machines

◇Our machinery

- Three-point pile driver :1 9 • Crawler crane 5 2 •
- Hydraulic impact hammer :3 0 • Vibratory hammer :2 4
- Casing rotator (Super top):22 etc.

Our main work is the foundation work of steel pipe sheet driving work and steel pipe pile driving work. And the removal of underground obstacles is also our work. We have various large machines for example, large crawler crane (500t), large hydraulic impact hammer and so on. We can handle the larger and diversified construction works by our newest technology.

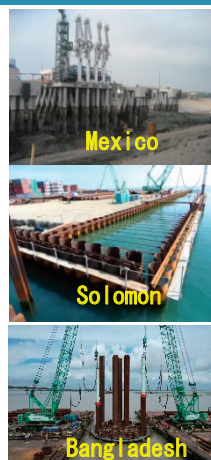
4. Our original technology.

①The noise prevention device which can decrease the noise of the driving pile by hydraulic impact hammer : ECOHOUSE 「OTONASHIKUN」

②The End-of-Driving Management System for Impact-Driven Piling which can make “driving pile management chart”, “measurement record of pile penetration amount” on time by using high-speed camera and automatically measuring the amount of penetration amount and rebound amount at the place several tens of meters away from the pile.

Achievements in Japan and Overseas

1. We started oversea project from 1971. We have achieved 47 projects In the 27 countries.
2. In 2009 Mexico 「Manzanillo LNG terminal」
Steel pipe pile φ600~1200 Lmax=38m Qty. 368
3. In 2015 Solomon Island 「Improvement of Honiara Port facilities」
Steel pipe sheet pile (Wall) φ600~900 Lmax=40.5m Qty. 169
4. In 2016 Vietnam 「Binkain Bridge North South Highway construction (part J1)」
Steel pipe sheet pile (Foundation)φ1500 Lmax=63.5m Qty. 162
5. In 2016 Bangladesh
「The construction of Kanchupur, Meghana, Gumti 2nd Bridges And Rehabilitation of Existing Bridges (Package No. PW-01)」
Steel pipe sheet pile(Foundation)φ1000 Lmax=78.0m Qty. 1125
6. In 2020 Bangladesh
「Bangabandhu Sheikh Mujib Railway Bridge Construction Project」
Steel pipe sheet pile(Foundation)φ1300~1400 Lmax=79.2m Qty. 1155



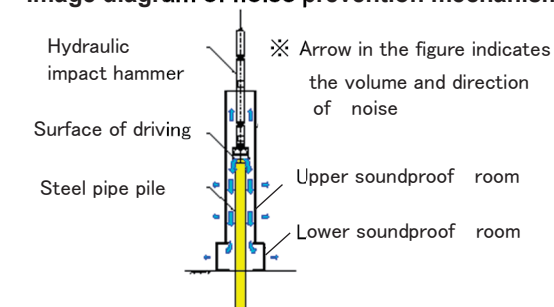
Construction organization

- We have construction achievements almost all over the world, Asia, Africa, Middle East and Latin America. We can transport pipe driving machines and dispatch Japanese engineers.

Noise prevention device in pile driving work and construction management by IT

The device that can secure the reliable bearing capacity by the impact hammer method without being bound by noise regulations

Image diagram of noise prevention mechanism



Noise prevention device: ECOHOUSE “OTONASHI-KUN”

Sampling Moire camera and PC for control, record and drawing

Field	Foundation construction	Category	Equipment and systems
Patent Registration & Awards	- Noise prevention device NETIS KT-210028-VE Registered on 29 June, 2019 Awarded the Creative Development Technology Award at the 25th National Infrastructure Technology Development Awards (MILT) - Pile stop management method NETIS KT-190085-VE Registered on 26 November, 2019		

Technology Overview

■Technical features

- ①The effectiveness of the noise decrease is very high (Possible for the construction under the same noise level of the ordinal low-noise method)
- ②Installation and removal are easy (Possible for the bulk installation and to ensure the stability only by placing)
- ③Possible to confirm the condition of the pile driving from outside (Possible for the installation of hydraulic impact hammer and stop driving work from outside of the device)
- ④By the End-of-Driving Management System for Impact-Driven Piling, it is possible for drawing on time and confirmation of cessation of driving work.

■Merit of construction by the introduction of this technology

The process of “Impact hammer method” needs a few machines and is simple in comparison with other construction methods. And it is a very effective method to gain the reliable bearing capacity because we can confirm the resistance of ground penetration through the pile at the strike.

Noise prevention device: ECOHOUSE “OTONASHI-KUN” avails to perform this excellent construction method at the construction site under the noise restriction. If you also use the End-of-Driving Management System for Impact-Driven Piling, you can utilize the collected and processed data on time. As a result, it is possible to ensure the more reliable and stable foundation.

■Solution of the problems that the country of introduction has

- It is possible to construct at the area of the strict noise restriction near residential area and hospitals etc. by the reduction of environmental load because of the noise decrease.
- It will become easier for the process management by controlling construction data on time.
- This system is very suitable not only for the public facilities which needs the details of measured value and records but also for the huge structures with large quantity of data.

■Link of video of construction and so on

Overseas construction achievements : <https://marutaidoboku.co.jp/works/14.html>

Video introducing ECOHOUSE “OTONASHI-KUN”

: https://marutaidoboku.co.jp/download/aerial_im

ECOHOUSE “OTONASHI-KUN” →
introduction video QR-code



Conditions for utilizing the technology

- Nothing special

Company Name	GIKEN SEKO CO., LTD.	Establishment	Jan 1, 1967
Employees	148	Website	http:// www.gikenseko.co.jp/for-english/
Address	Tokyo Head Office: 75-1 Minato, Urayasu-shi, Chiba 279-0024, Japan		
Contact	Consulting Department		
	Tel: +81-047-318-9111	E-mail: consul@giken.com	
Overseas Branches	Group overseas branches: Germany, the Netherlands, the U.S., Singapore, Thailand, China		
Possible Implementation Areas	Asia, African countries		
Supported Languages	English		

Business Overview

We are an innovative construction company that pioneered the practical application of the “press-in principle” with our SILENT PILER™ press-in/extraction piling machine. Leveraging this technology, we develop, propose, and implement advanced solutions. The press-in method delivers unique value—vibration-free, noise-free, space-saving, and temporary works-free—enabling rapid construction of resilient infrastructure against earthquakes, tsunamis, and floods, and contributing to global construction challenges and disaster prevention.

[Business Contents]

- Civil engineering contracting business
- Construction work using the “Implant™ Method”
- Construction of underground development products
- Consulting and supervision services related to civil engineering works
- Research and development of construction machinery

Implant™ Method: A construction technique that creates a resilient structure integrated with the earth by continuously press-inserting allowable structural members (such as steel sheet piles and steel tubular piles) deep into the ground, combining the superstructure and foundation.

Achievements in Japan and Overseas

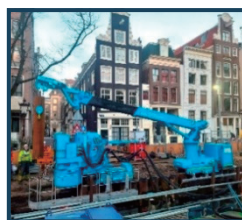
Feb-Oct 2017 : Kanchpur, Meghna, Gumti construction & rehabilitation of existing bridges

Sep-Nov 2019 : (Phase 1) Rehabilitation of the quay wall of Dakar Port, Senegal

Aug-Sep 2019 : Cairo University specialized pediatric hospital outpatient facility

Feb-Mar 2021 : (Phase 2) Rehabilitation of the quay wall of Dakar Port, Senegal

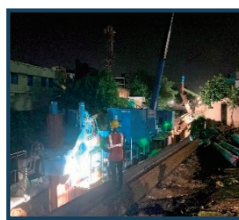
Jan-Aug 2025 : Jakarta sewerage development project, Indonesia



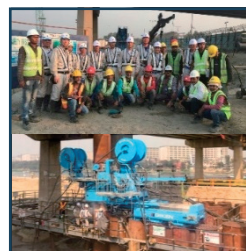
Rehab of canal quay walls
In Amsterdam, Netherlands



Rehabilitation of the quay
wall of Dakar port in Senegal



Development of rainwater
draining facilities in India



Bridge foundation work
in Bangladesh



Jakarta sewerage
Development in Indonesia

Work System

With a proven track record across 17 countries and regions, we have successfully delivered construction services and technical consulting for overseas ODA projects and government-commissioned works. Our global network ensures responsive support, with inquiries on construction technology and implementation handled through group company offices in 6 countries.

Press-in Technology

Optimal Maintenance & Rehabilitation with Press-in Technology



Construction without disrupting ship
berthing or cargo handling (Senegal)



Bridge foundation construction with limited
overhead clearance (Bangladesh)



Rain-induced Road retaining wall failure (Japan)
→ Construction in the confined and elevated site

Field	Bridge, Port, Road, Coast, River, Disaster countermeasure	Category	Method
Registration, Awards	NETIS : SK-190009-VE, SK-170006-VE, KT-220224-VE, KT-220232-A “2022 JSCE Award for Technology (Group II)” from the Japan Society of Civil Engineers (JSCE) for the “Port of Dakar Pier No. 3 Rehabilitation Project” in Senegal		

Technical Overview

[Technical Features]

With the construction technology ‘GRB System™,’ which performs all processes on completed piles, the work’s impact area can be minimized to the width of the machinery on the piles. This enables construction without temporary trestles or detours, even under challenging site conditions such as waterfronts, sloped or uneven terrain, confined spaces, and low headroom.

[Merit of Adopting Technology]

Environmental Performance: The static load pressing method minimizes noise and vibration, while lightweight and compact machinery reduces the land required for construction.

Safety: The press-in machine is always anchored to the pile driven into the ground, eliminating the risk of tipping over by design.

Speed: Its compact size allows multiple machines to operate simultaneously and enables night work, thereby reducing construction time.

Economic Efficiency: The narrow impact area minimizes disruption to existing traffic and prevents interference with local economic activities.

[Contributions to Solving Issues]

Shorter Construction Period & Cost Reduction: Eliminates the need for temporary work platforms and enables space-saving construction, significantly reducing project duration and overall costs compared to conventional methods.

Efficient Infrastructure Renewal: Allows rapid replacement of aging infrastructure, lowering maintenance costs and reducing long-term financial burdens.

Reduced Environmental Impact: Achieves vibration-free and noise-free construction, minimizing impact on urban areas and natural environments while reducing CO₂ emissions.

[Video Link／QR Code]



SEKO web



GIKEN web

Conditions for Using Technology

The construction targets include continuous walls and areas where the Skip-Lock method™ can be applied to accommodate specific pile spacing. (<https://www.giken.com/en/solutions/skiplock/>)

The applicable ground conditions range widely from soft to hard soils.

Company	RONTAI CO., LTD.		Establishment	Year 1957
Employees	Headcount is 124		Website	https://www.rontai.co.jp
Address	3-1-11 Kinda-cyo, Moriguchi-shi, Osaka Prefecture, 570-0011, Japan			
Contact	Name: Yuji SHINUNE	Overseas Business Department		Title: Department Manager
	Tel: +81-6-6902-9401		E-mail: overseas@rontai.co.jp	
Overseas Branches		Vietnam (Hanoi), China (Dalian)		
Possible Implementation Areas		Vietnam, Asia		
Supported Languages		English (e-mail only)		

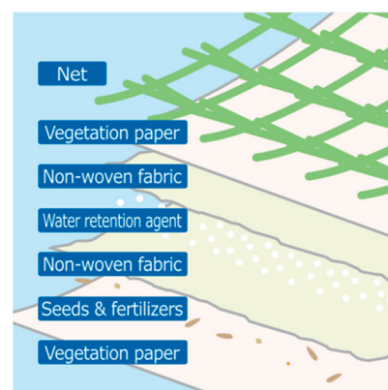
Business Overview

1. Slope greening protection technology
2. Development, manufacturing and sales of slope protection products
3. Design and construction of slope protection technology

[Original Technology]

The proposed product is a sheet consisting of a non-woven fabric that contributes to the drainage of rainwater, a water retention agent and a layer of seeds and fertilizer that contribute to the greening of slopes.

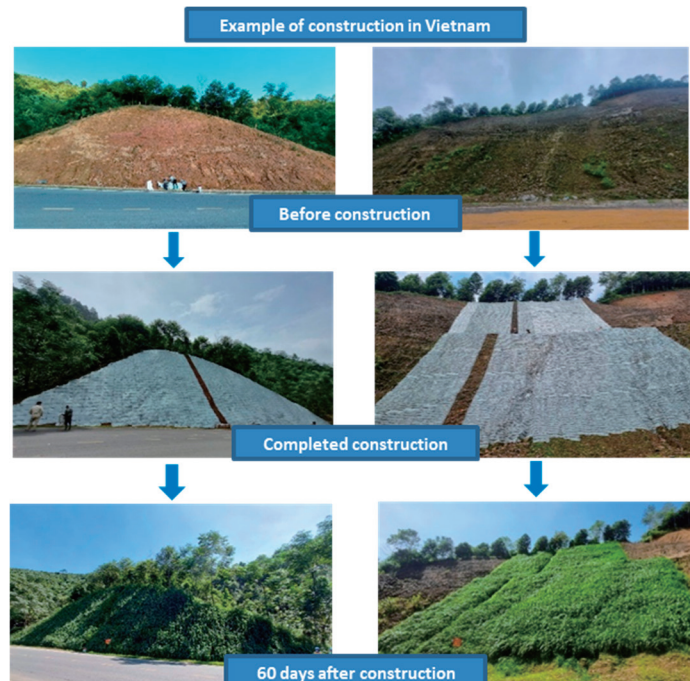
In South East Asia, the precipitation during the rainy season often exceeds 100 mm/h. Even when a rainwater drainage test was conducted with a standard precipitation of 180 mm/h, it showed that our proposed technology helped to drain 85% of rainwater.



Product structure

Achievements in Japan and Overseas

2019年	Established a representative office in Vietnam	
	Palau	250m ²
2020年	Indonesia	200m ²
	Palau	3,500m ²
	Vietnam	200m ²
2021年	Vietnam	500m ²
2022年	Vietnam	2,000m ²
2023年	Vietnam	3,000m ²
	Laos	500m ²
2024年	Vietnam	4,000m ²
2025年	Vietnam	5,000m ²
	Nepal	2,000m ²
	Established a local subsidiary in Vietnam	



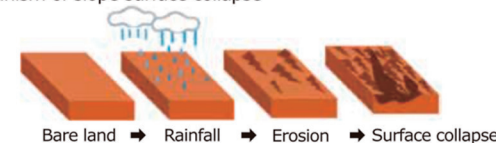
Work System

- Since the construction process is very easy to follow (with procedure manual), local construction worker can perform the job.
- When necessary, instructions can be provided through a video call.

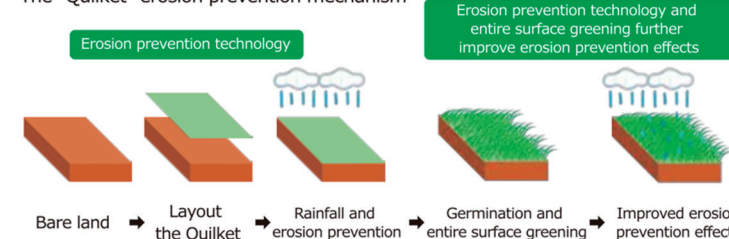
Greening sheet for slope protection

Our technology helps to enhance slope greening and prevent slopes from collapsing by simply covering the surface with a rolled up sheet

The mechanism of slope surface collapse



The "Quiklet" erosion prevention mechanism



Field	Slope planting (Slope protection)	Category	Product
Registration, Awards	NETIS: KK-120016-VE		

Technical Overview

[Technical Features]

Contributes to the greening of slopes and prevention of disasters by attaching sheets that combine seeds and fertilizer

- Drainage function (Non-woven fabric and water retention agent helps to drain water)
- Sediment outflow prevention function (The product absorbs water and becomes heavier, which helps to prevent sediment outflow)
- Greening function (Since our sheets contain seeds and fertilizer, slope surfaces can be greened in around 2 months)
- Simple construction process (Construction can be easily done with only a hammer and scissors)

[Merits of Adopting Technology]

- Since the construction process is very easy and fast, our technology saves much more time compared to the seedling planting method.
- Stable quality since product is manufactured in a factory.

[Contributions to Solving Issues]

- 3 main functions of Quiklet (drainage function, sediment outflow prevention function, greening function) enhances erosion prevention effects, reducing damage due to heavy rain. In this way, our product helps to reduce damage caused by natural disasters.
- Previous construction methods often failed for slope greening, which leads to reconstruction. With Quiklet, the initial cost may be higher compared to previous methods, but there is no need for reconstruction, which helps to reduce the total cost efficiently.

[Construction Process]



Conditions for Using Technology

- Note: Rock greening is not possible
- Seeds used for construction must be examined.

Company	Takino Filter Inc.		Establishment	1994
Employees	49		Website	http://www.takino.co.jp/
Address	2-904-16 Hayama, Kudamatsu, Yamaguchi, 744-0061 Japan			
Contact	Name: Takuji Tsunemura	International Business Division		Title: General Manager
	Tel: +81-833-46-4466		E-mail: tunemura@takino.co.jp	
Overseas Branches		None		
Possible Implementation Areas		East Asia, Southeast Asia		
Available Languages		English		

Business Overview

1. Manufacture and sales of soil conservation and greening materials
2. Investigation of soil and vegetation, and design and construction of our own products such as Erosion Control Mat.

What is the “Erosion Control Mat” ?

It is a slope protection mat with an erosion control function which was developed with the aim of creating a vegetation base by itself. It mainly consists of non-woven fabric (web) made of randomly entwined polyester short fibers and is reinforced with a polyethylene net. The web with a porosity of 97 to 98% allows the free flow of air and water and protects the soil from erosion caused by rainfall.

Currently, the new category of "Construction Method with a Vegetation Mat for Erosion Control" has been established in the public works of Japan and our “Erosion Control Mat” is registered.

Achievements in Japan and Overseas

- 2013: Indonesia, "Pilot Survey for Disseminating SME's Technology" by JICA
- 2016: East Timor, "Asian Development Bank Road Network Improvement Project" 2,000 m²
- 2017: Indonesia, "GIIC Japanese Industrial Park Slope Improvement Work" 38,500 m²
- 2018-2019: Philippines, "TCP-III Pilot Project Slope Protection Work" by JICA 4,650 m²
- 2019-25: Taiwan, "Private and Public Works Projects", 102,000 m²
- 2022-24: India, "The project for Natural Disaster Management in Forest Areas in Uttarakhand", 21,400 m²
- 2022-24: Philippines, "SDGs Business Verification Survey with the Private Sector for Erosion Control and Vegetation Mat for Slope Protection"



Restoration of devastated land on Mt. Batur, Bali, Indonesia

Work System

Our products can be exported by reliable Japanese trading companies or distributors.
We provide construction guidance to local customers, but we do not directly perform construction work.

Takino Filter Inc.'s “Erosion Control Mat”

Our Erosion Control Mat protects the soil from various environmental conditions



Field	Slope construction work	Category	Materials, Products
Registration, Awards	NETIS registered technology (CG-980018-VE) Construction Technology Review and Certificate (No. 0106) Registration of UNIDO Sustainable Technology Promotion Platform (STePP)		

Technical Overview

[Technical Features]

1. Prevents slopes and soil erosion caused by rainfall and controls muddy water.
2. Heat keeping effect prevents erosion caused by freezing and melting in cold regions.
3. Covering effect of the mat prevents blown sand in high wind areas.
4. Can be applied to the submerged surface of dam, lakes, etc.
5. Has water retention, preventing soil from drying out.

[Merits of Adopting Technology]

- Because it is a standard product, the quality is uniform and handling is easy.
- No machinery is required, so anyone can easily install it.
- It reduces CO₂ emissions and doesn't create dust, noise or muddy water during construction.
- Use in combination with slope spraying method is possible.
- It enables greening with mainly local plants and leads to permanent greening.
- Total cost including maintenance is suppressed, achieving high cost effectiveness.

[Contributions to Solving Issues]

Because the slope can be protected for a long term after construction, the risk of slope disasters due to environmental stresses such as heavy rains during the rainy season and/or climate change is reduced. Furthermore, greening also contributes to the reduction of CO₂ emissions.

[Video Link]

Product introduction: <https://www.youtube.com/watch?v=TVjmrDybzdI>

Construction method: <http://www.takino.co.jp/manual.html>

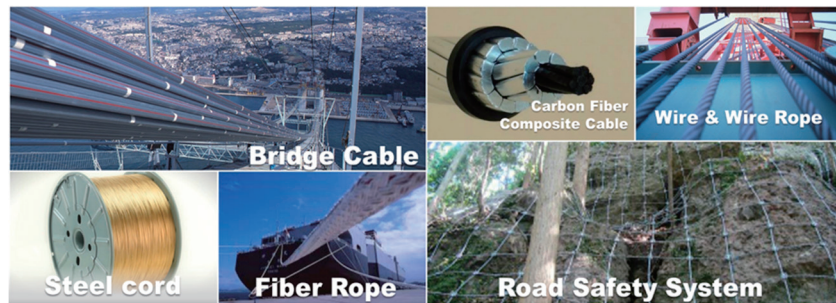
Conditions for Using Technology

- Dynamically stable slope
- Soil conditions: Fill soil, cut soil, sandy soil, clayey soil, soil with gravel, various hard soils
- Slope angle: If greening is required, the maximum slope angle is 60° (Actual result is 73°)
- It is difficult to install on uneven slopes where our mat cannot be attached close to the surface.

Company	Tokyo Rope Manufacturing Co., Ltd.	Establishment	April 1, 1887
Employees	1,450 people	Website	http://www.tokyorope.co.jp/ https://tokyorope-intl.co.jp/
Address	Shibusawa City Place Eidai, 2-37-28 Eidai, Koto-ku, Tokyo 135-8306		
Contact	Yoshiharu Tsutsumi Tel:+81-3-6366-7788	Engineering Division	Position: Manager Email: tsutsumi.yoshiharu@tokyorope.co.jp
Overseas Branches	China, Vietnam, Philippines, Poland, America		
Possible Implementation Areas	countries around the world		
Supported Languages	English, Russian		

Business Overview

A leading company in the wire rope industry (steel cable business), and a pioneer in rockfall and snow damage prevention products (Development Products Business). We manufacture and sell wire rope, wire, steel cord, and carbon fiber composite cables. Our business also includes the production of road safety facilities such as rockfall protection netting, environmental protection products such as acrylic sound insulation walls, as well as the design and construction of bridges, suspension bridge structures, and various industrial facilities.



Achievements in Japan and Overseas

○ **Rockfall prevention works:** Philippines (Client: Ministry of Public Works), Sri Lanka, Kyrgyzstan (ODA projects), and many others.

○ **Main cables for suspension bridges and cable-stayed bridges:** Turkey (Osman Gazi Bridge), Vietnam (Nhật Tân Bridge / Nhat Tan Bridge), and many others.

○ **Carbon fiber composite cable (CFCC):** Used as a bridge reinforcement material for the Hampton Roads Bridge-Tunnel Expansion Project (Client: State of Virginia), currently underway in Virginia, USA, and many other projects.



Hampton Roads Bridge-Tunnel



"Application image of our CFCC"

Work System

We have established a comprehensive system that covers everything from product transportation to on-site installation guidance.

We dispatch multilingual engineers from our company and group companies to locations around the world.

- ① Rockfall prevention products, ② Suspension bridge and cable-stayed bridge cables, ③ Tsunami barriers, ④ Acrylic water stop panels, ⑤ Carbon fiber composite cables (CFCC)

From concept to completion, we engineer civil infrastructure with wire, cable, and high-strength mesh.



Bridge cables



Tsunami Barrier



Acrylic waterproof panel

Field	Rockfall prevention measures, water stop measures, bridge cables for suspension bridges and cable-stayed bridges, coastal corrosion prevention measures	classification	Materials, products, construction management
Technology registrations, awards, etc.	Rockfall prevention products: - Philippine Department of Public Works (DPWH) Certified to the standard specifications. - United Nations Industrial Development Organization (UNIDO) Tokyo Office Sustainable Technology Promotion Platform (STePP) certification - Published in the Ministry of Economy, Trade and Industry's collection of good adaptation practices Carbon Fiber Composite Cable (CFCC): - AASHTO Certification		

Technology overview

■Technology Features

1. Rockfall prevention: Durable, proven products with long track record in Japan.
2. Bridge cables: High-performance prefabricated cables (e.g., Akashi Kaikyo Bridge).
3. Tsunami Barrier: Captures debris with wire ropes to reduce coastal damage.
4. Acrylic water stop panel: Transparent flood protection without harming landscape.
5. CFCC: Lightweight, strong, corrosion-resistant cables for bridges and coastal structures.

