

Japanese firms ready to build a better future

Japan's labor shortages due to its aging population, the need to refurbish and maintain aging infrastructure, increasing natural disasters, climate change and the shift towards carbon neutrality due to environmental concerns. These are just some of the main challenges facing the construction and related industries in Japan today. And in order to tackle these challenges, companies and stakeholders are turning to DX (digital transformation) and the power of new technologies such as IoT and automation.

"In the past, we were able to secure plenty of workers, so there was no incentive or driving force to introduce additional means. It was more efficient to focus on having multiple workers take care of one construction-related task, rather than focusing on increasing the capability of one worker. But the environment has drastically changed, and it's now important to increase per-capita productivity for instance by utilizing DX and/or AI," says Soichiro Masuoka, President of Masuoka Gumi, a civil engineering and building construction services company that has embraced new technologies such as drones, 3D mapping and AI to enhance its operations.

EARTHTECHNICA, meanwhile – a company that provides crushing and grinding machinery to the construction and other industries – has adopted sensor technology, 3D imaging technology and Big Data to improve monitoring and

evaluation work. "In the past, human operators conducted inspections by eye. But now automation and sensors are used to manage a very stable condition on the field," explains president Masahiko Nishii. "3D imaging is a very high-level technology, so we asked our parent company, Kawasaki Heavy Industries, for design cooperation. Competitors of the same size as us find it very difficult to have such a large R&D capacity. As we are part of the Kawasaki Heavy Industries group, that engineering and technological edge is what we have over our competitors."

Japan's declining population also has spurred the shrinking of the domestic market, forcing many companies to look abroad for business growth. While doing so, Chikami, a company which supplies functional raw materials to the construction and other industries, aims to develop a business model that promotes collaboration with local firms. "Major American, European and Japanese companies have not disclosed any of their technologies to locals, and what tends to happen is that those major companies take the technology and do the work by themselves in order to retain said technology," states president Kunio Chikami. "We need to change the business model to build win-win relationships with local companies."

With companies in five countries, Yabashi Holdings operates in the construction, machinery and mining industries. President Tatsuyoshi

Yabashi also describes his company's approach to overseas business, stressing the importance of synergy and collaboration. "At Yabashi, our core strength is having companies in different countries and industries, all independently working hard to achieve *monozukuri* – perfection and innovation in manufacturing. The variations between the group's global locations trigger a synergic effect. We believe the more we understand each other culturally and business-wise, the larger the synergic effect. That is why we want to present an example of multicultural cohabitation."

Optimization, sustainability and automation will prove key as companies are faced with increasingly limited resources, be it materials or human capital, as pointed out by Noriyuki Ishihara, president of construction-related trading company Ishihara. "First, as an environmentally friendly company, when using gypsum board, it is pre-cut at the factory, so no waste is generated at the construction site. And all gypsum board cut in our factory is 100% recycled. This is one of our strengths," he adds. "Another activity is optimization. Due to the labor shortage these days, it is difficult to secure human resources and to improve work efficiency, so we have to introduce new technologies such as robots. These integrated systems help alleviate the burden on operators, and this is key given the scarcity of human capital in the domestic market."

Paper material trader Chikami the "connective tissue" for cross-industry collaboration

Since its foundation in 1946, Chikami Miltec has continued to be an integrated provider of functional raw materials, supporting key industries such as paper and non-woven fabric manufacturing, machinery and construction and civil engineering.

With a huge selection of products ranging from raw materials and functional products to industrial materials needed for civil engineering, Chikami Miltec has been an established industry player for more than three quarters of a century.

Due to Japan's well-documented demographic issues, the company

to the pursuit of further business growth. We are trying to look at the market from a bird's eye perspective rather than a narrow-sighted one."

The company already enjoys a certain international status with their Geodrain product, a prefabricated vertical drain (PVD), which is used in civil engineering for soft

ground improvement, and has become standard in Japan, Vietnam and many other countries around the world.

The story behind the development of that product is interesting, according to Mr. Chikami, because it shines a light on how the

firm views itself in today's increasingly fast-paced age.

"We want," Mr. Chikami says, "to exist as a connector, filling the gaps in order to create new value. Any mediator needs to have extensive knowledge of the fields it wishes to connect, as well as the capacity to analyze what's missing and propose something new."

Looking to the future, therefore, the company is focusing more on collaborating with foreign entities and personnel in joint ventures. Key to this enterprise will be the hiring of employees who can operate as a bridge between Chikami and overseas companies.

"Having talent that can bridge gaps will be key to our company's growth," concludes Mr. Chikami. "Many companies would like to hire creators and inventors; our focus is on employees who can act as connectors."



Kunio Chikami, CEO,
CHIKAMI MILTEC INC.



