OBAYASHI CORPORATION

CORPORATE PROFILE

MAKE BEYOND

TRANSCENDING THE ART AND SCIENCE OF MAKING OF THINGS

OBAYASHI

Obayashi Basic Principles

Obayashi Philosophy

Obayashi's Vision and Mission in Society

A Leading Sustainability Company

1 Exercise honest craftsmanship with superior technologies and create new value in every space.
2 Care for the global environment and create solutions to social challenges as a good corporate citizen.
3 Value each person with a stake in our business.

By keeping these promises, Obayashi Corporation contributes to realizing a sustainable society.

Obayashi Code of Conduct

These guidelines help us realize the Obayashi Philosophy and continue being an enterprise trusted by all stakeholders

1 Fulfill our social mission

(1) Provide high-quality buildings, infrastructure, and services
(2) Foster an environmentally responsible society
(3) Value every one of our associates
(4) Build stronger mutual trust with suppliers
(5) Build good relationships with communities

2 Ensure strict adherence to corporate ethics

(1) Comply with laws and regulations and take a sensible course of action
(2) Promote fair and free competition
(3) Maintain appropriate relationships with stakeholders
(4) Avoid all contact with antisocial forces
(5) Ensure appropriate information disclosure and transparency of management

Obayashi Three Pledges

The spirit that has guided us since our founding

Quality, Value, and Efficiency

Brand Vision

MAKE BEYOND

TRANSCENDING THE ART AND SCIENCE OF MAKING OF THINGS

The Obayashi Group's hope for the future is to take the craftsmanship technology and knowledge we have cultivated over our history, attune them to our present times, and develop them into new paths forward, and to grow in ways that reach beyond the framework of our existing business.

Realizing a sustainable society

Since its founding in 1892, the Obayashi Group has held to the spirit of the Obayashi Three Pledges: Quality, Value, and Efficiency. As such, we have worked to develop society and the economy and raise people's quality of life by exercising true craftsmanship and employing superior technologies.
Society is changing quickly in recent years, and people's needs are becoming more diverse. Now in its 130th year in business, the Obayashi Group has adopted the "MAKE BEYOND　Transcending the art and science of making of things" Brand Vision. Under it, we will open up new fields and possibilities by leveraging our strengths: the craftsmanship technology and knowledge that we have cultivated over our history.
Additionally, Obayashi Sustainability Vision 2050, our long-term vision, states that our ideal for the year 2050 is to realize sustainability of "the planet, society, and people." We will work together as a Group to advance ESG management.
Ultimately, our goal is to live up to the trust and expectations that people have for us. To do so, we will continue to provide safe and secure high-quality buildings, infrastructure, and services while putting the highest priority on implementing rigorous compliance. We will help foster an environmentally responsible society that is comfortable to live in. We will work to solve global challenges, for example by practicing ESG management and achieving the SDGs. By doing these things, we will contribute to realizing a sustainable society.

President
Representative Director
Kenji Hasuwa

130 years of history

Since its founding in 1892, Obayashi's members have handed down its DNA of honest craftsmanship and technology. It has relied on that DNA to complete numerous projects emblematic of their era, including Tokyo Central Station (today's Tokyo Station), Kansai International Airport, Tokyo Bay Aqua-Line, and TOKYO SKYTREE®. We supported Japan's modernization and post-World War II reconstruction and helped build the infrastructure for the nation's growth into an economic powerhouse. We continue to take the challenge of creating new value by doing business in partnership with changing societies. These pages trace the Obayashi Group's 130-year history.

1892-1945

Supporting Japan's Modernization and Laying the Cornerstone of the Construction Industry

Obayashi was founded as the "Obayashi Store," a civil engineering and building construction contractor, in 1892. The demand for factory construction with the yarn spinning boom of the time gave a big boost to Obayashi's business in the early years. Subsequently, Obayashi entered the market to construct large factories and offices as well as infrastructure construction projects like ports and railroads. Having grown into one of Osaka's premiere construction companies, Obayashi went on to establish a foothold in Tokyo. This period started with the construction of Tokyo Central Station, completed in 1914. It constructed numerous concrete buildings after the Great Kanto Earthquake of 1923, thereby contributing to Tokyo's recovery. Obayashi's track record in public works and other projects grew in the 1930s and beyond, building it into a nationwide construction company.

