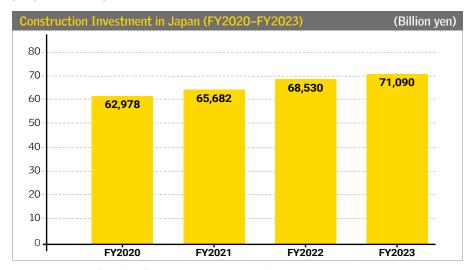
Innovation Meets Safety in Japan's Build Boom

Japan's builders are fusing tradition, technology and sustainability to create safer, smarter spaces that protect people and the planet alike. By Daniel de Bomford and Bernard Thompson



Source: Ministry of Land, Infrastructure, Transport and Tourism

Japanese construction is entering a new era, harkening back to its roots of collaborating with nature, rather than fighting against it. It was an era when craftsmen combined environmental knowledge with the latest technology to create something functional, sustainable, and elegant. Not only are innovation, efficiency, responsibility and safety paramount, but they are essential for people and the environment. Timber halls that breathe with the forests, and ports that bend with the tide will prove that progress can be crafted conscientiously and exist in harmony with the world.

Japan's construction sector remains a pillar of national growth, with total investment reaching 71.1 trillion yen (\$461 billion) in fiscal year 2023, up 3.7 percent from the previous year. Driven largely by private-sector demand, the industry balances urban redevelopment with regional revitalization, even as housing starts to decline amid demographic shifts and labor shortages.

"As climate policies evolve and carbon pricing becomes more rigorous, our proactive approach in this space will position us well, both in Japan and abroad."

<mark>Takeshi Hayakawa</mark>, President, TOA Corporation

Sustainability and Environmental Responsibility

Yamagataya Industry has spent more than a century perfecting the art of working with wood, guided by its principle, "Living with Trees." From its base in Gifu Prefecture, where forests blanket 80 percent of the land, the company transforms precious wood, prized for its individuality—known as *meiboku*—

into resources for architectural masterpieces. Yamagataya aims to demonstrate that wood is a sustainable, renewable and restorative resource. As President and CEO Yoshiharu Yoshida says: "If we are to decarbonize meaningfully, we must replace as much steel and concrete as possible with wood. That transition is central to Japan's future."

TOA Corporation has shaped Japan's connection to the sea, building ports, seawalls and coastal infrastructure that are the anchor of the nation's prosperity. Under President Takeshi Hayakawa, the company is steering its maritime expertise toward sustainability and resilience, aligning with Japan's 2050 carbon-neutral vision. "We now want to give back to the environment by restoring those areas to a form as close to nature as possible," he says. Through innovations like PLUG Magic and DECOM, and projects spanning disaster recovery to port modernization, TOA continues to engineer the delicate balance between progress and preservation.

Digital Transformation and Technological Innovation

Spiderplus & Co. is rewriting Japan's digital story by bringing intuitive, human-centered design to construction sites across Asia. In an industry slow to modernize, President and CEO Kenji Ito insists on simplicity as the foundation of innovation: "If it isn't simple, it won't be used." The company's software replaces paper blueprints and fragmented workflows with a seamless digital platform that integrates AI, Building Information Modeling (BIM) and third-party tools. With growing adoption across Southeast Asia and the Middle East, Spiderplus is proving that Japanese technology can transcend its "Galapagos" reputation to build a truly global digital ecosystem.

Nikken Lease Kogyo has transformed scaffolding from a background necessity into a frontline innovation in construction safety. Chairman Tadakatsu Sekiyama led the company beyond leasing equipment to designing advanced systems, like its DARWIN scaffolding, which features pre-installed guardrails to protect workers before they climb. "Our systems are engineered for safety and designed to protect lives," Sekiyama says. From Japan to Southeast Asia, the firm exports not only hardware but also know-how, training local teams in best practices. Through its Nikken Connect platform and BIM-based planning, it combines engineering precision with digital insight, ensuring that every project, from skyscrapers to subways, upholds the same promise: that every worker returns home safely.

"The construction industry is facing labor shortages, and many general contractors now lack the in-house expertise to design detailed scaffolding plans."