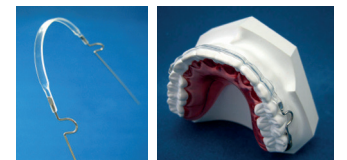
"BICLECA" Cleaning cards & items



PVD ground improvement



Earthquake ceiling isolator



"Q.C.M." Orthodontic retainer

Naotomi Shoji leading the way to a greener future

Engaged in the recycling of industrial and household waste, as well as the production of biofuels, Naotomi Shoji aims to expand its international operations in China and Southeast Asia.

Reduce, reuse, recycle – the so-called 'Three Rs' are seen as indispensable when it comes to the full realization of a circular, sustainable global economy that ensures the safety and survival of the planet. But the cold reality is that, on a global level, due to population increase and ever-growing consumer demand, the first 'R' (reduce) is arguably unattainable, making the second two 'R's (reuse, recycle) ever more important.

Recycling companies across the world are working at a local level to ensure the overarching global aspirations for a circular economy are achieved. And in Nagano Prefecture, Japan, Naotomi Shoji is playing its part as a local leader in the recycling of industrial and household waste, as well as the production of biofuels. The company also has ambitions to expand overseas and already has operations in China, where it forms part of a joint venture with a local partner engaged in the recycling of automobiles.

Naotomi Shoji's business comprises four pillars: 1) metal recycling; 2) industrial waste treatment and recycling; 3), general waste recycling including waste paper and biodiesel fuel production; and 4) other activities such as building maintenance, demolition and used clothing.

"We see growth potential in pillars 1 to 3," says President Shigeo Kinoshita. "Particularly pillar 1 (recycling scrap metal) as steel scrap is used more than ever in blast furnaces due to decarbonization measures. We also expect demand for copper and other non-ferrous metals to increase, as well as steel, due to the penetration of electric vehicles and the global improvement in quality of life. And recycling is more earth-friendly than digging up mountains."

"Alternative fuels can be made from the industrial waste (pillar 2). The need for such alternative fuels is also increasing in Japan. Increasing the recycling rate of industrial waste is also something that is being attempted at our new plant. For Pillar 3 (general domestic waste), we are currently focusing on recycling

"Our strategy is to carry out automotive recycling in China."

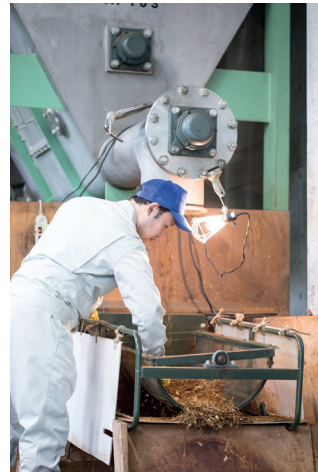
Shigeo Kinoshita,
President,
Naotomi Shoji Co.



Metal recycling (copper sorted from coated wire copper)



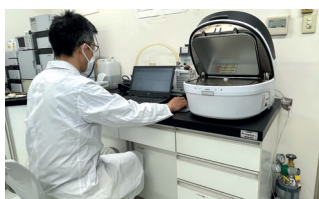
Metal recycling (scrap metal cut from steel)



Food waste recycling (feedstuff production)



Head office (Nagano, Japan)



Research and development of recycling technologies

plastics and waste wood as they have great potential and we will continue to target them."

The company's new state-of-the-art plant in Nagano, which is earmarked for completion in December, is being built to increase production capacity and will leverage the power of artificial



Household waste collection vehicles

intelligence to increase efficiency, enhance productivity and reduce energy consumption and waste.

"To reduce our environmental impact, we are working on energy-saving activities such as switching 100% of our lighting to LED, and there are many things we are doing, such as solar power generation,"

adds Mr. Kinoshita. "We are also converting our fleet from engine vehicles to EVs and hybrid vehicles to reduce fossil fuel consumption."

Naotomi Shoji also aims to help other businesses and organizations in the local Nagano area to reduce their consumption of fossil fuels by producing biodiesel fuel (BDF) from used tempura oil. "We want to collect tempura oil in Nagano Prefecture and recycle it into BDF that can be used in buses, trucks and heavy machinery. We want to complete this recycling system within Nagano Prefecture. Vehicles running on tempura oil generated at home will go to local kindergartens, primary schools, etc. to collect waste and other materials. It is truly a local-production-for-local-consumption view of recycling. We expect it to be easy for children to understand and familiarize themselves with."

Such innovation and initiatives, however, should not be limited to the local Nagano area, which is why Naotomi Shoji has set its sights on expanding its presence in China (to grow its aforementioned car recycling business) and the Southeast Asian region. Indeed international expansion will be crucial for the Japanese enterprise to reach its financial goals, as well as social aspirations.

