### Japan: Building innovation for the 21st century

With much of Japan's modern infrastructure dating back to the country's post-war economic boom of the 1960s, the biggest task for the nation's construction industry today is the maintenance and repair of existing roads, bridges and buildings. And as a highly natural disasterprone country, ensuring the reinforcement of structures with the latest disaster prevention technologies is also essential. Climate change, of course, also brings its challenges, prompting the need for sustainable buildings and construction practices, and the establishment of a strong renewable energy network. Fortunately, Japan's innovative companies involved in the construction, infrastructure, real estate and related industries are facing the challenge head on.

"Japan is very vulnerable to various natural disasters and the ongoing global warming situation. Seeing the wider perspective of what is happening in the world around us and predicting these natural disasters is something we can do to some extent," says Toshihiro Matsumoto, Chairman and President of JESCO Holdings, whose business activities include real estate and renewable energy. "That is why we can gather and prepare infrastructure and equipment to be ready for when these disasters strike. The approach to disaster prevention is something that every company in our group follows, including our newest group company, JESCO CRE (Corporate Real Estate)."

"In recent years with the push towards carbon neutrality, Japan has become more dependent on alternative energy sources such as wind, hydro and solar," he adds. "These alternative sources are actually a foundation for our business and we can provide appropriate solutions to interested potential clients."

Founded after World War II to support Japan's post-war housebuilding drive, Sekisui House continues to play an important role as a developer of earthquake resistant prefabricated and pre-engineered housing. "There are some other competitors in terms of pre-engineered or prefabricated houses, but when it comes to standards for earthquake resistance, we have always been a little bit ahead of the competition," explains company president and CEO, Yoshihiro Nakai. "We always try to be one step ahead of the current standards, so in a sense, you could say that our own company standards are stricter than those of the Japanese government. We try to make sure that our company is always one step ahead of others in our field. By doing so it enables us to lead the industry."

"We use our wholly owned subsidiary Sekisui House Construction Group to do the foundations for houses," he adds. "That is because the foundation is the most important part of a house and we simply cannot trust an outsourced company to do it. As a result, in the 1995 Great

Hanshin-Awaji Earthquake and the Great East Japan Earthquake of 2011, we did not have any houses that were destroyed due to earthquake shaking, either completely or partially.

With Japan's construction boom dating back to the period before and around the 1964 Tokyo Olympics, maintenance of aging infrastructure is crucial. "Bridges are in particular in need of attention," says Toshikazu Yaguchi, President of ATOX. "To address this challenge, ATOX has developed an inspection system with a portable X-ray generator and a high-performance detector to visualize incomplete filling of grout and fractures in PC steel. The system can be used for concrete walls as well as PC bridges. In the future, it is hoped that the system will also be well suited to the maintenance of other structures, such as older buildings."

Wood has long been a cherished building material in Japan. As a company involved in the manufacture of high-quality Japanese wooden furniture, ETO is committed to sustainable business practices. "We think it is very important to protect our forests. In fact, our company also has mountains in other prefectures, where we regularly plant trees," says president Aya Yamasaki. "We work with the forestry cooperatives in the regions where our mountains are located to protect the mountain and forest environment and to ensure sustainable production."

## Sekisui House paving way for the next generation of homes

As a pioneer in prefabricated housing, Sekisui House is now looking towards ZEHs and digital technologies as the next step in the evolution of homebuilding and living.

Initially established to help Japan cope with the difficulties of building houses in the post-war era, Sekisui House has played a key role in the popularization of prefabri-

cated homes and is today regarded as a major industry player.

"Our pre-engineered houses have two notable characteristics," explains company president,











Yoshihiro Nakai. "One is that we have introduced robotics into our factories and we have also promoted automation through the introduction of new equipment and AI as well as DX. The other is that we use our own subsidiary, Sekisui House Construction Group, to do the foundations for the houses."

This willingness to innovate and move with the times can be seen with the development of SHAWOOD, a highly engineered home that can withstand harsh natural conditions and whose structure is strengthened by the use of the company's pioneering Metal Joint System.

Other concepts gaining similar traction are the Family Suite, where families can be present in one space while carrying out different tasks; and the Platform House concept, which aims to use various



"Our global vision is to make home the happiest place in the world."

