

Technical profiles of companies

JFE Engineering Cooperation Waste

JVCKENWOOD Cooperation Disaster management reduction / Transport

MACNICA, Inc. Smart energy NEC Corporation Transport

Nihon Suido Consultants Co., Ltd. Water supply, wastewater / Smart city

Nikken Sekkei Ltd. Smart city

One Will Co., Ltd. Co. Construction / Smart energy

OYO RMS Corporation Disaster prevention

Takachiho Shirasu Corp

Yamashin-Filter Corp

Yokohama Kankyo Design Co., Ltd.

Construction

Smart energy



JFE Engineering Corporation

Waste to Energy

Business Development, Overseas Administration Department,

2-1 Suehiro-cho, Tsurumi-ku, Yokohama City, Kanagawa, 230-8611, Japan

TEL +81-45 505 7390, Email: takahashi-gen@jfe-eng.co.jp

Company website: http://www.jfe-eng.co.jp/en

Our expertise are in

Waste

[Strengths]

All of our technologies are for the protection of this beautiful planet.

JFE Engineering is the comprehensive engineering arm of the JFE Group. We aim to become one of the world's leading engineering companies, addressing ever-changing needs with products and services that draw on the strengths of the JFE Group and state-of-the-art technology. Our boundless missions are out there as long as the people in the world seek a more comfortable and better life. At the JFE Engineering Group, we will keep providing society with the optimal solution as a company that "creates and continues to care for the foundation for life."

[Projects]

| Destination | Mongolia, China, Taiwan, Hong Kong, Philippines, Vietnam, Indonesia, Malaysia, Singapore, Thailand, |
|-------------------------------------|---|
| | Myanmar, Bangladesh, India, Sri Lanka |
| Project details | Steel bridges, water purification facilities, wastewater treatment facilities, waste to energy plants and |
| | other social infrastructure |
| Project duration | Depends on the project |
| Local partner | Local company |
| Locally incorporated company if any | Branch office: Philippines, Myanmar, Thailand |
| Company II any | Local subsidiary: China, Philippines, Vietnam, Singapore, Malaysia, Indonesia, Myanmar, India |

| Industry sector | Plant EPC(engineering, procurement and construction) for the |
|---|---|
| | Infrastructure Sector |
| Number of employees (including group companies) | Group-wide: approx. 9,500 |
| Normal involvement in infrastructure related construction | EPC(engineering, procurement and construction) |
| Type of export that is preferable | Exporting a system that includes the company's technology as well |
| | as others / Exporting technology and also participating in the |
| | operation & maintenance |
| The location of your choice for doing business overseas | China, Taiwan, Philippines, Vietnam, Indonesia, Malaysia, |
| | Singapore, Thailand, Myanmar, Bangladesh, India, Sri Lanka |



JVCKENWOOD

JVCKENWOOD Corporation

Disaster management solutions using ICT and In-vehicle devices

DX Business Division

3-12, Moriya-cho, Kanagawa-ku, Yokohama City, Kanagawa, 221-0022, Japan

TEL +81-45-450-4523, Email: tanaka.hideki@jvckenwood.com,

Company website: https://www.jvckenwood.com/en.html



[Strengths]

We have a variety of technologies to offer. The two presented at the business matching session at the ASCC were disaster management solutions using ICT and in-vehicle devices.

1) Disaster management solutions using ICT

Our disaster management solutions use digital radio communication technology and are used worldwide. Clients include police departments, fire departments, ambulance deployment services, rail companies, airports, ports, manufacturing plants, stock yards, construction sites, hotels, and the retail industry. Our radio communication system for disaster management can monitor and detect disasters, and is also used in times of evacuations and rescues.



- ① Monitoring/detection: Our technology is used to monitor rivers and mountain slopes using censors and CCTV cameras, and to transmit the data to the control center via radio communication.
- ② Evacuation /rescues: We support citizens swift evacuation through speakerphones, and allow the police department and government officials to share information and collaborate.

Using a console system allows our technology to communicate between users with different protocols and communication systems.

Radio communication is competitive because they are not only cost effective, and applicable for a wide range of use but also because the communication lines are stable even in the event of a disaster.

