Marketing and Sales Division

The Marketing and Sales Division plans and implements the company-wide strategy for securing project contracts and is committed to achieving the Medium-term Business Plan target while partnering with East and West Japan In-house companies, which are tasked with on-site operations. In FY2024, the total contract volume for the entire Group including products and construction exceeded 100 billion yen and our business performance showed steady growth. These positive results were achieved through selective vetting of project contracts based on information sharing, human resource development, and appropriate resource allocation. Under our Medium-term Business Plan 2027, our strategy for securing contracts will continue to focus on large-scale construction projects for expressway companies. We are working to enhance our competitiveness to secure more expressway contracts and promoting strategies in line with national and local government public works schemes. We are also focusing on peripheral areas (i.e., areas other than roads) through efforts to expand our business areas as a comprehensive infrastructure maintenance company.

Takayasu Shimada

Director of Business Strategies, SHO-BOND Holdings Co., Ltd.
Managing Director and General Manager of Marketing and Sales Division, SHO-BOND CORPORATION

Risks and Opportunities in Our Domestic Construction Business

[Risk factors]

- Shortage of construction workers due to Japan's declining population
- Risk involving accidents and other aspects of safety
- Quality management risk involving defects and other problems
- Intense competition for orders in the Expressway Renewal Project

[Opportunities]

- Growing demand for life-extending works due to accelerated measures to address aging infrastructure
- Growing demand for reinforcement works due to greater severity and frequency of natural disasters
- Increasing importance of preventive infrastructure maintenance technologies

Strengths

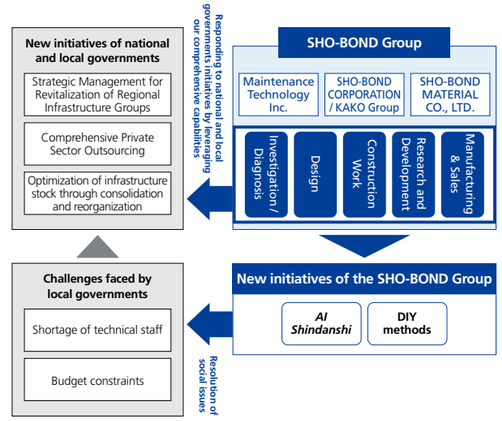
- Comprehensive infrastructure maintenance capabilities from a broad range of perspectives
- Accomplishments spanning more than 65 years as a specialist in the field of infrastructure maintenance
- Construction skills and technologies available to provide the best methods for repairing various types of damage

Review of Previous Mid-term Plan and Overview of Medium-term Business Plan 2027

During the three years of the previous mid-term plan, we achieved a significant increase in contract orders due to our solid efforts in securing large-scale construction projects. Through closely-coordinated information sharing between our East/West Japan In-house companies and our head office divisions, we made a positive contribution to improving our profitability by undertaking a systematic review to thoroughly vet potential project contracts and optimize our resource allocation. In line with the Medium-term Policy strategy of pursuing more large-scale construction projects by strengthening our organizational capability, we have improved human resources management and optimized the size and number of our partner companies to secure contracts for expressway construction projects outside of our metropolitan regional offices, which have typically been responsible for procuring large-scale construction contracts. These efforts are already paying off. These 'beginner' regional offices started with expressway construction contracts of several hundred million to one billion yen and subsequently gained experience in completing large-scale construction projects through team-based construction management. As a result, all of our regional offices now have a growing number of personnel with experience in large-scale construction projects, and are developing their capability in securing new contracts. We have also been strengthening our ties and collaborating with group companies and other companies, and have received a total of seven orders for large-scale construction projects through joint ventures with other companies over the past three years, marking an increase of four orders from the previous three years. As a result, construction contract orders per employee were approximately 91 million yen in FY2024, compared to approximately 73 million yen in FY2021.

Under the Medium-term Business Plan 2027, we will expand the scope of our strategy from optimization within our East/West In-house Japan companies to optimization on a company-wide scale. We will boost our competitiveness by promoting company-wide improvements in our overall contract bidding and technical proposal capabilities, and will strategically form a backlog of contract orders not only for a single year but for multiple years. Furthermore, we will respond to the diversification of contract orders resulting from new national and local government initiatives such as the "Strategic Management for Revitalization of Regional Infrastructure Groups" and "Comprehensive Private Sector Outsourcing" by leveraging our group's comprehensive strengths across all project aspects from surveying to construction. In order to provide solutions to structural issues encountered by infrastructure administrators such as the shortage of engineers and budget shortfalls, we will lease our "*AI Shindanshi*" diagnostic system which consolidates our engineers' diagnostic expertise on concrete structure deterioration, and we will develop simple repair methods and materials enabling DIY repairs and maintenance by facility managers. In the peripheral area, we have received orders totaling approximately 500 million yen from several new private-sector clients in Japan through SB&M—our joint venture with MITSUI & CO. Going forward, we will strengthen our approach to addressing the aging of various infrastructure with a focus on KAKO-Group operations. In addition to applying our existing technologies to port structures, we are planning to undertake large-scale repair projects in the area of railways. We also see many opportunities for expanding and enhancing our business areas, such as proposing construction methods suited to construction sites with time constraints.

To achieve sustainable profit growth by strengthening profitability and diversifying our revenue sources, the Marketing and Sales Division has established an internal project team to explore future business possibilities and has initiated discussions among our next generation of leaders. Themes to be discussed by the team include the future of the infrastructure maintenance market, consolidation of new business areas, and development of markets that are new to our company. There is a growing need for repair and reinforcement work in various fields due to the emergence of increasingly severe and frequent natural disasters and aging infrastructure. We are working to comprehensively assess the needs of facility managers and develop new repair materials and construction methods.