Tadakatsu Sekiyama, Chairman, Nikken Lease Kogyo

Innovating Resilience

Nakano Corporation has built its reputation on precision and trust in one of the world's most seismically active regions. As Japan's construction market shifts from scrap-andbuild to renovation and restoration, President Takashi Iizuka is steering the company toward efficiency, innovation and wellbeingthe hallmarks of its Chukei 86 strategy. "For us, financial performance and client trust are inseparable," Iizuka says. The company's practical innovations are evident in its Hyper Seismic reinforcement system, which can be installed without disrupting use or altering the building's appearance. It's half a century in Southeast Asia, driven by local leadership and multinational clients, demonstrates how global trust can be engineered one project and one partnership at a time.

Together, these companies illustrate how, alongside structures, Japan's construction industry is building trust, safety and sustainability into the fabric of modern life. From digital innovation to seismic resilience and environmental design, their work reflects a national philosophy where progress does not come at the expense of harmony. Each project, whether a wooden hall, port or digital platform, represents a step towards a world where craftsmanship and technology coexist for the common good. In their hands, the construction industry is building a better future, a promise to protect, endure and inspire.

Sustainable Marine Civil Engineering by TOA CORPORATION

Harnessing more than a century of maritime civil engineering expertise, TOA CORPORATION is redefining coastal construction through innovation, resilience and a commitment to protecting Japan's ocean environment. By Daniel de Bomford

Before roads or railways, there were currents the maintenance and retrofitting of existing and tides. Humanity's earliest journeys, exchanges and civilizations depended on the sea, its vastness both a barrier and a bridge. From this ancient bond, entire nations were built, including Japan, whose prosperity has always been tied to the ocean's rhythm. TOA Corporation has spent more than a century working with that rhythm, building and protecting the infrastructure that connects land to sea.

TOA Corporation has been dedicated to building Japan's vital infrastructure, particularly in the maritime and logistics sectors. It played a vital role during the economic miracle, preparing the country for its legendary golden age of exports, during which "made in Japan" was synonymous with quality.

The company was founded on the spirit of contributing to society. Beyond construction, it mobilizes whenever disaster strikes to provide much-needed support for beleaguered infrastructure.

Adapting to a Changing Tide

TOA Corporation has grown with the times. and that adaptability is more important now than ever. President Takeshi Hayakawa is cognizant of the challenges climate change and rising seas pose to ports. Concurrently, Japan's construction priority will shift, moving from scrap-and-build policies that defined the second half of the 20th century to



Tokyo Bay Agua Line(Umi hotaru) Kanagawa and Chiba Prefectures Japan

structures for resilience.

While new construction is expected to slow, redevelopment and renovation are expected to dominate the market. "This doesn't necessarily signal a decline but a modification in our industry," Hayakawa says. From 2026, Japan will undertake a national investment program aimed at enhancing resilience to natural disasters, with a total investment expected to exceed 20 trillion ven (\$160 billion). "These projects play directly to our strengths, and we anticipate continued stability—and even growth—in this segment," he says.

Building Japan's Next Wave of Infrastructure

The rise of e-commerce and the need for warehousing have been a boon for TOA Corporation, which has effectively leveraged its expertise in ports and coastal logistics to meet the demand. In 2024, approximately 60 percent of its building construction sales were tied to physical infrastructure such as warehouses.

Japan's 2050 carbon neutrality pledge also offers new opportunities for the company. Hayakawa anticipates that in the long term, private offshore wind opportunities will emerge as companies strive to align with the initiative and affirms TOA Corporation's readiness to contribute to this vital initiative.

Hayakawa also sees opportunities as Japan increases its defense spending to align with global



Deep Cement Mixing vessel: The KOUKAKU



Container Berths C1-C8 at Tuas Port - Singapore

geopolitical challenges. Domestically, many JSDF bases were built before World War II, and there is a concerted effort within the Japanese government to consolidate and upgrade JSDF infrastructure. An effort that the company is actively positioning itself to contribute to.

Both the United States military and the JSDF rely heavily on port-related infrastructure in Japan. "We aim to support the renovation and modernization of these facilities, ensuring they meet today's strategic and environmental demands," Hayakawa says. TOA Corporation has the expertise to meet the stringent requirements of the military, while also offering advice on actual site conditions and proposing more economical and practical solutions.

Giving Back to the Sea

TOA Corporation has played a significant role in disaster recovery efforts, especially after the 1995 Kobe Earthquake, the 2011 Great East Japan Earthquake and the 2024 Noto Peninsula Earthquake. The company has contributed by opening up logistics routes via sea to circumvent damaged highway infrastructure.