1914 Tokyo Central Station (today's Tokyo Station)

1931 Main Tower of Osaka Castle

1933 Osaka Subway (Yodoyabashi – Kita-Kyutaromachi)

1956 Nukabira Dam Power Generation Development on the Tokachi River system in Hokkaido

1964 Yoyogi National Stadium 2nd Gymnasium

1970 The Japan World Exposition (Theme Pavilion). Exposition theme: "Progress and Harmony for Mankind"

Business Expands with Construction of Infrastructure as a Foundation for Post-War Economic Development

During the post-war reconstruction era, the focus was on rebuilding government office buildings, schools, and hospitals. The 1950s and 1960s also brought Obayashi numerous projects for the public good, such as dams, power generation facilities, railroad networks, and station buildings. During these years, Obayashi endeavored to meet society's needs. Later, as construction technology progressed, more high-rise buildings were constructed. The Osaka Obayashi Building, completed in 1973, was the first high-rise tower in western Japan. Together with other projects, it kicked off an era in which Obayashi constructed many such towers in Tokyo and Osaka. In 1964, the same year as the Tokyo Olympics, Obayashi started expanding globally with the opening of its first overseas representative office in the Kingdom of Thailand. Then in 1970, the Tokyo Branch Office became the Tokyo Head Office and began overseeing business activities for all of Obayashi.

1946-1990

1991-2016

Obayashi Increasingly Becomes a Global Company as It Takes on More Large-Scale Projects in Japan and Overseas

In the years following 1991, just as Obayashi was approaching its 100th anniversary, Japan's era of powerful economic growth was coming to an end. In spite of the slump in private demand, Obayashi still won a number of domestic landmark projects, including Kansai International Airport, Roppongi Hills Mori Tower, and TOKYO SKYTREE. Outside Japan, the Company participated in large-scale projects like Taiwan's high-speed rail, the Hoover Dam Bypass bridge over the Colorado River, and the Dubai Metro. This era also saw increasing public interest in protecting the environment. In 1992, Obayashi established its Environmental Protection Action Plan and began initiatives designed both to pursue business and protect the environment.

1997 Tokyo Bay Aqua-Line

2012 TOKYO SKYTREE

2011 Dubai Metro Project (United Arab Emirates)

2017 Mitanehamada Wind Power Station

2017 to the present

Aiming to Realize a Sustainable Society and Enhance Corporate Value

Today, Obayashi continues history-making construction in Japan and overseas. Examples include Tokyo Aquatics Centre and the Jewel Changi Airport in Singapore. We are also focusing on technological innovation with IoT, AI, and robotics and stepping up our renewable energy business to help achieve a low-carbon society, with solar, wind, and biomass power stations in operation. In future, we will continue to strengthen our four business areas (building construction, civil engineering, real estate development, and new businesses), deepen and expand our business domains, and accelerate our globalization while responding to society's increasingly diverse needs, such as reducing environmental impact and preventing and mitigating disasters.

2018 Waterview Connection Tunnels and Great North Road Interchange (New Zealand)

2019 Shin-Aomori Prefectural Comprehensive Athletic Park Athletics Stadium

01 Building Construction Business

We provide structures with a wide range of uses: office buildings, factories, medical and public welfare facilities, educational facilities, logistics bases, and more. From the stage of facility planning all the way through to operation, maintenance, and management, the Obayashi Group works as a team to advance projects in many different fields, including marketing, design, procurement, construction, and technological development. Throughout each building's life cycle, we meet people's wishes for safety, quality, comfort, economy, and energy efficiency while also helping to find solutions that customers and society need for their ESG challenges.


1 Photo: East Japan Railway Company


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1 Takanawa Gateway Station

Location: Minato City, Tokyo

An Eco-Friendly Gateway to a Global Hub

Located between JR Tamachi and Shinagawa Stations, this is the first new station on the Yamanote Line in 49 years. The 30th station on the line, it is the gateway to a global hub for Tokyo. The great white roof, designed by Kengo Kuma, is based on an origami motif. Sunlight coming through panels are reminiscent of shoji sliding doors, accentuating the Japanese look. The station building is also very eco-friendly: the membrane roof reduces how much power is used for lighting and the structure is made of wood from the Tohoku region.