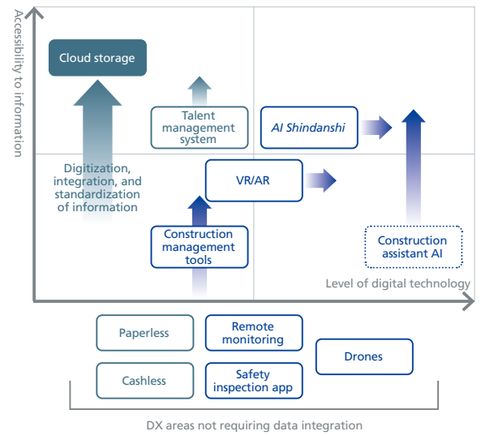
Improving Productivity and Promoting Work Style Reform Through DX

Our group has defined two main areas for DX (digital transformation): on-site and administrative DX. In on-site DX, we aim for improved productivity, enhanced safety management, and technology transmission. In administrative DX, we focus on improving productivity through work style reform. Of these two areas, on-site DX is being promoted mainly by the DX Promotion Office within the Marketing and Sales Division.

In terms of improving productivity, construction management tools have been in place for several years and we are seeing their increased uptake at work sites. The use of VR/AR technology is also increasing due in part to the proactive efforts of our working groups. In terms of enhancing safety management, we are developing and implementing on-site remote presence using webcams, as well as our proprietary "SB+" safety inspection app. In the area of technology transmission, we have developed "*AI Shindanshi*" to consolidate our engineers' high level of expertise in diagnosing concrete structure deterioration, and have also started developing an AI-based construction assistant to address the challenges of passing on knowledge and experience through digital technology.

During the three years of the Medium-term Business Plan 2027, we will proceed with efforts to integrate our decentralized data into the cloud and will focus on consolidating a security-conscious environment, in addition to our continued commitment to the above-mentioned initiatives. By improving the confidentiality, integrity, and availability of our data while digitizing and consolidating information, we are aiming to enhance information accessibility and maximize the benefits of DX. We will promote on-site DX within our group by effectively leveraging the latest digital technology in combination with accumulated data.

[Concept for DX Initiatives]



East Japan In-house Company

The East Japan In-house Company's operating policy under the Medium-term Business Plan 2027 is to strengthen our construction base, maintain stable earnings, and expand into peripheral areas. To strengthen our construction base, we are enhancing our safety, quality, and technological proficiency by developing our human resources and pursuing shared prosperity with our partner companies. Building on this base, the strong will and motivation of each employee will be crucial in order to proactively pursue large-scale and complex construction projects and to maintain and grow our earnings. We will also diversify our revenue sources by developing our business in peripheral areas, and will strive to create a working environment where all employees can work together and achieve a sense of fulfillment.

Takayasu Shimada
Managing Director of East-Japan In-house Company
SHO-BOND CORPORATION

Topics

Our in-house company is proceeding to diversify our employee base, and we currently employ 14 female engineers and 6 foreign-born engineers. Several female engineers received the "CCI Tokyo Construction Industry Young Engineer & Female Engineer of the Year Award" in recognition of their outstanding skills as site managers. Our foreign-born engineers include personnel who have grown to be able to independently manage on-site operations as management engineers and female personnel who perform a series of design processes, such as 3D scanner-based site surveying, revision of construction plans, and calculation of structural intensity. We are also focusing on fostering young engineers by assigning on-site management roles at an early stage in their career according to their individual aptitude so that they can develop experience working in a position of responsibility. We will continue to create an environment where each employee can step up and find fulfillment in their work. In terms of helping to develop our partner companies, we offer secondment contracts to the next generation of partner company employees to improve their management techniques and technical skill levels as well as establish working groups in each type of work to improve our workplace health and safety. We will work with our partner companies to strengthen our respective systems by providing support for securing foreign workers to address the growing shortage of human resources.

We are also actively engaged in large-scale complex construction projects such as the Maehara Bridge project overseen by our Shutoken Hokuriku Regional Office, which involved removing an expressway overpass using multi-axle trolleys in what was a first for the SHO-BOND Group. The entire Tohoku Expressway, which has a daily traffic volume of over 90,000 vehicles, was closed to traffic, and the removal work was completed overnight without any accidents. Our Kita-Nihon Regional Office is currently overseeing a project to replace the deck slabs and seismically reinforce Tengu Bridge, which has a unique structure. This marks the first time that the NEXCO Tohoku Branch has replaced deck slabs using precast deck slabs on a steel box girder bridge. By continuing to secure a solid volume of these large-scale complex construction projects in the future, we will diversify and evolve our infrastructure maintenance operations through the training of engineers and the improvement and transmission of technical capabilities.


Female engineers working on-site

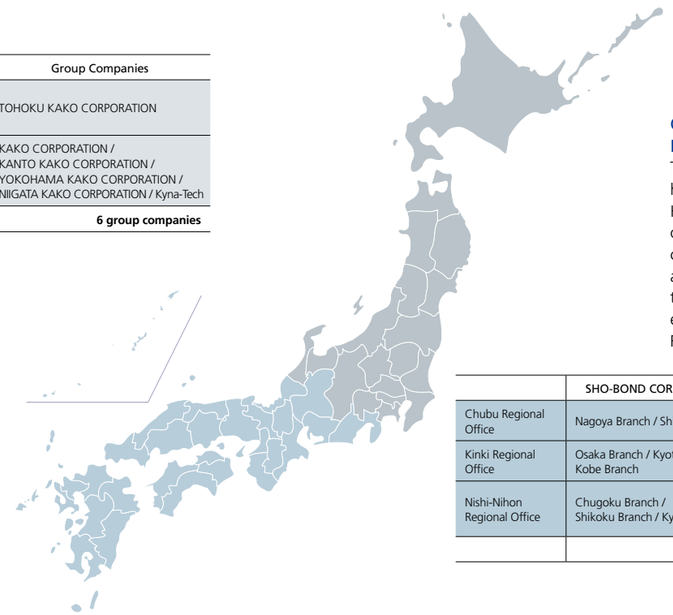

Removal of overpass at Maehara Bridge


Replacement of deck slabs at Tengu Bridge

	SHO-BOND CORPORATION	Group Companies
Kita-Nihon Regional Office	Hokkaido Branch / Minami-Tohoku Branch / Kita-Tohoku Branch	TOHOKU KAKO CORPORATION
Shutoken Hokuriku Regional Office	Tokyo Branch / Chiba Branch / Kanto Branch / Hokuriku Branch / Building Construction Branch	KAKO CORPORATION / KANTO KAKO CORPORATION / YOKOHAMA KAKO CORPORATION / NIIGATA KAKO CORPORATION / Kyna-Tech
	8 branches	**6 group companies**