Compared to other technology, digital radio communication, is especially good at blocking wiretapping and eaves dropping because of its encryption function. It can also be used to develop wide area networks because the technology can connect distant locations via IP. In times of emergency when telephone lines are cut off, the technology will allow cities to send instructions between each other. Radio communication is useful when used via IP networks in non-emergency situations, too. They could be used for a municipality's core activity that requires collecting and processing of data.

Details for our global sales, design technology and system technology can be found in the link below. Our products comply with

the local radio law in major countries.

https://comms.kenwood.com/en/index.php

https://www.kenwood.com/jp/b_com/

https://www.kenwood.com/jp/business/

2) In-vehicle devices

Please refer to our case studies for information on our design and production technology for in-vehicle devices. We have started provisioning telematics solutions centered on dashcams and drive recorders for ride sharing and road insurance using the latest digital technology.

- ① Our joint project with Grab Holdings Inc. offers security service to drivers using a dashcam with communication capabilities. https://www.jvckenwood.com/en/press/2019/04/press_190426_1.html
- ② Our drive recorders are used in Mitsui Sumitomo Insurance's service "driving insurance by real-time tracking of vehicles". https://www.jvckenwood.com/press/2018/08/press_180830.html

[Projects]

| Destination | Multiple countries in Asia |
|-------------------------------------|--|
| Project details | Sales of in-vehicle devices, wireless devices, videos, audio devices / The introduction of driver security |
| | services using wired in-vehicle devices / The introduction of a flooding warning and disaster prevention |
| | system using wireless transmission / Production of other various devices |
| Project duration | For fifty years |
| Local partner | Local sales subsidiary (Singapore, Malaysia, Thailand, Indonesia) / Local production subsidiary |
| | (Malaysia, Thailand, Indonesia) |
| Locally incorporated company if any | We have local branch offices |

| Industry sector | IT · Communication services · Internet / Manufacturer of Electric |
|---|--|
| | Appliances / Automobiles & Components, Transportation |
| Number of employees (including group companies) | 1001 and beyond |
| Normal involvement in infrastructure related construction | Project management / concept design / basic design (FEED) / |
| | system design / system development / operation / maintenance |
| Type of export that is preferable | We export our technology as a unit or a system, and also participate |
| | in the daily operation for some projects. |
| The location of your choice for doing business overseas | Asia/Island countries/etc. |



MACNICA, Inc.

Energy-saving solutions using the world's most advanced LED technology. AI / IoT-based energy predictive control solutions used around the world

Smart Infrastructure Business Promotion Office

1-6-3, Shin-Yokohama, Kohoku-ku, Yokohama City, Kanagawa, 222-8561, Japan

Tel: +81-45-470-9118, Email Abe-hi@macnica.co.jp,

Company website: https://www.macnica.co.jp/

Our expertise are in

Smart Energy

[Strengths]

<High Efficiency LED>

- 1. Key product features
- ① Our products have a long lifetime of over 72000 hours because of our unique technology which stops heat dissipation immediately after the light is switched off.
- ② Our products can achieve zero illuminance attenuation even after 6000 hours because our unique heat dissipater keeps the temperature of the illuminance source from rising.
- 3 Our COB high output LEDS provides the illuminance appropriate for a location due to our unique technology for optical lens.
- ④ Our technology has cleared wind velocity tests of maximum 80m/s.
- ⑤ Our technology can withstand heavy salt erosion and has cleared tests that are equivalent to being left along coastlines by the sea for five years and still be free of rust.
- ⑥ Our technology can endure temperature as high as +70°C and as low as -40°C
- Water and dust resistance levels are IP68
- 2. Competitive
- ① It is brighter than our competitor's models using the same power consumption
- ② It is cheaper than out competitor's models with the same illuminance

If 100 conventional mercury lightbulbs (960W) were replaced by 70 of our ShinyU100WLED models energy efficiency can be achieved by 90 percent and initial investment recovered in a year. Over USD200,000 of costs can be saved in five years.

Please note the output may vary due to the location.

③ Our products' life time are very long (over 72,000 hours)

<Smart infrastructure related technology>

For information on our smart infrastructure related service lines kindly refer to the following links.