2 Tokyo Aquatics Centre

Location: Koto City, Tokyo

Great Roof of 7,000 Tons Lifted into Place

Obayashi constructed the internationally certified aquatics center in Tatsumi Seaside Park. It consists of a 50 m 10-lane main pool, a sub pool, and a 25 m wide diving pool. The work was delivered in a short time thanks to the "liftup construction method." The massive roof, weighing 7,000 tons, was assembled on the ground and then lifted into place by wire. It is used for international swimming competitions and as a sports facility for Tokyo citizens.

3 Kumamoto Castle Keeps Restoration Work

Location: Kumamoto City, Kumamoto

Castle Keeps Restored with the Latest Seismic Resistance and Vibration Control System

The Kumamoto earthquakes of April 2016 caused Kumamoto Castle's keeps, turrets, and stone walls to crumble and collapse, leaving major damage. Obayashi did the restoration work on the keeps. The aim was to ensure a quick recovery of the keeps as a symbol of the area's revival. Restoration of the keeps was completed in March 2021. They are protected by Cross Damper®, an advanced seismic resistance and vibration control system combining a brake damper and oil damper.

4 Mizuho Marunouchi Tower, Japanese Bankers Association and Marunouchi TERRACE

Location: Chiyoda City, Tokyo

Large-scale Redevelopment in Tokyo's Marunouchi Area

Three existing buildings came down, replaced by a 29-story tower and 10-story annex. Obayashi reduced costs and made the work on the basement framework as efficient as possible, using the outside wall of the existing basement framework as a temporary wall. For the sake of the environment, Obayashi built the foundation with Clean-Crete®, a low-carbon concrete developed by Obayashi with much lower CO2 emissions when it is produced.

02 Civil Engineering Business

We provide various types of social infrastructure including tunnels, bridges, dams, river works, urban civil engineering and railways. From the viewpoint of matters such as energy efficiency, environmental awareness and appropriate maintenance management, the Obayashi Group combines its technological capabilities at every step of a project from assessment to design, construction and maintenance management. Our aim is to increase the service life and accessibility of social infrastructure, provide society with safety and security, and contribute to disaster prevention and mitigation.


1 Photo: Central Nippon Expressway Company Limited


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1 Shin-Meishin expressway between Yokkaichi JCT and Kameyama-nishi JCT

Location: Yokkaichi City, Mie ; others

New Expressway Reinforces Important Traffic Network in Japan

The Shin-Meishin Expressway is expected to serve as an alternate route to the Meishin Expressway, one of Japan's most important traffic routes. Obayashi constructed the Yokkaichi Junction and about 14.9 km (about 5.5 km in tunnels) of the roughly 27.8 km extension between Yokkaichi Junction and Kameyama-nishi Junction. By bringing redundancy in the road connections between Nagoya and Osaka, the Shin-Meishin Expressway is expected to strengthen the region's ability to find alternate access in a disaster, relieve traffic congestion on the Higashi-Meihan Expressway that runs alongside it in places, and shorten travel times.

2 Kamaishi City Katagishi and Unosumai Area Post-Earthquake Reconstruction Project

Location: Kamaishi City, Iwate

Supporting Reconstruction through Construction Management at Risk (CMAR) System

Obayashi conducted the reconstruction/community development project covering about 75 ha in the Katagishi and Unosumai Area of Kamaishi City, which was struck by the Great East Japan Earthquake. Land was elevated by an average of about 1.7 m, after which residential land and infrastructure for daily life were built and a school site and other places were developed that could serve as evacuation areas. By using a Construction Management at Risk (CMAR) system, Obayashi could manage surveying, design, and construction in a unified way, which helped to smooth the project and ensure a faster recovery.

3 Toranomon Underground passage

Location: Minato City, Tokyo

Overcoming Unique Urban Conditions for Pedestrian Convenience

Obayashi constructed the 370 m underground pedestrian passage connecting two Tokyo Metro subway stations: the Ginza Line Toranomon Station and the Hibiya Line Toranomon Hills Station. Construction took place under exceedingly difficult conditions: shallow earth covering and very soft ground in a busy part of the city, with nearby structures and underground obstacles. Obayashi used rectangular shield construction, under-railway/road tunneling, and open-cut methods, minimizing the impact to the surrounding environment.