"Our goal for the next six years is to increase the company's profits and sales," states the president. "We expect to generate approximately 16.5 billion yen this year, so our first step is to achieve sales of at least 20 billion yen. We consider sales to be proof that people appreciate our company, so we will do our best to gain the support of as many people as possible."

Poverty eradication, meanwhile, is one of the U.N. Sustainable Development Goals and Naotomi is now taking action, both locally and globally, to alleviate poverty, especially among children. "Moving forward," Mr. Kinoshita adds, "we want to expand and continue our actions and make our results visible."

NAOTOMI
直富商事株式会社
www.naotomi.co.jp

Masuoka Gumi: striving to be a premiere social resilience company

As it approaches its 120th anniversary, Masuoka Gumi aims to build on its reputation as a trusted partner in the construction sector.

Masuoka Gumi is one of the longest-standing and most reputed players in Japan's construction industry, providing world-class civil engineering and building construction services since its establishment in 1908. Proudly boasting a portfolio made up of several hundred successfully completed projects, the company designs and constructs roads, bridges, tunnels, and residential and commercial buildings, as well as offering real estate sales and brokerage services.

Over its 115-year history, Masuoka Gumi has had to adapt to the ever-changing needs and challenges of the construction industry. Today, one of the industry's main challenges involves successfully adopting the latest DX (digital transformation) technologies to improve efficiency and productivity amid a backdrop of labor shortages and growing environmental concerns due to climate change. It is an area in which Masuoka Gumi aims to lead the charge in Japan, as company president Soichiro Masuoka explains.

"In the past, it was more efficient to focus on having multiple workers take care of one construction-related task, rather than focusing on increasing the capability of one worker, but the environment has drastically changed, and it's now important to increase per-capita productivity by utilizing DX and AI," he says, before giving some concrete examples of the company's DX initiatives.

"By introducing drones in our operations, we are not only able to have accurate measurements, but at the same time, provide safety for workers and cut the cost and time required to do the operation. For example, we can measure a mountain where we will conduct a civil engineering project using 3D mapping. By combining this accurate data together with the construction plan, we are able to determine at which point we need to cut and do the civil work."

He adds: "Costs differ considerably depending on the combination of the materials and methods, the region of construction, the timing,

"In this orchestra analogy I see us as the maestro or the conductor. Even if we have great expertise, it's important to collaborate with trusted partners."

Soichiro Masuoka, President, Masuoka Gumi Co., Ltd.



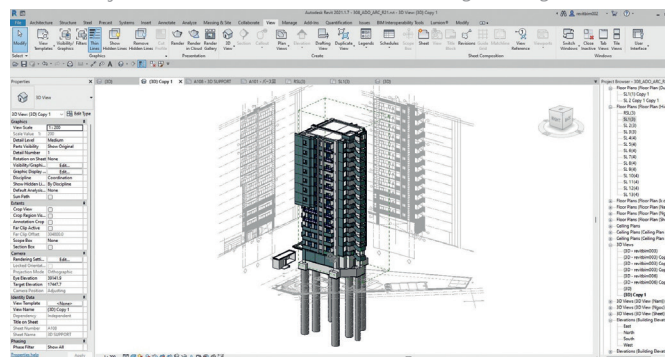
TEKKO Building, a new Tokyo landmark



Innovative measurement technology for the best accuracy, safety and efficiency



AR applications for civil engineering



Cutting-edge architectural design with BIM

and the amount of the order. It's important to provide clear cost information to our customers, but more than that, we need to know the real cost incurred during construction, so I believe that by using AI, we will be able to gather real time data on the cost. That is the approach we would like to take."

Another grave challenge for Japanese construction and engineering firms has been growing their global operations to mitigate the impact of the nation's shrinking domestic market due to its aging population. Fast-growing markets in neighboring Southeast Asia have naturally been a target for Japa-

nese firms revered in the region for the ability to deliver high-quality projects and solutions.

In the case of Masuoka Gumi, the company has worked in Vietnam, having completed the Hai Duong Garden residential project, and Cambodia, where the company has undertaken land development work.

"The Japanese market and economy are shrinking, so it's important for us to go abroad. We need to change our work style by location. If we were to stay domestic, we would have to change our business model in order to survive. On the other hand, if we are to keep our conventional business model, we need to go overseas to open up new markets," explains Mr. Masuoka.

"The very first initiative was through ADO, our group company. We started training local Vietnamese engineers so they could use CAD, BIM and other digital means to create architectural drawings, so we could increase the number of engineers in-house. We now have about 30 Vietnamese engineers and they are very talented."

Currently, the company's international strategy involves gaining a foothold in India, where it has invested in the project of a local partner in Bangalore alongside some fellow Japanese developers.

Looking towards the future and the company's 120th anniversary in 2028, a philosophical Mr. Masuoka is aware of the danger of resting on one's laurels in a constantly-changing landscape.