Yoshihiro Nakai, President & CEO, Sekisui House, Ltd.

data on household patterns and routines to offer new services such as preventative health care.

Elsewhere, the company is well on its way to realizing its aim of supplying 10,000 houses overseas by the year 2025, and has recently been tasked with building 57 new SHAWOOD homes in Southern California.

Nor has Mr. Nakai ruled out the prospect of introducing zero-energy houses (ZEHs) to the US market, highlighting the importance of carbon neutrality and zero emissions to the company's continuing success.



Established in 1992, So Kikaku Sekkei (SKS) is an architectural design and engineering firm with a wellestablished business in Japan and a growing presence in Southeast Asia.

"Despite having a relatively short history of 31 years and limited achievements compared to other major design firms, we are still a rapidly growing company, driven by a spirit of challenge," says SKS president Sumio Hara.

In the unique context of Japan's construction industry, where large projects require a track record and credentials, SKS's business strategy focuses on accumulating experience through numerous smaller projects, which subsequently enables the company to secure larger contracts – as explained by Mr. Hara.



Future Education Hall, Aichi University of Education

Presently, SKS boasts 26 branches nationwide, along with subsidiary companies specializing in facility



Duyen Ha Resort in Vietnam

design, environmental surveys, civil engineering design, and overseas design. The company is actively involved in various projects spanning different fields, particularly excelling in educational facilities and renovation projects. "As part of our pursuit of further development, we aim to become a comprehensive consultant and have set our sights on expanding our group and venturing into the international market," adds the president.

When it comes to the international market, SKS has placed its focus on fast-growing Southeast Asia. The Japanese firm has established a base in Vietnam to serve as its hub for the region, where it has stationed top Japanese engineers to work alongside local staff. "With nearly 20 staff members in Vietnam, we can oversee all aspects of projects, from planning and design to construction supervision, ensuring consistent quality," Mr. Hara explains. "This approach garners positive feedback from clients and effectively maintains the quality of our services."

With environmental conservation, climate change and natural disaster mitigation top concerns for SKS, the company is supporting the construction of flood-resistant buildings in Bangladesh based on its experience on developing earthquake-resilient technology in Japan,



Stage for expression in elementary school

while in Vietnam, it has a project involving a waste incinerator that processes 4,000 tons of garbage daily, contributing to waste reduction and clean energy generation.

"Our expansion into new territories like Vietnam, Myanmar, and China, and our efforts to help address environmental concerns in those countries, align well with



"Our design philosophy is harmony with people. People are at the heart of everything, and we aim to create designs that appeal to people's five senses, promoting ease of use, livability, comfort, and kindness. Even in today's advanced high-tech world, the design that truly touches people's hearts depends on the sensibilities of each individual designer."

Sumio Hara, President, So Kikaku Sekkei, Ltd.

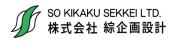


Kusatsu City Arena (YMIT Arena)

our commitment to SDGs (sustainable development goals)," says the SKS president.

At home in Japan, SKS specializes in educational facilities and renovation projects and will continue to do so, as Japan's changing learning methods demand new types of school buildings, and while the issue of upgrading Japan's aging public facilities and infrastructure remains a priority challenge for the country.

"We have a five-year medium-term plan in place, setting annual targets based on metrics such as revenue, brand strength, technology adoption, societal contributions, and employee development," adds Mr. Hara. "We aim to consistently achieve 10% profit growth annually, sustaining our growth momentum. Recognizing the value of fresh talent, we emphasize bringing new energy to our company's management."



www.soukikaku.co.jp

# Roofing that withstands the toughest climate change conditions

Gantan Beauty continues to offer the best roofing solutions in the face of growing environmental challenges.



Oman project

First established more than 50 years ago, Gantan Beauty is a research and development-oriented metal roofing manufacturer with a striking portfolio of accomplishments.

The firm prioritizes product development with a focus on energy efficiency, renewable energy and disaster resilience.

As Company President Seigo Kato explains, this is in no small part due to prevailing domestic conditions: "Today one of the main challenges faced by construction companies is the im-



Zojoji Temple

pact of global warming on building materials. Natural disasters like high temperatures, strong winds, typhoons, hurricanes and tornadoes can compromise the integrity of construction materials, especially roofs."