■Construction benefits of introducing technology

Tailored methods minimize construction time, maintenance, and repairs.

■Resolving issues faced by countries that have introduced the system

Supports local production, technology transfer, and construction guidance.

■Links to construction videos, etc.

https://www.youtube.com/watch?v=Nu7iJGj2HOk&list=PLypNbM48WZ9-n_13oBGXq334qRR7h9Pz1&index=2

Regarding the use of technology conditions

1. On-site surveys ensure optimal construction methods.
2. Technical guidance dispatch secures design performance.

Company	SANKO CO., LTD. (SANKO Group)		Establishment	1949
Employees	166		Website	https://www.skgr.co.jp/
Address	2-27-10, Higashi-Ohi, Shinagawa-ku, Tokyo, Japan			
Contact	Name: Aijiro OE	Overseas Business Development		Title: Manager
	Tel: +81-3-3761-2111		E-mail: ooe-a@sankogr.co.jp	
Overseas Branches		Singapore, Malaysia (2 Co.), Thailand (2 Co.), Indonesia, Philippines (2 Co.), Vietnam, USA		
Possible Implementation Areas		South East Asia, Africa, Middle East, Eastern Europe, USA etc.		
Supported Languages		English		

Business Overview

The SANKO Group has been evolving with industry, continually taking on challenges and seeking fields not only domestically but also around the world in the over 70 years since establishment in 1949. At present, we are composed of 6 domestic companies segmented by sector and function and 10 overseas companies in South-East Asian countries and the USA, mainly in the engineering field of instrumentation/control systems, electrical facilities and piping, with each company pursuing further sophistication of its own technology/services as a professional. By utilizing synergistically collected group strength, we have provided Global One Stop Engineering from basic planning, procurement, production, system integration and construction to maintenance in various domestic and international industrial fields.

[Business Outline of SANKO Group]

- Engineering of Instrumentation/Electrical facilities for domestic & international plants/factories
- Piping, Equipment Installation
- Engineering & Production of Control Panels/Sampling Equipment
- Supervisory Control and Data Acquisition (SCADA) System Integration
- Instrumentation Maintenance, Calibration of Measuring Equipment
- Production of Fitting/Valve etc.

Achievements in Japan and Overseas

[Establishment of Overseas Affiliated Companies]

- Singapore (1979), Philippines 2 Companies (1992, 2011), USA (1995), Indonesia (1996)
- Malaysia 2 Companies (1998, 2000), Thailand 2 Companies (2000, 2015), Vietnam (2016)

[Recent Major Overseas Construction Experience] * E: Electrical, I: Instrumentation

- Singapore: E & I work for Exxon Mobil large-scale petrochemical plant (Fin. 2017)
- Malaysia: E & I work for semiconductor silicon production plant in Sarawak (Fin. 2013, 2015)
E & I work for gas recovery & reforming plant in Terengganu (Fin. 2015)
I work for large-scale ethylene plant in Johor (Fin. 2019)
- Indonesia: E & I work for PVC raw material production plant in Cilegon, Java Island (Fin. 2016)
- Vietnam: I work for large-scale oil refinery plant in Nghi Son, Thanh Hoa (Fin. 2017)
E work for TTC No.2 50MW solar power plant in Tay Ninh (Fin. 2019)

Work System

- Each overseas affiliate is controlled by a Japanese GM dispatched from the head office, and conducts educational training of local staff, engineers and technicians according to its training program.
- We have mobilized multinational workers ranging from a few hundred to around one thousand for construction projects. The engineers/workers hired for the project are managed by our own database, and we have established a structure that enables us to assign the right people in a timely manner across the group.
- We have conducted educational training prepensely in Japan, using our intracompany transferee system.

Global One Stop Engineering by SANKO Group

We can provide Global One Stop Engineering, from basic planning, procurement, production, system integration and construction to maintenance in various industrial fields

Field	Plant construction work	Category	System
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Technical Overview

[Outline of Main Technologies of SANKO Group]

1. Instrumentation Facility Work

Instrumentation facilities are used to monitor and control process volume (flow, pressure, temperature, level, component etc.) in production runs at plants/factories, and realize optimum production and safe operation. We have a lot of Instrumentation construction experience for overseas plants, including the Middle East and Asia.

2. Electrical / Power Facility Work

We have conducted work (including explosion-proof work, which requires expertise) for substation, distribution facilities, power equipment and lighting facilities for oil / petrochemical / power plants and pharmaceutical / food factories, covering design, procurement, construction, inspection, testing and maintenance.

3. Piping, Equipment Installation Work

We have conducted piping and equipment installation work for LNG/town gas facilities, power plants and industrial gas facilities based on technology/know-how accumulated in work for nuclear facilities for many years. Our factory, which has acquired authentication of the welding control process by the Electricity Business Act, has prefabricated piping with high-quality welding technique/facilities in response to various needs.

4. Control Panel/Sampling Equipment Production

We have produced control panel/sampling & chemical feeding equipment etc., consecutively from design, assembly and factory testing to installation & commissioning after delivery, prioritizing ease of operation & maintenance and utilizing clean room & various function simulation devices.

5. Supervisory Control System Integration

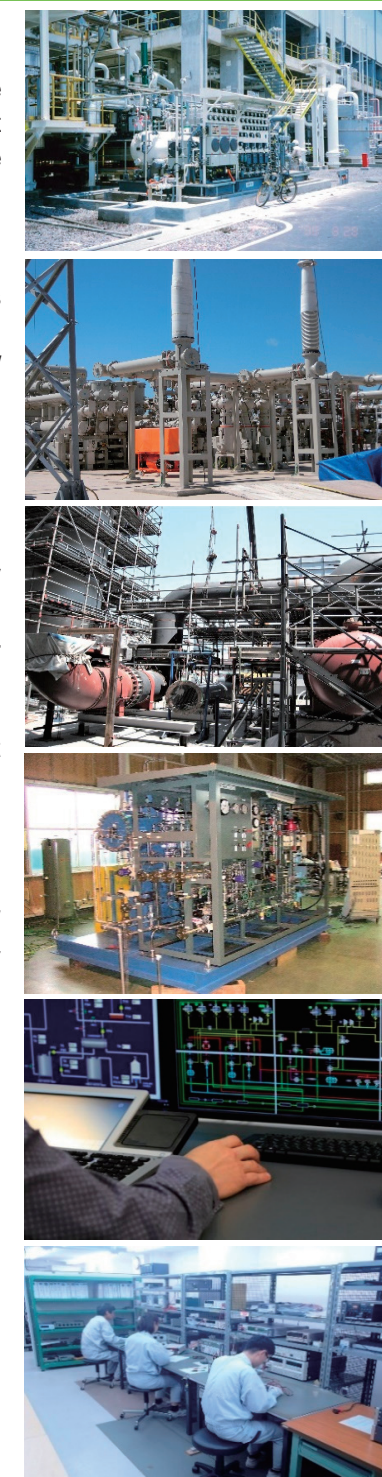
We have conducted system integration in the field of batch process / manufacturing & assembly for pharmaceuticals / fine chemicals / tires / car industry, consecutively from design of supervisory control system consisting of PC, PLC, development of control software, system architecture and commissioning to maintenance. In addition, we have provided validation services according to latest laws/regulations/ guidelines in the pharmaceutical industry.

6. Instrumentation Maintenance / Calibration

Measurement is the principal portion of instrumentation. To maintain quality / safety / stable operation of plant and infrastructure facilities, comprehensive maintenance and calibration of sensors / instruments / analyzers / instrumentation systems are essential. We have regional service hubs around the nation, and a calibration technical center (Kawasaki City), which provides calibration services for instruments/measuring equipment with the nation's premier calibration equipment traceable to national measurement standards.

Conditions for Using Technology

Please feel free to contact us.



Company	SOLTEC INDUSTRIES CO., LTD.		Establishment	1985
Employees	160		Website	http://soltec21.co.jp
Address	2-1-17 Tatsumi-higashi, Ikuno-ku, Osaka-shi, Osaka, Japan			
Contact	Lee Akiko	Business Administration Department		Title: Senior Managing Director
	TEL : 06-6757-4550		Email : lee@soltecvn.com	
Overseas Branches		Vietnam		
Possible Implementation Areas		Vietnam		
Supported Languages		Japanese, English, Vietnamese, Korean, Chinese		

Business Overview

1. Fabrication, Installation, and Piping Work for Various Plant Facilities
Dust collection systems, power generation facilities, conveyor systems, rolling and refining equipment, various tanks, structural steel, and others.
2. Environmental Facilities Construction
Waste incineration plants, recycling centers, water purification plants, wastewater treatment plants, biomass power generation facilities, and others.
3. Maintenance of Various Factory Facilities
4. Staffing and Recruitment Services
Dispatch and recruitment of highly skilled technical engineers (Vietnamese and Korean).

SOLTEC VIETNAM 1st Factory



SOLTEC VIETNAM 2nd Factory



SOLTEC HANOI Factory



Introduction of Achievements Including Overseas Projects

◆ Integrated Construction from Design and Fabrication to Installation and Piping Work

We are capable of providing end-to-end services, from design and fabrication through to installation and piping construction. Our company established its subsidiary, SOLTEC VIETNAM, in 2010. Currently, our production capacity is up to 600 tons per year in Japan and 6,000 tons per year in Vietnam.

In Japan, we have successfully undertaken and completed numerous large-scale construction projects, accumulating extensive on-site construction experience. In Vietnam, construction work is carried out by local Vietnamese employees while strictly adhering to Japanese standards of quality, delivery schedules, and safety.

By leveraging close collaboration between our operations in Japan and Vietnam, the SOLTEC Group delivers services that are unique to our integrated cross-border structure. We bring over 40 years of fabrication and on-site construction experience in Japan, along with more than 15 years of extensive fabrication and construction achievements in Vietnam.

◆Photos of Fabrication and Construction Projects in Vietnam



Organizational Structure

At the time of establishment, Japanese engineers were stationed on site to provide guidance and training to local employees. Currently, three Japanese staff members are permanently stationed locally, covering sales, cost control, and construction supervision.

For large-scale projects, we maintain a system whereby instructors are dispatched from Japan as needed. At present, Vietnamese employees have reached a level at which they can independently handle fabrication and construction work without issue.

Although instructors will not be stationed on a permanent basis in the future, we plan to continue dispatching instructors from Japan for approximately one to two weeks per month to further enhance technical skills and management capabilities. Furthermore, a major strength and differentiating factor of our company is our employment of many Vietnamese staff members who have undergone three years of professional training in Japan.

On December 19, 2025, we acquired Kobelco E&M Vietnam Co., Ltd. through an M&A transaction. As a result, we now operate three business locations in Vietnam and aim to further expand our business operations.

Integrated Technical Capability – For a better future of the planet

One-stop solution: Fabrication, Installation & Piping for Various Plant Facilities



SOLTEC VIETNAM / SOLTEC HANOI – Fabrication (including Tank Design), Installation & Piping Works

Field of Expertise	Plant Facilities & Environmental-Related Facilities	Category	Design,Fabrication, Installation& Piping Works
Technical Certifications & Awards	300 Promising SMEs (Organization for Small & Medium Enterprises and Regional Innovation, Japan) – Osaka’s Dynamic Manufacturing Companies Construction Licenses: Mechanical Equipment Installation, Piping, Civil Engineering, Scaffolding & Earthwork, Steel Structures, Building Construction		

Technical Overview of Our Capabilities

Our Strengths

Comprehensive Mechanical Installation: Expertise across machinery installation, electrical work, piping, heavy lifting, scaffolding, and advanced welding. We call this “Integrated Technical Capability.”

Piping Construction: Extensive experience and proven track record.

Certified Manufacturing: ASME U-stamp & S-stamp certified for pressure vessels and boilers.

Production Capacity:

Japan: 600 tons/year Soltec Vietnam: 4,000 tons/year Soltec Hanoi: 2,000 tons/year

Design Capability: Expanded Vietnamese design team since 2020, combining local expertise with Japanese technical standards.

Why Choose Soltec

One-stop solution: from design → fabrication → installation → piping

Experienced Vietnamese supervisors and craftsmen trained in Japan ensure high-quality construction.

Solving Infrastructure Challenges

Environmental infrastructure: incineration plants, wastewater treatment, water supply/sewage systems

Many successful projects in Japan; leveraging this expertise in Vietnam for local projects.

Watch Our Work in Action: https://youtu.be/xe_YUGx6rno

Conditions for Technology Utilization

None

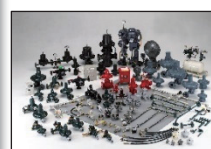
Company	ITO Corporation	Establishment	May 1929
Employees	287	Website	www.itokoki.co.jp/english/
Address	8F PMO EX Honmachi,3-1-10 Honmachi,Chuo-ku,Osaka-shi,Osaka 541-0053,JAPAN		
Contact	Name: Sakura IWASAKI	Overseas Operation Department	Title: Manager
	Tel: +81-6-6210-5416	E-mail: sakura.iwasaki@itokoki.co.jp	
Overseas Branches	Korea (Gyeonggi-do, Jeju), China (Shanghai), Vietnam (Hanoi, Ho Chi Minh), United Kingdom (Buckinghamshire), Myanmar (Yangon)		
Possible Implementation Areas	South Korea, China, Vietnam, Myanmar etc.		
Supported Languages	Korean, Chinese, Vietnamese, English etc.		

Business Overview

1. Manufacturing Gas Supply Equipment (METI Certified High Pressure Gas Equipment Manufacturer) and Disaster Prevention and Mitigation Business
2. Construction and Engineering Business (Special Construction Business Licensed by the Governor of Osaka)

Achievements in Japan and Overseas

- 1965: Constructed our 1st LP Gas filling station with 2 units of 10t bulk tank in Seoul, South Korea. Contributed to the start of domestic production of LP gas in South Korea.
- 1998: Established our 1st overseas subsidiary in Anyang, South Korea. Our products were adopted by pressure regulating stations for city gas in the Nagano Winter Olympics, Japan.
- 2001: Established a subsidiary in Japan to expand our overseas business. Participated in the District Development .Project in Ho Chi Minh, Vietnam and started designing LP Gas supply equipment and facilities.
- 2003: Established a sales company in 2003, and a manufacturing factory in 2005, both in Shanghai, CHINA.
- 2006: Designed and constructed LPG facilities for a new terminal at the Tan Son Nhat Int'l Airport in HCM, Vietnam.
- 2007: Incorporated our local liaison office in Ho Chi Minh, Vietnam.
- 2010: Sold LPG supply equipment for a venue at the Shanghai World Expo in Shanghai, China.
- 2015: Contracted and installed LPG equipment for a new terminal of the Noi Bai Int'l Airport in Hanoi, Vietnam. Delivered LPG supply equipment for the ICHTHYS LNG Project in Australia.
- 2016: Established a joint venture company in Yangon, Myanmar.
- 2018: Applied LPG supply system at the Pyeongchang Winter Olympics in South Korea.



Our Lineup

Work System

- In Vietnam, we have 1 or 2 Japanese technical sales staff stationed and 37 local staff. In Myanmar, 1 Japanese technical sales representative is stationed. Our experienced staff can flexibly handle projects in neighboring countries.
- We provide excellent service for residential area distribution using LPG low pressure system, for commercial facilities with equipment offering a high level of safety, and for complexes and difficult industrial facilities which cannot be handled by local agencies. We will support you to enable a safe and reliable supply of gas.

Sustainable LP Gas & Natural Gas System with Low Environmental Burden

Highly Efficient, Advanced Safety, and Eco Friendly LP Gas & Natural Gas Supply System



LPG Supply System
50t Tank 1,500 kg/h Air-heating Vaporizer



LPG Supply System
25t Tank, Air-heating & Electric Vaporizer

Field	LP Gas & City Gas Natural Gas Supplying System	Category	Manufacturing & Design
Registration, Awards	1995 Grand Prize by Ministry of Economy, Trade and Industry. 1996 Good Company Award, sponsored by the Medium and Small Business Research Institute "Corporate Excellence Prize" 1999 The High Pressure Gas Safety Institute of Japan, Osaka "Distinguished Service to Safety Award" 2008 The 300 of "Japan's Vibrant Monozukuri (Manufacturer) SMEs by Ministry of Economy, Trade and Industry. 2005, 2008 The Japan Gas Associations "Technical Grand Prize" 1998, 2000, 2003, 2009, 2010, 2016, 2020 "Technical Prize" 2011 The World LP Gas Association Global Technology Conference "Technical Grand Prize" 2013 The World LP Gas Association Global Technology Conference "Technical Grand Prize" Runner Up 2014 Higashi Osaka Monozukuri (Manufacturing Engineering) Award "Grand Prize" 2020 Advanced Cogeneration and Energy Utilization Center Japan The Cogeneration Award "Technical Prize"		

Technical Overview

[Technical Features]

We design and construct LP gas and city gas natural gas supply systems for midstream and downstream based on Japanese high safety standards. Utilizing our experience in Japan and overseas markets, we can flexibly respond to local conditions and supply LP gas to cover residential buildings and/or shopping malls from LP Gas vaporization & regulation facilities in one place through pipelines. For factories, we support the improvement of existing supply systems or conversion from coal or heavy oil to LPG or NG, and suggest unique solutions to help reduce carbon emissions using our eco-friendly products such as our air-heating type vaporizers for LP gas (the ITO eco Rizer).

[Merits of Adopting Technology]

- Reduce consumer's risk of danger caused by changing of cylinders. Our "automatic changeover regulators" and other innovative products enable the changing of cylinders without cutting off the LP gas supply.
- We can design and install an automatic shut-off system that prevents gas leakage even after an accident or natural disaster using advanced safety devices, and a gas-leakage centralized monitoring system.
- We optimize design in accordance with local conditions to ensure a safe and reliable supply. Follow-up services such as periodic inspections are also available.
- Reduce CO₂ emissions and running costs in factories by introducing air-heating type vaporizers.

[Contributions to Solving Issues]

Ensuring universal access to reliable, sustainable, and modern clean energy services.

Conditions for Using Technology

Please feel free to contact us.

Company	TAMADA CORPORATION	Establishment	1950
Employees	278	Website	https://www.tamada.co.jp/
Address	Ha 61-1 Muryojimachi, Kanazawa, Ishikawa 920-0332, Japan		
	Name: Takamitsu AKAIKE	Overseas R&D Division	Title: Manager
	Tel : +81-3-5401-3689	E-mail: takamitsu_akaike@tamada.co.jp	
Overseas Branches	Hai Phong Province, Vietnam		
Possible Implementation Areas	Vietnam, Southeast Asia		
Supported Languages	English, Vietnamese, Chinese		

Business Overview

1. Design and manufacture of underground storage tanks and fire cisterns *No. 1 domestic share (70%) for S&F double wall tanks
2. Design and construction of hazardous substance facilities
3. Underground Tank Interior Lining (extend the useful life of old tanks)
4. Statistical Inventory Reconciliation for underground storage tanks
5. AQUA in PIT, AQUA in Angel (Earthquake Resistant Water tanks for Fire protection & Drinking Water Purposes)
6. Maintenance & Inspection of underground storage tanks and tank trucks
7. Overseas business (licensing of technology, OEM, delivery of imports, etc.)

Achievements in Japan and Overseas

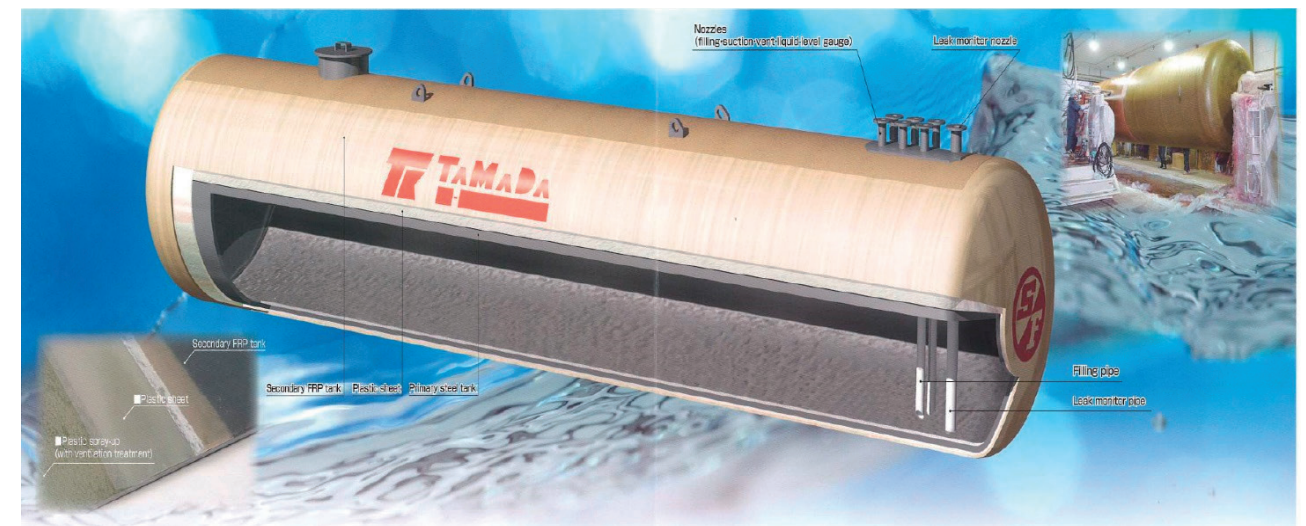
1. In 2012 the Japan International Cooperation Agency (JICA) conducted the SDGs Business Model Formulation Survey with the Private Sector for Hazardous Material underground storage tanks (in Vietnam)
2. In 2013 JICA conducted The Knowledge Co-Creation Program for the Socialist Republic of Vietnam, a pilot survey for disseminating small and medium enterprises technologies for SF double shell tanks to avoid leakage of hazardous materials.
3. In 2013 we established a local subsidiary in Vietnam and opened a factory in 2015 to deliver products to Vietnam, Japan, and third countries.
4. In 2018 1st Japan Construction International Award (MLIT) SMEs category
5. Delivery of SF double wall tanks for gas stations and factory facilities in Vietnam
6. Delivery of chemical storage tank (double wall tank) to the Philippines
7. Contracted manufacturing of various plate products (tank, ducts, hoppers, stands, etc.)
8. Licensing of technology (to Thailand, Malaysia, China, Taiwan)

Work System

Our technician will be on hand and provide installation guidance when the tank is installed.

SF Double Wall Tank

Hazardous material storage underground tanks with an emphasis on safety, quality and economy



Field	Oil Construction	Category	Product
Registration, Awards	JIS Q 9001:2008 (ISO9001:2015)		

Technical Overview

[Technical Features]

<SAFETY>

1. 1 Seamlessly laminating the FRP layer of the outer shell consists of a unique construction method (multilayered method) which makes up for the weak point of FRP that has seams with the ordinary construction method, creating a solid underground tank.
2. No. 1 construction record in the industry (in Japan) thanks to outstanding strength of a steel tank, with no tanks damaged by the Great Hanshin-Awaji Earthquake.
3. Pressure gauge is installed and kept in place until the end of tank installation to enable accidents to be instantly detected during construction.
4. Can also be used to store fuel containing alcohol.
5. Leakage monitor (leakage detection device) detects minute leaks in the tank and provides instant notification with a buzzer.

[Merits of Adopting Technology]

Since the tank itself has a function to detect leaks, there is no need to install a pit room, and construction costs and period can be reduced.

[Contributions to Solving Issues]

It is possible to prevent soil contamination by preventing the fluid leaks from the underground tank.

[Video Link]

https://www.youtube.com/watch?v=yQv3meo_JxE&t=6s

Conditions for Using Technology

There are no qualifications. Please feel free to contact us if you have any questions.