When the city dispatched a ship from Kyushu laden with supplies for Noto, TOA Corporation sprang into action. "Our team was able to coordinate on-site logistics, unload cargo by hand and establish functional distribution points even when the port's basic infrastructure was incapacitated," Hayakawa says.

As a part of the Japan Reclamation and Dredging Association and the Japan Federation of Construction Contractors, TOA Corporation has been integral in the recovery efforts in Noto, collectively assessing and planning the recovery of vital infrastructure.

Beyond simply being reactive to changing environmental conditions, actively contributing to sustainability efforts through planning and infrastructure is vital. Hayakawa says he wants to give back to the ocean, after the company has benefited so greatly from it. "We now want to give back to the environment by restoring those areas to a form as close to nature as possible."

TOA Corporation collaborates with allied companies on environmental initiatives, including the propagation of eelgrass and other marine plants, which can absorb four times more carbon dioxide than terrestrial forests. Environmental factors such as rising ocean temperatures are creating challenges, but alongside its partners, it is investing in research and development to overcome them.

Engineering for Resilience and Renewal

Its commitment to the environment extends beyond initiatives and into its proprietary technology, such as PLUG MAGIC, which creates usable material by utilizing plug flow (turbulence)—the byproducts of dredging. "This technology contributes to reducing environmental



impact by enabling the reuse of soft dredged soil," Hayakawa says. Blending dredged sand and gravel with solidification materials enables their reuse as landfill foundation materials. This method has a significant track record in Japan, having been utilized at Chubu Airport as well as in container ports overseas.

THJ is a seismic reinforcement method specifically designed for cold storage warehouses that must maintain sub-zero temperatures, allowing structural upgrades without impacting the interior temperature. DECOM is a ground improvement method that strengthens soft soil, which is vital in new port construction. DE-COM, in particular, is being leveraged overseas in new port constructions in Southeast Asia.

Expanding Horizons Across Asia

As demand grows across Southeast Asia, TOA Corporation is establishing more local subsidiaries across the region to transition from dependency on Official Development Assistance (ODA) to host government and local capital contracts. "Rising sea levels threaten

many coastal communities in the region, and we believe that we have a significant role to play," Hayakawa says.

The company proposes solutions based on its deep expertise in port construction, ranging from port elevation to flood-resistant logistics terminals. The company entered countries such as Singapore, Indonesia, Vietnam and Bangladesh earlier than its peers and established close relationships with local governments and industry authorities. While maintaining operations in Africa, TOA Corporation's focus remains in Asia, where it can assist with projects such as Indonesia's undertaking to relocate its capital to Kalimantan.

For more than a century, TOA Corporation has helped Japan navigate its connection to the sea by building the ports, seawalls and logistics hubs that underpinned its success. As the country faces rising seas, aging infrastructure and shifting global demands, the company's mission remains much the same, both inland and by the sea. By centering on honesty, innovation and respect for the environment, TOA Corporation honors its company's

roots while constructing global infrastructure for the future.

Takeshi Hayakawa, President and Representative Directo TOA CORPORATION



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How Nakano Corporation Builds Global Trust in Construction

From resilient design to regional expansion, Nakano Corporation blends tradition and innovation to build lasting client trust and sustain growth across Japan and Southeast Asia. By Daniel de Bomford and Paul Mannion



Ardentec Semiconductor Test Facility

Looking at the man-made wonders of the world, it's easy to appreciate the complexity of their construction. Dozens of architects and designers, along with hundreds of builders, come together over thousands of hours to ensure every screw is tight, every beam is supported, and every panel is secure. Success requires trust, operational efficiency and vision. Japanese construction firm Nakano Corporation embodies these traits.

Nakano Corporation has been delivering results beyond its size since its inception in 1933. Despite being a mid-sized company, it expanded internationally into the United States in 1974, and before the end of the 1980s, Nakano Corporation had opened offices in Singapore, Indonesia, Malaysia and Thailand.

Japan's construction landscape is shifting radically as the country's population shrinks and centers increasingly in urban areas. Concurrently, it is moving away from scrap-and-build policies towards extending the life of existing infrastructure.