Chairman and Representative Director, Mr. Motokatsu Funaki, picks up the thread: "Our company has developed roof systems with earthquake and fire resistance. Our high-performance metal roofs excel in strength and durability, minimizing damage risks even during repeated disasters."



Rain gutters that keep fallen leaves out

Perhaps unsurprisingly for a firm whose name is derived from the Japanese word for the first day of the year, Gantan Beauty is not only renowned for pursuing innovation, but also has a proven track record in developing both pioneering and aesthetically pleasing roofing solutions.

The company's roofs, including 'Beauty Roof L200', offer a state-of-the-art stable roofing system that differs from conventional systems, which often have loose connections between roofs and buildings. The technology is highly reliable and has been successfully deployed in numerous projects and buildings, including universities in Okinawa and art museums in Kvoto.

Another innovation is a new roof replacement system with flexible







"We are always challenging ourselves to make the impossible possible and realize our dreams while imagining the happiness of the people who gather under our roof."

Seigo Kato, President, (left); Motokatsu Funaki, Chairman and Representative Director (right), Gantan Beauty Industry

scaffolding. Changes to roof and gutters can be complex and expensive, particularly as in densely populated areas space is often limited. Instead of installing scaffolding on the sides of a building, therefore, Gantan Beauty's new technology is designed to be installed on the roof.



Okinawa Institute of Science and Technology Graduate University

Mr. Funaki again: "We have incorporated a movable gondola lift with a ladder on the side of the building, allowing easy access to any part of the roof that needs repair or replacement. The system provides spacious and safe maneuverability, catering to the needs of the elderly and addressing the labor shortage in the construction industry."

And the future looks bright, with the company planning to establish a new research and development center.

"The facility," Mr. Funaki confirms, "will serve as a crucial hub for collecting valuable information and strengthening our existing knowledge base. Knowledge that

will drive our efforts to develop cutting-edge technological solutions, whether it's for renovating residential roofs, installing solar panels on roofs or designing rain gutters that can prevent the accumulation of fallen leaves."

With a portfolio of accomplishments that includes work on the Zojoji temple and the Nippon Budokan, it is little wonder that there is increasing international demand for the company's products.

Indeed, thanks to its proven resilience, there are opportunities for the company to expand its roof reinforcement technology to Southeast Asian countries such as Indonesia and Malaysia which are similarly prone to seismic activity and natural disasters.



Nippon Budokan

"We welcome collaboration," Mr. Funaki concludes, "with individuals or overseas organizations seeking to leverage our technology."







"Our aim is to let the quality of our products shine through to an international audience who are interested in what we have to offer."

Aya Yamasaki, President, ETO Co., Ltd.

## Bringing the beauty of Japanese furniture design to global markets

A century-old company committed to quality and sustainability, ETO is out to expand the overseas reach of its skillfully-crafted products.

Founded back in 1920 in Okawa, Japan, ETO sells stylish, expertly-made wooden furniture – pieces that are crafted with an identifiably Japanese aesthetic and are adored by both domestic and international customers.



Headquarters

"Our home town has traditionally been at the very center of the Japanese furniture-making trade," says ETO's president, Aya Yamasaki. "We place great importance on promoting the skills and attractions of this furniture town to the world."

Originally a lumber company, ETO transitioned into the furniture business late in the 20th century. "Our willingness to shift gears in this way is one reason why we have survived and prospered for more than 100 years," Ms. Yamasaki declares.

The firm, which specializes in using Hinoki – a type of cypress that is native to southern Japan – draws on its past in the lumber trade to handle its wood with a degree of expertise that sets it apart. "We are able to bring out more of the beauty of the tree,



Items displayed at international exhibitions

creating furniture with a natural look and feel," Ms. Yamasaki says.

ETO also makes sure to manage its raw materials sustainably. "It is very important to protect our forests," Ms. Yamasaki notes. "We work with forestry cooperatives in the regions where we source our wood to look after the forest environment and ensure sustainable production."

The company's Hinoki furniture lines began with a range of children's products designed to capitalize on the benefits of phytoncide, a substance present in high quantities in this variety of wood. "Given



phytoncide's anti-bacterial properties and relaxing effect, we felt Hinoki would be suitable for kids' furniture," Ms. Yamasaki explains.