Company	JESCO Holdings, Inc.		Establishment	August 1970
Employees	642 (Consolidated)		Website	https://www.jesco.co.jp/
Address	3 Floor, Akasaka JEBL Building, 4-8-18 Akasaka, Minato-ku, Tokyo 164-0011, Japan			
Contact	Name: Junko Fujimoto	Corporate Planning Division	Title: Deputy General Manager	
	Tel: +81-3-5315-0331		E-mail: fujimoto@jesco.co.jp	
Overseas Branches		Vietnam (Ho Chi Minh , Hanoi, Danang , Long An, Can Tho), Singapore		
Possible Implementation Areas		Vietnam		

Business Overview

We are an EPC Contractor (Engineering, Procurement and Construction) engaged in the construction of electrical and wireless communication facilities in Japan and Vietnam, providing one-stop integrated solutions from consulting, engineering, cost control and construction to management of construction and maintenance. Our main businesses are described below.

(Domestic) Renewable energy such as solar power, mobile communication systems, wireless networks, electrical equipment construction, plant-related construction, power transmission network construction, and high-voltage power generation and transformation equipment construction
(Vietnam) Various engineering and cost integration services (Design soft BIM has been introduced), electrical equipment work for Vietnam international airports, disaster prevention radio-related works, solar power generation, highway ITS work, high-rise condominiums (electrical equipment, air conditioning, water supply and drainage and fire-fighting systems)

Achievements in Japan and Overseas

JESCO ASIA JSC was established as a subsidiary in Vietnam in 2001. Headquarters were established and branches were set up in Hanoi, Da Nan, Long An, and Can Tho.

In Vietnam, the Company focuses on design and cost estimation, leveraging its experience in electrical design for international airports. In December 2022, it was certified by the Vietnamese government as a prime contractor for special high-voltage electrical equipment up to 35,000V.

The Company also promotes DX, enabling real-time design and inspection between Japan and Vietnam using smart glasses, while strengthening its engineering capabilities through workforce expansion and BIM engineer development.

1. Noi Bai International Airport: Design, construction management, and electrical equipment work
2. Hue Province: "Emergency operation and flood management of dams using a water damage management information system"
3. Integrated Resort: Electrical equipment, air conditioning, and water supply systems.



Work System

JESCO ASIA JSC – Number of employees: 221

JESCO HOA BINH ENGINEERING Co., LTD. – Number of employees: 22

JESCO PEICO ENGINEERING JSC – Number of employees: 53

EPC Contractor for Electrical and Wireless communication facilities

**Technical capabilities cultivated through 25 years of experience in Vietnam
(Design and material costing, management of construction and construction)**



JESCO ASIA JSC Design office



Long Thanh International Airport
Detailed Electrical Design



ACECOOK VIETNAM
Solar power generation equipment

Field	Construction, maintenance	Category	Design and Construction
Registration, Awards	2018 1st JAPAN Construction International Award (Minister of Land, Infrastructure and Transport Prize), 2016 Engineering Achievement Award (Vietnam, Noi Bai International Airport), 2018 High quality construction award (Vietnam Ministry of Construction), 2019 First-class construction-related ability certificate (Vietnam Ministry of Construction)		

Technology Overview

[Technical Features]

- We are able to provide consistent services from design and cost estimation, construction management, and maintenance.
- Real-time design and inspection between Japan and Vietnam using smart glasses enables high-quality, cost-efficient engineering.

[Merits of Adopting Technology]

- High quality, low cost, and speedy design and cost estimation through the use of offshore resources (Vietnam)
- Total management from cost estimation to construction is possible by adopting the latest BIM technology.

[Contributions to Solving Issues]

- Advanced engineers can be trained by the JESCO Academy, an in-house education system utilizing the internet.
- Contribution to the efficient development of social infrastructure through our experienced construction management technology.
- Expansion of employment of local high-level engineers in Japan (through the use of JESCO Expert Agent (JEA), the Group's recruitment agency for foreign engineers)

[Video Link]

- Infrastructure improvement : Gateway to the sky Noi Bai International Airport in HANOI
<https://www.jesco.co.jp/en/project/story07.html>
- Three key people who led a large-scale project to success
<https://www.jesco.co.jp/ja/project/story06.html>
- JESCO has provided Vietnam with Japan's high quality EPC business through our localized power
<https://www.jesco.co.jp/en/project/story03.html>

Conditions for Using Technology

None

Company	Yuicom Networks Co., Ltd.		Establishment	April 2005
Employees	335		Website	http://yuicom.net/
Address	4-29-6 WIS Building 4F, Nishi-Shinjuku, Shinjuku-ku, Tokyo, Japan			
Contact	Name: Ryo SANO	Wide Area Engineering Division		Title: General Manager
	Tel: +81-03-3373-3911		E-mail: r_sano@yuicom.net	
Overseas Branches		None		
Possible Implementation Areas		Please contact us		

Business Overview



As a partner of telecommunications carriers, we are working to build systems for IOT-related equipment that will lead to the future.

- 1. Access engineering**
Build a network using optical fiber cables.
- 2. Mobile engineering**
Comprehensive construction work, from consulting to construction and maintenance of mobile phone base stations.
- 3. IT Solutions**
We will make full use of the various technologies and networks that have been cultivated through the construction of communication facilities up to now to promote initiatives for higher layers.
- 4. Energy-related business**
Construction and maintenance of communications infrastructure facilities provided by gas suppliers.
- 5. Temporary staffing services**
We dispatch professional engineers who are well versed in each field with high skills.

Achievements in Japan and Overseas

[Results in Japan]

- Construction of wired transmission lines for telecommunications carriers
- Construction of terminal equipment for communication services
- Construction of radio transmission lines for telecommunications carriers
- "IOT" Device System Construction

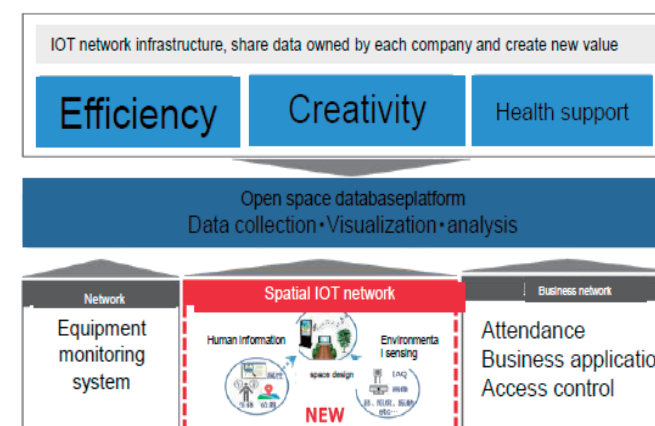
Work System

For the above, we can provide all construction systems.

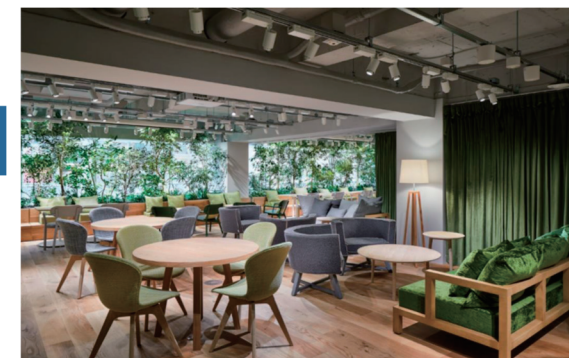
We also operate a temporary staffing business, so we can dispatch employees overseas upon request.

Data collection technology by integrating sensors and communications

**Technology that collects and accumulates data of working people
by fusing communication and sensors**



[Point 0 Marunouchi]



Field	Providing office space where you can work more efficiently	Category	Communication environment construction
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Technical Overview

[Technical Features]

As part of the work to build workspace "Point 0 Marunouchi" in an office building in central Tokyo that incorporates multi-spatial content under the theme of "More efficient office space", we undertook the development of a communication environment and the installation of IoT devices under the umbrella of a certain telecommunications company.

In addition to air conditioning, lighting, sound, fragrance, furniture, and other equipment, the workspace is designed to suit a variety of office environments, collecting data on the comfort, productivity, and health of the people who work there, and verifying the effectiveness of content and creating new content. The workspace is designed to suit a variety of office environments by collecting data on the comfort, productivity, and health of the people who work there, and not only the equipment such as air conditioning, lighting, sound, fragrance, or furniture. We also plan to use feedback from workspace users to enhance spatial content.

■ Main content

1. Automatic interlocking service for air conditioning, lighting, and security linked with location information in the space
2. Meeting room where discussions can proceed smoothly with voice-based sentiment analysis and "scent spraying"

[Merits of Adopting Technology]

We select and propose various application systems that are suitable for local requests (monitoring systems that utilize sensors, systems that use cameras with high functionality and learning functions, etc.)

[Contributions to Solving Issues]

We will proactively administer and teach you communication and sensor fusion facility technology for local telecommunication engineers.

Conditions for Using Technology

We can propose applied technologies that integrate communication and sensors.

Company	KOKEN BORING MACHINE CO., LTD.	Establishment	1947
Employees	230	Website	https://www.koken-boring.co.jp/en/
Address	Mejiro Nakano Building 1F, 2-17-22 Takada, Toshima-ku, Tokyo, Japan		
Contact	Name: Kazuyoshi MORIYAMA	Engineering Division	Title: Deputy Section Chief
	Tel: +81-3-6907-7513		E-mail: moriyama-k@koken-boring.co.jp
Overseas Branches	Uganda Branch		
Possible Implementation Areas	Worldwide		
Supported Languages	English, French, Tamil (India)		

Business Overview

We are the only listed company (JASDAQ) among boring machine makers. We can provide one stop solutions since we design, manufacture, sell, construct, and maintain a wide variety of boring machines. There are special methods of construction that only we can do, and have obtained many patents.



Achievements in Japan and Overseas

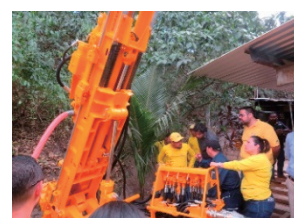
We provide boring machines, technical guidance, and construct boreholes and waterworks around the world.



- Mali:
- Water supply facility
 - Borehole construction



- Malawi:
- Water supply facility
 - Borehole construction
 - Renovation of borehole



- El Salvador:
- Machine provision (Disaster prevention)
 - Technical guidance



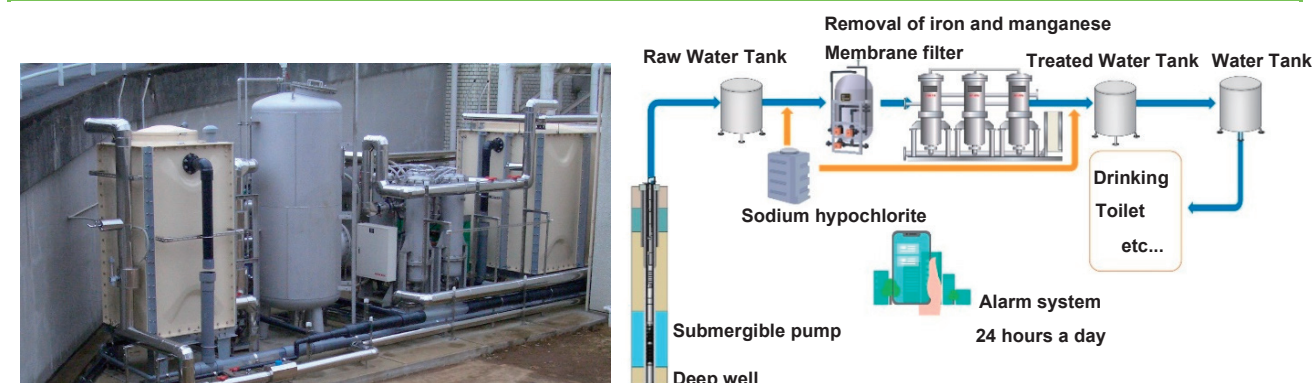
- Pakistan
- Machine provision (Deep well)
 - Technical guidance
 - Technical guidance

Work System

- Japanese engineers and Indian engineers are in charge of groundwater development.
- In the case of construction, several engineers and transport machines will be dispatched from Japan.
- Scheduled to open a branch office in Tamil Nadu, India

Ground Water Purification Plant (Remote Monitoring Type)

Remotely monitored and controlled plant purifies groundwater and enables standard water quality, stable water supply and the reduction of water charges



Ground water plant

Ground water purification flow diagram

Field	Groundwater development, Groundwater purification	Category	Equipment, system
Registration, Awards	Letter of appreciation from residents of Ishima, Tokushima (2010)		

Technical Overview

[Technical Features]

- Taking advantage of the characteristics of the manufacturer, we select the most suitable machine for the site from a wide variety of boring machines.
- Fully automatic operation for normal water sampling and membrane cleaning.
- An alarm system using IoT automatically notifies the person in charge of an emergency 24 hours a day.
- Compact design according to the location of the installation

[Merits of Adopting Technology]

- Total support from water well drilling to purification plant installation and maintenance.
- Water charges can be reduced.
- Remote monitoring technology ensures quick response in case of trouble
- Significant space saving compared to conventional equipment.

[Contributions to Solving Issues]

- Even if the existing water supply is cut off, groundwater can be supplied in a stable manner, enabling factories and hospitals to continue operation.
- We can provide safe and secure water to residents of areas with contaminated groundwater.
- The plant capacity can be set according to the customer's request, taking into consideration the pumping capacity (groundwater volume) of the well.

Conditions for Using Technology

- It is suitable for businesses (factories, hospitals, hotels, etc.) who want to use water with standard water quality.
- It is suitable for businesses that use a lot of water every month which are burdened by water charges.
- It is necessary to conduct groundwater exploration before construction to determine whether this system can be installed.
- Purification of surface water such as river or lake water is not possible.
- Drainage is the responsibility of the business operator.

Company	Daiken Co., Ltd.	Establishment	1974
Employees	54	Website	https://d-ken.jp/
Address	2-9-12 Minamisho, Sawara-ku, Fukuoka, 814-0031, Japan		
Contact	Name: Taro Sasai	Land Management Division	Title: Leader
	Tel: +81-92-851-3900	E-mail: sasai@d-ken.jp	
Overseas Branches	Daiken Vietnam (Ho Chi Minh City, wholly owned subsidiary)		
Possible Implementation Areas	Vietnam, Laos, Indonesia, India		
Supported Languages	English (e-mail only)		

Business Overview

We have received many awards from the Ministry of Land, Infrastructure and Transport, and 46 of our 54 employees are technical experts.

- (1) Compensation Consultant: Land surveys, land appraisals, property surveys, machine tool surveys, business compensation, special compensation, business losses, compensation method examination, compensation explanation, business certification, application for adjudication
- (2) Construction Consultant: Roads, rivers, sand/mud control, structures, intersections, bridges, water supply and sewerage systems, agricultural engineering, parks, biotopes, residential land development, development permit application, various types of construction management, environmental assessment
- (3) Residential Development Division: Developer, real-estate transactions, planning, management, builder
- (4) Survey Division: Sites, settlement, depth, GPS
- (5) Geological Surveys: Machine boring, lab tests
- (6) Construction Division: Design, management

[Original Technology]

- (1) "Tametotto" tank that stores large volumes of rainwater while purifying it.
- (2) "NCZ Method" which creates robust manmade foundations and underground spaces.

Achievements in Japan and Overseas

Track Record for "Tametotto" Underground Rainwater Storage Tanks:

- (1) May 2012: "Ogiura Garden Suburb" 18-unit residential complex developed by Daiken in Itoshima, Fukuoka
Storage volume: Approx. 122t x 1 tank, Application: Water for flushing toilets, watering, washing cars, Users: Approx. 50 persons
- (2) June 2014: UN Habitat "Water for Life Project" in Laos
Storage volume: Approx. 100t x 2 tanks, Application: Drinking water, Users: Approx. 600 persons
- (3) May 2017: UN Habitat "Women's Facility Construction Project" in Laos
Storage volume: Approx. 150t x 1 tank, Application: Drinking water, Users: Approx. 200 persons
- (4) January 2018: UN Habitat "Pilot Project" in Vietnam
Storage volume: Approx. 100t x 1 tank, Application: Watering of plants
- (5) September 2019: UN Habitat "Kalobeyi Refugee Camp" in Kenya
Storage volume: Approx. 100t x 1 tank, Application: Drinking water, Users: Unknown
- (6) June–September 2021: Ministry of Foreign Affairs of Japan – Grant Assistance for Japanese NGO Projects (NGO Collaboration Program) in Indonesia
Storage volume: 40t x 1 tank, Application: Drinking water, Units constructed: 4 tanks (Remote technical guidance provided from Japan)
- (7) January–February 2024: UN Habitat in Myanmar
Storage volume: 150t x 10 tanks, Application: Drinking water
- (8) July 2024: Japan (Domestic) – Donation to Fukuoka City Zoological and Botanical Garden (50th Anniversary Commemorative Project)
Storage volume: 44t x 1 tank, Application: Plant irrigation
- (9) December 2025: Japan (Domestic) – Construction beneath employee parking lot adjacent to company headquarters

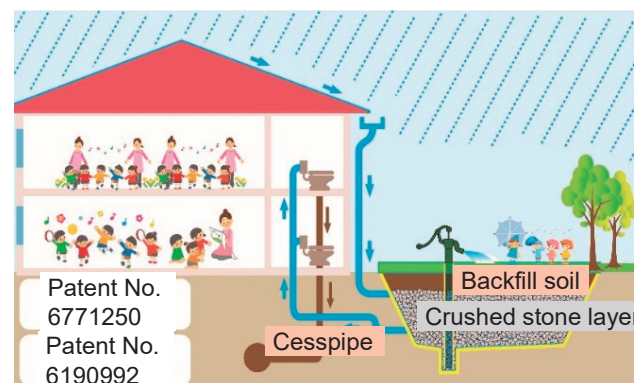
Work System

Overseas Construction Track Record (100 ton class)

- (1) Two Japanese engineers dispatched, built by 7 – 10 local workers.
- (2) Almost no materials or equipment needs to be brought from Japan, and local materials and heavy machinery is used to complete work in about one week.
- (3) Remote construction possible

"Tametotto" Underground Rainwater Storage Tank

Easily built tank that stores rainwater with drinking water quality for various types of uses



Structure of "Tametotto"
Rainwater is collected on the roof and stored in the tank with a crushed stone layer. It can be used to flush toilets and with a hand pump in a disaster.

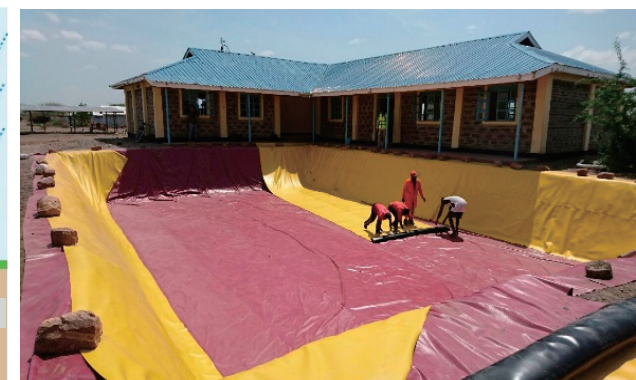


Photo of work for "Tametotto" in Kakuma Refugee Camp in Kenya (Sept. 2019)

Field	Underground water storage tanks, regulating ponds	Category	System
Registration, Awards	Patent No. 6190992, Patent No. 6771250 Trademark registration (Overseas): Int'l Reg. No. 1499968, (Domestic): No. 6172501		

Technical Overview

[Technical Features]

- (1) Enables large volume of rainwater to be stored at a location in close proximity.
- (2) Rainwater can be purified to drinking water level quality. When dirty water passes through crushed stone, it is cleaned by contact sedimentation, absorption by microorganisms and oxidative decomposition.
- (3) Low construction costs.
- (4) Easy maintenance after construction.
- (5) Can be used as a park, parking lot, playground or other purpose after construction underground.
- (6) Can be used with a hand pump in a disaster.
- (7) Controls outflow during heavy rainfall (regulating pond function).
- (8) Contributes to SDG Goal 6 "Ensure access to water and sanitation for all"

[Merits of Adopting Technology]

- (1) Short construction period
- (2) Materials and equipment that can be locally obtained are used
- (3) Local workers can perform work since no special construction capabilities are required

[Contributions to Solving Issues]

- (1) Enables water source to be secured in countries with water supply problems (insufficient water during dry season, contaminated wells, etc.)
- (2) Can be more quickly built and at a lower cost near residences compared to dams as a method to secure water source, and cost of water purification plant/piping etc. is eliminated
- (3) Effectively controls water outflow in the event of torrential rain (regulating pond function)

[Video Link]

Pamphlet: <https://www.d-ken.jp>

Conditions for Using Technology

- (1) Confidentiality agreement with local construction company is required
- (2) Collection of data for installation location (rainfall, etc.) and region in which water distribution rules can be proposed after installation
- (3) Injection of microorganism activator as necessary

Company	Kyowakiden Industry Co., Ltd.	Establishment	1948
Employees	580	Website	https://www.kyowa-kk.co.jp/
Address	10-2, Kawaguchi-machi, Nagasaki-shi, Nagasaki, 852-8108, Japan		
Contact	Name: Matsuzono	Overseas Business Division	
	Tel: +81-95-848-9106	E-mail: info_overseasbiz@kyowa-kk.co.jp	
Overseas Branches		Vietnam (Ho Chi Minh city, Ving long province)	
Possible Implementation Areas		Vietnam, China, Taiwan, other Southeast Asia area	
Supported Languages		English (e-mail only), Vietnamese (in Vietnam)	

Business Overview

As an Environmental Creation Company, contribute to the development of the social environment. Aiming to develop social infrastructure centered on water and electricity and realize an energy-saving society that considers the global environment, we will develop one-stop solutions from planning and proposals to development.

Line of Business

- System Design and Engineering Services
- Machinery Manufacturing and Installation Services
- Electrical Services
- Electric Power Services and Maintenance Services
- Information Systems Services and Systems Development



- + Membrane system and O&M of Japan's largest Seawater desalination facility (50,000 m³/day)
- + Received "Corporate Excellence Prize" at the 53rd Good Company Award 2019

Achievements in Japan and Overseas

Overseas Business

Design & Manufacturing of machinery and control panels for water supply and sewage water treatment facility, and small-scale Seawater Desalination unit mainly in Southeast Asian area.

<Vietnam> Field test of "Highly Concentrated Waste Liquid Reduction and Purification System"

Overseas Manufacturing Record

- Sludge collector, grid collector, hopper, screen for sewage treatment plant
 - Panels and control & monitoring system for water treatment plant
- *Provide optimal design and manufacturing services with SCM in Japan and Vietnam

Business in Vietnam

- Engineering Services for Water treatment
- Provide engineering services and EPC services such as wastewater treatment, reuse, and water purification systems primarily for various factories.

Work System

- Dispatch Japanese engineers to Southeast Asia as supervisors

Water and wastewater systems: machinery, electrical equipment, and control system

End-to-end solution covering design, manufacturing, and installation

Mechanical Equipment

We manufacture equipment such as automatic bar screens, scrapers, hoppers, and conveyors.



▲ Automatic bar screen

▲ Scraper(sludge/ grit)

▲ Hopper

Electrical Equipment

We offer panel products and monitoring & control systems for water treatment and various plants.



▲ Switchgear, control panels, and distribution boards

▲ Control and monitoring systems

Field	Water and wastewater	Category	Equipment, Systems
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Technical Overview

Features

- Providing integrated one-stop solutions from design through manufacturing and installation (Overseas projects are supported through on-site supervision by our engineers.)
- Extensive domestic track record and proven experience in overseas ODA-based water and wastewater projects

Construction Advantages of Technology

- Shorter lead times through an integrated production system (design, manufacturing to inspection) and streamlined flow production.
- Reduced installation time with machinery designed to minimize anchor bolts.

Solving Challenges for Partner Countries

- Implemented in water treatment plants, wastewater treatment facilities, and pumping stations, delivering economic and social benefits.

Conditions for Using Technology

Mainly for water treatment plants, wastewater treatment facilities, and pumping stations.