Overview of East Japan In-house Company

The East Japan In-house Company consists of the Kita-Nihon Regional Office and Shutoken Hokuriku Regional Office. The regional offices include KAKO-Group companies and the Shutoken Hokuriku Regional Office also encompasses Kyna-Tech. Overall, this in-house company is responsible for operations in Hokkaido, Tohoku, Kanto, and Hokuriku. As of June 30, 2024, this in-house company had 425 employees. Construction sales for FY2024 were 40.6 billion yen.



West Japan In-house Company

The West Japan In-house Company has been actively investing in human resources with the goal of creating an amenable working environment for all of our employees. In addition to these efforts, we will seek to ensure stable earnings by maintaining our existing markets while continually pursuing challenges and gaining insights in new markets to evolve in step with the times. As part of these efforts, the KAKO-Group positioned within the West Japan In-house Company will place a renewed emphasis on peripheral areas including railroads, electricity, and ports.

Tsuyoshi Koga
Senior Managing Director and General Manager of the West Japan In-house Company
SHO-BOND CORPORATION

Topics

We are working to improve our productivity by leveraging the in-house company system by unifying standards at the in-house company level and promoting active exchanges of people and products. We have succeeded in strategically capturing large-scale construction projects by aggressively expanding the operation area of partner companies across jurisdictions at each regional office. In response to requests from our regional offices, the West Japan In-house Company has established unified rules for safety, and the workplace health and safety council at each regional office in our company performs mutual patrols to extensively monitor the safety of each other's work sites. By unifying standards to improve the efficiency of safety management operations, and encouraging mutual interaction through safety patrols, the entire in-house company has managed to reform its work style and improve our safety and health level.

We are also striving to further enhance the in-house company's specific employee training program. Under the Medium-term Business Plan 2027, we will conduct training for mid-level site engineers and discussion-based training for our veteran engineers, in addition to our existing training focusing on female and young employees. The mid-level construction training will aim to equip mid-level employees with a certain level of experience with even greater knowledge of civil engineering projects. The training will consist of in-person lectures by mid-career recruits based on project case studies. The discussion-based veteran engineer training will aim to improve the problem-solving abilities of our veteran engineers by having them each conduct a fishbone analysis of past failures and then discuss various issues and potential solutions. We will continue to enhance our training programs to better meet the needs of our employees, thereby improving their individual abilities and motivating them in order to play a role in human capital management.

We are also actively recycling the used paper generated at our offices and construction sites. Through a system involving a social welfare corporation and a recycling company, our in-house company's used paper is recycled as originally labeled toilet paper. This service not only makes effective use of our used paper, but also has the added benefit of creating employment for people with disabilities. Our use of this service was initially proposed by one of our employees. Going forward, we will continue to actively adopt good ideas and promote sustainability.

Overview of West Japan In-house Company

The West Japan In-house Company has three regional offices (Chubu, Kinki, and Nishi-Nihon) and each office is affiliated with KAKO-Group companies. Operations cover south and west Japan. As of June 30, 2024, this in-house company has 397 employees. Construction sales for FY2024 were 35.4 billion yen.

	SHO-BOND CORPORATION	Group Companies
Chubu Regional Office	Nagoya Branch / Shizuoka Branch	CHUBU KAKO CORPORATION
Kinki Regional Office	Osaka Branch / Kyoto Branch / Kobe Branch	KANSAI KAKO CORPORATION
Nishi-Nihon Regional Office	Chugoku Branch / Shikoku Branch / Kyushu Branch	CHUGOKU KAKO CORPORATION / SHIKOKU KAKO CORPORATION / KYUSHU KAKO CORPORATION
	8 branches	**5 group companies**


On-site training inspection for female engineers


Technical exchange meeting

Engineering Division

The Engineering Division is chiefly responsible for gathering technical information and developing technologies related to our core business of infrastructure maintenance, and for supporting each of our Group's engineering departments. Amidst the recent increase in the scale and complexity of construction projects, we believe it is essential to improve the technical skills of our engineers. We have sought to address these issues by integrating new technologies with the proprietary technologies we have developed over the years. Following on from our AI-based technology for diagnosing concrete structure deterioration (*AI Shindanshi*), we intend to develop an AI assistant tool to support on-site engineers in order to address the shortage of engineers and improve quality. In terms of technology development, our Engineering Division is working with the Technical Research Institute to develop organic and inorganic products and construction methods leveraging these products in response to on-site requirements. We will continue to create unique and superior products and construction methods and contribute to society through technological development with an eye towards decarbonization.