4 Metropolitan Expressway between Itabashi JCT and Kumanocho JCT

Location: Itabashi City, Tokyo

Japan's First Double-Decker Lane Widening Project on Metropolitan Expressway

The road between Itabashi and Kumanocho Junctions suffered chronic traffic congestion because two routes of the Metropolitan Expressway merged and diverged in a mere 520 m. Obayashi performed Japan's first expressway lane widening project involving a two-level bridge pier structure to support the upper and lower roadways. It put a variety of new technologies to work, including hybrid structural footing. The project helped ease the chronic traffic congestion and strengthen the functionality of the Central Circular Route.

03 Real Estate Development Business

We develop and hold excellent properties for lease in favorable locations, primarily in urban areas, providing safe, secure and comfortable spaces for tenants and users. We apply the knowledge we learned in the construction industry and the latest technologies and functions to maintain facilities. As a business partner and specified agent for urban redevelopment projects and as a private-sector large-scale development business, we contribute to the low-carbon society and sustainable community development.


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1 Kumiyama Distribution Center

Location: Kumiyama Town, Kuze District, Kyoto

Entire Roof of About 13,000 m² Generates Solar Power

The distribution center makes effective use of about half the premises of the Obayashi Osaka Material/Equipment Center. Obayashi developed the center at a site highly convenient for transport. We lease out the space. The entirety of the roof, measuring about 13,000 m², has solar panels with a capacity of 982 kW. The distribution center started selling electricity in July 2012, becoming Obayashi's first electric power generation business by applying the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities.

2 AKASAKA INTERCITY AIR

Location: Minato City, Tokyo

Super-High-Rise Mixed-Use Building for Easy Living and Working

The concept behind the super-high-rise mixed-use building was "developing a comfortable community where anyone can live or work with ease." It contains a mix of offices, shops, condominiums, and more in its 38 floors above ground and three basement floors. There are more than 5,000 m² of pleasant greenery at the center of the 16,000 m² premises, offering a workplace where people can rest and rejuvenate.

3 oak meguro

Location: Shinagawa City, Tokyo

An Office Building Meant for Business Continuity and Comfort

Obayashi planned, designed, and constructed the most up-to-date, high-grade office building with 10 floors above ground and two basement floors. In addition to its convenient location close to Meguro Station, it helps ensure business continuity for its tenants thanks to extra emergency generators and the high-level vibration-reducing effects of its seismic-isolation structure. Its rich amenities include a rooftop garden and electric car chargers.

4 SHINAGAWA INTERCITY

Location: Minato City, Tokyo

An Outstanding Large-Scale Mixed-Use Complex in Tokyo

Centered on three super-high-rise office towers and comprising commercial facilities and a concert hall, Shinagawa Intercity is among the largest mixed-use complexes in Tokyo. The extensive pedestrian zones and the greenery-filled public space, among the largest in a Tokyo office district, provide a comfortable environment for office workers. Together, the complex forms a major business hub in Tokyo because of its excellent location and landmark quality.

04 New Businesses

The Obayashi Group is actively pursuing projects beyond the fields of construction and real estate development. New businesses include electric power generation from renewable energy (solar, wind, biomass, and geothermal), a project to prove the feasibility of using hydrogen energy, and PPP*. In keeping with changes in the times and environment, we will use the technologies and expertise learned from the construction business to diversify our revenue base and contribute to the realization of the Sustainable Development Goals (SDGs).

* Public Private Partnership (PPP) is a concept that seeks to operate public services efficiently through cooperation between public and private sectors.


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1 [Wind Power Generation Business] Mitanehamada Wind Power Station

Location: Mitane Town, Yamamoto District, Akita

Wind Lift® Method, a New Construction Technique, Used to Protect Environment

Obayashi's first wind power generation business began operating in November 2017 (three turbines with capacity of 2 MW each). We used Wind Lift equipment to help construct the large turbines without a large crane. This was better for the surrounding area and the environment because the work only required a minimal footprint. The project won the First Construction Excellence Prize (2020), hosted by the Japan Federation of Construction Contractors.