"Everything is transient and changing, and failure often leads to success. However, success may lead to failures, so you have to be mindful that conditions always change," he states. "In a rapidly changing society, it's important for us to be proactive in meeting market needs and not stay passive, so through the accumulation of know-how, we want to become a socially resilient company."

MASUOKA

www.masuoka-g.co.jp

A bright future for renewable energy is under construction

Combining expertise in the fields of civil engineering as well as construction of hydro-power plants and housing, Fukamatsu Group can offer comprehensive solutions that benefit not only enterprises but local communities as well.

Founded in 1925 and operating in a local area of Japan, Fukamatsu Gumi KK is a medium-sized construction company where Tsutomu Fukamatsu, president and CEO, successfully manages the main business while providing social benefits for the community.

His management philosophy is based on "serving the prosperity of local communities through construction projects with respect for mutual trust," and a 2014 investment in a solar power business was seen as part of this shift to social responsibility,



Tsutomu Fukamatsu,
President,
Fukamatsu Group Co., Ltd.



深松組

www.fukamatsugumi.co.jp

with renewables a pillar of the company's current evolution.

In line with this philosophy, Fukamatsu Group made a donation to a fund supporting a joint research program undertaken by Tohoku University and Idea International — the latter being a subsidiary company of Fukamatsu Group which develops innovative nano carbon material (lithium ion endohedral fullerenes) and its applications. The fund will be used for development of a new perovskite solar cell.

"The renewable energy business has made our com-

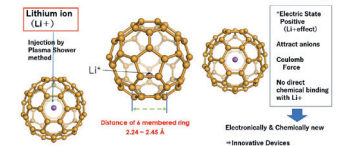
pany even more concrete," says Mr. Fukamatsu. "The rental service apartments and Okinawa resort hotel are initiatives that I also added to the company's portfolio, and we built a commercial facility on the land where homes were destroyed by the 2011 tsunami."

While connectivity of more remote villages may be for larger companies, Fukamatsu is playing its part. "We facilitated the establishment of a small hydro-electric power plant in a small village in Toyama prefecture where my grandfather started his construction business," Mr. Fukamatsu explains. "The village lacked funds for renovation of the tap water system and revenues from the hydro-electric power plant are utilized for repayment of the 20-year loan provided by Hokuriku Bank and the local government."



Commercial facility with a hot spa in Sendai

LIEF (Lithium Ion Endohedral Fullerene: Key Material)



Lief (lithium ion endohedral fullerene)



Rental service building for residents in Myanmar



Solar photovoltaic plant in Chiba prefecture

2x4 method the future of safe construction

With over 2 million homes utilizing the 2X4 construction method, Wing is ensuring a safe future for homes in Japan.



"Japan has a long history and tradition in wooden construction and our technical skills are highly regarded worldwide."

Toshiyuki Kurata,
President, Wing Co., Ltd.

The Japanese are renowned for building high-quality wooden housing designed to withstand earthquakes and other natural disasters. Today, Wing, a leader in wooden housing construction solutions, aims to bring the Japanese 2X4 method to global markets.

"Japanese companies involved in building and housing construc-

tion are required to provide earthquake-resistant building structures. Our core business, 2x4 housing construction structures, is highly earthquake-resistant and airtight," says Wing president Toshiyuki Kurata.

"This is one of our greatest advantages. We create an environment that increases the value of buildings by using the Japanese 2x4 method in Europe and the U.S. They can withstand pests such as termites, which can damage wooden buildings, and last long term. These advantages are why we are promoting 2x4 housing."



Wall panel

The resilience of 2x4 housing in Japan was demonstrated in the Great Hanshin-Awaji Earth-



Precut roof parts

quake (1995) and the Great East Japan Earthquake (2011). The reinforced timbers used in 2x4 construction, such as laminated timber and layered timber, have been proven to withstand strong forces and as such they have even been used in the construction of high-rise buildings.

There are also, of course, the environmental benefits. "When it comes to the issue of carbon neutrality, timber houses have excellent carbon storage capacities," adds Mr. Kurata.

Many Japanese housing companies are expanding overseas and Wing aims to expand alongside them, with plans afoot to open factories in the U.S. and Canada.

"The future of housing construction, as I envisage it, is without carpenters or framers on site. Everything – interiors, windows, doors – will be pre-made in a factory," Mr. Kurata explains. "We hope that this vision will become a reality in Japan in five years' time and eventually become a global standard. North America is a leader in 2x4 construction but has not yet introduced ready-built construction. In the future, we hope to introduce this efficient construction method."



Overview of Wing factory



www.wing2x4.co.jp

Crushing, Grinding and Separation

Established in 2003 as part of the Kawasaki Group, EARTHTECHNICA has developed four business areas consisting of Crushing & Grinding, Recycling, Powder Processing and Casting products for the global market.