Energy related: https://www.macnica.co.jp/business/energy/

 $Energy\ efficiency\ solutions\ from\ our\ provider:\ \underline{https://www.shinyou.com.tw/techen.asp\#}$

[Projects]

Destination 80 locations in 23 countries worldwide (USA, China, India, Great Britain, Germany, etc.) Project details We offer worldwide services for semi-conductors and networks for electronic appliances in the form of consulting, sales, operation services and maintenance services. We are the largest trading company in Japan dedicated to electronic appliances and with our level of technical skills. We apply our advanced knowledge on technology to develop new business opportunities in leading domains such as AI, IoT, smart infrastructure, automated driving, robotics, and health care. Our sales overseas was over 200 billion yen in 2018. Project duration Over 24 years Local partner n/a Locally Multiple local branch offices have been setup worldwide incorporated company if any

[Basic information]

| Industry sector | Trading Conglomerate |
|---|---|
| Number of employees (including group companies) | 1001 and beyond |
| Technology or services you would like to export overseas | Energy efficiency, renewables |
| Normal involvement in infrastructure related construction | Concept design / system design / civil and building works / |
| | system development / operation and maintenance. We offer our |
| | expertise in energy efficiency systems and energy management |
| | systems with functions that allow optimal utilization of energy, as |
| | well as analysis on monetization. |
| Type of export that is preferable | Exporting a system that includes the company's technology as well |
| | as others |
| The location of your choice for doing business overseas | Southeast Asia, Oceania region |



Photos: Lightings for high ceilings / photo transmitter / road lights / street lights



NEC Corporation

Intelligent transport management system for buses

Global Relations Division, Global Business Unit

7-1, Shiba 5-chome, Minato-ku, Tokyo, 108-8001 Japan

Tel +81-3-3798-6614, Email saki-matsubayashi@nec.com

Company website: https://jpn.nec.com/profile/corp.html

Our expertise are in

Transport

[Strengths]

The intelligent transport management system for buses has three qualities. They are:

- Automatic ticketing system: NEC has installed an EMV (international standard for IC cards) equivalent system for fare payment
 specifically for India that uses contactless cards and smartphones. Passengers will be able to purchase their tickets via
 smartphone and will not need to go to the ticketing office or purchase them on the bus. Furthermore, the central operating
 center will allow accurate counting of the number of passengers that pass through the ticketing gate at the BRT station or the
 in-vehicle equipment on the bus.
- Real-time bus locating system: The real-time bus locating system will offer support in maintaining the time schedule of 1000
 buses by clarifying the status of each individual bus, and also offering speculations on each respective arrival time. In times of
 emergency, there will be bilateral communication between the central management center and each bus.
- 3. Information platform for passengers: The speculated arrival time for the next bus arrival will be shown as accurately and timely as possible on a display inside the bus and/or located at the bus terminal. Passengers on the bus will also hear announcements or guidance for the next bus terminal allowing the passenger ease of moving from one location to another.

| Destination | India |
|-------------------------------------|--|
| Project details | NEC has installed an intelligent transport management system for Smart City Ahmedabad Development Limited |
| | (SCADL) to upgrade their existing system with intelligently applied IoT and big data analysis technologies. The |
| | upgraded system will provide the citizens of Ahmedabad with a safe and reliable bus system. SCADL is a state |
| | owned company established by the Gujarat state government and Ahmedabad city. NEC offered SCADL a |
| | comprehensive system complete with data analysis, automatic ticketing machines, and also an operation center |
| | that will manage operations and maintenance. |
| | The system utilizes a combination of technologies such as; 1) a cashless automatic ticketing system linked to IC |
| | cards and smartphones; 2) GPS loaded buses with real-time bus locating systems that will allow SCADL to monitor |
| | the bus route taken, and the traffic condition seamlessly and comprehensively. This is possible by adding a bus |
| | route planning system; a branch office management system; as well as a comprehensive monitoring system. |
| Local partner | N/A |
| Locally incorporated company if any | NEC Technologies India Private Limited |

Industry sector IT · Communication / Manufacturer of Electric Appliances

Number of employees (including group companies) 1001 and beyond

Normal involvement in infrastructure related construction Project management / concept design / basic design (FEED) /

system design /

Type of export that is preferable System development on site

The location of your choice for doing business overseas Have businesses in all the major countries in Asia







BRT in Ahmedabad



Nihon Suido Consultants Co., Ltd.