Hiroshi Takemura

Managing Director & General Manager of Engineering Division
and Director of Technical Research Institute, SHO-BOND CORPORATION

Strengths

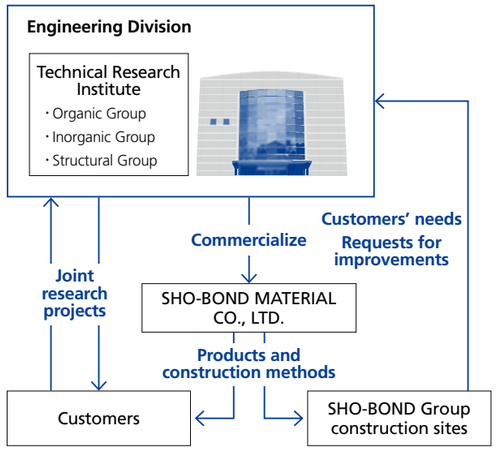
- Combining chemical and civil engineering technologies to create new technologies
- Construction methods and materials specialized in repair and reinforcement
- Accumulated technological development capabilities and knowledge centered on the Technical Research Institute

Review of Previous Mid-term Plan and Overview of Medium-term Business Plan 2027

Under the previous mid-term plan, we focused on improving the technical skills of our employees in order to respond to the increasing size and complexity of construction project contracts. In addition to our human resource development initiatives including on-the-job training and support for obtaining qualifications, we proactively undertook the challenge of integrating our proprietary technologies with advanced digital technologies. In terms of human resource development, we organized on-the-job practical training for young engineers to engage in construction projects with detailed designs. The training enabled these engineers to improve their skills by gaining experience in dealing with design modifications based on site-specific conditions. We are also strengthening our system of support for employees seeking to obtain Professional Engineer certification with the assistance of our qualified engineers. In terms of integrating our technologies with advanced digital technologies, we have established a cross-functional working team to study and internally utilize advanced technologies such as 3D CAD, AR, and FEM analysis, and our flexibility to adapt to new technologies and ability to link these technologies to productivity improvements have steadily improved.

One outcome of our recent research and development in response to Japan's current full-scale expressway renewal work is bridge deck reinforcement technology, which we jointly developed and commercialized in a three-way partnership with an expressway company and a private-sector company. This technology improves fatigue durability by covering the bridge deck slab's upper surface with a special concrete that behaves the same way as the existing slab. The technology was developed through a joint initiative involving each of the Technical Research Institute's groups. Specifically, the Inorganic Group developed the special concrete and the Organic Group developed the permeable resin, while the Structural Group verified the products' fatigue durability using our wheel load running testers.

●SHO-BOND Group R&D Flowchart



Under the Medium-term Business Plan 2027, we will continue and expand our efforts to boost our technological capabilities with a key focus on large-scale, complex projects such as seismic reinforcement of special bridges, and our activities to increase productivity in response to labor shortages within the construction industry. We will expand the scope of our AI application beyond the diagnosis of concrete structure deterioration to include support for our engineers. In terms of technology development, we will pursue research and development targeting a wide variety of aging structures in addition to expressways and other high-specification roads. We will cooperate with the Marketing and Sales Division to pursue a product lineup that meets the needs of our customers, such as process-reducing products for railroads that allow installation to be completed in the interval between the last train and the first train.

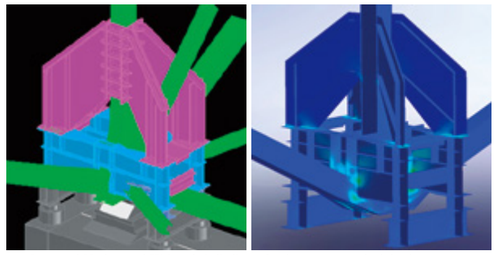
We will also focus on providing technical support for overseas projects. In March 2024, we enlisted the cooperation of entities including a Thai university and the Thailand Concrete Association to hold a seminar on infrastructure maintenance in Bangkok that was attended by members of local industry, government, and academia. We will continue to pursue these types of initiatives in cooperation with the Overseas Business Department to expand the Group's business areas and contribute to solving infrastructure maintenance issues overseas.

Construction Engineering Technology Conference

Each year in June, SHO-BOND holds the Construction Engineering Technology Conference. Each regional office selects three to four of their construction projects for that year, and a representative gives a presentation on a technically-outstanding advanced case study. The conference is a major event that attracts around 100 employees from across Japan to the head office building, and is streamed online to all regional offices and branches. As each presenter is representing their own regional office, they rehearse thoroughly with the support of their office before the day of the presentation. After the presentations, awards for excellence are presented and employees interact with one another, thereby encouraging and motivating participants to do their best. We also offer other programs as the need arises to broaden the knowledge of our engineers, such as special lectures by outside academics.

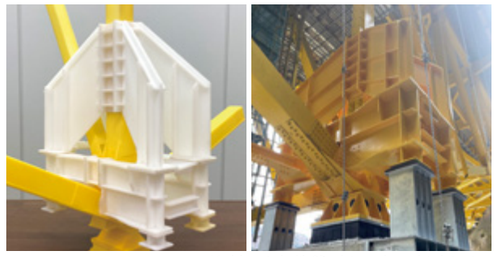
At the Construction Engineering Technology Conference, we select relevant themes and seek submissions. In recent years, there have been many presentations related to digital transformation (DX), with more than half of all presentations in FY2024 pertaining to digital technologies with keywords such as AR, 3D models, CIM, FEM analysis, and AI. SHO-BOND is actively engaged in "on-site DX" initiatives, and the overall trend toward infrastructure DX is progressing, as evidenced by the fact that BIM/CIM is being applied in principle to construction projects under the direct control of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) from FY2023. The case study in the figures below which was presented in FY2024 investigated the use of reinforcing components during jack-up within the bridge-bearing replacement process. In designing the reinforcing components for this project, the project team performed FEM analysis using 3D modeling that made it possible to avoid interference with existing components and to improve the structure by keeping the bending stress of fittings within the permissible range. By utilizing 3D data and 3D printer models to communicate with on-site workers, the team also managed to smoothly execute the highly complex process of jacking up and installing the reinforcing components. This construction project has since been completed with no accidents or disasters, and has received high praise from the client. This type of company-wide deployment of best practices, including new findings and innovations, has led to new discoveries and improved the technical skills of our employees.