Company	NISSAKU CO., LTD.	Establishment	April 1912
Employees	269	Website	https://www.nissaku.co.jp/
Address	199-3 Sakuragi-cho 4-chome, Omiya-ku, Saitama-shi, Saitama 330-0854, Japan		
Contact	Name: Masakazu MIZOBUCHI	International Division	Title: General Manager
	Tel: +81-4-8644-2391	E-mail: int-div@nissaku.co.jp	
Overseas Branches	Nepal (Kathmandu)		
Possible Implementation Areas	Nepal, Benin, Senegal, Zambia, Uganda		
Supported Languages	English, French (e-mail only)		

Business Overview

In the more than 100 years since we were founded in 1912 as the well construction company that introduced the first motorized rotary drilling machine into Japan, we have accumulated extensive experience in groundwater development throughout Japan. Currently we have three main departments: Well drilling and Facility construction, Advanced civil engineering, and Geological survey. We have earned the trust of our customers as a comprehensive engineering company in the field of water and land by providing a one-stop service, ranging from survey and design to construction and maintenance, with a combination of traditional technologies and the latest original technologies. Commencing with well construction in Afghanistan in 1958, we have drilled more than 5,000 wells in more than 40 countries throughout the world.

In particular, since 1989, we have been involved in groundwater supply facility construction projects through ODA grant aid cooperation, mainly in African countries.

[Details of Business] 1. Well drilling 2. Well rehabilitation
3. Facility construction 4. Advanced civil engineering
5. Geological surveying, construction consultancy service
6. Overseas business (ODA Groundwater projects)
7. Manufacturing and sales of equipment for wells



Achievements in Japan and Overseas

[Well Drilling]

2019: Intake well for underground dam, Miyakojima, Okinawa

2019: Hot spring well, Tokyo

2020: Subsidence observation well for water-soluble natural gas, Niigata

[Advanced Civil Engineering]

2019: Expressway Tunnel Landslide Countermeasure (Piling), Yamagata

2020: Water collecting well for water supply facility, Akajima, Okinawa

[Geological Survey]

2019: Survey of water sources for water supply, Nagano

2020: Hydrological survey of expressway service area, Kanto region

[Overseas Business]

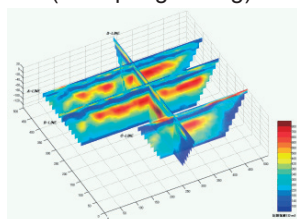
2017: Water supply and sanitation Improvement in rural areas, Senegal

(Won the 2nd JAPAN Construction International Award:

<https://www.mlit.go.jp/JCIA/award/2/projects/#05>)



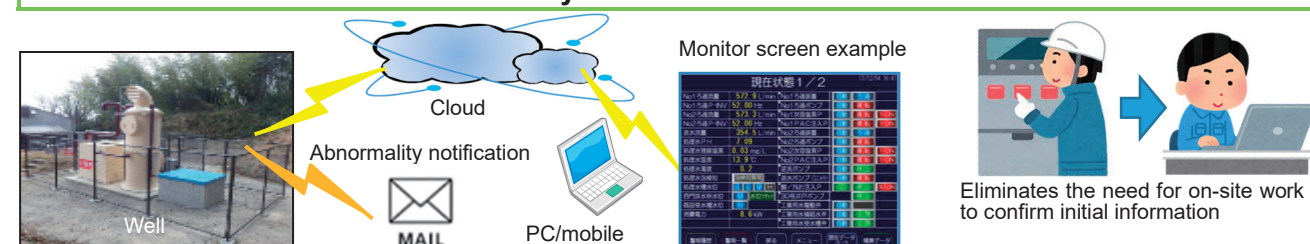
Site arrangement for well drilling (Hot spring drilling)



Water source survey 3D analysis (geophysical survey)

IoT Compatible Cloud-based Remote Monitoring System

Remote monitoring and alarm signal transmission of well data made possible
Enables early detection of abnormalities



Field	Well drilling, operation and maintenance	Category	Systems
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Technical Overview

[Technical Features]

- Automatically measure and remotely transmit data (groundwater level, water discharge rate etc.) needed for the operation and maintenance of wells.
- Also possible to send warning notifications to the mobile phones of managerial staff when measurement data is abnormal.

[Merits of Adopting Technology]

- The lifespan of a well can be extended by monitoring data in real time and detecting abnormalities at an early stage in order to take countermeasures.

[Contributions to Solving Issues]

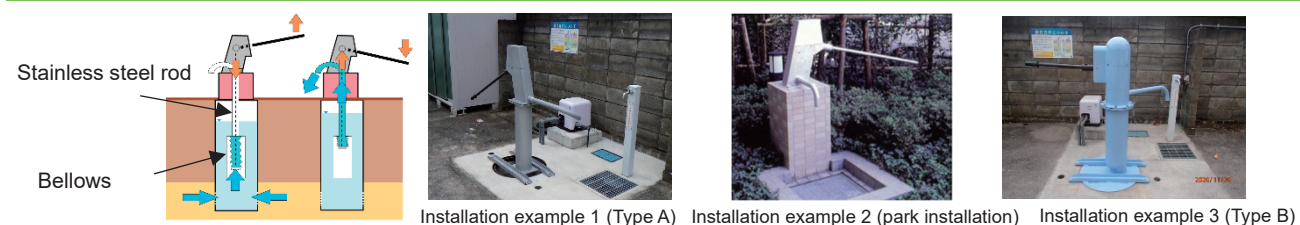
- A well is a facility that requires continuous maintenance. Our company contributes to the maintenance of local water environments by making use of our extensive experience and achievements. We make appropriate recommendations regarding the operation and maintenance of wells based on data that has been obtained through remote monitoring.

Conditions for Using Technology

- To utilize this technology there just needs to be a water level sensor and a flow meter installed in the well, a primary power supply and working mobile phone communications.

Highly Durable Handpump

Achieve a lifting height of 50m with a handpump
A high lift handpump with excellent durability



Field	Well drilling and pumping equipment	Category	Products
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Technical Overview

[Technical Features]

- Realization of a handpump with excellent durability and high lift height by use of pumping method that utilizes a bellows and a stainless steel rod.
- The pump cylinder has a built-in bellows mechanism, which means fewer parts rubbing against each other when pumping water.

[Merits of Adopting Technology]

- Eliminates the need for periodic replacement of consumable parts, which greatly reduces pump maintenance frequency.

[Contributions to Solving Issues]

- Anti-disaster wells and handpumps are being reevaluated as emergency water sources in times of disaster. Water can be pumped up from a depth of 50 meters with just the small force of a hand pump even in areas with deep groundwater. Local anti-disaster measures can be enhanced by securing water sources that do not rely on electricity.

Conditions for Using Technology

- The inside diameter of the well tube must be 100 mm or greater, and to get a pumping water volume of 10 L/min, the pumping water level must be at a depth of 50 m or less.

Company	ES-Waternet Co., Ltd.		Establishment	1970
Employees	65		Website	https://www.es-waternet.co.jp/
Address	4-24-1, Suwa, Tama-shi, Tokyo, 206-0024, Japan			
Contact	Name: Yuuki SHIMOYAMA		International Marketing & Sales	Title: Manager
	Tel: +81-4-2318-1674		E-mail: mail@es-waternet.co.jp shimoyama@es-waternet.co.jp	
Overseas Branches		None		
Possible Implementation Areas		Africa, Asia, Middle East, Latin America		
Supported Languages		English, French		

Business Overview

Under the slogan “Contribute to the development of human beings and society through the water business”, we are involved in the 4 business fields below:

- Agriculture (Field irrigation, Controlling temperature in greenhouses by fogging, etc.)
- Environment (Sprinkling water on roofs, lawn playgrounds, etc.)
- Industry (Sprinklers for melting snow on railways, etc.)
- Oversea Projects (Supplying materials for overseas construction projects)

In the field of “Overseas Projects”, we have supplied pipes, valves and other items for water pipelines and facilities for both public (Official Development Assistance by JICA) and private projects. We are involved in the entire flow of the business - from engineering to logistics.

Achievements in Japan and Overseas

[Project for the improvement of the drinking water supply of the upper part of the city of Conakry (Guinea)]

As a contractor, we installed a ductile iron pipeline (DN1100 mm, 4.46 km length). Replacing the FRPM pipes with ductile iron pipes has strengthened the pipeline, and made the water supply more stable.



Installing ductile iron pipes
(Completed in 2017)



[Grant Aid for Environment and Climate Change for Escuela de Ciencias Forestales de la Universidad Mayor de San Simon (Bolivia)]

We designed the layout of sprinklers and plumbing in greenhouses, supplied the whole system (greenhouses, sprinklers, irrigation controller, soil injector, nursery pots, etc.) and dispatched supervisors.



Outside and inside of the greenhouse
(Completed in 2019)

Work System

We have dispatched supervisors and managed the construction work at overseas sites.

Hydrostatic Water Pressure Control Technology

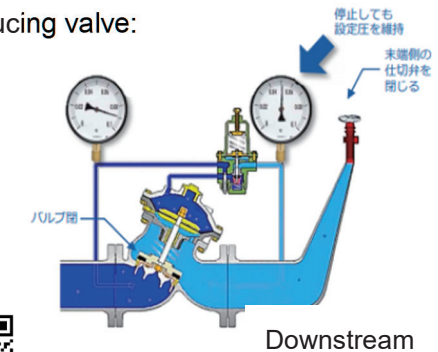
System costs can be reduced by water pressure control without using electricity.

“Hydrostatic Water Pressure Control” with a pilot type pressure reducing valve:

In cases where a butterfly valve is used for pressure reducing, the downstream pressure will be the same as the upstream when the water flow is shut off.

With a pilot type pressure reducing valve, the downstream pressure can be sustained as set even when the water flow is stopped.

Details: https://www.es-waternet.co.jp/product/list?series_id=94



Available Range:

We can design economical water pressure control systems using hydrostatic pressure control.

We can make total proposals such as described below:



Field	Water supply, Irrigation	Category	EPC
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Technical Overview

[Technical Features]

- Hydrostatic pressure control is performed using a pilot type pressure reducing valve.
- It is possible to maintain the set downstream pressure on the pressure reducing valve.
- The pipe type/size on the downstream side can be selected based on the pressure you set.
- The pressure reducing valve is operated by water and does not require electricity.

[Merits of Adopting Technology]

- In addition to the pressure reducing function, the following functions can be added as options. Water level control / Flow rate control / Pressure sustaining / Shutoff in an emergency.
- No new electrical work is required.

[Contributions to Solving Issues]

- On the downstream side, the pipe type can be selected based on the set pressure. Therefore, the material cost is more reasonable than cases where butterfly valves are used.
- It is possible to introduce the system even if the electric power supply is unstable.

Conditions for Using Technology

- A hydrostatic pressure control system cannot be constructed under conditions that exceed the usage range of the pilot type pressure reducing valves.
- The difference between the upstream and downstream pressure shall be 0.07 MPa or more.
- Diameter of pressure reducing valves: DN50-1200 for irrigation, DN50-800 for waterworks.

Company	ABE NIKKO KOGYO CO., LTD.		Establishment	1949
Employees	519		Website	http://www.abe-nikko.co.jp
Address	Gifu Headquarters: 3-13-3 Rokujoomizo, Gifu City, Gifu Tokyo Headquarters: SK Building-S, 3rd Floor, 2-3-18, Shimoochiai, Shinjuku, Tokyo			
Contact	Name: Hirokazu DEGAWA		Overseas Business Department	Title: Manager
	Tel: +81-3-5906-5631		E-mail: h.degawa@abe-nikko.co.jp	
Overseas Branches		Sri Lanka Liaison Office (Colombo)		
Possible Implementation Areas		Sri Lanka, Bangladesh, Africa, Middle East, South Pacific, Bhutan, Vietnam, etc.		
Supported Languages		English, Chinese		

Business Overview

[Core business] Construction of bridges and water tanks using prestressed concrete (PC) and manufacture of sleepers for railways.

- [Characteristics]
- Construction of the first PC tank in Japan
 - Pioneer of PC tanks --- Over 8,500 units in Japan
 - Top share in domestic market for railway sleepers

[Business description]

- Design and construction of PC structures (tanks, bridges, buildings, etc.)
- Design and manufacture of PC sleepers
- Design and manufacture of secondary PC products
- Design and construction of reinforced concrete (RC) structures
- Design and manufacture of secondary RC products
- Repair and reinforcement work for concrete structures (PC, RC)

[Main ordering party]

Ministry of Land, Infrastructure, Transport and Tourism, local governments, expressway companies, railway companies including JR



PC Tank
(Sri Lanka)

Achievements in Japan and Overseas

1981: Constructed PC tanks and PC bridges as a subcontracting business in Egypt and other countries. PC sleepers were exported to Vietnam and Indonesia.

2014: Sri Lanka, PC tank, participated in JICA support project "Verification Survey with the Private Sector for Disseminating Japanese Technologies for Pre-stressed Concrete Tanks for Water Supply and Sewage Treatment Systems"

2017: Sri Lanka Liaison Office established.

2018: Dhaka Mass Rapid Transit Line 6 construction started (3 companies JV, construction management by prime contractor).



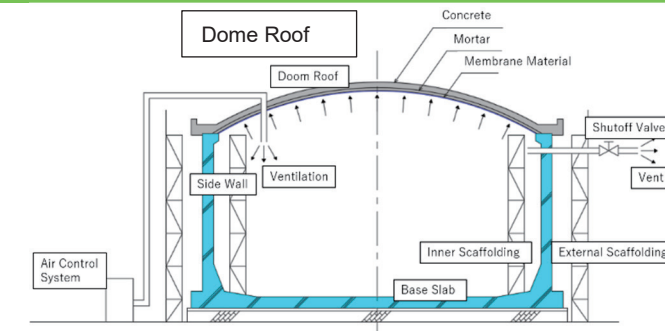
Railway PC Sleepers

Work System

- Cooperate in the design of low temperature tanks in the energy field.
 - Cooperate as a subcontractor for construction of bridges, tanks, etc. in more than 15 countries overseas.
- Dispatch of engineers, design verification, delivery of materials and equipment. Technical guidance and human resource development for local workers.
- Construction management as a prime contractor for the construction of Dhaka Mass Rapid Transit Line 6.

Air Dome Construction Method

Method of Constructing a Concrete Dome Using a Membrane Material Supported by Air Pressure



Field

Water storage tanks

Category

Construction method

Technical Overview

1. Applicable to the construction of concrete domes such as the roof of cylindrical PC tanks.
2. Replaces conventional support work and formwork with a construction method in which a dome is placed using a membrane material supported by air pressure and a mortar shell constructed on top of it serves as the formwork support.
3. Consists of three parts: Membrane material, mortar, and air control system.
4. Track record of more than 300 units in Japan.

[Technical Features]

1. Improvement of safety
In the past, total support was assembled on the inner surface of the tank, but since there is no such process, dangerous work is eliminated and safety is improved.
2. Simplification of work
Since the work for support work and formwork is greatly reduced, the work of skilled workers such as scaffolders and carpenters is reduced, and the work is simplified.
3. Shortening the construction period
Assembling and disassembling formwork support work and dome inner surface anticorrosion work are eliminated, shortening the construction period.
4. No need for anticorrosion measures and maintenance
The film is left as is and used as an anticorrosive material.
5. Eco-friendly
Since no wood is used as the formwork material, no waste material is generated, which saves resources and is environmentally friendly.

Conditions for Using Technology

Can be applied to tanks with an inner diameter of up to 50 m.

Company	SUGAWARA SETSUBI Inc.	Establishment	November 1998
Employees	61	Website	http://agile-innovation.co.jp/index.html
Address	3-21-2 Motoderacho, Tsushimashi, Aichi, 496-0034, Japan		
Contact	Name: Naoki Sugawara	Department: International Business Department	
	Tel: 0567-24-1743	E-mail: global@sugawara-setsubi.co.jp	
Overseas Branches		Vietnam (Da Nang City)	
Possible Implementation Areas		Vietnam (Da Nang City only)	
Supported Languages		English, Vietnamese, Japanese	

Business Overview

1. As a subsidiary of Agile Innovation Co., Ltd.*, the holding company of the group, we provide comprehensive water supply and sanitary plumbing services throughout Aichi Prefecture, including water supply and drainage works, general plumbing services, septic system installation, and renovation and maintenance work. We hold a market share of over 10% in the water supply and drainage installation sector in Aichi Prefecture.
 2. In human resource development, we have introduced an advanced craftsman training program that utilizes digital manuals and remote systems, enabling even young technicians to demonstrate skilled workmanship consistently at any job site.
 3. We operate our own aquaponics farm, enabling us to offer integrated solutions covering design, construction, and operational management.
- * Agile Innovation Co., Ltd. is a holding company that provides comprehensive services for residential and commercial properties, including real estate leasing, materials procurement, and LP gas sales agency, primarily in Aichi Prefecture. It operates 1 overseas location and 10 locations within Japan.



Achievements in Japan and Overseas

2019: Established SUGAWARA VIETNAM Co., Ltd. and began providing CAD-based design services.
 2025: Plans to expand staff, strengthen design operations, and launch local plumbing construction and aquaponics businesses.
 SUGAWARA VIETNAM Co., Ltd.: <http://sugawaravietnam.com/lien-he.html>

Our team

- Our skilled workforce includes professionals from diverse nationalities, including Vietnam, Myanmar, Mongolia, China, and Indonesia.
- Our company and group companies employ more than 50 skilled craftsmen, enabling us to handle over 130 construction projects per month.

One-stop services for all plumbing work, from design to construction

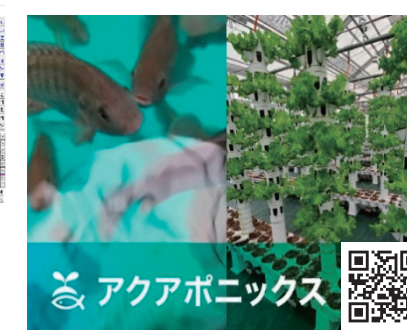
Our team of highly qualified plumbing engineers, licensed in Tokyo and Aichi, can handle both design and construction under a single contract.



Plumbing works



Design using CAD



Aquaponics

Areas of Expertise	Water supply and drainage system installation, CAD-based design, Aquaponics design and construction	Category	Method of construction

Technical Overview

[Technical Features]

Backed by a solid track record of successful projects, we handle everything in-house, from design and construction to after-sales support.

1. Leveraging experience from over 1,000 properties annually, we can handle projects ranging from single-family homes and condominiums to multi-tenant commercial building renovations.
2. We can install all major plumbing systems used in Vietnam, including septic systems, elevated water tanks, and water booster systems.
3. We provide end-to-end aquaponics services, covering design, construction, and operational management.

[Key Technical Strengths]

1. Through our local subsidiary, "SUGAWARA VIETNAM Co., Ltd.", we can respond quickly to on-site issues.
2. Our Japanese-speaking Vietnamese employees can explain construction processes in both Vietnamese and Japanese, enabling us to accurately understand clients' needs.
3. The absence of language barriers allows for effective technical discussions on design and plumbing.

[Addressing local challenges through our technologies]

1. High-quality Japanese plumbing, design, and installation expertise will be transferred to local personnel.
2. The expansion of "SUGAWARA VIETNAM" will lead to local job creation, contributing to the growth of the local economy.

Conditions for Using Technology

- We currently do not hold the qualifications required to submit plumbing applications to the construction departments of Vietnam's provincial People's Committees; however, our local subsidiary plans to obtain them in the near future.
- Our current procurement sources are limited to Japan; however, we plan to source locally in the future.



Company	TBR Co., Ltd.	Establishment	June 1960
Employees	34	Website	https://www.tbrjp.co.jp
Address	4-63, Odabuchi-cho, Toyokawa city, Aichi, 442-0844, Japan		
Contact	Name: T. KINOSHITA	Environmental Division	Title: Acting General Manager
	Tel: +81-5-3388-2171	E-mail: info@tbrjp.co.jp	
Overseas Branches	China (Shanghai)		
Possible Implementation Areas	East Asia, Southeast Asia		
Supported Languages	English (e-mail only), Chinese		

Business Overview

1. River purification business

For rivers that are heavily polluted by domestic wastewater, mainly in developing countries, river purification is carried out by using a contact aeration purification system that is easy to maintain and a floating island construction method with BIO-CORD installed.

2. Wastewater treatment business

Design, proposal and construction to strengthen the functions of wastewater treatment facilities in accordance with the wastewater treatment regulations of each country.

3. Manufacture and sales of braided ropes for fisheries, industry, and leisure

With a production base in China, we develop our business mainly in East Asia and Southeast Asia.

[Original Technology]

We have manufacturing technology for microbial fixed beds, fiber filter media, artificial seaweed, etc. using braided rope manufacturing technology.

Achievements in Japan and Overseas

1995: Established a local subsidiary in Shanghai, China

2010: Established a sales office in Shanghai, China

2010: "Dianchi Lake Water Purification Project", Kunming, China

2012: "GOMBAK River Package 2" Malaysia RIVER OF LIFE Business

2015: "Water Purification Project of Qiangwei Reservoir" in Lianyungang City, China

2016: "Jinze Reservoir Water Purification Project", Shanghai, China

2016: "Tainan Technology No. 1 Wastewater Treatment Project Reconstruction Project" Taiwan

2017: "GOMBAK River Package 3A & 3B" Malaysia RIVER OF LIFE Business

2019: "Galaxy Flood Reservoir Water Purification Project" Bekasi, Indonesia

Work System

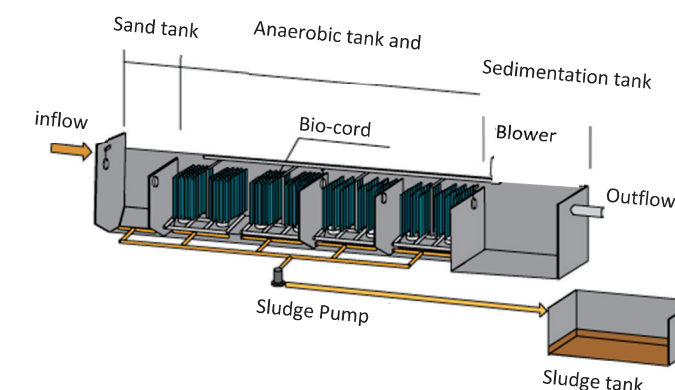
- We have a local subsidiary in China and cooperate with several construction companies.
- Have formed alliances with contractors in Malaysia, Taiwan and Indonesia.

Efficient Water Environmental Improvement System "BIO-CORD"

Low-tech water quality improvement sustainable system utilizing microorganisms for developing countries



Installed directly in shallow rivers



Aeration type

Field	River purification / water purification	Category	System
Registration, Awards	1997: Science and Technology Commissioner's Award		

Technical Overview

[Technical Features]

- "Bio-Cord" fixes a large amount of microorganisms to special fibers, and has the effect of increasing the self-cleaning effect of rivers by simply laying them in rivers.
- Compared to small-scale sewerage, the facility area is 1/3 and the maintenance cost can be reduced to 1/6 (in the case of a treatment facility of 500 m³/day).
- Since oxygen is deficient in rivers with a high pollution load, aeration type is used.
- It is used not only for river purification but also for wastewater treatment in agricultural villages and landfill leachate treatment.

[Merits of Adopting Technology]

- There is no difficult construction, allowing installation by workers in developing countries.
- Maintenance can be done by local workers by only removing the inflowing refuse and checking operation of the equipment.

[Contributions to Solving Issues]

- It has been adopted as a measure for domestic wastewater treatment until a sewage treatment plant is built. Since it can be installed in small community units, facilities can be built with a low budget.
- Since maintenance can be done by local residents, it contributes to the creation of employment.

Conditions for Using Technology

- In the location where it is installed directly in the river, it needs to be straight and the flow velocity is preferably 10 to 30 cm/sec.
- For rivers with a BOD of 100 mg/L or higher, use the aeration type.
- Cannot be applied for rivers with a large influx of earth and sand. Therefore, it is better to target small waterways through which only domestic wastewater flows, rather than large-scale rivers.
- In the case of rivers with a BOD of 400 mg/L or more, factory wastewater may flow in, so it is better to take measurements on the factory side, which is the source of pollution.