"We just need to look around and see opportunities continuously in sorting and crushing."

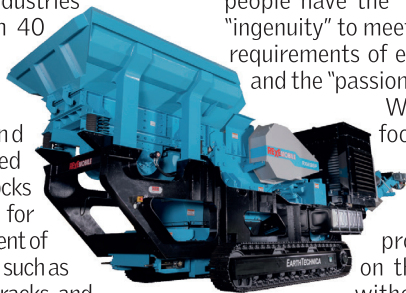
Masahiko Nishii, President, EARTHTECHNICA Co., Ltd.

EARTHTECHNICA was established in 2003 by integrating the crusher divisions of Kawasaki Heavy Industries and Kobe Steel, Ltd., before becoming a wholly owned subsidiary of Kawasaki Heavy Industries in 2008. With crushing, sorting, and granulation as our core technology, we operate in the fields of crushing and grinding, recycling and powder processing. We have more than 50 years of experience in the field of crushers, and based on the valuable experience and know-how we have accumulated during that time, we not only provide individual machines, but also plant engineering, design, manufacturing, construction, and even operational guidance.

We are in the leading position in the crusher market in Japan. In addition, our crushing technology is highly evaluated around the world, and we have a track record of timely delivery to the mining, cement, and aggregate industries in more than 40 countries.

The Crusher

Stones and sand produced by crushing rocks are essential for the development of infrastructure such as roads, train tracks and concrete buildings. EARTHTECHNICA manufactures crushers that produce "aggregate" used in concrete buildings, "crushed stone" used in road construction, and "bal-



Mobile Jaw

last" used as cushioning material for railroad tracks. Our crushers are also used by cement companies and iron ore, gold, copper and diamond mines around the world. It can be said that our technology supports infrastructure from the ground up.

Taking the cone crusher used in the mining industry as an example, we have made numerous improvements to the machine body, such as the design of the crushing chamber and the number of revolutions. As a result, compared to 30 years ago, we have been able to reduce the energy used for crushing by 40%. Today the same amount of ore can be crushed with 60% of energy that used to be required. In this way, we have contributed to energy saving around the world, and by creating, developing, and improving products that are useful for society, we are contributing to the development of society and the earth. That is our mission.

Advantages of EARTHTECHNICA

In this competitive world it is very important to have the right features and knowledge. Since it is a niche industry, the needs of our customers are also niche, and if we cannot meet those needs, we cannot survive. Our main customers are in the mineral resource fields such as mines and aggregates, but we also have those operating in steel, cement, electricity, automotives, and the pulverization and granulation of pharmaceuticals and food.

Our superiority lies in our ability to customize products to meet our customers' needs, and our people have the "wisdom" and "ingenuity" to meet the different requirements of each customer and the "passion" to achieve it.

We are also focusing on the development of technology and new products based on the belief that without our technological innovation and improvement as the top runner in the industry, there will be no technology that will improve people's lives in this field. Speed is the most

important factor in proceeding with this development, and trying things first and thinking while running are essential elements when developing innovative solutions.

UNIQUE PRODUCTS

ZI Cone Crusher and p-referential crushing technology for the diamond industry: More than 100 units of the ZI Cone Crusher series have been ordered and delivered since it was introduced to the market, and it has gained the overwhelming trust of diamond mine operators, especially in the Southern African region. The reason the ZI Cone Crusher is successfully adapted for diamond liberation is a special crushing technology that does not crush diamonds. Diamonds are concealed in a rock called kimberlite. Accordingly, kimberlite must be crushed by crushers to liberate the diamonds. However, if the diamond is damaged during the crushing process, its market value will drop drastically.



Gyratory Crusher

The solution which EARTHTECHNICA is able to offer its customers to address this issue is the mild steel inserted (MSI)-type crushing chamber of the ZI Cone Crusher. Mild steel is cast into the high-manganese steel cast steel so that shallow grooves are always formed on the surface of the mantle and concave until the liners are worn out. The shallow grooves are very important for liberating diamonds without damage. This technology was originally developed to improve crushing efficiency and productivity. However, through repeated crushing tests, it was found that the MSI technology works very well to liberate diamonds without damage.

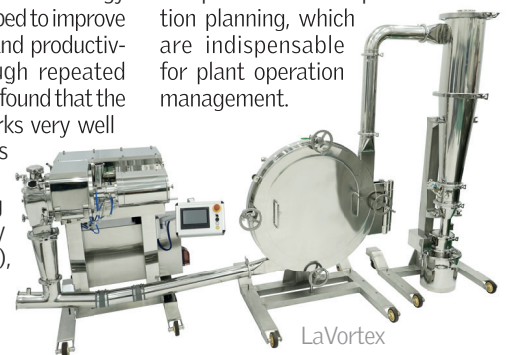
For the crushing process (especially mineral processing), EARTHTECHNICA has drawn on its extensive knowledge

and years of field experience to design a crushing chamber that meets the customer's requirements. Thanks to a newly developed crushing chamber design, the throughput capacity has improved by approximately 20-25% compared to the previous model.