Conference presentation



Presented 3D data and FEM analysis findings after improvement of reinforcing components

Conference venue

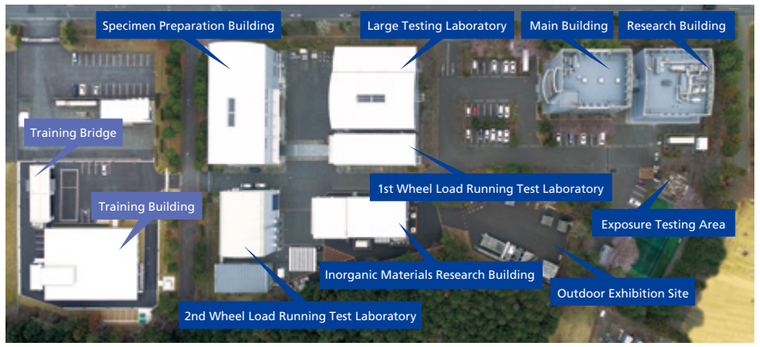


Model created with 3D printer and completed structure

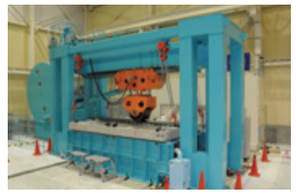
Technical Research Institute

Overview of Technical Research Institute

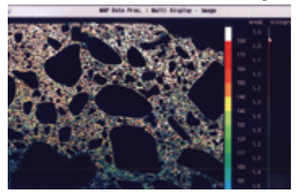
The SHO-BOND Group has contributed to society through the research and development of its own repair technology, believing that the combination of chemical and civil engineering technologies is important for effective infrastructure maintenance. The Technical Research Institute has played a central role in this effort. In 1996, the year after the Great Hanshin-Awaji Earthquake, SHO-BOND opened its third research laboratory (with a site area of approximately 22,000 m²) in Tsukuba Science City. We named it the Technical Research Institute (TRI) based on the philosophy of raising infrastructure repair skills to the level of scientific research. TRI focuses on identifying the mechanisms of structural deterioration and damage, improving fatigue durability against large vehicles, and researching and developing effective reinforcement technologies for earthquakes. TRI is unique within Japan as a research facility that specializes in the repair and reinforcement of structures and that is well-equipped with state-of-the-art devices. Many materials and construction methods developed at the Institute have been adopted as standard repair methods. TRI is organized into three groups—the Organic Group, the Inorganic Group, and the Structural Group.



Aerial view of the Technical Research Institute and Tsukuba Training Center



Wheel load running test

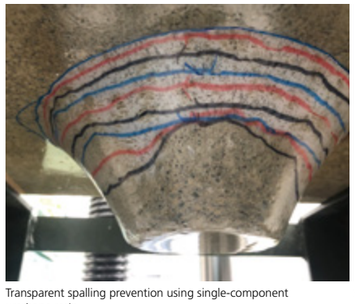


Example of EPMA analysis

Organic Group

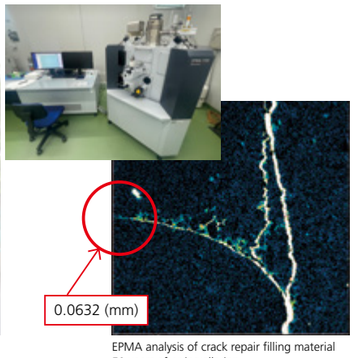
The Organic Group develops products and construction methods using organic materials (resins). Development themes range from concrete protection, steel protection, and modification of asphalt pavement and road base materials. We are developing mainly epoxy resin formulation technologies that we have cultivated over many years, and are also leveraging the characteristics of various resins such as urethane and MMA resins. In terms of practical applications, each product has diverse performance requirements so we use our various evaluation systems to check mechanical properties and durability while producing high-quality products that meet customer needs. We also perform follow-up surveys of structures we have previously repaired to verify the effectiveness of repair materials and provide feedback for product development.

Given the recent shortage of engineers in Japan, there is a growing demand for simple, process-saving products so we are actively promoting the development of single-component materials that can be used without mixing or stirring. We are also working to realize a sustainable society by replacing petroleum-based raw materials with plant-derived materials in an effort to reduce the carbon footprint of existing repair resin materials.



Transparent spalling prevention using single-component urethane resin

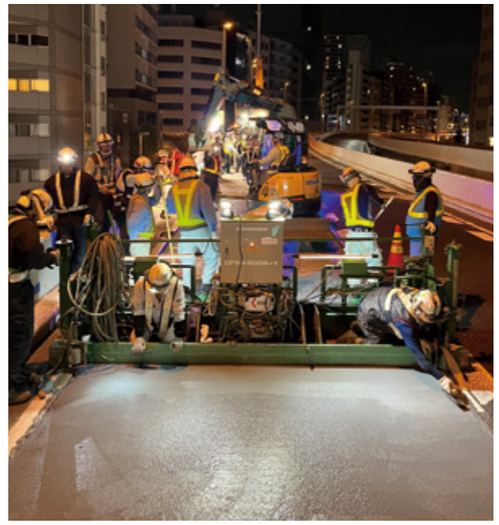
Spalling prevention using single-component water-based urethane resin



EPMA analysis of crack repair filling material 50 years after installation

Inorganic Group

The Inorganic Group was formed in 2019 to independently develop inorganic materials such as cement and concrete, and to diversify SHO-BOND's product lineup in response to customer needs. Over the five years since the Inorganic Group was established, we have focused on establishing fundamental technologies that will serve as the basis for our inorganic material development, and have succeeded in developing the following: (1) material design technology for ultra-rapid hardening of concrete, (2) technology for improving durability through latex modification, (3) technology for controlling concrete's static modulus of elasticity, (4) technology for concrete mix designs of premixed materials, and (5) technology for preventive maintenance of rebar corrosion. These are highly original technologies that cannot be imitated by other companies, and can be combined in various ways to meet the complex and diverse needs of the infrastructure maintenance. As well as establishing these fundamental technologies through basic research, we are leveraging these technologies to develop products such as concrete for repairing top surfaces of bridge deck slabs, waterproof concrete for deck slabs, overlay concrete for deck slab top surfaces, bridge pavement concrete to protect deck slabs, and permeable rust inhabitor for rebars. These efforts have resulted in the development of outstanding products such as CPJ-L. Going forward, we will prudently leverage the fundamental technologies we have successfully developed to achieve even greater progress.