For decades, Nakano Corporation has been a leading contractor for design, construction, renovations and civil engineering. To remain profitable, Japanese firms must adapt to the new paradigm, and Nakano Corporation is no exception. As renovation and seismic retrofitting have become an increasing



share of the market, the company has accelerated its efforts to improve its resilience technology.



ESR Karawang Logistic Parkl

A Blueprint for Domestic Growth

President Takashi Iizuka says that domestically, the company is focused on profitability through efficiency improvements, securing and retaining talent and strengthening collaboration with partners as outlined in its *Chukei 86* strategy. "My personal aspiration is to create a company where employees share the same vision, communicate openly, and work together with energy, positivity, and camaraderie," he says.

Improving build efficiency is paramount, and Nakano Corporation has turned to innovation to make gains, mastering new methods like the HRPC II precast concrete method. Success hinges on close involvement from the design stage to optimize planning and coordination. Iizuka describes the "Hyper Seismic" system as especially valuable for retrofitting existing structures such as schools and hotels.

Recalling a client in Sendai using basement seismic isolation, he says, "During a major earthquake, while shelves collapsed in nearby buildings, our tenant—a convenience store—reported that not a single item fell."

But as the population shrinks, so too does the labor pool. "Recruiting talent is indeed a critical priority," Iizuka states. Under his leadership, the company has implemented a companywide KENKO Investment for Health. Programs that improve work-life balance are an essential investment for attracting new, young talent.

At the same time, the company is focusing on diversity, amongst its other SDGs. "While construction has traditionally been male-dominated, over the past decade, many talented women have joined Nakano Corporation as site engineers, architects, designers, and even project managers," Iizuka says.

Global Growth Through Local Strength

However, Nakano Corporation is not going to limit itself to the domestic market, and Iizuka considers the organization's longevity abroad to be a rarity for a mid-sized contractor. As the company celebrates its 50th anniversary in Singapore and 40th in Indonesia, Iizuka reflects on what he believes to be one of the company's great strengths: developing strong local organizations.



Piazza Tower Uehonmachi EAST

"While Japanese staff were essential in the early years, we have invested heavily in training local employees so they can manage projects independently," he explains. "Today, we have just 20 Japa-



"For us, financial performance and client trust are inseparable."

Takashi Iizuka, President, Nakano Corporation

nese staff across five countries, compared to 70–80 in the past."

Over 60 percent of Nakano Corporation's overseas clients are non-Japanese, and Iizuka expects that number to increase as multinationals grow in Southeast Asia. In the immediate future, Southeast Asia remains the company's primary focus, but it is watching India closely.



Underground seismic isolation

Trust as the Foundation of Success Iizuka says that profitability depends on delivering value to clients, "Listening closely to clients and co-creating outcomes with them is central to our philosophy." Ouglity confets and vol

with them is central to our philosophy." Quality, safety and reliability are at the heart of Nakano Corporation's value proposition.

With an impressive track record, Nakano Corporation's quality and ability to deliver are clear. Iizuka says the company strives to provide clear added value, building trust through transparency. "Ultimately, this is what will allow us to maintain competitiveness, meet our targets, and build trust globally."

www.wave-nakano.co.jp

Nikken Lease Kogyo Builds Safer Sites

Nikken Lease Kogyo has reimagined scaffolding, designing intelligently for safety, ease of use and suitability for the myriad of challenges brought to bear by modern construction. By Daniel de Bomford and Cian O'Neill



"Our systems are engineered for safety and designed to protect lives."

Tadakatsu Sekiyama, Chairman, Nikken Lease Kogyo

Each day, when a construction worker comes home, their family breathes a little sigh of relief. Construction is hard work and can be dangerous, especially at heights, where one wrong step can be catastrophic.

Nikken Lease Kogyo answers construction safety challenges with its catalog of innovative scaffolding, shoring and site offices, supported by cutting-edge digital tools. Whether on a highrise construction site in Japan, a factory in Vietnam or a subway in the Phillipines, every worker deserves to return safely to their families each evening.

Building on Strong Foundations

From humble beginnings as a scaffolding service provider, Nikken Lease Kogyo has grown into a full-service provider of scaffolding and shoring for the construction industry. When

Tadakatsu Sekiyama looked at the construction industry, the scaffolding wasn't meeting the broad variety of challenges modern projects were up against. Safety, ease of use and weight ratings were not always suitable for their intended purpose.