PSD Monitoring System and Automatic Operation Control System: Our latest technology is the PSD Monitoring System, which monitors the size distribution of crushed products on the conveyor belt from data collected by a 3D camera. The 3D camera only sees the surface, but with top-secret know-how, it is possible to know the size distribution of the crushed product on the conveyor.

Traditionally, the machine operator visually checked the crushed product and manually increased or decreased the gap and feed rate settings. But now thanks to the PSD Monitoring System, automatically measured data is calculated and the system automatically changes the feed rate and gap settings.

In the past, the operation relied on the intuition and experience of the operator. However, with this PSD Monitoring System and the Automatic Operation Control System, the plant's production volume can be maximized and operating costs can be reduced. In addition, by visualizing and reporting the operating status of the plant, it is possible to propose appropriate maintenance plans and provide data for production planning, which are indispensable for plant operation management.



LaVortex

Manganese Sorting System: Blast furnaces, which are currently the mainstream in iron manufacturing, emit a large amount of carbon dioxide, so electric furnaces that melt iron scrap to make iron are considered to be one of the alternative technologies. In order to produce high-quality steel in an electric furnace, it was necessary to adjust the quality and composition of the scrap, and our customer needed to sort steel plate scrap in large quantities, at high speed, and with high accuracy according to the manganese ratio. EARTHTECHNICA conducted R&D to meet this demand, repeated tests, and completed this device. In this system, a line sensor camera captures images of the steel plates on the conveyor, and the images are processed for separation and sorting. This technology has been recognized as a world-first innovative technology, for which we have acquired a patent. In addition, we continued R&D to improve the performance of this device, and completed a system that uses AI to improve sorting accuracy.

LaVortex: LaVortex is a newly developed system that can completely and

continuously process wet granulation and drying processes, which were conventionally performed in batch mode. Batch production was the mainstream in the pharmaceutical industry, but there were problems with complicated operations. LaVortex adopts a new process analysis technology (PAT), which enables advanced quality control in continuous production, achieving stable production and labor saving. Compared to conventional batch-type equipment, this product has improved disassembly and cleaning performance by reducing the number of parts and reducing weight, meaning granulated products can be easily produced.

With the batch method, one major problem is that if one machine produced multiple batches with defects, they would all be defective. LaVortex uses new sensing technology to detect defective products and automatically correct settings to do a new run and produce a modified version of the product. By constantly controlling

the setting level, it is possible to stably produce high-quality products continuously.

AUDIS Jaw: Slag discharged by steel companies is manufactured and quality-controlled in accordance with various uses, and is widely used as a construction material. The slag generated from electric furnaces contains a lot of iron, so it cannot be crushed by a normal jaw crusher, meaning the machine will stop, and recovery work will require manpower and time. The AUDIS Jaw, developed by EARTHTECHNICA, is equipped with a specially developed hydraulic cylinder and sensor. When it detects difficult-to-crush objects, it automatically ejects and resumes normal operation, enabling stable operation and reduction of downtime.



AUDIS Jaw

RPF Plant: RPF (Refuse Paper & Plastic Fuel) is a solid fuel mainly

made from waste plastic and waste paper. Through our system, waste plastics and waste paper that are difficult to recycle are not discarded, but are reborn as "RPF", an alternative to fossil fuels such as pulverized coal and heavy oil, that contributes to conserving resources and reducing CO₂ emissions.

Mobile Jaw: Our mobile jaw crusher adopts a newly designed jaw crusher for mobile use, and is driven by a diesel engine that complies with the latest exhaust gas regulations. Feeders, conveyors and jaw crushers can be compactly unitized and can be driven into a transportation trailer without disassembling the components.

EARTHTECHNICA celebrates its 20th anniversary in 2023. In order to achieve the global goal of net zero emissions and the transition to a circular economy, we will continue to develop technology and continue to release products that can contribute to society.

 **EARTHTECHNICA CO., LTD.**
www.earthtechnica.co.jp/english

A trustworthy construction partner both in Japan and abroad

A trading company that boasts over six decades of expertise, Dentetsu Shoji is targeting big projects with its niche products as it bids for global growth.



Dentetsu Shoji is a trading company that sells construction, mining and civil-engineering materials and machinery, supplying projects in Japan and worldwide.