SMART Solutions for Water and Sewage Management

Business Planning & Promotion Department, Corporate Planning Headquarters

22-1, Nishi-Shinjuku 6 Chome, Shinjuku-ku, Tokyo, 163-1122, Japan

Tel +81-3-5323-6378, Email tobe t@nissuicon.co.jp

Company website: http://en.nissuicon.co.jp/

Our expertise are in

Water supply

Wastewater

Smart city

[Strengths]

We offer various business solutions for sustainable growth in the field of water supply and sewerage in over 55 countries including Japan. Founded in 1959, we continue to be a leading engineering consulting firm. We provide comprehensive solutions in all aspects of water infrastructure especially in the areas of water supply, sewerage, river, and water environment. Our strengths stem from our extensive experience in infrastructure planning, design, construction, operation, maintenance and management. We are now applying innovative Smart technology for water supply, sewerage system, disaster prevention and reduction. For example, real-time management system by IoT monitoring, AI and Digital Twin, maintenance and inspection technologies by S-Smart Ball and other Robotics.

| Destination | Asia (Official Development Assistance (ODA) applicable countries: Vietnam, Cambodia, Laos, Myanmar, |
|----------------------|--|
| | India, Sri Lanka and other countries in Africa, Latin America, Middle East where ODA funding is possible. |
| | Asia (non-ODA applicable countries: Singapore, Malaysia, Philippines) |
| Project details | We work on water supply and sewerage systems in Asia, Africa and Latin America using ODA grants, loans |
| | and technical cooperation. |
| | We seek new projects including those for Smart related technologies for governments and the private |
| | sector in countries that are no longer recipients of ODAs, such as Singapore, Malaysia, China, Thailand, and |
| | ODA non-applicable countries such as the Philippines. |
| Project duration | Project duration varies depending on projects. We have been involved in projects for over 50 years and |
| | have experience in ODA related projects in 55 countries. |
| Local partner | We usually collaborate with local consultants in each country. |
| Locally incorporated | None (Local subsidiary: PT DACREA Design and Engineering Consultants (Indonesia)) / (Local branch |
| company if any | office: Singapore Branch Office, Philippine Branch Office) / (Local representative office: Indonesia, |
| | Vietnam, India, Republic of Korea) |
| | |

| Industry sector | Consultant |
|---|---|
| Number of employees (including group companies) | 501~1000 |
| Normal involvement in infrastructure related construction | project management / concept design / basic design(FEED)/, |
| | civil engineering, architectural design / system design / operation |
| | / maintenance |
| Type of export that is preferable | Exporting technology and also participating in the daily operation |
| The location of your choice for doing business overseas | China, Singapore, Philippines, Malaysia, Vietnam, Myanmar, |
| | Cambodia, India |

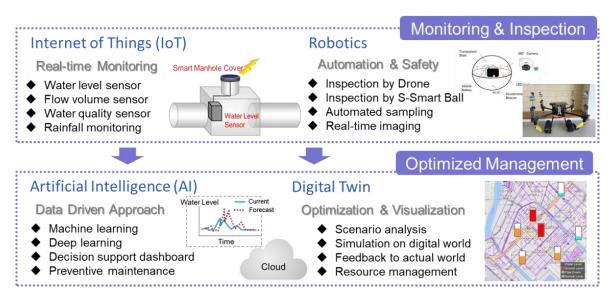


Diagram: Smart Solution for Water Sector

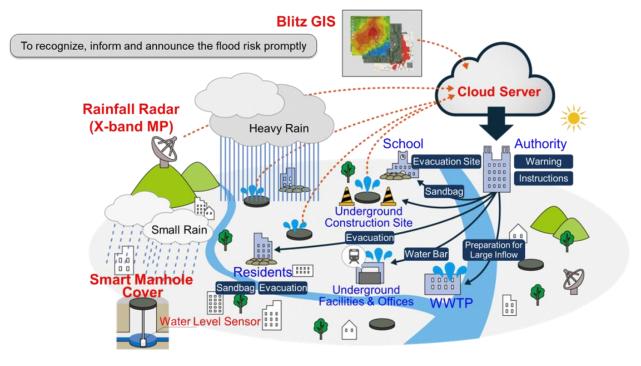


Diagram: Real-time Flood Forecasting System

NIKKEN

Nikken Sekkei Ltd.