He took the company in a new direction, from buying standard scaffolding and leasing it on project sites, to designing and manufacturing a new generation of scaffolding systems ready to overcome any challenge.

Almost immediately, Nikken Lease Kogyo saw its advances in scaffolding sought after by job sites. The company's DARWIN system, for example, which dramatically improves safety by incorporating a preinstalled safety rail, reduces the risk for workers by eliminating the need to install one high above the ground.

Nikken Lease Kogyo's scaffolding systems are designed for a broad variety of jobs. Every system has a verified structural strength basis, allowing for precise planning and preventing unnecessary material transportation.

It isn't just Japan adopting Nikken Lease Kogyo's advanced systems; companies worldwide are seeking the company to ensure everyone returns home safely.

Safety Without Borders

As Japan's population continues to contract, Sekiyama sees growth opportunities abroad, especially in the fast-growing Southeast Asian



Falsework for a concrete bridge



National Academy of Public Administration, Vietnam

region. Over the past two decades, Nikken Lease Kogyo has expanded into local markets, starting with Vietnam in 2007 and Thailand the following year.



Residential Complex Site

Today, over 80 percent of the company's clients in Vietnam are local construction companies. "Our products are superior in both design and safety compared to many regional alternatives," Sekiyama says. "But more importantly, we also export know-how. We provide training and technical guidance on proper use and safe practices."

In 2014, Nikken Lease Kogyo began operating in Myanmar and the Philippines. The company expanded into Taiwan in 2021, Bangladesh in 2024 and Indonesia in 2025.

Safety is of paramount importance to Sekiyama and Nikken Lease Kogyo. In Southeast Asia, the prevalence of cheap labor, high turnover of migrant workers and weak protections for workers is impacting safety. Nikken Lease Kogyo's systems are directly contributing to efforts

to improve the safety of construction workers in the region.

It's not just local companies that Nikken Lease Kogyo works with; it also collaborates with local governments. "In Taiwan, we are collaborating with the Labor Bureau to help shape legal frameworks for construction site safety," Sekiyama says.

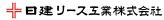
Designing the Future Through Digital Tools

Through digital transformation tools, such as Building Information Modeling (BIM), Nikken Lease Kogyo can accurately prepare jobsites and provide 3D visualizations. Its proprietary software platform, Nikken Connect, allows clients to view scaffolding models, material requirements and place orders, removing the need for manual calculations.



Commercial Facility

By enhancing transparency through technology and safety in design, Nikken Lease Kogyo ensures that workers get home safely. The company is helping build a world where safety isn't a hope, but a promise.



www.nrg.co.jp/nikkenlease/global

Spiderplus Leads Asia's Digital Construction Shift

Spiderplus is transforming Japan's construction industry through intuitive digital tools, driving global adoption and ushering in the nation's digital future. By Daniel de Bomford

The Galapagos Islands found their place in modern history when Charles Darwin stepped onto the archipelago. Despite the proximity, each island had evolved unique endemic species, from tortoises with unique shells to a diverse array of finches, which altered the course of natural sciences.

In Japan, however, Galapagos is associated with technological challenges faced by exporting Japanese software in international markets. "Galapagos phones" are the perfect example of this challenge, highly sophisticated devices, perfectly tailored for Japanese users that were never adopted abroad. This has been a particular issue for the Japanese software industry, which has struggled to find mass market appeal in the global market.

Spiderplus is bucking that trend with its highly intuitive

construction management software. President and CEO Kenji Ito says that the most important factor is UI and UX, especially in an industry where workers typically have low

IT literacy. "The

guiding principle was: If it isn't simple, it won't be used," he says.

The result has been an incredibly intuitive interface, where everyday tasks require virtually zero instructions. This has been a key differentiator in Asian markets, where companies have reported that Spiderplus is "easy to understand and quick to adopt."

The company has established operations across Southeast Asia and the Middle East and has received an exceptionally

SpiderPlus & Co.

https://en.spiderplus.co.ip

positive response where English is widely used, such as Malaysia, the Philippines, the UAE and Qatar. "Over the past year, we have built strong connections in these regions, and more than a dozen large firms—ranging from 1,000 to 10,000 employees—are already trialing or adopting Spiderplus," Ito says.