ETO then went on to develop Hinoki furniture that was not aimed towards children, some of which led to penetration of the U.S. market.

ETO has had numerous experience in the lumber industry, as well as furniture manufacturing and trading products, both in Japan and overseas. With the establishment of



Furniture made of Hinoki wood

overseas offices in China, Malaysia and Vietnam, the company is now developing a global business, including the import and export of planned products designed in-house. "Until now, we have mostly dealt with Japanese customers, but we have been actively participating in overseas exhibitions and disseminating information to overseas customers, and we now receive enquiries from customers in many different countries. Although each country

has its own language, culture and furniture sizes, our desire to deliver good products to people all over the world remains the same," says President Yamasaki. Based on the



know-how that ETO has developed over its more than 100-year history, the company is now moving on to the next stage of its development, with the aim of "taking the market to Asia and then to the world".

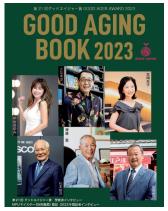


www.eto-web.com/en

## Japan's renewable energy market and JESCO's approach

From energy innovations to real estate ventures – a glimpse into JESCO's business evolution.

Founded in 1970, JESCO Holdings has had to diversify across various industries to deal with Japan's changing landscape, but factors such as the quality of life, safety, and a strong economy have maintained its place as an attractive place to live. And this is where an



The 21st Good Ager Award

investment opportunity lies linking with the company's core business.

"Stability is important for any business out there, and this is especially true for real estate," Toshihiro Matsumoto, the company's chairman and president explains, adding that increased investment from foreign investors has allowed the leveraging of exchange rate fluctuations to its advantage.

JESCO's commitment to sustainability is another element. With a focus on eco-friendly solutions, such as solar panels, the company is taking steps to shape a cleaner, more sustainable future for Japan. This journey involves not only renewable energy but also responsible recycling, as seen in their alliance with J&T Recycling Corporation, and an appreciation of getting the ideal energy mix which, Mr. Matsumoto believes, would include hydrogen.

Strategic acquisitions have also played a vital role in securing high-quality human resources and skills in this field.



The Solar Panel Project Managed by JESCO

"Our bright future is very dependent on the expertise of skilled operators," Mr. Matsumoto states, and this is significant for expansion into Southeast Asia. "India is showing a lot of promise right now," he hints.

Mr. Matsumoto, who was nominated in the 'Good Ager Award of 2023', has a clear commitment to the company's vision extending beyond numbers, focusing on making

"We provide infrastructure, basically setting up the foundation for the energy companies to benefit from."

Toshihiro Matsumoto, Chairman & President, JESCO Holdings, Inc.

social contributions and ensuring the happiness of its employees.

"The key here is not necessarily being a big company, but rather being a good company," he concludes, targeting a more sustainable and prosperous future for all.



#### AMCON to Pursue International Growth Strategy

"We believe that expanding our sales by forming new global partnerships is vital for our business."

Shoichi Sasaki, Chairperson (left), Manabu Aizawa, President (right), AMCON INC.

AMCON, a company whose corporate philosophy is to "provide amenity (AM) and convenience (CON) beyond expectation", was founded in 1974 and today caters primarily to the drinking water treatment, plastic recycling waste treatment; and livestock waste treatment industries.

After half a century in business and with a new president at the helm, the sludge treatment expert targets growth opportunities in Southeast Asia.



As a sludge treatment machine manufacturer, one of the company's standout products is its brand, VO-LUTE, which includes the bestselling FS, GS and ES range.

Unlike more traditional methods of sludge treatment such as the centrifugal and belt-type methods, VOLUTE products incorporate a cylinder that envelops the dewatering apparatus.

While the GS and FS series have proved enduringly popular since the method was first launched in 1991, the VOLUTE DUO, which was developed through an in-house R&D project two years ago, has taken on the mantle of flagship product.

Incoming company president Manabu Aizawa explains: "Unlike our alternative best-selling products, VOLUTE DUO requires only one filtration unit while simultaneously encasing two Screws within the one filtration cylinder."