Creating office · workplace value

IoT Consulting Section

2-18-3, Iidabashi, Chiyoda-ku, Tokyo, 102-8117, Japan

Tel: +81-3-5226-3030 Email: nakamura.kimihiro@nikken.jp

Company website: https://www.nikken.co.jp/ja/index.html

Our expertise are in

Smart city

[Strengths]

Nikken Sekkei specializes in construction design and supervision as well as urban design. We also offer research, conceptual planning, consulting in the same area.

We respect Nikken Sekkei Groups company philosophy of "contributing to the society by offering value-added work". Ever since 1900 and for the past 115 years, Nikken Sekkei has complied with the needs of the society as well as the specific needs of our clients to build a better social environment for all. Our projects now count over 25,000 and can be found in 50 countries, 250 cities.

The IoT Consulting Section offers clients consultancy on smart buildings where people can share knowledge and ideas, where workers can work wherever and whenever they want, where security is high, and it is natural to save energy. Our smart building system allows clients a workplace where the information they want is analyzed and visualized.

| Destination | Singapore, the old site for the KNT railway corridor |
|----------------------|--|
| Project details | In 2011 the closure of 24km of KTM railway bisecting Singapore released 24km of continuous land spanning |
| | the entire nation. In the face of population growth and urbanization, the "City in the Garden" made the |
| | bold decision to transform the 100ha site into public space to benefit its people and environment. The |
| | Design Team's winning masterplan proposal, "Lines of Life" envisions the Rail Corridor as an inspiring, |
| | people-centric symbol stitching the entire nation, weaving itself into the lives of those around it. The |
| | proposal sets out a long term vision, planning framework and design strategies to guide progressive |
| | implementation of an extraordinary public space. |
| Project duration | Nov 2015 and onwards |
| Local partner | Singapore Urban Redevelopment Authority |
| Locally incorporated | Singapore (Liaison office) 182 Cecil Street, #17-85 Frasers Tower, Singapore 069547 |
| company if any | TEL +65 6622-5330 |

| Industry sector | Consultant |
|---|---|
| Number of employees (including group companies) | 1001 and beyond |
| Normal involvement in infrastructure related construction | project management / concept design / basic design (FEED) |
| Type of export that is preferable | City planning, master plan development, landscape planning |
| The location of your choice for doing business overseas | China, ASEAN, the middle east, and have recently expanded into |
| | India, Russia and the CIS (commonwealth of independent states). |

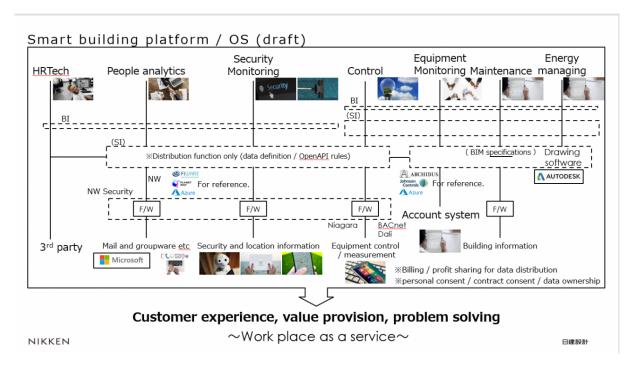


Diagram: Smart building platform. Smart buildings are an integration of various software.



Diagram: Concept design of the old site for the KNT railway corridor



One Will Co., Ltd. Co.