Company	Ogushi Drilling Co., Ltd.	Establishment	1906
Employees	25	Website	http://www.ogushi.co.jp
Address	Atsuhara 2202, Fuji City, Shizuoka, Japan		
Contact	Name: Hiromi AOKI	Tokyo Head Office	Title: Office Manager
	Tel: +81 3 6893 2960	E-mail: aoki@ogushi.co.jp	
Overseas Branches		Uzbekistan, Afghanistan, China, Korea	
Possible Implementation Areas		English speaking areas in the above countries and surrounding areas	

Business Overview

1. Well Drilling (Groundwater, hot spring, geothermal, gas, oil, earthquake/water quality observation wells)
2. Surveys incidental to wells (Electrical exploration, electromagnetic exploration, physical logging, underwater television camera surveys)
3. Equipment work incidental to wells (Well pump, hot water pump, air lift, filtration equipment, gasseparator, water supply / hot water, supply equipment)
4. Maintenance of wells and equipment

[Original Technology]

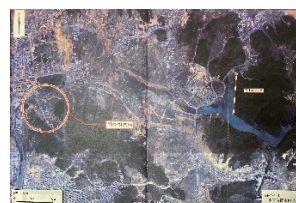
(1) Double Casing Method

We developed the "double casing method" as an improved method aiming for a larger amount and a higher temperature of hot water at the source in the event the amount of hot water pumped has decreased over time.

A heat-retaining fiberglass pipe is inserted as a straw tube to the bottom of the hole, and hot water from the hot spring is pumped from the hot water vein at the bottom of the hole with a higher temperature. At the same time, the gas dissolved in the hot spring can be eliminated, enabling more efficient hot water pumping.

Achievements in Japan and Overseas

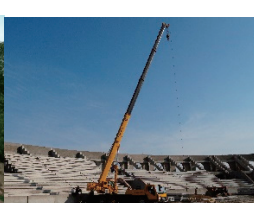
1. China: Hot Spring Survey in Lushun Konan Village
2. Uzbekistan: Water Source Development in Fergana Region Wide Area
3. Kazakhstan: Hot spring development in Almaty city (consulting)
4. Afghanistan: Water source development in Kabul (consulting)



1.China



2. Uzbekistan



3. Kazakhstan

Work System

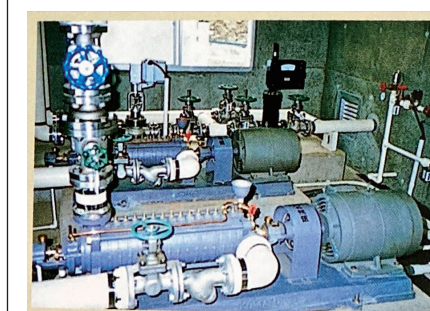
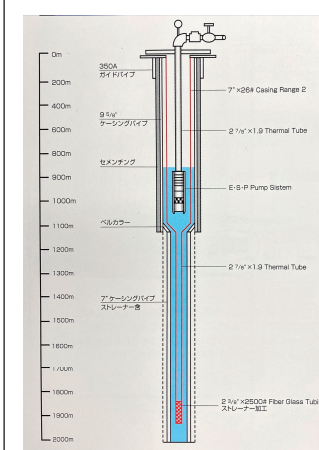
Uzbekistan: Local joint corporation

Afghanistan: Local joint corporation

China / Korea: Local affiliated companies

12000 Wells Drilled, 600 Hot Springs Drilled Since 1906

Double Casing Method for Hot Spring Wells



Hot spring pump room:
Yugashima Hotel Resort



Hot spring: Mikuni Onsen in Fukui

Double Casing method

Field	Drilling Groundwater	Category	Construction method
Registration, Awards	"Double casing method" Hot spring water pumping equipment and pumping method (Patent No. 3101183)		

Technical Overview

[Technical Features]

Water from hot springs excavated deep in the earth tend to decrease in volume and go down in temperature over time. As an improvement measure, the "double casing method" technology was developed with the aim of recovering the volume and temperature of hot water.

[Merits of Adopting Technology]

- Increases the volume and temperature of hot spring water, and recovers the decreased volume and temperature of hot water.
- Restoration of existing water sources is lower in cost and quicker than drilling new wells.

[Contributions to Solving Issues]

The requirements for hot springs are set by the "Hot Spring Law" or related laws in each country.

This is especially important in China, Taiwan, and other Asian countries where the development of hot springs has been remarkable in recent years. The standards and guidelines are even stricter than in Japan.

The "double casing method" is effective for existing hot springs. It aims to restore aging hot springs that no longer meet the "hot spring" standards by increasing the volume and temperature of hot water.

[Video Link]

<http://www.ogushi.co.jp/technology/>

Conditions for Using Technology

- The well diameter (casing diameter) of the source must be 150 mm or more.
- We will examine the effectiveness of this method by submitting the casing program and electrical logging results in advance.



Company	SAWATA CONSTRUCTION CO., LTD.	Establishment	1943
Employees	86	Website	https://www.sawata.com/
Address	1-23 Kaidenishimachi, Hofu, Yamaguchi, Japan		
Contact	Name: Shuji SAWASHIGE	General Affairs Department	
	Tel: +81-80-3522-2634	E-mail: soumu@sawata.com	
Overseas Branches	None		
Possible Implementation Areas	Vietnam		
Supported Languages	Vietnamese (Our two Vietnamese staff can correspond via e-mail.)		

Business Overview

1. General Construction Industry : Civil Engineering business, Building Service and design development
 2. Real Estate development business : Development of real estate for sales
- Weekly Diamond, Japanese Special Journal for Business, ranked us 186 out of 1100 companies in Japan. We were ranked number 1 in Yamaguchi Prefecture

[Original Technology]

- (1) Agricultural Civil Engineering: Underdrain Construction, seat pipe method, drains water off farmland properly.
- (2) Agricultural Civil Engineering: FOEAS, Farm Oriented Enhancing Aquatic System, maintains groundwater level.
- (3) Civil Engineering: PALTEM FR method, Pipeline Automatic Lining System Flooring method, repairs inside of sewage pipe
- (4) Cross Laminated Timber method: This method makes wood as strong as concrete

Achievements in Japan and Overseas

[Achievements in Japan]

- (1) Seat Pipe Method
- (2) FOEAS

March 2019 Scheme for Improvement of Agricultural Competitiveness
Infrastructure Scheme for Maintaining Farmland in Ueda Manabe region in Hofu

- (3) PALTEM FR method

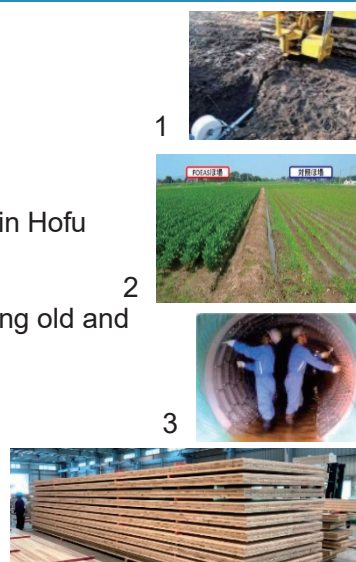
September 2020 Scheme for life Elongation of Public Sewage ; improving old and dirty pipe in Hofu

- (4) Cross Laminated Timber method

October 2019 Construction of New Head Office Building

Total Floor Area 1,192.8 m² CLT used for this building : 97.3853 m³

4



Work System

Sending our Japanese engineers, supervisor, and contractor is negotiable. Bringing in your equipment is also negotiable.

PALTEM Flooring method

This method regenerates and renovates decript pipes

Case of continuous step

Tube type : RC rectangular pipe of Cast-in-place concrete

Size : W=2,250mm T=2,250mm

Extension : 61m

linear : Straight line with 8 steps in the vertical direction

Step : 450mm



The PALTEM FR method is reliable because it is used in various shapes.

Field	Renovation of sewage pipe, maintenance of water	Category	Construction method
Registration, Awards	We are certified by the PALTEM method association		

Technical Overview

[Technical Features]

We attach high density polyethylene fitting material and surfacing material with an iron ring assembled inside pipes in the tube axis direction. The space between the existing pipe and renovation facing is filled with filler in order to renovate the pipes. The renovated pipe is composite of the existing pipe and renovation material.

[Merits of Adopting Technology]

Our custom-made design can respond all types of requests: Any faults or strength problems in pipes

[Contributions to Solving Issues]

For the problem of deteriorated sewage pipes and pipes for supplying agricultural water, we preserve them and prevent these pipes from losing their function.

[Video Link]

<http://www.paltem.jp/method/movie/fr201212.wmv>

Conditions for Using Technology

Round Form: 800 – 3,000 mm

Not Round Form: Short side; More than 800 mm, Long side; Less than 5,000 mm

Company	SAKAEGUMI Corporation	Establishment	1955
Employees	43	Website	https://sakaegumi.jp/
Address	Itazawa 9-19-1, Kamigo-cho, Tono-shi, Iwate 028-0776, Japan		
Contact	Name: Yoshihiro SASAKI		
	Tel: +81-198-65-3032	E-mail: info@sakaegumi.jp	
Overseas Branches	Brazil (under preparation)		
Possible Implementation Areas	Brazil, Colombia, Mexico, USA		
Supported Languages	Japanese, English, Portuguese		

Business Overview

1. General construction business.
 2. Repair and reinforcement of concrete structures.
 3. Deterioration investigation, diagnosis, and design of repair and reinforcement for concrete structures.
 4. IP leasing business for Crack Injection technology (37 companies in JAPAN as of December 2025).
 5. Management of the Society for Pressure Adjustment Grouting Technology (PAGT Association).
- [Original Technology]**
- (1) Sakae Adjustable Pressure Injection System (SAPIS): Patented in Japan, the U.S., Brazil and Indonesia.
 - (2) Sakae Infrastructure Maintenance and Management system (SIMMS): For the Life Prolongation of concrete structures.

Achievements in Japan and Overseas

1. Domestic Achievements: approx.500 construction projects, as of December 2025.
2. Overseas Achievements:
Since 2018, the Company has actively expanded its overseas operations after being selected for JICA's SDGs Business Supporting Surveys. Starting with the first application of adjustable pressure injection technology in Brazil, the Company has built a solid track record in Indonesia, Brazil, Mexico, and Colombia. Key achievements include technical certification by the Indonesian government, the execution of crack injection works on major infrastructure projects, and multiple applications in public and transportation-related facilities.
In addition, the Company has established business partnerships and signed Memoranda of Understanding (MoUs) with local organizations in Brazil, Indonesia, and Mexico, concluded a sales agency agreement in Japan with a U.S.-based concrete manufacturer, and conducted METI-commissioned feasibility studies and on-site technology demonstrations in Colombia. In recognition of these international initiatives, the Company received the 8th Japan Construction International Award (Small and Medium-sized Construction Enterprise category), presented by the Minister of Land, Infrastructure, Transport and Tourism of Japan, in 2025.



Crack injection work carried out at the Sao Paulo Luz Station Building (Brasilia)



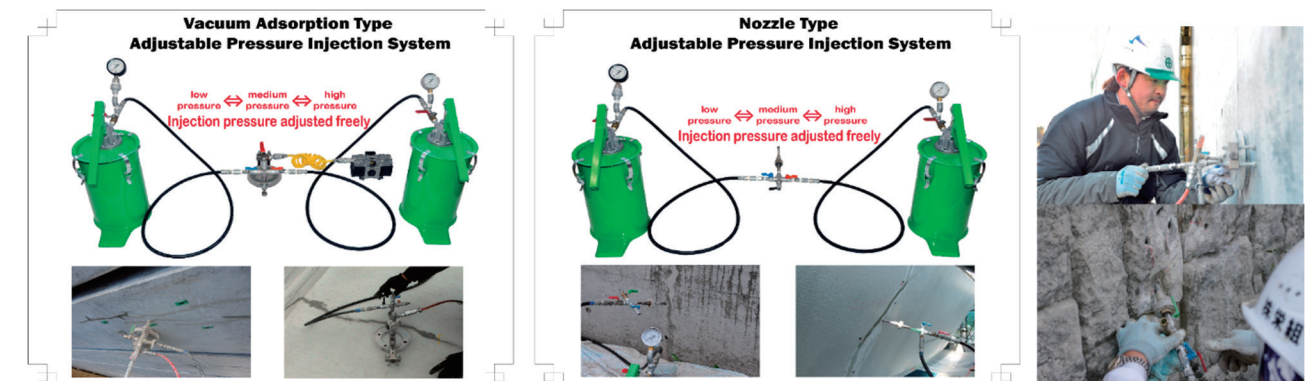
8th Japan Construction International Award – SME Category (MLIT Honoree)

Work System

We will provide crack injection equipment and technical services, and promote the adoption of preventive maintenance technologies for concrete structures by training local engineers in repair and reinforcement techniques. We offer leasing and licensing of our patented crack injection technology to partner companies. In addition, we will collaborate with local vocational education institutions to develop skilled repair and reinforcement technicians, contributing to develop local technical skills.

Crack Injection Method, SAPIS (Sakae Adjustable Pressure Injection System)

Enables free adjustment of injection pressure and precise injection of crack repair material.



Field	Repair of concrete structures	Category	Construction methods and equipment
Registration, Awards	NETIS:TH-110002-A (SAPIS Vacuum Adsorption type), TH-110003-A (SAPIS Nozzle type), Patented in Japan, the U.S., Brazil and Indonesia		

Technical Overview

[Technical Features]

Improved repair performance: Injection pressure can be freely adjusted from low to high, enabling injection into even very fine cracks. Multiple repair materials can be injected continuously, and proprietary construction management standards have been established.

High versatility and adaptability: A wide range of repair materials can be injected, from organic to inorganic materials, for both civil engineering structures and buildings.

Reduced environmental impact: Zero waste discharge and shorter construction periods reduce environmental impact, while minimizing loss of injection materials.

[Merits of Adopting Technology]

The following merits can be obtained while maintaining the same construction cost as before.

1. Crack repair and structural integrity improvement can be performed simultaneously.
2. The technology can be applied to various types of cracks that are difficult to address with conventional methods, within the same construction period.

[Contributions to Solving Issues]

Extends the service life of existing concrete structures and reduces infrastructure maintenance costs.

The life cycle cost can be reduced and efficient construction investments can be made.

[Video Link]

<https://www.youtube.com/watch?v=8olrVws-3Us>

<https://www.youtube.com/watch?v=cA8j97qG-GE>

<https://www.youtube.com/watch?v=1GVMFIRXqu8>

Conditions for Using Technology

There are no specific natural conditions (such as weather or temperature) that restrict construction.

Applicable to high or narrow locations, provided sufficient space is available for manual work.

Construction work in water is not permitted.

Company Name	EARTH SHIFT CO.Ltd	Establishment	August, 1983
Employees	88	Website	https://www.earth-shift.co.jp/
Address	2-17-16 Yamazaki Aoi-ku, Shizuoka-shi, Shizuoka-ken 421-1213 Japan		
Contact	Name: Satoshi Murakami		Title:
	Tel: +81- 54-278-8309		E-mail: soumu@earth-shift.co.jp
Overseas Branches	None		
Possible Implementation Areas	Depending on the construction content, we can handle domestic and overseas projects.		
Supported Languages	Japanese and English		

Business Overview

As a general construction company, we operate in a wide range of fields, including general civil engineering, infrastructure maintenance, and ICT utilization. In addition to our construction division, we also provide design services as a consultant. Our construction division serves as a prime contractor, primarily for civil engineering projects in public works projects. While we are a prime contractor, we also employ many directly-managed on-site workers, enabling us to perform our own construction work. As a result, we own approximately 20 pieces of heavy machinery, including the latest ICT heavy equipment, and employ many employees with not only technical skills but also specialized skills. We are also working toward internationalization, such as by hiring technical intern trainees for "construction machinery installation." In our infrastructure maintenance business, we inspect structures using "rope access," as well as conduct surveys and repairs using specialized construction methods. We handle many life-extension methods for aging Japanese structures, and operate nationwide. Our consulting division provides design services, including road and bridge design, as well as undertaking bridge inspection work.

We also focus on the maintenance of wind power generation, which holds an important position among renewable energy sources. As the stable operation of wind power facilities requires advanced technology and safety management, we have strengthened our inspection and repair system by employing specialized engineers, and are working to improve quality and safety.

As the introduction of wind power generation is expected to expand both domestically and internationally, we will continue to build a system that can reliably meet increasing demand by further improving our technical capabilities, introducing the latest maintenance methods, and actively training engineers with rope access skills.

In addition, through our group companies, we are involved in a business that arranges the acceptance of technical intern trainees from overseas, thereby contributing to the development of international human resources.

.Achievements in Japan and Overseas

[Rope Access Technology]

We use rope access technology to inspect and repair infrastructure structures in areas that are difficult to reach with specialized vehicles or installations (e.g., overpasses, trusses, hi-beams, suspension bridges, stilts, cable-stayed bridges, and other special structures). By manipulating ropes, we can inspect even the smallest details, allowing for close-up visual inspection and detailed damage investigation, which is why we receive requests from all over Japan.

We employ some of Japan's top technicians, with a track record of inspecting over 500 bridges per year. In addition to bridges, we also have experience inspecting and repairing difficult-to-access locations such as wind turbine blades, slopes, and caves.

In May 2025, we signed a "Vestas Japan Certified Service Provider (VJCSP)" agreement with Vestas Japan Co., Ltd., a global wind turbine manufacturer. As a Vestas-certified service provider, we have fully entered the wind power maintenance business.

We leverage our technology and experience to provide high-quality services in wind power maintenance. Key Applications: Ministry of Land, Infrastructure, Transport and Tourism, local governments, railways, highways, Vestas Japan, etc.

[Single i Method]

This is a micro-destructive inspection method that directly examines the internal condition of concrete, rather than simply diagnosing damage to bridge concrete decks. By inserting a high-performance endoscope, cracks as small as 0.01mm can be measured. Drilling a 9mm hole minimizes damage to the concrete, making this a highly sought-after method.

Key Applications: Expressways, etc.

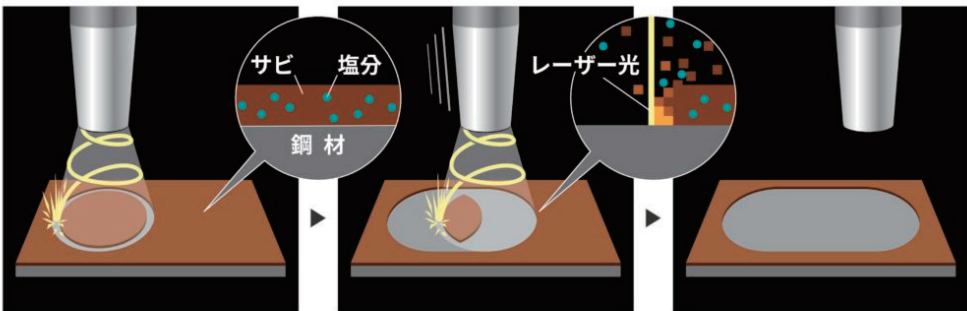
[ICT Utilization - Drone Surveying]

UAVs (drones) and terrestrial laser scanners (LS) enable high-density 3D surveying in a short time. The use of drones improves work efficiency and reduces costs. Furthermore, even in areas that are inaccessible due to disasters, drones equipped with high-performance cameras can be used to check for damage to facilities and equipment from a safe distance.

Key Applications: Local governments, etc.

Laser blasting method CoolLaser®

Technology to remove rust and paint using high-power lasers



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Field	Bridge construction, etc.	Category	Construction method
Registration, Awards	- Registered in the NETIS New Technology Information System (Registration No. CB-230005-A) - Japan: Patent No. 5574354 - USA: Patent No. US-9868179		

Technical Overview

■ Technology Features

Paint Removal: A high-intensity laser beam focused on a single point on the surface is scanned in a circular pattern while rotating at high speed, instantly dissolving and thermally shattering the paint, rust, and metal on the surface.

Clean, abrasive-free method: A dust collection system collects generated dust, simplifying on-site protection and enabling lighter protective equipment.

Salt Removal: Reduces salt levels from an original level of over 1000 mg/m² to 4.5 mg/m², significantly below the standard limit.

■ Construction Benefits

- **Lifespan Extension:** By removing even the invisible salt that causes rust, recurrence is less likely.
- **Improved Workability:** Light work, effective even in tight spaces and on uneven surfaces.
- **Clean:** This is an environmentally friendly technology, as it produces little waste other than the material being removed.



Conditions for Using Technology

- It is not suitable for highly reflective materials such as stainless steel, or thin or flammable materials.
- In addition, we are currently unable to clean molds and other items inside factory facilities.
- We do not undertake contract processing, where we receive products from customers and process them to suit their purposes. Currently, we are primarily involved in infrastructure maintenance such as bridges.

Company	TOYO KIKAI Co., Ltd.	Establishment	1947
Employees	100	Website	http://www.toyo-kikai.co.jp/
Address	1-5-30 KimachiDori Aoba-ku Sendai, Miyagi, 980-0801, Japan		
Contact	Name: Hiroshi SASAKI	Title: CEO	
	Tel: +81-22-222-9831	E-mail: sasaki_h@toyo-kikai.co.jp	
Overseas Branches		Thailand (Bangkok)	
Possible Implementation Areas		ASEAN countries	
Supported Languages		English	

Business Overview

1. Maintenance and Repair Services for Railway Maintenance Vehicles.
Supporting the railway industry by supplying good quality railway maintenance vehicles.
A maintenance agent of;
Nippon Plasser K.K.
Niigata Transys Co., Ltd.
Santo Co., Ltd.
NICHIJYO Corporation (cooperation factory)
2. R&D OF SPECIAL MAINTENANCE VEHICLES.
Developing and manufacturing special vehicles based on customer needs and wants.
3. R&D UNIQUE JIG AND MACHINERY FOR CIVIL ENGINEERING AND RAILWAY INDUSTRY.
Better tools for improving efficiency of field work for railway and construction business.

Achievements in Japan and Overseas

[TRAM (Thai Railway Advanced Machinery Co., Ltd.)] A subsidiary company of Toyo-Kikai
Launched office in Bangkok, Thailand in September 2019
Began maintenance and repair activities of railway maintenance vehicles.
We respond to monthly and annual maintenance needs as well as emergency repair work.
Planning to expand business into Asian countries in the near future.
Our local partner, Thai Agency Engineering Inc., supports manufacturing capability for TRAM.
TRAM utilizes a human exchange program supported by ATOS to improve local engineering skills.

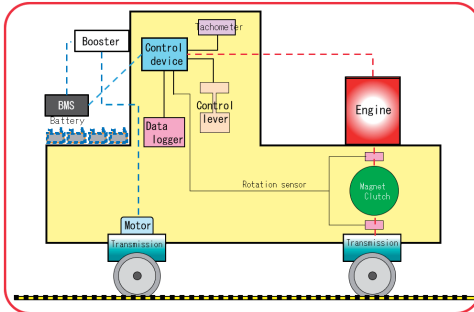
[Toyo-Kikai Co., Ltd. Sendai, Japan]
Repair and maintenance of more than 400 special vehicles in Japan over 70 years.
Have a good reputation for inspection skill and immediate response for emergency trouble.

Work System

JAPAN: 100 employees. 2 plants and 4 branch factories.

Developing railway maintenance vehicles tailored to local needs

Please contact us concerning problems that need to be solved at the work site.



- Three Key Components:
1. Hi-Brid System (with an engine and motor for dynamic force to avoid stopping on the rails.)
2. Magnet Clutch (magnetic clutch able to hold high volume driving force with no contact.)
3. B. M. S. (Battery Management System designed to extend life of lead acid batteries)

Field	Support improving on site work	Category	Developing machine, equipment
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Technical Overview



[Developed Aerial Work Platform]
Used for inspection of high tunnel walls and ceilings. The machine features a platform that can move up and down as well as to the left and right a maximum of 400 mm.
This function eliminates the need for workers to reach out from the vehicle to the wall which is unsafe.

[Dust separator for ballast stone]
Crushed ballast stone must be cleaned at a certain interval. Traditionally, ballast stone was cleaned off site. This machine eliminates “stone replacement work” by performing the job on site.
Dimensions Width: 2,300 mm
Length: 900 mm Height: 1,530 mm



Conditions for Using Technology

We will improve your on-site civil engineering work that entails many difficulties involving unnecessary work, uneven quality, and unsafe work. We help enhance civil engineering work by developing machines and equipment that makes your job easier.