Easy to operate and maintain with a clog-free self-cleaning mechanism, it also reduces power consumption by approximately 65% in comparison with a centrifugal dewatering machine.



VOLUTE DUO

The product's success is one of the reasons the company is looking to develop its already established international presence. With existing bases in China and the Czech Republic, the firm has recently launched a new office in

the Philippines, marking the start of an exciting new journey in the South East Asian region.



Demo operation at an Italian winery

Recruitment is also a key issue. Mr. Aizawa adds: "Our ongoing business strategy is centered around international expansion, and we view proficiency in English and a willingness to travel for market expansion as desirable attributes in prospective employees. Our goal is to imbue the next generation of AMCON workers with the confidence to innovate and create new works."



### Alpha Hydraulic Engineering Consultants: Japan's specialized marine consulting firm

A construction consultant company specializing in harbor and waterside projects, AHEC is at the leading edge of innovation in marine-based disaster prevention.





"Our dream is to become a specialized international consulting firm equipped with a diverse team of engineers from around the world."

Akira Kawamori Ph.D. Chairman & Group CEO (left), Takehito Horie Ph.D., President (right), Alpha Hydraulic Engineering Consultants Co., Ltd.

Whilst Japan is a country that has always been particularly susceptible to extreme natural weather events - including typhoons, storm surge, and torrential rains - in recent years the escalating effects of climate change have seen a dramatic increase in the frequency and severity of these occurrences, resulting in greater natural disasters. Given this reality. Japan's construction consultants and other companies involved in public infrastructure development

have had to reorganize and reassess their businesses.

We recognized early on that specialization would be key to our success. Our focus has been on becoming specialists in the field of fisheries, ports, and coastal and marine infrastructure within the realm of engineering consulting. We firmly believe that Japan has amassed a wealth of wisdom, know-how, and technology in engineering public infrastructure projects, especially in water environments and marine sectors.





3D Tsunami simulation

Indeed, Japan has experienced natural disasters so often that it today has a unique reservoir of knowledge, with some of the world's leading experts in the field. The country's main island, Honshu, for instance is located at the intersection of three tectonic

plates, making it subject to frequent natural disasters, including earthquakes and tsunamis. As a construction consultant company, specializing in harbor and waterside projects, AHEC is one of the experts at the leading edge of deployment in marine-based disaster prevention technologies.

We possess simulation technologies capable of accurately predicting the height and time between generation and arrival of tsunamis and storm surge. Drawing from the lessons learned from the Great East Japan Earthquake and Tsunami, we have been actively exploring how to develop tsunami-resistant structures and facilities, and the establishment of a BCP (Business Continuity Plan) for the early resumption of fisheries and port operations. We also address littoral drift issues such as beach erosion and port siltation. We use sediment transport simulation technology to support fishing port planning and sand drift countermeasure facilities that take coastal erosion into consideration.

AHEC's services extend beyond providing predictive technologies for integration into resilient infrastructure designs. It is also committed to creating comprehensive measures aimed at minimizing damage and safeguarding people in the event of disasters.

This technology has the potential to save lives. We also provide consulting services that take into consideration the impact on the water environment, beaches, and other natural features. Our approach Spotter involves strategically applying technologies to maintain and repair aging structures while considering a scrap-and-build approach where applicable.

container vessels and bulk carriers are getting larger every year, but the guays of Japanese ports and harbors are not keeping pace with this trend. In addition, many quays have low water depths and are aging. "In such cases, we meticu-

lously assess where reinforcement is required, whether additional functions should be integrated, or if a complete scrap-and-build approach is more appropriate."

As a result of these challenges and decline in traditional usage, fishing harbors must evolve in order to be utilized efficiently and effectively.



Wineglass-shaped Fishing Port designed as a solution to regional sediment transport problems

Our focus extends beyond structural maintenance; we aim to create a more adaptable environment that aligns with current needs. We endeavor to provide proposals that maximize the use of these spaces, such as reallocating areas for fisheries. This approach involves fostering innovation and embracing changing dynamics, which is becoming increasingly vital. For example, in one project, we are promoting the cultivation of sea urchins, ovsters. kelp, and salmon in a fishing port where the number of fishing vessels has decreased. As another example. increasing water temperatures have led to catching of fish that could not

previously be caught, such as the recent increases in vellowtail in Hokkaido amid decreasing squid catches. In response to this, we are considering development of fishing port hygiene management facilities to maintain the freshness of landed yellowtail.