"Traditionally, we're known for specializing in civil-engineering solutions – particularly in the construction of highway, railway and sewage tunnels," says the Tokyo-based firm's president, Takenao Mimura.

A trader with a growing global influence, Dentetsu Shoji



"Cooperation with both SMEs and large general construction firms is a strong point of the company, which is expanding its network."

Takenao Mimura,
President,
Dentetsu Shoji Co., Ltd.

opened a South Korean office in 2003. Located in Seoul, the branch aids the company's work abroad, which is chiefly carried out for Japanese clients.

"A lot of general construction companies in Japan are focusing on overseas markets and are contributing to local infrastructure," Mr. Mimura says. "For example, we've

assisted with the construction of the Marmaray Tunnel in Turkey, a subway system that's the world's deepest tube tunnel."

It is the kind of project that Dentetsu Shoji, as a company that isn't as large as Japanese trading giants like Mitsubishi and Mitsui, tends to set its international sights on.

"Basically, we're aiming to



Bridge construction project in Bangladesh

go to places which, for a variety of reasons, those trading houses are unwilling to go to. Common sense dictates that as a smaller company, niche locations are key to expanding further overseas."

While Dentetsu Shoji normally assists Japanese companies with overseas projects, it also welcomes international clients.

"We're traveling along a long road, and if we come across foreign companies that are looking for the kinds of solutions we provide, we'd be fools not to take that opportunity," Mr. Mimura says. "Whether it's foreign or Japanese, we're always looking to increase our network and spread our good name."

 **DENTETSU SHOJI CO., LTD.**
www.dentetsu.com



Pipeline project in Qatar

Vietnam at the heart of Yabashi's international approach

With companies in five countries, Yabashi Holdings is a construction, machinery and mining group that draws on the synergy between its Japanese and overseas locations to maximize value creation across its business areas.



"We believe the more we understand each other culturally and business-wise, the larger the synergic effect between countries."

Tatsuyoshi Yabashi,
President, Yabashi Holdings

At Yabashi Holdings, international influences are considered vital to the Japanese organization's good health and continued growth.

A construction, machinery and mining group made up of 17 companies – 10 in Japan, seven abroad – Yabashi has overseas firms in each

of its three chief business divisions: wood products, metal products, and limestone mining and processing.

While also present in Myanmar, Singapore and South Korea, Yabashi has a particularly close relationship with Vietnam, where it has established three companies since 2000 – and is in the process of adding another.



Japanese tea ceremony attended by people from 3 different nations

"Japanese companies' products are the result of the high levels of education the workers on the factory floor possess," says President Tatsuyoshi Yabashi. "This leads to high-quality products. However, when it comes to value creation, I don't think the Japanese education is doing enough, so I believe

we need to work in tandem with people from other countries.



Mining in Vietnam

"At Yabashi, our core strength is having companies in different countries and different industries, all independently working hard to achieve monozukuri – perfection and innovation in manufacturing. The variations between the group's global locations trigger a synergic effect."

Cultural understanding is crucial to maximizing international synergy, Mr. Yabashi adds: "I always tell my employees when they're going on business trips abroad: Even if it only takes seven days to finish the work, stay for 10 days or more. Really get to know the culture of the area."

"In addition, in 2025, I'm planning to build a canteen for our company that serves the traditional and most popular dishes of the countries of each of our employees. I want our employees to be able to experience with their five



Omotenashi at president's house senses, tasting different cuisines, seeing different multicultural art and crafts, and so on. We believe the more we understand each other culturally and business wise, the larger the synergic effect."



www.yabashi.co.jp

From construction equipment parts trading to end-to-end production

Kanehiro has become an all-rounder solutions company specialized in structural and performance components by understanding the needs of the market.



"We work together with clients to come up with the best-value solution that works for both parties."

Hiroshi Hashimoto,
President, Kanehiro Co., Ltd.

Understanding a market, no matter how niche, requires a holistic outlook that can only be achieved through diverse experience. Japanese firm Kanehiro has become a leader in the field of construction machinery parts

through its years of working both as a manufacturer and a trader in the industry.



Founded in 1952, the company operated as a trader until 2003, when company president Hiroshi Hashimoto made the move into the manufacturing of metal assembly parts used in construction machinery. The company used its knowledge of the industry and clear lines of communication with its customers to meet changing needs with new solutions.

Kanehiro's components are split into two divisions: larger module

structural parts and smaller functional parts. Mr. Hashimoto explains that Kanehiro has worked to ensure its employees know each step of the manufacturing process of its parts: cutting, processing, welding, assembly, and painting. As Mr. Hashimoto says: "You have to become an all-rounder, and we have fully achieved end-to-end production for module manufacturing."



Not only has Kanehiro become competent in all aspects of manufacturing, it has used innovative methods to remain at the van-



Head office in Kobe

guard of the industry. From 3D design models and measurement, to robots in its factories, the company uses technology to keep up to date with its customers' needs, especially as the engines used in construction machinery continue to undergo changes.