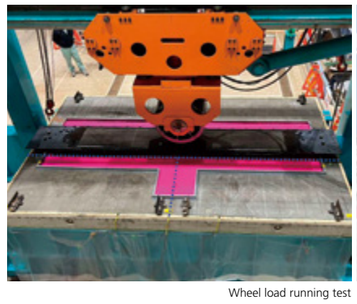


Overlay concrete construction on top surface of bridge deck slab

Structural Group

The Structural Group develops and verifies materials and construction methods mainly related to structural mechanics. TRI's wheel load running testers (steel wheel and rubber tire models) and large fatigue testers are widely deployed, and in recent years are increasingly being used in our joint research with universities, expressway companies, and construction companies. In the area of bridges, we are utilizing our wheel load running testers to conduct joint research on the structural enhancement of composite-slab SUPER DECK SLAB and a method for replacing width-divided deck slabs. We are also working to improve the fatigue durability and waterproofing performance of expansion joints using fatigue testers and joint testers. In the area of earthquake resistance, we are conducting impact testing on shock-resistant devices such as RESTRAINING CHAIN and SHEERING STOPPER to verify their buffering effects and investigate the potential addition of new features.

We are also actively engaged in the latest digital technologies such as AI and VR/AR to promote on-site DX, and are currently studying on-site support tools using AR technology. At seismic retrofitting sites where large and complex-shaped components are installed in existing structures, digital technologies can be used to determine the interference between components and simulate the construction process so that all construction stakeholders can have a shared understanding of the project. We will aim to improve productivity by promoting on-site DX and the use of CIM while cooperating within the SHO-BOND Group.



Wheel load running test

Matterport 3D spatial capture of the training bridge in Tsukuba Training Center

Construction Division

The Construction Division is responsible for improving the quality and safety of construction work. It cooperates with the regional offices to facilitate the on-site operations that are fundamental to a construction company such as ours. Most of our Group's construction work involves public works so our clients are generally public facility administrators and expressway companies. One of our key roles is to earn our clients' trust by ensuring high-quality construction work that will lead to future project contracts. Securing a competent workforce and passing on our unique construction expertise are both essential elements in achieving this goal. In order to diversify our revenue sources and strengthen our profitability into the future, we will leverage our accumulated repair and reinforcement construction expertise to complete construction projects of various sizes while also helping to foster our partner companies and secure our workforce.

Tsuneyuki Ashizawa

Director and General Manager of Construction Division
and Director of Tsukuba Training Center, SHO-BOND CORPORATION

Strengths

- A strong team of engineers capable of earning profits from even small projects
- Large network of partner companies with experienced people covering a diverse array of construction skills
- Close relationship with factories that fabricate steel components one by one to match the requirements of individual projects
- Low cost of construction by performing projects requiring specialized skills without using subcontractors

Review of Previous Mid-term Plan and Overview of Medium-term Business Plan 2027

In the past few years, the infrastructure maintenance environment has changed significantly from small-scale, single-year projects to large-scale, multi-year projects. Amidst this shift, various challenges have emerged in terms of establishing construction and safety management systems, securing partner companies, and procuring the materials and equipment capable of handling large-scale projects.

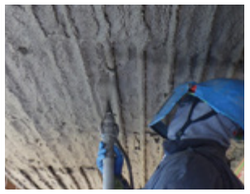
The Construction Division places a particular emphasis on securing and training partner companies and site-support staff. On construction sites, our work typically involves collaboration between not only our core personnel such as our site manager and management engineer but also support staff and partner companies. We are therefore striving to raise the skill levels of the support staff and partner companies in order to handle the increasing size of construction projects and changing work practices. The Tsukuba Training Center (TTC) is the nexus of our employee training. The TTC operates for more than 100 days a year, with both Construction Division employees and Technical Research Institute personnel acting as instructors. These instructors provide training on on-site quality and safety management while also integrating practical elements. The Construction Division also promotes the company-wide dissemination of construction management tools with the aim of improving on-site management productivity. It has gradually achieved results not only by distributing software but also by providing detailed follow-up to each office and site, including training by external expert personnel and setting up a support desk.

Under the Medium-term Business Plan 2027, we will further promote the above initiatives to ensure our construction capacity while also conducting initiatives in earnest to secure our workforce and make more cost reductions. In terms of securing the workforce, we are supporting the recruitment of partner companies including foreign nationals. In terms of reducing costs, we are working to internalize the specialty construction that is frequently entailed in repair and reinforcement projects. In our water-jetting work, Kyna-Tech has already trained its own construction team. We are also reviewing whether to bring other essential types of work in-house through M&A or other types of business partnerships. Another challenge that we face is to train engineers who can flexibly handle not only large construction projects but also small and medium-sized repair works. While there are many advantages to focusing on large-scale project contracts, such as securing stable profits and ensuring the regular availability of engineers, we must also preserve our unique strength of being an infrastructure maintenance specialist capable of securing sufficient profits from small and medium-sized construction projects. Under the Medium-term Business Plan 2027, SHO-BOND will actively engage in relatively small projects for the national and municipal governments and the private sector, where we must achieve profitability by leveraging our small and medium-sized construction expertise accumulated since our founding. We will ensure that our unique construction techniques are passed down to the next generation by training and staffing our construction employees and by utilizing DX technology.

SHO-BOND Construction Sites

Concrete Sectional Repair

We remove deteriorated parts of concrete using the water-jet method without damage to existing healthy parts of concrete structures and then repair them by spraying materials including mortar or putting them with a trowel.



Suspended Scaffolding

Suspended scaffolds are an indispensable part of bridge repair works. The photo below is of the Tengu Bridge on the Tohoku Expressway. As this is a V-shaped bridge traversing mountainous terrain, when repainting and seismically reinforcing the bridge, we erected scaffolding to encompass the bridge's long piers that extend in a V-shape from its base. The key to this type of repair work is setting up the most suitable scaffolding for each site according to the shape of the bridge and the type of work to be done. We plan to use this large-scale scaffold for two more years of construction at Tengu Bridge, and we will remain fully focused until the scaffolding is safely removed.