Furthermore, we have also recently expanded business to become Japan's exclusive distributor of the Spotter Buoy, which enhances the accessibility of marine observation capabilities in the fisheries and marine construction sectors.

For example, internationally





Fish landing and hygiene management facilities designed and built by AHEC



Planning study using image CG (Case study of marine product storage facility development)

#### Takaoka Engineering: Providing comprehensive energy solutions worldwide

A firm with significant global reach, Takaoka boasts nearly 50 years of experience in power infrastructure.



"The breadth and depth of our influence instills a profound sense of pride and purpose in every Takaoka team member."

Akihiko Ichikawa, President, Takaoka Engineering Co., Ltd.

Founded in 1975, Takaoka Engineering specializes in construction of power infrastructure facilities on EPC basis (engineering, civil and building work, and procurement, transportation and installation of equipment).

"Our operations are marked by an intense awareness of the role that we play in provisioning a society's fundamental power needs," says the Japanese company's president, Akihiko Ichikawa.

"We are driven by a profound sense of responsibility. The critical nature of our work necessitates that we execute our tasks with unwavering commitment and precision."

Takaoka boasts wide-ranging expertise, carrying out projects involving all kinds of power infrastructure - be it generation plants, substations, transmission lines, renewable energy (including solar with storage) and small hydro. "Our hallmark is the comprehensive suite of services that we offer," Mr. Ichikawa says. "This capacity to undertake a broad range of tasks is something that sets us apart."

The scope of Takaoka's activities is also geographically diverse, extending far beyond Japan's

borders. "Our global influence stretches over 50 countries, encompassing roughly 150 engineering projects throughout Africa, Asia, the South Pacific and Latin America," Mr. Ichikawa explains. "This year alone, we have expanded our reach into six new countries."

"We recognize the immense importance of technical transfer and knowledge sharing during construction, factory test and site training," Mr. Ichikawa says. "Taking full advantage of our technological strength and extensive experience in close collaboration with our international partners, we significantly contribute to the improvement of social infrastructure and the economic backbone for the benefit of people of developing countries. We shall remain fully dedicated to contributing to the promotion of SDGs."



Costa Rica: solar power





EU: factory test for Rwanda



www.takaoka-eng.co.jp/en

#### Steel resolve: How E. Katayama navigates challenges to shape the future of construction

In a candid interview, the president of E. Katayama, a leader in the trade of specialized steel and construction materials, discusses how they're tackling labor scarcity, meeting strict anti-seismic standards, and envisioning a future beyond borders.

The Japanese manufacturing industry stands as a symbol of resilience and adaptability. As the world grappled with supply chain disruptions due to COVID and the U.S.-China decoupling, the nation's companies were uniquely positioned to export their expertise, especially to countries like Indonesia.

"It is now an opportune moment for the Japanese populace to reclaim their confidence," company president Takashi Katayama says.

Japan's demographic shift, with an aging workforce, poses challenges, but E. Katayama is embracing it as an opportunity. The company actively recruits Vietnamese trainees to supplement labor shortages and promotes integrating them into the construction and manufacturing process.

"This challenge looms large on the horizon," states Mr. Katayama, emphasizing the need for foreign workers in the industry.

Primarily focused on the trade of construction materials, the president says diversity and flexibility have contributed to the company's longevity, also highlighting its unique business model. Unlike larger corporations bound by ISO standards, E. Katayama's agility allows them to cater to customer needs rapidly.

Collaboration remains central to the company strategy, however, creating stronger bonds with suppliers and end-users. "We not only forge connections but also generate shared value," the president says, underscoring the importance of partnerships in their business.

Regarding overseas expansion,



"My goal is to pass on our generational wisdom to the next cohort, fostering their sense of responsibility. This keeps us aligned with current trends through adaptability."

Takashi Katayama, President, E. KATAYAMA & Co., Ltd.

Looking ahead, Mr. Katayama aims to pass down the company's generational legacy and empower his team. "Our aspiration is to evolve into a company that adeptly aligns with contemporary trends through transformative measures," he concludes.