The company's innovation has allowed it to expand into China. And with China as one of its manufacturing bases, it is always looking to work with trading companies with expertise in specific regions. Kanehiro's experience as a trader gives it a unique insight into the needs of its customers, while its manufacturing prowess enables it to meet these demands with innovative solutions.



www.kanehiro-inc.com

Custom-made steel products for electrical wiring work

Delivering high-quality custom-made products on demand and on time, Yashima Denko, a key supporter of electrical work within the construction industry, aims to go global.



Electrical wire duct installation on a highway

While regional competitors have overtaken Japan when it comes to mass production, Japanese companies are still dominant in high-mix, low-volume markets where customers demand high-quality, custom-made products. Japanese firm Yashima Denko has built its success on manufacturing and supplying custom-made iron steel parts and related products for electrical

"With the depreciation of the Japanese yen, we may have opportunities to receive custom-made orders from overseas countries."

Yoshitsugu Yamamoto,
President,
Yashima Denko Co., Ltd.



wiring work – delivering to customers on time and following the strictest quality standards.

As project timings often overrun in construction projects, the time allotted towards the end of a project for electrical wiring work can be shorter than initially planned, putting contractors under pressure to move quickly.

"We make specific custom-made products and provide various options that can cater to these

kinds of short-timeframe installations," states Yashima Denko president Yoshitsugu Yamamoto. "We are particular about providing quick service. From taking the customer's order to manufacturing and delivery usually takes us three days or less."

With manufacturing bases in Japan and Vietnam, Yashima Denko has its sights on bringing its custom-made products to a wider global



Electrical pull boxes and enclosures



Custom-made electrical cabinets and components

customer base, with North America and Europe being top export target markets as the company looks to take advantage of a weakened yen.

"Before Covid, we were actively trying to sell our metal processing products to other Southeast Asian countries," says Mr. Yamamoto. "But now we are currently in discussions with potential clients in the U.S.A. and E.U. markets. With the depreciation of the yen, we may have opportunities to receive custom-made orders from overseas countries."



www.yashimadenko.co.jp

Raising the flag of success

With products such as its aluminum flagpoles, lifters, bollards and camera stands, Sunpole aims to be a flag bearer of Japanese manufacturing "monozukuri" in Southeast Asia.



Shuji Makiya, Overseas Sales Manager, Sunpole Co., Ltd.; **Kaoru Ishigouchi,** Managing Director; **Ms. Yada & Ms. Wanida,** European Flagpole Co., Ltd.

Japan's leading manufacturer of flagpoles and traffic barriers, Sunpole Co., Ltd. is working to strengthen its international presence. A major milestone in this drive came in 2017, when Sunpole acquired Thai flagpole manufacturer, European Flagpole Co., Ltd., which facilitated its entry into the Southeast Asian market. For now, Sunpole's international focus is on ASEAN countries; however, there are also plans to target other global regions.

When it comes to overseas markets, the firm's sales strategy is underpinned by three core values. Firstly, Sunpole is committed to listening to its local clients without preconceptions; it wants to know exactly what they're looking for in its products. Secondly, it seeks to always be faithful and fair in its dealings; good products alone are not enough. Customers can expect a comprehensive, attentive service that includes



extensive after-sales service. Finally, Sunpole ensures it stands out from its imitators – and the previous two values play a funda-

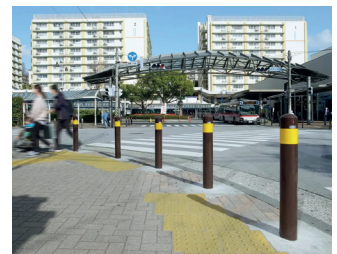


Strength testing of impact bollards with actual vehicles

mental role in this. As the superiority of its service shines through, the firm expects its global reputation to grow and grow.

Sunpole's representative product in the overseas market is the "lifter", which is a traffic barrier that can be stored underground and rise to ground level only when needed. Lightweight and long-lasting aluminum flagpoles and fixed camera stands where tourists can place their cameras and smartphones to take photographs are also key products for Sunpole's overseas expansion.

Sunpole is now considering "impact bollards" as the next product



Impact bollards installed at intersections in Japan

to be developed for the overseas market. The impact bollard is a product that absorbs the impact of a car collision by incorporating a unique reinforcing material. This product, which was created to address the large number of accidents involving elderly drivers in Japan, has spread rapidly throughout the country and has been well received and garnered positive reviews from overseas. No doubt that similar accidents will occur in other countries too in the near future as societies age. Sunpole believes that impact bollards can help alleviate this social problem.



www.sunpole.co.jp sunpolethailand.com