Replacement of Bridge Bearings

We have replaced many bearings on truss structures and other special bridges to improve their seismic performance. This is the most complex repair and reinforcement work as it requires jacking up the bridge with temporary supports to perform the work without disturbing the traffic on the bridge.

Tsukuba Training Center

The Tsukuba Training Center (TTC), which was completed in 2021 and started operating in 2022, marked its third year in 2024. From its primary task of our employees' rank-specific training, the TTC is now providing training to our partner companies and site-support staff. We have recently been requested to train young engineers from municipalities and expressway companies that are struggling to maintain and manage their infrastructure. There has also been significant interest in our repair technology from overseas, with over 250 people from 27 countries visiting the TTC to date through the Japan International Cooperation Agency (JICA) and other organizations' introduction. Going forward, we aim to further enhance the TTC by installing our repair and reinforcement materials on the Training Bridge.

Training Bridge

JICA visit

Overseas Business Department

The issue of aging infrastructure around the globe is already becoming evident in some parts of the world but much of it is still latent so the global market for infrastructure maintenance is expected to grow in the future. Another pressing issue is how to address the disasters caused by earthquakes and climate change that are occurring in many parts of the world. The Overseas Business Department is tasked with responding to these challenges by globally deploying the infrastructure maintenance technologies that the SHO-BOND Group has developed over many years in Japan. We will contribute to society by extending the service life of global infrastructure by combining our on-site technical capabilities cultivated in Japan to meet the demand for repair and reinforcement of various structures with the best solutions.

Setsu Arai

Director of Sales Management, SHO-BOND Holdings Co., Ltd.
Director and General Manager of Overseas Business Department, SHO-BOND CORPORATION
President and Representative Director, SHO-BOND MATERIAL CO., LTD.
President and Representative Director, SB&M

Risks and Opportunities in Overseas Businesses

[Risk factors]

- Country risks due to economic and political instability
- Uncertainty involving laws and regulations and logistics for shipments of products
- Rising cost of materials and exportation and uncertainty about foreign exchange rates
- Cost competition with local companies and other entrants

[Opportunities]

- Increasing public awareness worldwide of the need for maintenance of aging infrastructure
- Joint activities with other Japanese companies for the dissemination of infrastructure technology proven in Japan
- Growing need for protection against earthquakes, floods, and other natural disasters around the world

Strengths

- SHO-BOND Group's technology development capacity for development and modification of construction methods and products to match the requirements of specific countries and regions
- Global business network and overseas development and management capacity of MITSUI & CO. in 63 countries and 128 business sites

Review of Previous Mid-term Plan and Overview of Medium-term Business Plan 2027

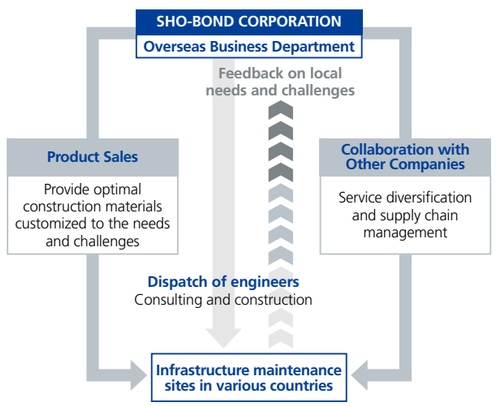
The SHO-BOND Group's overseas operations began in earnest in April 2019 when SB&M was established in partnership with MITSUI & CO. We established the infrastructure repair company CPAC SB&M Lifetime Solution in Thailand with CPAC of the Siam Cement Group in 2020. Under the previous mid-term plan, we made steady progress by investing in Structural Technologies (ST), a company specializing in concrete structures in the U.S. in 2023.

In the Overseas Business Department, our business strategy under the Medium-term Business Plan 2027 is to restructure our overseas business model. Our overseas business has previously been focused on the sale of construction materials with a proven track record in Japan. However, we have received numerous client queries about our on-site expertise in repair work so we have responded by establishing the Overseas Business Department within SHO-BOND CORPORATION, which is our core company for performing construction work. By doing so, we have consolidated a structure enabling us to provide not only sales of construction materials but also a wide range of infrastructure maintenance services by mobilizing the Group's collective strengths from surveying and diagnosis of aging structures to repair proposals, construction supervision, and provision of technology. Dispatching our engineers to overseas sites will enable us to identify the needs and issues in each country, propose optimal solutions, and develop new materials.

Our regional goal under the Medium-term Business Plan 2027 in Thailand is to enter the public sector construction business, specifically bridge repair projects, and to increase the volume of this work. Currently, the main source of revenue is private-sector construction. We are also preparing to undertake local manufacturing to strengthen the price competitiveness of our products. In the U.S., we will work to expand our business areas through ST. We will expand our repertoire of repair work by not limiting ourselves to SHO-BOND products and technologies but also introducing the technologies of other Japanese companies to ST.

Furthermore, we aim to increase the volume of our overseas business activities. We will double the number of our employees involved in overseas operations by hiring new overseas personnel and reallocating them within the Group. We are also aiming to increase our volume of overseas project contracts by expanding the scope of our business in areas such as surveying, diagnosis, and construction supervision, and we are aiming to expand our overseas revenue by increasing the number of products and construction methods that we handle, including deploying overseas technologies within Japan. In addition to Thailand and the U.S. where we have already launched, we will partner with local companies to develop our business in countries where infrastructure deterioration due to inadequate maintenance and management has had a significant impact on the lives of citizens. Despite numerous issues in these markets such as procuring the necessary budgets and materials, we will develop this business with the goal of achieving self-sufficiency in local maintenance.