Company	KFC Ltd.	Establishment	March, 1965
Employees	307	Website	https://www.kfc-net.co.jp/
Address	3-2-17 Nishi-Tenma, Kita-ku, Osaka, Japan		
Contact	Name: Futoshi Matsushima	Sales Planning Department	General Manager
	Tel: +81-6-6361-6040	E-mail: imsa-grp@kfc-net.co.jp	
Overseas Branches	Thailand (Bangkok, JV) China (Hebei Province, Subsidiary)		
Possible Implementation Areas	Thailand		
Supported Languages	English (e-mail only)		

Business Overview

Manufacture and Sales

Tunnel excavation materials, Post-installation anchors
Rivet screws, Concrete repair materials

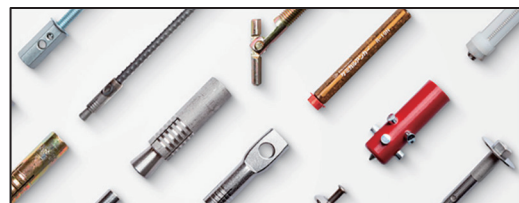
Civil engineering business

Road and railway installation work,
Tunnel interior construction,
Seismic retrofitting of civil engineering structures

- Strength in fasteners for civil engineering
- Top market share in Japan for rock bolts used in NATM (mountain tunneling methods)
- Extensive experience in seismic shear reinforcement of civil engineering structures using the RMA method in Japan

Original Technology

A wide range of proprietary technologies in fields such as concrete repair and reinforcement, seismic retrofitting, and safety countermeasures



Achievements in Japan and Overseas

2012: Establishment of Tangshan Rixiang Construction Materials & Technologies Co.,Ltd.

Tunnel excavation material

2009: Algeria East-West Expressway FIT Method (GFRP Pipe Forepiling Method, Longitudinal Face Reinforcement)

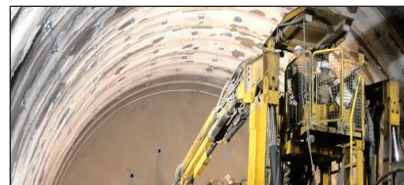
2013: Hong Kong MTR XRL825 Construction Section Me Method (Small-bore Steel Pipe Injection Type Long-nose Receiver/Long-span Mirror Reinforcement Work)

2015: Vietnam Haivan Tunnel Waterproof Sheet (High Panel SS Sheet)

2016: Singapore LTA MRT T207 Silica Resin PUIF Construction Method (Resin-based Injection-type Front Work)

2019: Indonesian ASAHAN3 Hydropower Plant AGF Method (Grouting-type long-nose receiving)

2020: Nepal Nagdonga Pass Road Tunnel (SN Twist Rock Bolt)



Materials for overseas markets

NINJA POWER SHEET

2019: Thailand EXAT (Expressway Authority of Thailand)
Trial construction on an actual bridge

NINJA MESH

2024: Thailand EXAT preventing peeling at Bang Na intersection

NINJA CF SHEET

2025: Thailand Siracha Harbor CFRP reinforcement of bridge



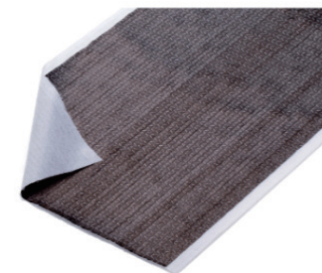
Work System

On-site construction is possible. Send Japanese engineers to guide the locals as needed.

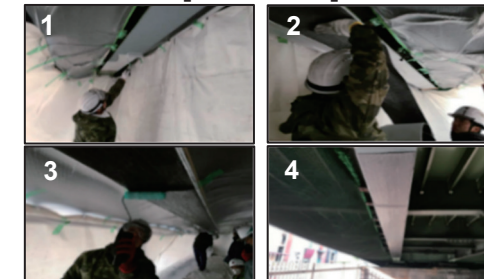
NINJA POWER SHEET

Repair and reinforce various structures using special laminated fiber sheets that offer excellent workability and superior reinforcement performance.

[NINJA POWER SHEET]



[Procedure]



1. Applying adhesive
2. Sheet attachment
3. Applying impregnating material
4. Completion

Field	Repair and reinforcement of various types of concrete and steel structures	Category	Construction methods and materials
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Technical Overview

Technical Features

- Special laminated fiber sheet: This method uses special laminated fiber sheets layered with carbon fiber, bonded to structures with adhesive resin, and coated with a high-performance impregnating material.
- Easy construction, no experience required for work: No need for defoaming work due to highly permeable impregnating material
- High basis weight carbon fiber sheets can be used: Up to 2,400 g/m² per layer of high basis weight carbon fiber sheets can be installed.
- Short construction period: Multi-layer application can be completed in a single process, significantly reducing construction time.
- Excellent flexibility: The flexible sheet allows easy installation around corners and complex shapes.

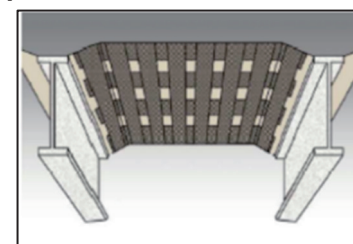
Merits of Adopting the Technology

- Compared to the conventional method (Continuous fiber sheet method), the construction cost can be reduced by shortening the construction period.
- The high-performance impregnating material ensures complete penetration, delivering superior construction quality.
- Since no prior experience is required for applying and impregnating the sheets, construction workers can be easily recruited.

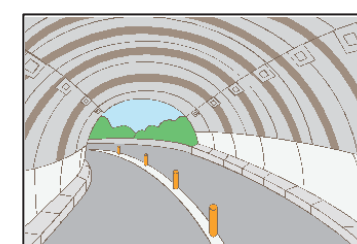
Contributions to Solving Issues

- Traffic impact can be minimized because bridge reinforcement work can be carried out without restricting traffic on the main lanes.
- A shorter construction period reduces congestion caused by traffic control under bridges when using high-lift work vehicles.
- Simple construction makes it easy for employers to recruit workers.
- Existing structures can be reinforced cost-effectively without large-scale construction work.

Applicable Structures



Bridge



Tunnel



Box culvert

Conditions for Using Technology

- Dries concrete and steel surfaces if they are wet due to condensation etc.
- Remove the fragile parts on the adhesive surface.



Company Name	ASAHI Co., Ltd.	Establishment	March 11, 1987
Employees	28	Website	https://asahi.nagoya/
Address	1-16-2 Shinagawa-cho, Minato-ku, Nagoya, Aichi, Japan		
Contact	Name: Hiroki Mito	Title: President & CEO	
	Tel: +8152-387-8650-	E-mail: mito@asahi.nagoya	
Overseas Branches		Hanoi, Vietnam	
Possible Implementation Areas		Vietnam	
Supported Languages		Vietnamese	

Business Overview

We were founded in 1987 in Nagoya, Aichi Prefecture, starting with the installation and rental of construction gondolas.

Today, we continue to grow with three core business pillars: the gondola business, the scaffolding business, and the large-scale renovation business.

Company History

- **1987** – ASAHI Lease Co., Ltd. established
- **2009** – Scaffolding Division launched (Wedge scaffolding construction & rental)
- **2010** – Company name changed from ASAHI Lease Co., Ltd. to ASAHI Co., Ltd.
- **2015** – Renovation Division launched
- **2025** – V-ASAHI established (Hanoi, July)

Corporate Philosophy

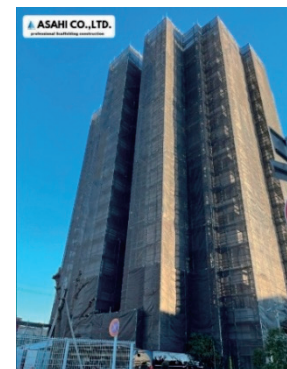
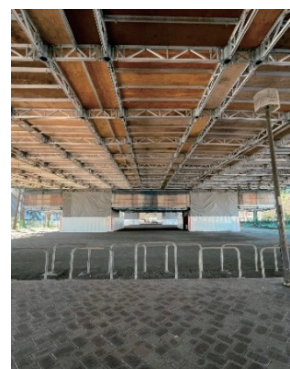
“A company that grows together with its customers.”

Since our founding, we have valued *trust and integrity*, consistently delivering sincere and reliable construction through skilled professionals. We will continue to create new value with heartfelt dedication to ensure customer satisfaction.

Achievements in Japan and Overseas

We have served numerous clients, including major general contractors.

In Vietnam, we provide safe and secure scaffolding based on the reliable skills and experience cultivated in Japan.



Work System

Japan

- Approximately 40 skilled craftsmen with solid technical expertise carry out construction.
- Because we handle temporary construction as a full-service (materials + labor) provider, we are able to deliver attentive, customer-oriented service.

Your Concierge for Gondolas, Scaffolding, and Renovation Work

Ensuring safety at construction sites in Japan and Vietnam through reliable technical expertise.



Field	Temporary Construction / Renovation Work	Category	Temporary Construction: Gondolas, Scaffolding Renovation Work: Painting, Waterproofing, etc.
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Technical Overview

■ Key Features

We provide peace of mind and high quality through customer-friendly communication and a strict commitment to safety-first construction.

■ Advantages of ASAHI

- We handle everything in-house, from assembly to dismantling of temporary structures.
- We deliver reassurance by preparing complete and accurate safety documentation.
- By supporting the construction industry facing labor shortages, we reduce the burden on prime contractors while delivering safe and high-quality services.

■ Addressing Issues in the Target Country

Contributing to the sustainable development of Vietnam's growing construction industry by promoting high-quality, safe scaffolding that meets Japanese standards.





Ocean Works Asia (OWA Group)

Company Name	Ocean Works Asia	Establishment	February 1971
Employees	Appx. 100pax.	Website	https://www.owa.com.sg/
Address	2-2-2 Irifune, Chuo-ku, Tokyo, Japan 104-0042		
Contact	Name: Takuma Iida	Sales Department	Title: Manager
	Tel: +81-80-1155-4244	E-mail: iid@owa.co.jp	
Overseas Branches	Singapore / Indonesia / Myanmar / Thailand		
Possible Implementation Areas	South East Asia & Middle East		
Supported Languages	English		

Business Overview

We provide all the offshore / underwater construction work with underwater technique that we have cultivated over 50 years experience.

Founded as a Japanese company, after several decades of history, now we are providing the services to the overseas, mainly in Southeast Asia and the Middle East conducted by international office in Singapore.

Together with experienced technique and prideful staff such as divers, ROV pilots and engineers, we, Ocean Works Asia continue the challenge to delivery highly-competitive technical solutions with considerate maintenance of natural environment by community-based approach.

Achievements in Japan and Overseas



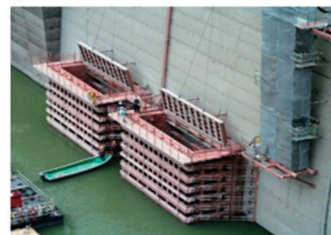
Offshore Construction



Any Diving Work for Deep & Shallow



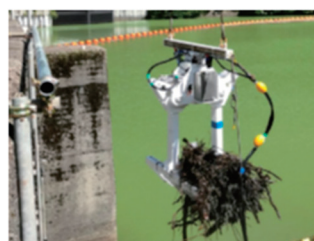
Inshore Construction



Hydro Power Plant Water Dam



ROV & Underwater Drone



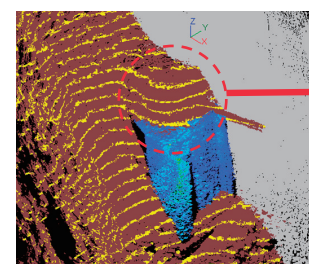
Underwater Mechanization Tools

Work System

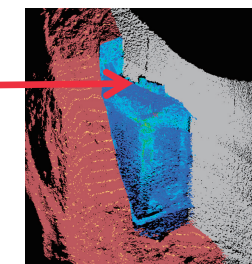
Depending on project requirement, we will dispatch Japanese and local staff individually or in combination.

UNDERWATER SUNKEN WOOD REMOVAL UNIT

Possible to Remove Sunken Woods from Dam Lakes and Rivers Safely without Diver



3D Sonar Check before Removal



3D Sonar Check after Removal

Field	Dam Lakes & Rivers etc.	Category	Underwater Mechanization
Awards	Published in Electric Power and Civil Engineering Magazine (January 2017)		

Technical Overview

Carried out without diver even in dangerous underwater environments with poor visibility.
Furthermore, Water Pressure driven, making it environmentally friendly!

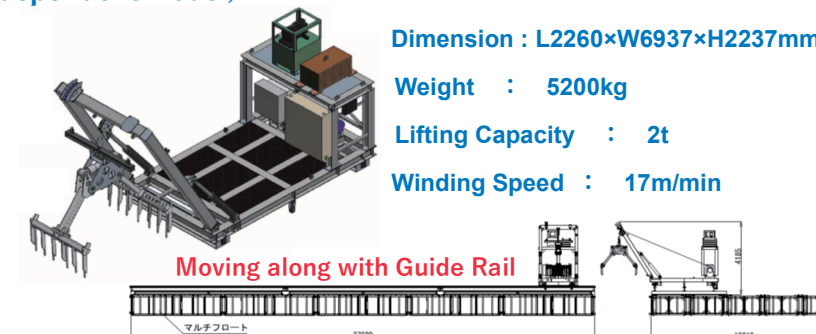
Crane Attached Model



Dimension : L2260×W1620×H2200mm
Weight : 700kg
Power : Open Activity 1t / Close Activity 0.6t
Attached Sensor : Rotation · Depth · Load etc.

Choice 2 Claw Model
(Flat Bar Model & Round Bar Model)

On Floating Pontoon Model (Independent Model)



Dimension : L2260×W6937×H2237mm
Weight : 5200kg
Lifting Capacity : 2t
Winding Speed : 17m/min

Moving along with Guide Rail

Conditions for Using Technology

- In case possible to lift the unit from the dam body, Use a Crane Attached Model.
- In case impossible to lift the unit from the dam body, Use Independent Model.

Company	Toyo Kensetsu Kohki Co., Ltd.		Establishment	1933
Employees	215		Website	http://www.toyokensetsukohki.co.jp/english/
Address	2-4-15 Sangenya-Higashi, Taisho-ku, Osaka 551-0002, Japan			
Contact	Name: Ryosuke SONE	Global Business Department		Title: Manager
	Tel: +81-6-6552-0507		E-mail: globalbiz@toyokensetsukohki.co.jp	
Overseas Branches		None		
Possible Implementation Areas		Asia, Oceania, Middle East, Africa, etc.		
Supported Languages		English, Chinese, Korean		

Business Overview

Though we rarely see rebar in our daily life, rebar are incorporated into architectural and civil engineering structures, and play an important role in maintaining the strength to withstand disasters and accidents. We at TOYO contribute to safe and secure life by providing the machines and systems to process rebar with high quality and high efficiency.

[Development, manufacture and sale of rebar processing machines]

We respond to customers' requests for cutting and bending rebar in various situations based on our proven trust and performance for over 60 years of experience in the rebar processing machine business.

[Comprehensive proposal of rebar processing factory]

We propose a line system to increase the efficiency at the site where the rebar is discharged after cutting and transferred to bending station; and a centralized management system for rebar calculation, raw material loading, rebar processing, and transferring & shipment of processed products.

[Global sales]

We provide solutions best-fitted to each customer and after-sales services in cooperation with our local partners in South Korea, Taiwan, Singapore, Malaysia, Vietnam, Thailand, Indonesia, the Philippines, Myanmar, Cambodia, etc. We also have an extensive sales record to the Middle East and Africa.

Achievements in Japan and Overseas

1971: First overseas deal triggered by an inquiry from Singapore.

2008: Delivery of automatic machines to the first rebar processing factory of a major general contractor in South Korea.

2012: Our automatic machines selected to meet the very strict requirements for rebar processing for precast concrete elements for Hong Kong-Zhuhai-Macao Bridge construction project.

2017: Delivery of automatic machines to the largest steel mill in the Philippines. The machines are used for the Manila Metro Rail Transit System construction project.

2018: Delivery of automatic machines to the first rebar processing factory in Myanmar.

2019: Delivery of rebar benders for high strength rebar to a major general contractor in the Philippines. The machines are used for the North-South Commuter Railway construction project site.

2019: Achieve over 80 percent market share for rebar processing machines in Japan according to Teikoku Databank's research.

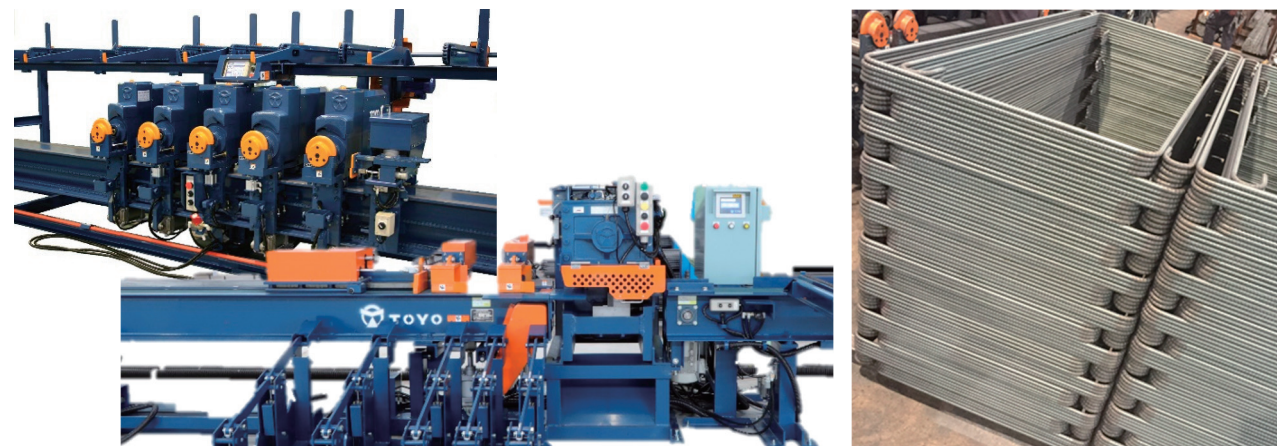
2020: Delivery of automatic rebar processing machine to a major steel manufacturer during Covid-19 pandemic.

Work System

We basically send our engineer(s) to local customers' factories at the time of new installation, commissioning and operation guidance for automatic machines. We are now expanding our service network so that we can provide attentive service for our products in cooperation with our local partners. In areas without a local partner, we respond as soon as possible by phone, email, messaging app, etc. to cope with customers' inquiries on operation, maintenance, and troubleshooting. To further improve customer satisfaction, we are now strengthening support by developing IoT equipment.

High-quality and high-precision rebar processing

Reformation of rebar industry – achieve sustainable development by saving labor and wastage



Field	Rebar/reinforcement work	Category	Machine and system
Registration, Awards	Many patents, for example, rebar counter, combination cutting system, casting structure to achieve low noise emission, etc.		

Technical Overview

[Technical Features]

- Preciseness: Processed dimensions ± 1 mm, processed angles $\pm 1^\circ$ excluding the effect of rebar surface. (This precision does not apply to some models.)
- Trusted processing quality: To meet the strict construction standards in the earthquake prone country of Japan.
- Automatic machine's productivity per worker: Approx. 3 to 5 times compared to that with conventional manual machines. (Average production per worker with seven hours: 1~2 tons at construction site with manual machines, and 5~7 tons in factory with automatic machines)
- Scrap reduction: Rebar scrap can be reduced by cutting out different lengths from one raw material.

[Merits of Adopting Technology]

- Uniformly aligned products make the assembling and installation of rebar easier and faster.
- Our products can handle the processing of high-strength rebar with higher earthquake resistance and of screw rebars which can reduce the labor on site and shorten the construction period. Our machines are advancing together with the technology in the industry.

[Contributions to Solving Issues]

- Labor saving machines solve the issues of labor shortages and labor wage hikes.
- By processing rebars in a factory, no rebar fabrication space is needed at the construction site and workers' safety will be enhanced. Other advantages are reduction of rebar wastage by product management and quality control in a factory, and prevention of construction delays due to bad weather.

[Video Link]



Automatic Cutting Machine: CS-185HB



Automatic Bending Machine: TBS-13-6-NC.

YouTube Channel



Conditions for Using Technology

- Use at ambient temperature of 0 to 40°C.
- Make sure to take measures against rainwater when machines need to be installed outdoors.
- Use stabilizer or other measures against voltage fluctuation.
- Consult us regarding voltage, breaker capacity, and other details.

Company	MATSUZAWA KAWARATEN Inc.	Establishment	June, 1948
Employees	18	Website	https://www.yane119.net https://7tsubaki.com
Address	3-32 Yokobori, Nakagawa, Nagoya City, Aichi Prefecture, Japan		
Contact	Name: Koki MATSUZAWA	Overseas Business Department	
	Tel: +81-70-8422-9287 (JPN)	E-mail: koki-jpn@yane119.net	
	Tel: +63-977-778-3550 (PHIL)		
Overseas Branches		Philippines (Manila), Vietnam (Hanoi)	
Possible Implementation Areas		Philippines, Myanmar, Vietnam, Brunei and ASEAN regions	
Supported Languages		English, Filipino (Tagalog)	

Business Overview

Nanatsubaki is a 100% subsidiary company of Matsuzawa Kawareten which handles UV-C lamp business.

1. OFF-GRID Business: Composed with Solar-panels and LPG gas-generators to provide electricity in unconnected areas. Used batteries are recycled and used as storage batteries.
 2. UV-C Manufacturing/Sales: Deactivate virus and bacteria with UV-C lamp.
 3. Container Business: Remodel marine used containers to provide comfortable life-style space.
- Combining these 3 technologies may provide COVID-19 treatment facility to ASEAN countries and Africa regions.

Examples: Refurbish marine used containers for habitats, warehouses and other facilities may provide space for various needs. Easier to transport and easy to install. Each container may be adjusted and customized for individual needs.

Facilities composed of containers can be used for habitats, clinics, online education facilities; and toilets with UV-C lamps may create safe, smart container towns (communities) anywhere.

Achievements in Japan and Overseas

- 2010: Established Nanatsubaki, Started accepting disabled employees.
- 2012: Overseas expansion/Established Kawara factory in Vietnam/Established CAD center in the Philippines.
- 2016: Vocational training school "Tone-Numata Techno Academy" as Director
- 2020: "Regional disaster prevention cooperation office" and "Designated emergency evacuation building", agreement signed with Nagoya-City

We have installed more than one hundred UV-C lamps

in a manufacturing factory of NIDEC in PEZA zone.

UV-C 254 and 222 have been installed in toilets, factories, canteens and shuttle buses. Installing UV-C lamp inside the

shuttle bus may prevent the virus from outside the factory from entering the factory.

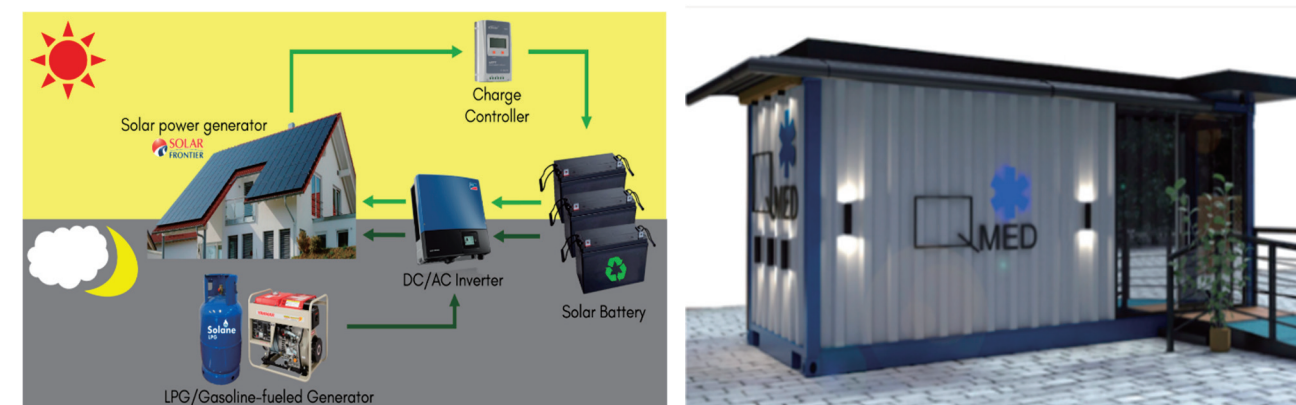


Work System

- There are more than 2 Japanese specialists staying in the Philippines.
- Holding training sessions and lectures for handling of UV-C lamps safely by local personnel.
- Main manufacturing factory is located in Shanghai China.