Wall material with new features that create a healthy and energy efficient environment

Management Section

Yokohama Asahikaikan, 8th FL, 15 Nihon-oodori, Naka-Ku, Yokohama City, Kanagawa, 231-0021, Japan

TEL +81-45-663-3330, Email info@onewill.co.jp

Company website: http://www.keisoukun.com

Our expertise are in

Construction

Smart Energy

[Strengths]

Our wall material "Keisoukun" is largely made of porous mineral such as diatom-earth and zeolite which is why it is especially good for improving indoor air quality, preserving tenants' health and saving energy. Our latest wall material (and ceiling material) creates a hygienic and energy efficient environment. We offer our products in three forms: 1) coating wall material; 2) wall paper; and 3) paint.

The following features are what allows our products to preserve good indoor air quality.

- 1) Humidity conditioning
- 2) Absorptive-decomposition of chemical-hazardous material (formic aldehyde)
- 3) Odor elimination
- 4) Antibacterial
- 5) Fungus prevention
- 6) Antifungal treatment

Our products are highly energy efficient when compared with a general vinyl chloride material (see photos). Our products are also appropriate for industrial use as seen in the environmentally conscious automatic vending machine for tea manufacturer Itoen who chose our product due to its energy efficiency, elimination of odor, and antibacterial features.

We are competitive because:

- 1) We are the only manufacturer that offers multifunctional wall material in three forms: coating wall material, wall paper, and paint.
- We have extensive experience in both domestic and international markets since 1998 and have always provided products with excellent quality. (For example, our wall paper is the only one to go beyond the WHO reference value for absorptive formic aldehyde decomposition. Our fungus prevention features are extinguished and have achieved LOG 5 and over for coli bacillus and staphylococcus aureus in antibacterial tests.)
- 3) We use mostly natural material (for over 98% of the total components), are safe and secure (non-burnable and free from toxic gas making it resilient in the event the building catches fire). It is free from odor during construction works and agreeable to construction workers on the site.

| Destination | Thailand and Philippines |
|-----------------|---|
| Project details | We have just received a trial order for building wall material such as coating, painting, wall paper that removes |
| | moisture and odor. |

Project duration n/a

Local partner We have a local agent

Locally incorporated company if any

[Basic information]

Industry sector Importing material for logistic services / Sales of building material

Number of employees (including 10-100

group companies)

Normal involvement in Civil and building works / Maintenance / Consultancy for the health and energy efficiency of

infrastructure related construction the tenants and residents

Type of export that is preferable Exporting technology and also participating in the operation. Manufacturing should be

handled by our local partner after some knowledge transfer.

The location of your choice for Vietnam, Philippines, Thailand, Indonesia

doing business overseas

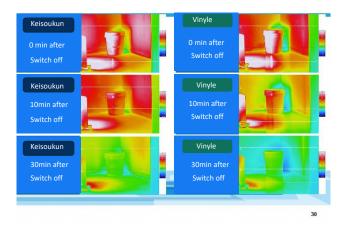


Diagram: The amount of infrared release from an infrared heater when Keisoukun is applied to the wall. Comparison between our products (left) and general vinyl wall paper (right) after applying electric currents for 120 minutes.



Photo: Itoen's automatic vending machine with our product



Photo: A site using our products



Photo: Paint



Photo: Coating material



OYO RMS Corporation

Offering seismic and natural disaster risk analysis to governments and companies

Corporate management

Akasaka MK Bldg., 4th FL, 9-9 Akasaka 4-Chome, Minato-ku, Tokyo, 107-0052, Japan

TEL +81-3-6434-9801, Email takeshi.tokaji@oyorms.co.jp

Company website: https://www.oyorms.co.jp/

Our expertise are in

Disaster prevention

[Strengths]

OYO RMS was established as a joint venture between two companies: OYO Corporation the leading company for catastrophic risk consultancy, and Risk Management Solutions, Inc. which is widely known in the insurance and reinsurance sector for its risk analysis services for natural calamities. We deliver superior knowledge required by our client to make risk management strategies in terms of social and natural disasters. Our services will allow clients to decide how to optimize their investments; support them in terms of decision making; as well as decide appropriate risk diversification.

OYO RMS conducts on-site research in terms of the level of the disaster which will be developed into a report. For further information on our services kindly refer to our company website. We would be happy to support you in English since one branch of our company was listed in the U.S. before the merger.