●New Business Model



On-Site Conditions

Here we will introduce our business operations in Thailand. Two Japanese staff members are also stationed at CPAC SB&M where they work with local staff to maintain aging structures. In addition to repairing manufacturing and other facilities primarily for private clients while leveraging our ties with Japanese companies and the network of MITSUI & CO., we have also taken on the challenge of introducing Japanese products to local markets.

↑ Repair work on the roof of an overseas Japanese company factory.

↑ Repair work on a port jetty at a Japanese chemical plant facility.

↑ Repair work on a cement silo at a CPAC Group company plant involving the removal, re-design, and re-construction of the silo's internal structure.

↑ We are working with CPAC, one of Thailand's leading ready-mixed concrete manufacturers, to study ready-mixed concrete processing methods that will also contribute to decarbonization.

SHO-BOND MATERIAL CO., LTD.

Overview

SHO-BOND MATERIAL CO., LTD. is a core company of the SHO-BOND Group. It was established in July 2016 by the merger of SHO-BOND Chemical and SHO-BOND Coupling and became a manufacturer and trading company that produces and sells resin products, construction materials, and couplings.

Risks and Opportunities in Our Construction Materials Manufacturing and Sales Business

[Risk factors]

- High cost of energy, construction materials, and raw materials
- Damage and disruption of operations caused by natural and other disasters at factories of SHO-BOND MATERIAL and its contract suppliers
- Measures needed to cope with the restriction on overtime work concerning logistics starting in Japan in 2024

[Opportunities]

- Growing demand for extending the life of infrastructure as the pace of activities for repairing and reinforcing aging infrastructure increases
- Growing demand for reinforcement work as the frequency and severity of natural disasters increase
- Demand for environmentally friendly products

Strengths

- A diverse lineup of products for many types of degeneration and damage offered by a specialist in repairs and reinforcement
- Group-wide development capabilities for customizing products to meet specific market demands
- Asset-light manufacturing through a fabless framework (for structural construction materials and pipe joints)
- Flexible environmental response, such as using non-hazardous organic materials and plant-based ingredients for the fabrication of products to reduce CO_2 emissions

Review of Previous Mid-term Plan and Overview of Medium-term Business Plan 2027

In the previous mid-term plan, we focused on strengthening sales of existing products and exploring new markets by addressing customer challenges and understanding on-site needs. One of our main products, couplings (pipe joints), has utilized its ease of installation to meet demand in the building maintenance market, leading to increased sales. Additionally, the process-saving surface coating method, NEO LINER EX METHOD, which was introduced in October 2023, was developed to address the needs of new customers, such as railway companies with tight construction schedules. This approach is anticipated to support future revenue growth and foster opportunities for new customer engagement.

In the Medium-term Business Plan 2027, we aim to align product sales and channel expansion with customer needs while enhancing sales trend analysis and marketing. To strengthen our sales capabilities, we plan to recruit new personnel. In line with the business strategy of the entire Group, we will pay close attention to initiatives by national and local governments in the road maintenance market and promote the sales of products in demand in peripheral areas outside of roads. Strengthening collaboration between internal organizations, such as the Marketing and Sales Division and the Technical Research Institute, will be key to these efforts, alongside the continuous implementation of the PDCA cycle. For existing products like couplings, which have shown steady growth, we are planning to make capital investments to improve operational efficiency by consolidating manufacturing and assembly bases as well as to increase production capacity and meet future demand. We also plan to leverage the manufacturing expertise developed domestically to support local production in overseas markets. By strengthening both sales capabilities and our involvement in building domestic and international supply chains, we aim to support the Group's growth strategy and achieve our construction material sales target of 11 billion yen.

NEO LINER EX METHOD

Kyna-Tech

Overview

Kyna-Tech became a wholly owned subsidiary of the SHO-BOND CORPORATION in 2016 through acquisition, as part of the Group's strategy to increase profitability and diversify its operations. The company is based in Saitama and had a workforce of 18 as of the end of June 2024. As a specialty construction company, Kyna-Tech enhances the Group's profitability through its expertise in advanced machinery construction technology, including high-frequency core drilling and water jets. Moreover, conducting water jet construction in-house leads to cost reductions and contributes to the profitability of the entire Group.

Operations

High-frequency core drilling at concrete structures

Making anchor bolt holes using high-frequency core drilling is one of the primary activities of Kyna-Tech. When reinforcing an existing concrete structure, holes are drilled for the placement of reinforcing components to increase earthquake resistance. Kyna-Tech's high-frequency core drill can make holes up to 15 meters deep and in a direction that is not possible with conventional machinery. Furthermore, holes are made about 2.5 times faster. Another advantage is the core drill being fitted with a safety device, which eliminates the risk of damaging rebar in the concrete structure.

We established the Waterjet Department in 2019 and have been building up our track record in surface treatment and chipping work. Since 2024, we have been strengthening our construction capabilities through a directly managed team.

Surface preparation of concrete using water jet

Maintenance Technology Inc.

Overview

Maintenance Technology Inc., established in 2011, is the only construction consulting company in the SHO-BOND Group. The company has sales offices in Tokyo, Nagoya, and Osaka. The workforce was 23 at the end of June 2024. The main activity is the investigation, diagnosis, analysis, repair plans, and other services involving bridges, tunnels, and other public-sector structures under requests from other construction consultants. We also measure structures, analyze resin products, and perform other services to improve the quality of work at our construction sites.

Operations

Structure measurements and 3D CAD data generation using a 3D measuring instrument

Repair and reinforcement work consists primarily of installing or replacing various materials in existing structures. Obtaining accurate measurements is often difficult because existing structures have complex shapes and narrow spaces. We use a recently developed wide-area 3D measuring instrument capable of measuring existing structures quickly and accurately. Furthermore, we also perform tasks such as converting point cloud data obtained from 3D measurements into 2D and 3D CAD formats, enabling us to check data for components in fabrication and component interference levels.

The status of measuring anchor bolt drilling positions using a 3D measuring instrument