Smart Container town UV-C lamp & Off-grid installed

We provide safe and clean habitat spaces at a low cost and high speed anywhere



Field	Energy, health, poverty and infrastructure	Category	Product, system
Registration, Awards	Registered: United Nations Industrial Development Organization (UNIDO), Department of Health, Philippines Certificate: Aichi industrial science and technology center, food industry technology center (Bacteria killing certificate)		

Technical Overview

[Technical Features]

Combining three technologies below enables habitat space, hygienic medical facilities and container towns to be created from refurbished containers.

- Off-Grid System: Electricity generated by solar panels and LPG gas generator is used to charge recycled lead-acid batteries. Ordinary household generator was converted to generation with LP gas, creating effective and sustainable system that recycles lead-acid batteries. The system was assembled in the Philippines.
- UV-C Lamp Deactivation system: 254 nm Wavelength UV-C lamp deactivates viruses and bacteria. Moreover, this system safely and effectively deactivates viruses and bacteria in confined spaces under IEC62471 and Japan's JIS safety standard.
- Container: Container is assembled in the Philippines. Container may be customized for local needs like African regions. Marine used containers with modified interiors can be transported by ship.

[Merits of Adopting Technology]

- Systems installed in marine used containers can be transported worldwide, and after the container arrives in the needed country, local staff can easily transport it by truck.

[Contributions to Solving Issues]

- This technique makes it possible to provide sanitary and safe living space in Africa, and by combining many different facilities in containers, it is possible to set up a smart container town in a place where there is no water or electricity. By installing an online lesson system (online or computer) inside the container, lessons can be provided in depopulated and poor areas in the same manner as in urban areas. The customization possibilities inside the container are endless, such as the enabling of fish farming on land.

Conditions for Using Technology

- Although off-grid has an LPG as generator for backup power, it is difficult to install it in areas with extremely heavy rain because it mainly generates electricity from sunlight.
- For more details, concerns and questions please visit 7tsubaki.com or e-mail at koki-jpn@yane119.net.

ASAHI INOVEX Corp.

Company Name	ASAHI INOVEX Corp.	Establishment	1952
Employees	250	Website	https://www.asahi-inovex.co.jp/en/
Address	1-6, Hiraoka 9-jo 1-chome, Kiyota Ward, Sapporo City, Hokkaido		
Contact	Name: Hiroyasu Tatsuzaki Tel: +81-6-6311-4556	West Japan Sales Department E-mail: sales-div@asahi-grp.co.jp	Title: Minister
Overseas Branches	None		
Possible Implementation Areas	Undetermined		
Supported Languages	*English		

Business Overview

Our company is headquartered in Hokkaido with manufacturing facilities there. As a manufacturing enterprise, we operate three divisions—Civil Engineering Steel Structures, Architectural Steel Structures, and Housing Equipment—engaged in the design, fabrication, and installation of steel structures such as floodgates, bridges, water pipe bridges, and dust removal equipment, as well as metal fabrication products including architectural steel structures and panel heater heating systems.

The floodgate equipment handled by our Civil Engineering Steel Structures Division serves as disaster prevention infrastructure against the frequent torrential rain and tsunami disasters occurring in recent years. Our self-powered automatic gate system, the “AutoGate,” developed in-house, is being deployed nationwide to achieve unpowered gate operation.

Achievements in Japan and Overseas

Auto gates, also known as balance-weight flap gates, feature balanced sluice doors that accurately detect slight water level fluctuations and automatically open and close using water pressure. Even during abnormal rainfall caused by typhoons, they are highly regarded for minimizing the risk of inland flooding due to drainage obstruction or backflow flooding caused by incomplete closure. In Japan, they have a proven track record of over 3,000 installations by the Ministry of Land, Infrastructure, Transport and Tourism, the Ministry of Agriculture, Forestry and Fisheries, and various local governments.

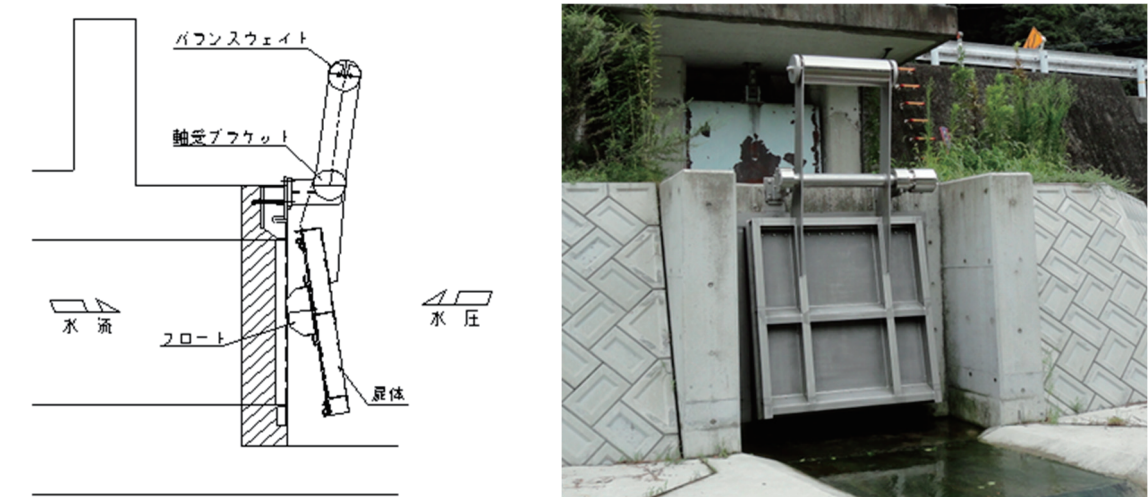
Although we have no overseas track record, given the increasing frequency of flood disasters caused by extreme weather worldwide, we believe Japan's automatic gate technology could be useful in other countries as well. Therefore, we would like to introduce it to you.

Work System

We will discuss each matter as specific cases arise.

Automatic Unpowered Water Gate “Auto Gate”

Automatic gates that open and close without manual operation protect the city from flooding.



Field	River Gate Structures / Gate Equipment	Category	Product
Registration, Awards	NETIS TH-990145-VE (Listing Period Ended)		

Technical Overview

■ Technical Features

- Equipped with counterweights to reduce door opening/closing force, enabling automatic gate operation with just a few centimeters of water level change.
- Requires no manual gate operation, allowing evacuation to take priority during sudden river flooding or tsunami strikes.

■ Construction Benefits from Technology Implementation

- Reduced construction costs and simplified maintenance.
- Reduced labor required for gate operation.

■ Addressing Challenges Faced by Host Countries

- River flooding can sometimes claim many lives, but introducing this equipment enables disaster prevention measures to be implemented.

Conditions for Using Technology

■ Natural Conditions / Site Conditions / Inapplicable Areas, etc.

- To be used as a backflow prevention measure for drainage works in areas protected by river levees or seawalls.

Company	Sanwa Boring Co., Ltd.	Establishment	May 4, 1967
Employees	51	Website	http://www.sanwa-boring.co.jp
Address	464-2 Horikawamachi, Toyama-shi, Toyama, Japan		
Contact	Name: Masaaki YUKAWA	Title: President and CEO	
	Tel: +81-76-424-2617	E-mail: info@sanwa-boring.co.jp	
Overseas Branches		East Timor (plans to establish a local subsidiary in April of 2021)	
Possible Implementation Areas		Indonesia, East Timor	
Supported Languages		English, Indonesian	

Business Overview

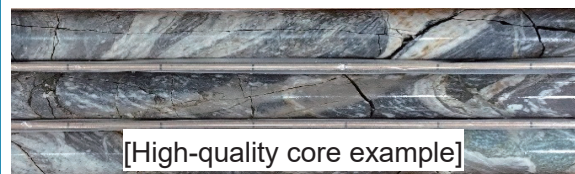
Sanwa Boring was founded in 1967 and mainly handles geological surveys as well as work to respond to geological conditions. In particular, the company relies on its background in geology to provide scientific geological information. The company focuses on work related to the boring of long, large-diameter holes and provides expertise in terms of geological surveys and boring work.

- (1) Geological survey business
 - Geological surveys, surficial geological surveys
 - Landslide surveys, stability analysis, countermeasure work design
 - Residential geological surveys, ground guarantees
 - Soil testing, rock testing
 - Soil contamination surveys
- (2) Boring work business
 - Various types of landslide countermeasure work, various types of slope protection work, ground anchor work
 - Falling-rock and avalanche countermeasure work



Achievements in Japan and Overseas

Business name	Location	Category	Client	
Geological survey of rivers within the jurisdiction	Within the jurisdiction	Rivers	MLIT	Toyama Office of River and National Highway
Riverbed material survey of the Jinzu River and Sho River	Within the jurisdiction	Rivers	MLIT	Toyama Office of River and National Highway
Geological survey of Araya, Toyota	Araya, Toyota, Toyama	Roads	MLIT	Toyama Office of River and National Highway
Geological survey of the Osawano Toyama Minami Road	Nirehara, Toyama	Roads	MLIT	Toyama Office of River and National Highway
Geological survey related to traffic safety within Toyama's jurisdiction	Within the jurisdiction	Roads	MLIT	Toyama Office of River and National Highway



[High-quality core example]

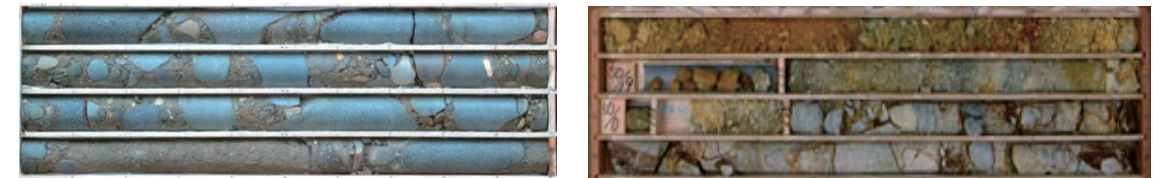
Our company collects high-quality cores through boring that uses original core collection technology, thereby providing advanced geological information. This has resulted in an extensive track record of geological survey results for many infrastructure development projects.

Work System

- We are planning to send a Japanese engineer to East Timor to train around ten local workers there.
- We have brought boring machines (a survey boring machine and rotary percussion drill for ground anchor work) in from Japan. We are also planning to establish an equipment center in Dili, the capital of East Timor.
- We plan to establish a local subsidiary in East Timor. We will then use that as a base to train human resources and help deal with the shortage of workers in Japan.
- We will try to use trained East Timor workers and engineers to expand into Indonesia.

Boring technology to collect high-quality cores

Technology that provides useful geological information necessary for the detailed designs of important structures and the consideration of road disaster measures



High-quality core (left) versus general core (right)

* The core on the right contains fine particles and is generally messed up, making it impossible to accurately determine the actual ground state.



The most important thing for collecting high-quality cores is the control of drilling water. We use an original valve developed by our company to automatically and continuously supply the right amount of water to the core tube with a pressure of 0.5 Mpm. This automated drilling water control can also handle cases where, for example, the hole is starting to get blocked, so even relatively inexperienced operators can collect high-quality cores. This means that local workers can more quickly be trained to a competent level.

Field	Geological surveys, design of civil engineering structures	Category	System
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Technical Overview

[Technical Features]

The boring control items relevant for collecting high-quality cores are: (1) the management of circulating fluid (water management), (2) the drilling rotation speed, (3) the drilling rod's penetration/pull-out strength, and (4) the drilling rod's ascent/descent timing. For our approach, the control items are managed as described below.

Control item	Method
(1) Circulating fluid management (water management)	A relief valve is used to automatically and continuously supply the right amount of water to the core tube with a pressure of 0.5 Mpm. This approach can also handle changes in the boring-hole situation, such as when the hole is starting to get blocked.
(2) Drilling rotation speed	Records of the rod rotation speed, amount of supplied water, and rod ascent/descent during excavation are measured, and this information is organized/accumulated for each geological condition and converted to a drilling-technology database. When doing on-site drilling work, digital measuring equipment can be installed to visually compare the drilling situation with past data in real time, and utilized in the operator's drilling judgment during work.
(3) Drilling rod's penetration/pull-out strength	
(4) Drilling rod's ascent/descent timing	

To collect high-quality cores, the general approach is to utilize the experience and intuition of the boring operator to control each relevant item while working. Our company's original approach is to automate and visualize work based on the statistical data analysis skills of veteran operators in order to enable the collection of high-quality cores even by non-veterans.

[Merits of Adopting Technology]

1. Boring survey technology for collecting high-quality cores by using survey equipment (boring machines, relief valves) can be provided.
2. Geological analysis technology based on the results of boring surveys, etc. as well as evaluation methods can be transferred to provide technology related to the design of civil engineering structures and road disaster measures based on useful geological information.

[Contributions to Solving Issues]

To vitalize the private economic activity of developing countries, it is necessary to develop transportation networks and enhance the capabilities of both organizations and human resources in charge of managing such development and follow-up maintenance. With our technology, geological technology at the level of Japan and other developed countries can easily be transferred.

Conditions for Using Technology

The above technology is suitable for geological surveys of areas with complex ground structures, such as the crescent-shaped archipelago of Japan, as opposed to the primarily bedrock-based ground of the continents of Europe and America.

Company Name	Tone Engineering Corporation		Establishment	May 1917
Employees	58		Website	http://www.tone-eng.co.jp/
Address	4th Floor, Yotsuya Annex, 4 Samon-cho, Shinjuku-ku, Tokyo 160-0017, Japan			
Contact	Noriyuki Kawabata (Mr.)	Overseas Construction Dep.		General Manager
	Tel: +81-3-5312-5214		E-mail: info@tone-eng.co.jp	
Overseas Branches		Thailand (SIAM TONE)		
Possible Implementation Areas		Worldwide (Asia, Africa, Latin America, Middle East, etc.)		
Supported Languages		English, Thai		

Business Overview

Founded in 1917 as a pioneer in drilling machine manufacturing, we inherited the technology of "Tone Boring." As an "Earth Contributing Company," we deploy unique drilling technologies globally in:

- Domestic:** Foundation piling, diaphragm walls, and hot spring development.
- Overseas:** ODA projects focusing on groundwater development, water supply facilities, and infrastructure foundations.



Achievements in Japan and Overseas

Since our first project in North Yemen in 1975, we have contributed to infrastructure in over 60 countries.

[Major Achievements]

- Africa:** In addition to groundwater development in Nigeria and other areas, we have also executed water purification plant construction in Guinea. In the civil engineering sector, we contribute to the strengthening of infrastructure in various countries by undertaking advanced foundation pile and pier construction for highways in Algeria and bridges in Mozambique.
- Asia:** We support diverse infrastructure development across Asia, such as bridge foundation works in Vietnam and Laos, urban civil engineering piling in Myanmar, and groundwater development in Bangladesh.
- Other:** Extensive track record in Latin America, delivering high-quality Japanese technology.




Work System

- Regional Hub:** Our subsidiary in Thailand, SIAM TONE, serves as a hub for Asian operations.
- Technology Transfer:** We prioritize training local staff alongside Japanese engineers, establishing consistent systems from equipment selection to maintenance tailored to local conditions.



Water Well & Hot Spring / Foundation Pile & Diaphragm Wall

Supporting the Future of the Earth from Underground with 100+ Years of Drilling Technology





Field	Groundwater Development, Foundation Works	Category	Construction Method, Implementation
Registration, Awards			

Technical Overview

■ Features of Technology

- Adaptability to Diverse Geology:** We select the optimal drilling method - such as Mud Circulation or DTH (Down-the-Hole) Hammer—based on local geological structures to ensure reliable water sources and solid foundations.
- Integration of Machinery and Skill:** We maximize performance by utilizing our group's proprietary drilling rigs, backed by deep operational expertise.
- Urban Construction Technology:** Our **TBH Method** (Top-Drive Reverse Circulation) enables infrastructure foundation work in urban areas with restricted space or height limitations.

■ Merits of Introduction

- High Efficiency & Short Construction Time:** Extensive overseas experience allows for optimized planning and the deployment of high-performance rigs, reducing construction time and costs.
- High-Quality Wells:** Proper borehole cleaning and finishing processes ensure the construction of long-life wells with high water yield.
- Total Support:** We provide comprehensive support ranging from drilling to the installation of pumping equipment, post-construction maintenance, and well rehabilitation.

■ Solution for Host Countries

- Securing Safe Water (SDGs Goal 6):** We provide a stable supply of safe, clean drinking water in regions suffering from chronic water shortages, contributing to improved public health and living environments.
- Resilient Infrastructure:** We support the foundations of critical structures like bridges and power plants with advanced Japanese technology, contributing to economic development and disaster resilience.

Conditions for Using Technology

■ Conditions for Application

- We can handle projects starting from preliminary surveys, regardless of the availability of existing geological data.
- We are ready to consider projects anywhere in the world, provided that equipment transport and customs clearance are feasible.



Company Name	Hokuto Sheet Metal Industry Co., Ltd.	Establishment	January 1, 1956
Employees	69	Website	http://www.hokutobankin.co.jp/
Address	115-13 Hokuocho, Kitami City, Hokkaido		
Contact	Name: Ayumu Tanaka	General Affairs Department, General Affairs Division	
	Tel: +81-157-24-8490	E-mail: kitami@hokutobankin.co.jp	
Overseas Branches		None	
Supported Languages		English	

Business Overview

Our company's work mainly consists of two areas: architectural sheet metal work and sheet waterproofing, which are important jobs that support people's lives.

Architectural sheet metal work involves using steel plates for the framework of a building, processing them to prevent rainwater from getting in, and creating roofs and exterior walls.

Sheet waterproofing is the process of creating roofs using vinyl chloride sheets, and because it can be installed quickly, it is often used in the construction of large buildings such as commercial facilities.

【Major Businesses】

- ◆Various architectural sheet metal construction businesses ◆Exterior construction businesses
- ◆PVC sheet waterproofing ◆Urethane coating waterproofing
- ◆Solar power generation business ◆Vacation rental business

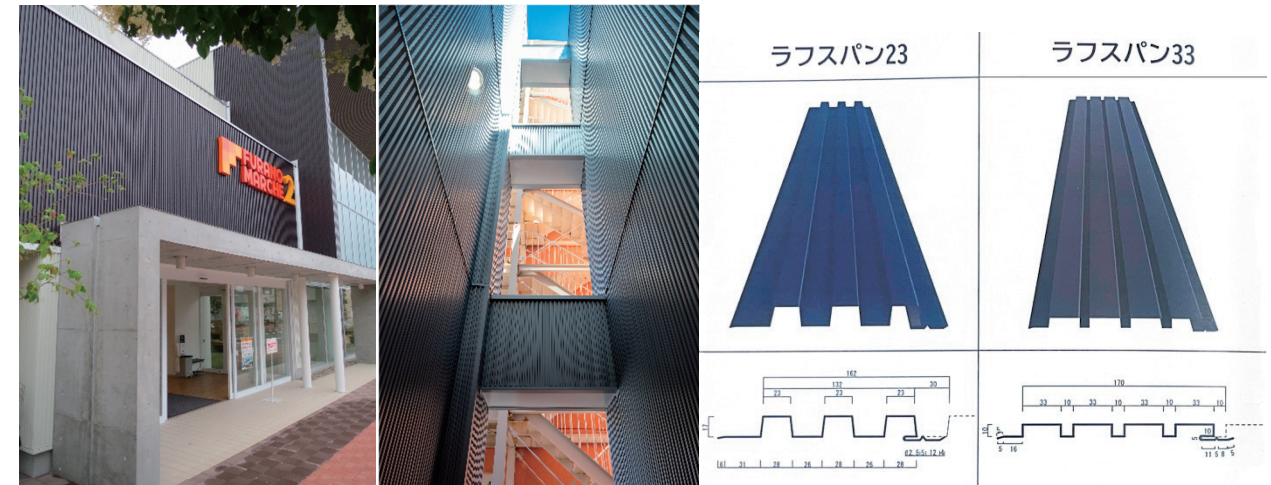
Achievements in Japan and Overseas

【Major Construction Projects】

- Kansai International Airport, New Chitose Airport, Memanbetsu Airport, Monbetsu Airport, Large Commercial Facility (33,000 m2)
- Public Facilities (Citizen Hall, Public Pool, Gymnasium, etc.) • Hospital • Logistics Warehouse & Center (Food Manufacturing Plant)
- Residential Buildings • Agricultural & Fisheries Facilities
- Niconico Nori Co., Ltd. Kyushu Factory • Kitami Institute of Technology Research Building • Other (Junior High School, Elementary School, etc.)

Rough Span 23

This exterior material matches the modern feel of its sharp unevenness and is suitable for warehouses, stores, homes, etc.



Field	Exterior wall sheet metal work	Category	Materials and supplies
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Technical Overview

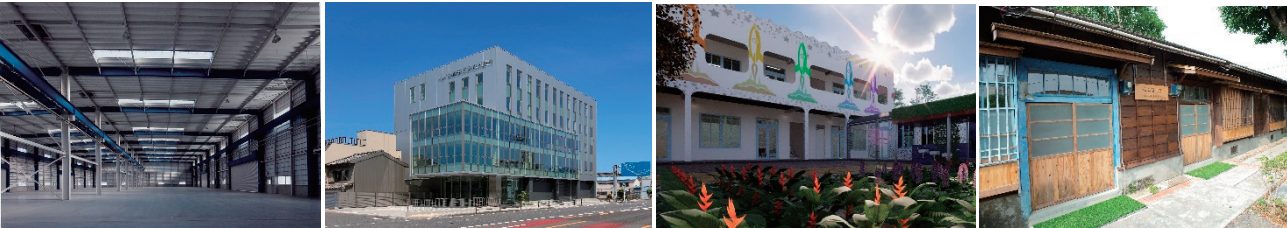
■Features

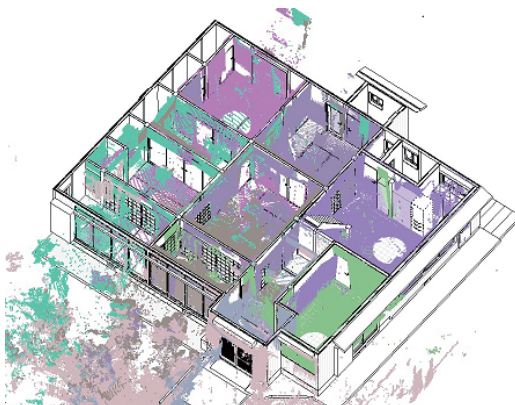
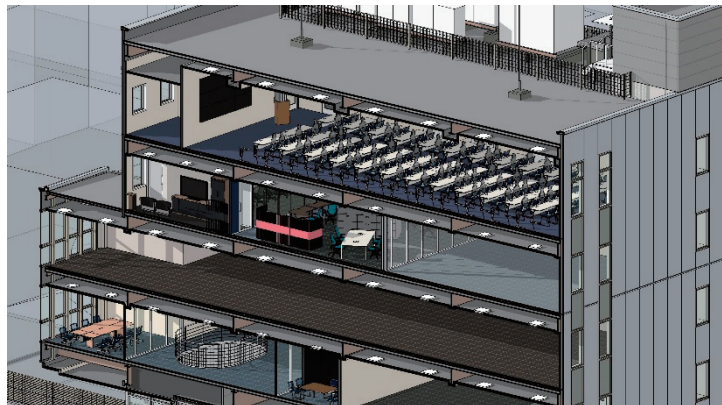
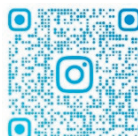
- This is a boltless spandrel with a textured, uneven surface based on straight lines.
- A variety of colors are available using various steel plates.
- The lateral flexibility of the membrane due to its shape makes it easy to incorporate into curved walls, etc., and allows for easy installation compared to using multiple materials.