[Projects]

Project details

We offer governments and private companies our extensive knowledge and experience in the following research

- Seismic risk analysis for railroad infrastructure
- Seismic risk analysis and index development for rail travel
- Risk analysis on the impact of strong gusts and cyclones for railroads
- Joint studies with the National Research Institute for Earth Science and Disaster Resilience on "Hazard risks from natural calamities".

Also in relation to earthquakes we can evaluate the local soil reactions to shockwaves and estimate the probable maximum loss of real estate properties.

Basic information

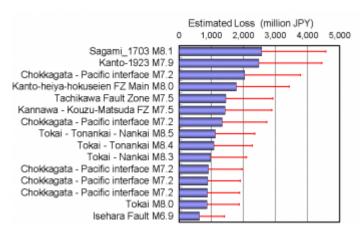
Industry sector Consultant

Number of employees (including group companies) 10-100

Normal involvement in infrastructure related construction n/a

Type of export that is preferable Direct sales to the local subsidiary

The location of your choice for doing business overseas East Asia, South East Asia, South Asia, Oceania region



Estimated loss from earthquakes



Takachiho Shirasu Corp

Safe, healthy and environmentally friendly housing and facilities

R&D center

Yokohama Landmark Tower, 9FL, 2-2-1, Minato-Mirai, Nishi-ku, Yokohama City, Kanagawa, 220-8109

Tel +81-45-224-6077 Email m kurihara@takachiho-shirasu.co.jp

Company website: http://www.takachiho-shirasu.com/ (English, Chinese)

http://www.takachiho-shirasu.co.jp/ (Japanese)

Our expertise are in

Construction

[Strengths]

Our plastering material "Shirasu kabe" is developed from volcanic soil known as shirasu found in South Kyushu. "Shirasu-kabe" exerts a variety of functions including removal of toxic material, deodorization, and humidity control. It also provides a comfortable and safe environment due to its air purification features that allow tenants to use less energy guzzling air conditioners and air purification appliances.

"Shirasu-kabe" has been used in the Ministry of Environment's model project for Eco-Housing, the Ministry of Land Infrastructure
Transport and Tourism's model project for sustainable housings, as well as a joint partnership between the academia and private
sector "Less chemical town R project" that was designed for children sensitive to chemical substances. Our products are well
suited for offering a safe and comfortable environment to people and for the conservation of the environment. In other words, our
products support the Sustainable Development Goals.

<Awards>

 $\,$ 2012 $\,$ 9th Eco-products Award, special prize from the chair of the review board $\,$

2014 9th Japan New Business Development Award. In the category of global markets

2015 9th Kids Design Award, in the category of safety and security for kids

2016 The Wonder 500TM

2017 Good Design Award, category for residential housing / interior

2018 2018 Future Seed Award

- Our product line http://www.takachiho-shirasu.com/products/
- Case studies http://www.takachiho-shirasu.com/case studies/

[Projects]

Destination Taiwan, Taipei City

Project details Takachiho Shirasu's shirasu-based interior-wall plaster product (Biocera) is employed at this new postpartum

care center in Taipei.

http://www.takachiho-shirasu.com/case_studies/postpartum-care-center/

Project duration n/a
Local partner None
Locally n/a

incorporated company if any

[Basic information]

Industry sector Construction

Number of employees (including group companies) 10-100

Normal involvement in infrastructure related construction Manufacturing and sales of natural materials for homes.

Type of export that is preferable Exporting the company's products



Our products line for interior walls: Biocera



Yamashin-Filter Corp

Construction machinery filters and nanofibers

Finance Section

Our expertise are in

Construction

Nisseki Yokohama Bldg 16FL, 1-1-8, Sakuragi-cho, Naka-ku, Yokohama City, Kanagawa, 231-0062, Japan

TEL +81-45-680-1679, Email ir@yamashin-filter.co.jp

Company website: http://www.yamashin-filter.co.jp/eng/company/organization.html

[Strengths]

Our expertise has been in filters since the very beginning. We conduct everything from R&D, design, to manufacturing within our group, which is why we are able to offer our customers with filters and filter media that match their specific requirements. We are especially strong in construction machinery filters, since the time oil hydraulic shovels were first developed in Japan. We have been very competitive for many years due to our knowledge on circuits in this area.