SPIDERPLUS in use

Population Decline

SPIDERPLUS

screen view

As Japan's labor pool shrinks, Ito says that digital transformation (DX), ICT, Building Information Modeling (BIM), robotics and AI are "essential for

survival."
Currently,
Japanese
construction remains profitable, but
industrywide IT literacy needs
to increase if
the sector is to
deliver the same vol-

ume of projects.
Ito says that many companies are investing in custom in-house tools and integrating them with Spiderplus through APIs, while others are ordering bespoke solutions. The real challenge, however, is ensuring company-wide adoption, rather than just a subsection of employees, to ensure maximum value. Digital tools are also a recruitment issue, with young digital native recruits being somewhat analog averse.

Spiderplus's vision for DX integration is comprehensive. "AI will play a larger role in automating tasks within our products, while BIM integration

will simplify workflows even further," Ito says. The company is connecting all of these elements through its Spiderplus workplace, an integrated endto-end platform.

When processes remain fragmented, productivity suffers. Ito points to Google as an example of a platform that integrates multiple services under one account, citing it as the reason the platform is so ubiquitous in day-to-day workflows. "That's why we created the Workplace concept: a unified platform that integrates not only our own products but also third-party tools," he says.

Spiderplus makes breaking free of Japan's Galapagos technology look easy. The company is centering the user in the design and observing



"If it isn't simple, it won't be used."

Kenji Ito, President and CEO, SPIDERPLUS & CO

universal truths about human behavior, rather than relying on entrenched norms in much the same way a young naturalist observed the environment when he stepped onto the Galapagos Islands in 1835.

For Ito, the evidence is seen in the pilot trials happening in countries across the world. "What excites me about Spiderplus is that within our vertical—construction digital transformation—our product is already receiving strong interest from across Southeast Asia."



SPIDERPLUS Workplace



SPIDERPLUS demonstrates its effectiveness on large-scale construction sites

Japan's Yamagataya Industry Leads Global Wood Innovation



For as long as civilization has existed, humanity has relied on wood—for shelter, tools and art. Learning to use wood is intertwined with the growth of societies and is deeply rooted in our collective consciousness. From the calming scent of cedar to the warmth of mahogany, wood evokes emotion and meaning far beyond its function.



Japan's Largest Precious Wood Showroom

Founded in 1918 as a humble lumber merchant, Yamagataya Industry has built over a century of craftsmanship grounded in its philosophy of "Living with Trees." President and CEO Yoshiharu Yoshida says this reflects Japan's enduring bond with wood and the company's mission to create harmony between people and nature through its responsible use.

Today, Yamagataya Industry is recognized worldwide as a leading authority in meiboku, or precious woods prized for their beauty and individuality. Through a vertically integrated system, from sourcing to in-house treatment, its skilled artisans maintain uncompromising quality at every stage. The com-



pany also holds one of the world's largest inventories, with around 150 species and more than 7,000 premium solid wood slabs, ensuring every client finds a perfect match. "Mass production is not our model,"



Explore the precious wood collection in real-time, from anywhere, in multiple languages. https://itakura-system.com/agency

"Our ambition is to move beyond being a 'total solutions provider' and instead position ourselves as a wood innovation company."

Yoshiharu Yoshida, President and CEO, Yamagataya Industry Co., Ltd.

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Yoshida says. "We pursue quality, authenticity and uniqueness, values that share Japan's spirit of craftsmanship with the world."

Meiboku is rare and complex, its value shaped by the unique patterns of each grain. A single log can fetch up to a hundred times the price of ordinary wood, earning it the nickname "the jewelry industry of wood." Few companies enter this field, but Yamagataya Industry thrives on its expertise and precision.

Based in Gifu Prefecture, the company benefits from its historic trade links with Taiwan and Korea and academic ties with Germany. Yoshida now seeks to expand further into Europe and the United States, targeting luxury sectors such as dining and hospitality. Yamagataya Industry's offerings

already meet strict certification standards for temples, shrines and government forestry projects.

Wood, Yoshida stresses, is vital to decarbonization, being renewable, energy-efficient and restorative when managed responsibly. Studies show its natural scents can enhance sleep and well-being.



Yamagataya has extensive experience delivering precious wood products to hospitality properties around the world.

Through innovative applications that blend wood with materials like stone, steel, or traditional crafts, Yamagataya Industry aims to create new value and preserve Japan's monozukuri culture.