There are also different types of rough spans, with wider face widths such as 33 and 53, which are affected by the distortion of the wall surface, giving some a softer impression.

Conditions for Using Technology

Archi-Cube architect and associates			
Company	Archi-Cube INC.	Establishment	October 2000
Employees	7	Website	https://www.archi-cube.com/
Address	6-28-2, Joto-dori, Gifu-shi, Gifu-ken, Japan		
Contact	Name: Yoshitomo OISHI	Deployment	Title: Representative Director
	Tel: +81-58-268-8122	E-mail: info@archi-cube.com	
Overseas Branches	Vietnam		
Possible Implementation Areas	Vietnam, Taiwan, Cambodia		
Supported Languages	English, Vietnamese (e-mail, phone)		

Business Overview
We are an architectural design consultant specializing in the design of offices and factories, operating in the Nagoya region. When we build in a plant, we use a 3D laser scanner to accurately survey the point clouds and then proceed with the design using the 3D modeling software Autodesk REVIT, so the client can make effective use of the space using 3D technology. During the design and construction phase, we propose a "visualization" of cost, design, and environmental performance. You can see it in a 3D view (VR, etc.) so that your company can share the construction project. The 3D model data can be used for facility management during construction and after completion, and in the future when installing machine tools or updating lighting fixtures. For your project, our company's female engineers with rich experience will be involved in the design process, so we can build an environment where women can work comfortably. We are also able to provide support for overseas projects in English and Vietnamese. We have given many lectures at Autodesk University 2020 and other venues throughout Japan.
Achievements in Japan and Overseas
[Japan] Design and supervision of a logistics warehouse (steel structure, approx. 8,000 m²) (photo at left) Design and supervision of an office (steel structure, approx. 2,500 m²) (middle left) [Vietnam] Design and construction of a nursery school in Buôn Ma Thuột, Vietnam (middle right photo) Design and construction of an office in Dak Lak Province (Ea Kiết) [Taiwan] Design of renovation of Chiayi Prison dormitory in Chiayi (right photo)

Work System
Established a local subsidiary in Vietnam (LIVE+VIETNAM) (Head office: Ho Chi Minh City, Branch office: Buôn Ma Thuột). The company will train Vietnamese engineers who can handle laser measurement and 3D modeling, and expand its business to Vietnam and other third countries (Cambodia). (The company has business partnerships in Taiwan and Cambodia.)

3D Laser Measurement + Building Information Modeling			
This is a method for measuring buildings and their surrounding environment in 3D, and using the data for everything from design to maintenance management			
			
Field	Construction and civil engineering, research, planning, design and maintenance	Category	System
Registration, Awards	The 1st Wooden Architecture AWARD Best of the Best Award The 1st Gifu Wooden House Building Contest, Excellence Award		
Technology Overview			
[Technical Features] • Design and supervision using 3D models based on Building Information Modeling (BIM) technology • Proposal of an efficient design method using a 3D laser scanner to measure the current conditions of existing site. • Utilization of 3D data for post-construction maintenance (facility management)			
[Merits of Adopting Technology] • Use VR and 3D views to enable real-time information sharing with people involved in the project. • We will show the technology overseas that has already become commonplace for projects in Japan and provide a mechanism to utilize it in the future.			
[Contributions to Solving Issues] • We can provide Japanese design and supervision technology and quality. • The technology can be disseminated to third countries through the country of introduction. • We can expand our business not only in cities but also in rural areas by promoting the introduction of design systems.			
[Video Link]  Website (Japanese)  Website (English)  Instagram			
Conditions for Using Technology			
None in particular			



KAZU DESIGN

Company Name	Kazu Architect Office Co.,Ltd	Establishment	2000.4.25
Employees	5	Website	https://www.kazu-design.co.jp/
Address	1955-3 Nishihara, Takaden, Hirooka, Shiojiri City, Nagano Prefecture, 399-0703		
Contact	Name: Aoki Kazutoshi	Department: Head Office	Title: Representative Director
	Tel: +81 263-51-0318	E-mail: info@kazu-design.co.jp	
Overseas Branches	None		
Possible Implementation Areas	Asia and Africa		
Supported Languages	English, Vietnamese, Spanish, Japanese		

Business Overview

[Industry]

1. First-class architectural office

[Business Activities]

1. Planning, research, design, and supervision related to architectural design, construction management, and urban planning
2. Research, development, design, and sales of furniture, furnishings, and toys
3. Research, development, and sales of building materials
4. Research, study, and publication of materials related to architecture
5. All other business incidental to the above items

Achievements in Japan and Overseas

[Design and Supervision Achievements]

1. Number of architectural design and supervision projects for private and public buildings: 180 buildings

[Research and Development Achievements Related to Architecture]

1. Development of fire- and heat-resistant building structures, fire-resistant window and door systems, and testing/surveying of wooden building materials overseas: 50 projects
2. Number of fire- and heat-resistant structure approvals by the Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT): 50

[MOUs with Overseas Research Institutions]

MOUs concluded with research institutions in the Socialist Republic of Vietnam in 2023, 2024, and 2025

[Architecture-related Patents]

1. Thermally broken window sash (granted)
2. Wall panels for timber buildings (granted)
3. Board material and method for manufacturing board material (pending)

Work System

[Dispatch of Japanese Engineers]

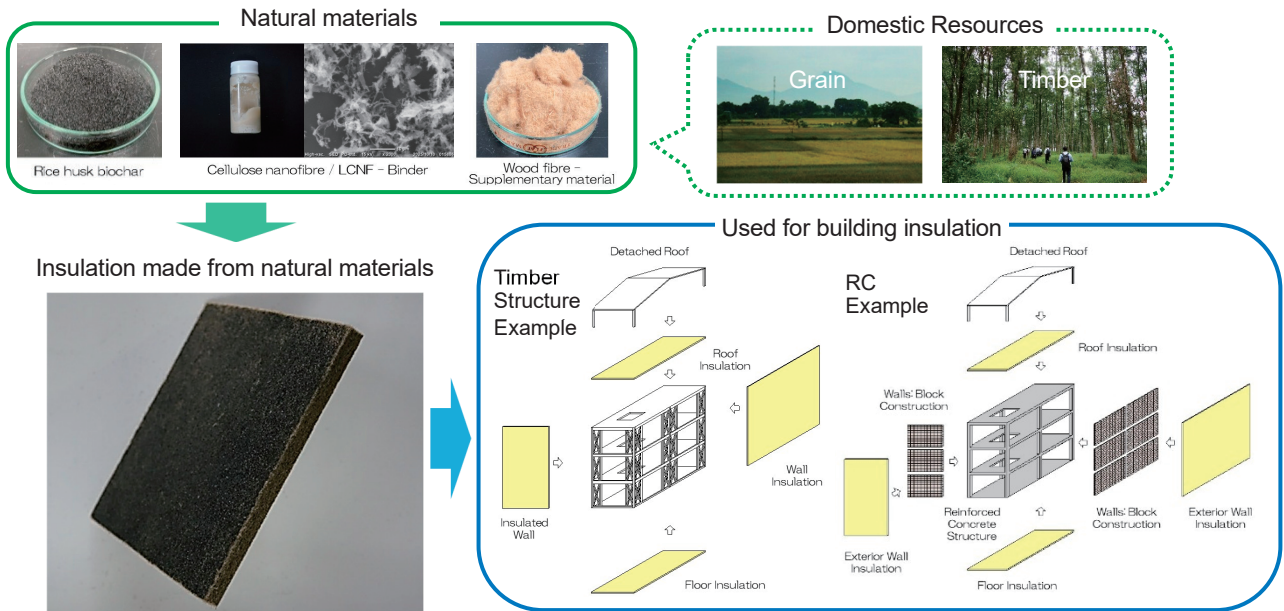
It is possible to dispatch Japanese engineers from Japan.

[On-site Technical Guidance]

Japanese engineers can provide on-site technical guidance.

Insulation made from natural materials & Japanese-style energy-saving timber technology

Construction insulation made from natural materials sourced from domestic resources



Field	Construction works, etc.	Category	Methods, materials/products, systems
Registration, Awards	International application under the Patent Cooperation Treaty (PCT)		

Technical Overview

■ Technical Features

- Thermal conductivity: $\leq 0.04 \text{ W/m}\cdot\text{K}$
- Density: $\leq 0.18 \text{ g/cm}^3$
- Energy required for production: **1.88 kWh/kg** (less than one-fourth that of mainstream commercial insulation materials in Japan)
- **CO₂ emissions** from insulation production: **0.86 t-CO₂/t**
- Sales price: **approximately one-third** that of conventional fiber insulation materials (based on comparison in Japan)
- Termite resistance: confirmed through impregnation with anti-termite agents (tested by RIFI)
- Fire resistance: confirmed self-extinguishing property through boric acid impregnation
- Disposal: can be safely used as agricultural soil amendment after disposal

■ Construction Advantages from Technology Adoption

- Can be installed using the same methods as conventional insulation materials

■ Addressing Challenges in the Host Country (Economic and social benefits for the partner country)

- The manufacturing process generates low CO₂ emissions, while the natural materials used store absorbed CO₂ long-term within buildings.
- The technology can enhance carbon credit value by adding credits from forests and rice fields, increasing environmental and economic benefits.

Conditions for Using Technology

- The required natural materials for the insulation are already available.

Company Name	Nippon Stud Welding Co., Ltd.	Establishment	December 5, 1969
Employees	110	Website	http://www.nsw-j.com
Address	No.1-2, Kashimada 1-chome, Saiwai-ku, Kawasaki, Kanagawa, 212-0058 Japan		
Contact	Name: Kenichi Hokotate	Construction	Title: Manager, overseas
	Tel: +81-44-589-9515	E-mail: hokotate@nsw-j.com	
Overseas Branches		Thailand	
Possible Implementation Areas		Asian countries, African Countries, Latin America	
Supported Languages		English, Thai and Tagalog	

Business Overview

Since established in 1969, concentrated on “Application development and proposal based on stud welding technology”, we have dedicated ourselves widely in architecture, civil engineering, bridge, ship-building and plant fields. “We wish to be a company that realizes clients’ and employees’ satisfaction all the time” by “Supplying systems in accordance with clients’ requirement in a competent prices and good quality, and good timing” ... This is our wish.

Achievements in Japan and Overseas

※Stud welding to Top Plate Joint

- Myanmar/ New Thaketa Bridge
- Vietnam/ Binh Khanh Bridge
- Bangladesh/ Kanchpur, Meghna and Gumti Bridges
- Bangladesh/ Sheikh Mujib Railway Bridge

※Stud welding to Kingpost

- Metro Manila Subway

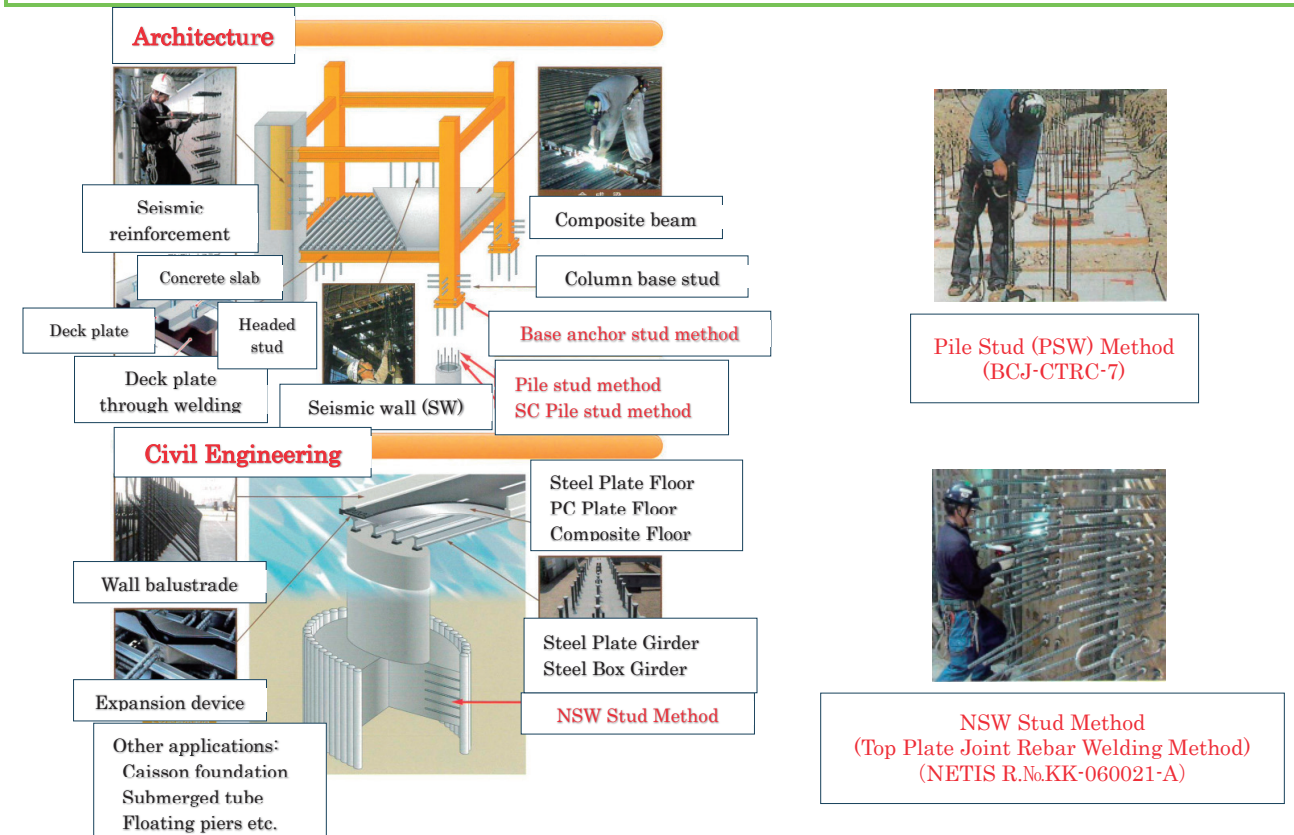


Work System

- Dispatch of Japanese engineers and technical instruction to local workers
- Training to local welding technicians

Arc Stud Welding Method

We realize reduction both in construction period and cost with split second welding!!!



Field	Architecture, Civil works, Bridge, Ship-building, Plant etc.	Category	Methods, Machinery, Materials and Systems
Registration, Awards	BCJ-Construction Technology Review and Certification, NETIS Registration		

Technical Overview

- Technical features
 - Welding to base metal is available from one side without drilling a hole.
 - Shortening of construction period is possible in about 1 second welding per 1 piece.
 - Sufficient strength assurance is possible because whole area is welded with a stud good in weldability.
 - High tension (HT-570) stud supply is available.
 - Welding under water and on high mountain (cold climate) is possible.
 - About 1.5 – 1.8 times of fatigue life span is possible using Fatigue Strength Improvement Type Ferrule.
 - Shortening of weld spatter removal time is possible using Fatigue Strength Improvement Type Ferrule.
 - Besides mild steel, stainless, aluminum and alloy studs can be supplied.
 - Quality assurance of large diameter stud welding is farther possible using our developed Monitoring System.
- Installation advantage by technical introduction
 - Shortening of construction period is possible in about 1 second welding per 1 piece.
 - Shortening of weld spatter removal time is possible.
 - Welding in narrow spaces of Floor System Replacement Construction (Highway Renewal Construction) is possible.
- Problem solution in the introduced country
 - Because our developed stud welding method can realize earthquake-resistance of buildings and bridges, it contributes to accomplishment of Sustainable Development Goals (SDGs) No.11 “Sustainable Cities and Communities” where people live in the area suffered by earthquake, typhoon and flood for long years.
- Link of Fatigue Strength Improvement Type Ferrule / YouTube
 - <https://www.nsw-j.com/methods/ferrule/>

Conditions for Using Technology

- Keep dry the materials, Base metals and Equipment.

Overseas expansion support for small and medium-sized construction enterprises (SMEs)

The Ministry of Land, Infrastructure, Transport and Tourism established the Japan Association of Small and Medium-sized Enterprises for Overseas Construction (JASMOC) on June 12, 2017 with the aim of assisting SMEs with overseas expansion in the construction sector. Since its establishment, JASMOC has been engaged in a range of activities to support such companies in expanding into international markets.

Purpose of JASMOC

There are small and medium-sized construction enterprises (SMEs) in Japan whose unique skills and technologies would be well received abroad and that are interested in expanding into international markets but are hesitant to do so due to a lack of the necessary knowledge and practical know-how. To support these companies' overseas expansion, JASMOC works in collaboration with corporations, industry groups, expert advisors and support organizations such as government-affiliated agencies and financial institutions. Through these partnerships, JASMOC promotes the sharing of information needed for overseas expansion, including related challenges, and conducts activities such as holding seminars to promote further utilization of support measures provided by relevant organizations.

Composition of JASMOC (as of December 2025)

- Member companies: 297 small and medium construction enterprises
- Support organizations: 147 organizations (including financial institutions and government-affiliated agencies)

Examples of JASMOC activities

Seminars

Hosting of overseas expansion seminars to provide information for overseas expansion, examples of companies that have previously expanded overseas, and an introduction to types of support provided by supporting organizations. JASMOC also hosts seminars with experts, who provide information about practical aspects and essential knowledge for overseas expansion

Overseas Delegations

Overseas delegations are organized to conduct visits to government agencies in destination countries and Japanese construction companies operating in those countries, site inspections, technical promotion activities, and business matching. Job fairs are also held in cooperation with local universities. (Past destinations of overseas delegations: Vietnam, Indonesia, the Philippines, and Cambodia)

Business Plan Development Support

Individual support with business planning for companies seeking overseas expansion

Seminars to Introduce Technologies in Collaboration with Foreign Universities

Support for building relationships between member companies and researchers at foreign universities

JASMOC General Meetings

Sharing of information about JASMOC's past activities and surveys to companies, as well as providing information about the upcoming year's initiatives

Construction Technology Portfolio

Introduction of outstanding construction technologies of member companies to domestic and international audiences, with the aim of expanding opportunities for global engagement

JASMOC Newsletter

Timely updates on support programs and topics related to overseas expansion

Past Activities



Seminar to Support Overseas Business Planning (Tokyo)



Overseas Expansion Seminar (Aichi)



Business Matching (Hanoi)



Business Matching (Ho Chi Minh)

Index by Overseas Branches

■ Socialist Republic of Viet Nam

Hashimotogumi Corporation:	
General Construction	5
Hiraiwa Construction Co., Ltd.:	
General Construction	7
Taiyu Kensetsu Co., Ltd.: Road	9
Okasan Livic Co., Ltd.: Road	11
Kochi Marutaka Co., Ltd. (candidate): Bridge	15
Kawakin Core-Tech Co., Ltd.: Bridge	21
Yasuda Engineering Co., Ltd.: Tunnel	25
Nikken Kogaku Co., Ltd.: Port	33
Onoda Chemico Co., Ltd.:	
Ground Improvement	35
Tenox Kyusyu Corporation:	
Ground Improvement	37
Murakamijuuki Co., Ltd.: Ground Improvement	41
SST Association Inc. (under examination):	
Ground Improvement	43
Ozawa Civil Engineering and Construction Co., Ltd.:	
Piling	55
Rontai Co., Ltd.: Slope	63
Tokyo Rope Mfg. Co., Ltd.: Slope	67
Sanko Co., Ltd.: Plant	69
Soltec Industries Co., Ltd.: Plant	71
ITO Corporation: Plant	73
Tamada Corporation: Plant	75
JESCO Holdings, Inc.:	
Electricity, Communication	77
Daiken Co., Ltd.: Water Environment	83
Kyowakiden Industry Co., Ltd.:	
Water Environment	85
Sugawara Setsubi Inc.: Water Environment	93
ASAHI Co., Ltd.: Repair, Maintenance	109
Matsuzawa Kwaraten Inc.:	
Equipment, Product	115
Archi-Cube Inc.: Design	125
■ Kingdom of Thailand	
Kochi Marutaka Co., Ltd. (candidate): Bridge	15
GIKEN SEKO CO., LTD.: Piling	61
Sanko Co., Ltd.: Plant	69
Toyo Kikai Co., Ltd.: Repair, Maintenance	105

KFC Ltd.: Repair, Maintenance	107
Ocean Works Asia: Repair, Maintenance	111
Tone Engineering Corporation: Boring	121
Nippon Stud Welding Co., Ltd.: Welding	129
■ Republic of the Union of Myanmar	
Kochi Marutaka Co., Ltd. (candidate): Bridge	15
Onoda Chemico Co., Ltd.: Ground Improvement	35
Tenox Kyusyu Corporation:	
Ground Improvement	37
ITO Corporation: Plant	73
Ocean Works Asia: Repair, Maintenance	111
■ Republic of Indonesia	
Kidoh Construction Co., Ltd.: Tunnel	27
Chiken Enterprise Co., Ltd.: Tunnel	29
Sanko Co., Ltd.: Plant	69
Ocean Works Asia: Repair, Maintenance	111
■ Republic of the Philippines	
Tokyo Rope Mfg. Co., Ltd.: Slope	67
Sanko Co., Ltd.: Plant	69
Matsuzawa Kwaraten Inc.:	
Equipment, Product	115
■ Kingdom of Cambodia	
Saitagumi Co., Ltd.: General Construction	1
IKEE LTD.: Road	13
Tenox Kyusyu Corporation:	
Ground Improvement	37
■ Federal Democratic Republic of Nepal	
Sohatsu Systems Laboratory Inc.: Tunnel	31
Nissaku Co., Ltd.: Water Environment	87
■ Malaysia	
Sanko Co., Ltd.: Plant	69
■ Democratic Socialist Republic of Sri Lanka	
Abe Nikko Kogyo Co., Ltd.: Water Environment	91
■ Taiwan	
Kidoh Construction Co., Ltd.: Tunnel	27
■ The Democratic Republic of Timor-Leste	
Sanwa Boring Co., Ltd. (plan): Boring	119
■ Republic of Singapore	
GIKEN SEKO CO., LTD.: Piling	61
Sanko Co., Ltd.: Plant	69
JESCO Holdings, Inc.:	
Electricity, Communication	77
Ocean Works Asia: Repair, Maintenance	111

■ People's Republic of China

GIKEN SEKO CO., LTD.: Piling	61
Rontai Co., Ltd.: Slope	63
Tokyo Rope Mfg. Co., Ltd.: Slope	67
ITO Corporation: Plant	73
TBR Co., Ltd.: Water Environment	95
Ogushi Drilling Co., Ltd.: Water Environment	97
KFC Ltd.: Repair, Maintenance	107
■ Republic of Korea	
Yasuda Engineering Co., Ltd.: Tunnel	25
Tenox Kyusyu Corporation:	
Ground Improvement	37
ITO Corporation: Plant	73
Ogushi Drilling Co., Ltd.: Water Environment	97
■ Unites States of America	
GIKEN SEKO CO., LTD.: Piling	61
Tokyo Rope Mfg. Co., Ltd.: Slope	67
Sanko Co., Ltd.: Plant	69
■ Republic of Turkey	
Kawakin Core-Tech Co., Ltd.: Bridge	21
■ Islamic Republic of Afghanistan	
Ogushi Drilling Co., Ltd.: Water Environment	97
■ India	
IKEE LTD.: Road	13
■ Republic of Uzbekistan	
Ogushi Drilling Co., Ltd.: Water Environment	97
■ Republic of Uganda	
Koken Boring Machine Co., Ltd.:	
Water Environment	81
■ United Kingdom of Great Britain and Northern Ireland	
ITO Corporation: Plant	73
■ Kingdom of the Netherlands	
GIKEN SEKO CO., LTD.: Piling	61
■ Federal Republic of Germany	
GIKEN SEKO CO., LTD.: Piling	61
■ Republic of Poland	
Tokyo Rope Mfg. Co., Ltd.: Slope	67
■ Brazil	
Sakaegumi Corporation(planned):	
Repair, Maintenance	101

Collection of Construction Technologies

—The World-Class Technologies of Japanese Small and Medium-sized Construction Companies—

Published March 2021
Second Edition (Revised) Published March 2026

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JASMOC

Japan Association of Small and Medium-sized enterprises for Overseas Construction



MLIT

Ministry of Land, Infrastructure, Transport and Tourism

March 2026