In recent years, our research for nanofibers has allowed us to develop a global first which can be used for not only construction machinery but other areas too.

[Projects]

| Destination | Philippines, USA, Belgium, Thailand, China |
|-------------------------------------|--|
| Project details | R&D, manufacturing, sales of construction machinery filters, and nanofiber |
| | |
| Project duration | 30 years |
| Local partner | YAMASHIN FILTER (SIP) TECHNOLOGY INC |
| Locally incorporated company if any | |

| Industry sector | Machinery |
|---|--|
| Number of employees (including group companies) | 501-1000 |
| Normal involvement in infrastructure related construction | R&D, manufacturing, sales of construction machinery filters, and |
| | nanofibers |
| Type of export that is preferable | Same as above |
| The location of your choice for doing business overseas | South East Asia (Vietnam) |



Yokohama Kankyo Design Co., Ltd.

SMART Solutions for solar photovoltaics

Executive office

Pacific Shin Yokohama, 3-18-20, Shin Yokohama, Kohoku-ku, Yokohama City, Kanagawa,222-0033, Japan

Tel +81-45-534-6468, Email https://ykd.co.jp/contact/

Company website: https://ykd.co.jp/

Our expertise are in

Smart Energy

[Strengths]

We are a total solutions provider that can offer clients a full range of services for solar PV generation systems at residential and commercial buildings. More specifically we can offer project design, engineering, civil and building works, as well as services in operation and maintenance.

One of our technical advantages are in our panel mounts. The mounts are patented due to their unique features that do not require anchor bolt placing. The panel mount is competitive for two reasons. First, they are resilient to salt erosion, very strong but also cost competitive because they use duplex stainless steel (our SUSK model). Second, they can be installed on fragile rooftops with low load bearing capacity, in locations where drilling holes in the waterproof membranes is prohibited, or in windy locations where constructions could be blown away. Our panel mounts are a solution to all these issues, and can be installed quickly because we have kept the number of components to a minimum.

We also offer operation and maintenance services through "Adler Solar Works", our joint venture with Germany's Adler Solar Service. As of September 2019, Adler Solar Works' operation and service coverage is a total of 175MW. The company also has a proven track record for providing technical due diligence tests (TDD) and completion inspections for 570MW of new PV installments. Our purpose is to support utilities generate sustainable, safe and stable power.

| Destination | Kanagawa prefecture, Japan | |
|-------------------------------------|---|--|
| Project details | 1) Shoko High School and Ebina School for the Disabled were two of the public buildings selected for | |
| | Kanagawa Prefecture's rooftop renting scheme. Yokohama Kankyo Design won a public tender and | |
| | was awarded the project at which the two schools offered their rooftops free of charge to install solar | |
| | PVs. The SUSK panel mounts which were first designed and developed in 2012, and are now being | |
| | used by many companies. | |
| | 2) Adler Solar Works conducts IV curve measurement and electroluminescence tests on TEPCO's | |
| | Ukishima Solar Power Utility and Ogishima Solar Power Utility sites in Kawasaki City (refer to photo). | |
| Project duration | 2012 onwards | |
| Local partner | Kanagawa Prefecture | |
| Locally incorporated company if any | | |

| Industry sector | Construction (general contractor, construction material etc.) |
|---|--|
| Number of employees (including group companies) | 100-300 |
| Normal involvement in infrastructure related construction | project management / system engineering /civil and building |
| | works / system development / operation and maintenance for |
| | solar power. |
| Type of export that is preferable | Exporting technology and also participating in the daily operation |
| | (Operation and maintenance services) |
| The location of your choice for doing business overseas | South East Asia (Indonesia) |



Yokohama Kankyo Design's solar PV panel mount (SUSK) is installed using a roof-top renting scheme (site: Shoko High School, capacity: 57kW)





Adler Solar Works' solar PV test car (site: TEPCO's Ukishima Solar Power Utility and Ogishima Solar Power Utility, Kawasaki City).