2 [Hydrogen-Related Businesses] Hydrogen Production and Supply Facility in New Zealand

Location: New Zealand

Green Hydrogen Supply Chain Demonstration Project

Obayashi is verifying a complete supply chain that uses electricity generated by geothermal power to electrolyze water to produce "green hydrogen" and then transports, stores, and supplies the hydrogen. Working with Tuaropaki Trust, we started operating New Zealand's first megawatt-class hydrogen production and supply facility (1.5 MW, 250 Nm³/h, about 100 tons/year) in August 2021.

3 [Biomass Power Generation Business] Otsuki Biomass Power Plant

Location: Otsuki City, Yamanashi

The largest class biomass power plant using Japanese-grown wood

Obayashi's first biomass power generation business began operating commercially in December 2018. The plant's generating capacity of 14.5 MW is the largest class biomass power plant using Japanese-grown wood. The fuel includes fine chips from untapped thinned wood and trimmings from the greater Kanto Region, especially Yamanashi Prefecture. The business is promoting sustainable use of biomass resources and reinvigorating forestry.

4 [PPP Business] Nara Prefecture Convention Facilities Construction and Operation Project

(BTO [Build - Transfer - Operate] Scheme)

Location: Nara City, Nara

Nara Prefecture's Largest Tourism and Networking Spot, Surrounded by World Heritage Sites

In our Private Finance Initiative (PFI) business, we maintain and manage convention facilities and tourism promotion facilities to create a new site for encouraging people to try stay tourism and interact with others. Business opened in April 2020, with Obayashi in charge of business management, design, and construction as the representative enterprise for the special purpose company (SPC). We will run the business as the representative enterprise for the 15-year administrative, maintenance, and management period.

05 Overseas Business

Together with our group companies, we are expanding into various areas of the construction business, with projects in regions such as North America, Southeast Asia and Oceania, leveraging technological capabilities cultivated through our domestic construction business. We combine broad experience, gained through over half a century of overseas business as a global contractor, with the capabilities of our worldwide network to respond properly to the diverse needs of each region.


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Photo Credit: UC Merced
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1 Nam Ngiep 1 Hydropower Project

Location: Laos

Concrete Gravity Dam Boasts Reservoir Capacity of 2.2 Billion m^3

Obayashi built the main dam and re-regulation dam with hydroelectric power stations (total output about 290,000 kW) on the Nam Ngiep River, a tributary of the Mekong River. As the Mekong forms much of the boundary between Thailand and Laos, the project is intended to provide a stable supply of electric power to the two nations. The body of the main dam measures 167 m in height with a crest length of 535 m and total volume of 2.36 million m^3. The concrete gravity dam has more than three times the maximum reservoir capacity of the Tokuyama Dam, which has the greatest such capacity in Japan at approximately 660 million m^3.

2 Minnesota State Highway 149 Improvement Project High Bridge Slab Replacement

Location: U.S.A.

Upgrades to Kilometer-Long Steel Arch Bridge

Group company Kraemer North America, LLC performed the slab replacement on the steel arch bridge (completed in 1987, length about one km, span between arch's central supports 160 m) that crosses the Mississippi River in the U.S. With the project based on a CM/GC contract, Kraemer North America was able to participate from the design stage. While replacing the aging deck slabs, it was able to control the tensioning force acting on the arch and ensure stability.

3 ICONSIAM

Location: Thailand

One of Thailand's Largest Commercial Complexes

Group company Thai Obayashi Corporation Limited built one of Thailand's largest commercial complexes. With 11 floors above ground and two basement floors, it sits on the banks of the Chao Phraya River near central Bangkok. To build on the soft ground along the river, Thai Obayashi brought together the knowledge and expertise it had gained over the years. For example, it made its first use of both the reverse construction and island construction methods. The facility's shopping areas are drawing attention for hosting Japanese department stores and brand shops not previously present in Thailand.

4 UC Merced 2020 Expansion

Location: U.S.A.

Highest Rating under LEED Environmental Performance Certification System

Group company Webcor,L.P. expanded the campus of the University of California, Merced in the U.S. The new group of buildings make up one of America's largest social infrastructure projects by public-private partnership. They have earned acclaim for providing comfortable, productive spaces that are also eco-friendly. All the buildings subject to evaluation under the LEED green building certification program were certified Platinum, the program's highest rating. The campus is the first public research university certified as carbon-neutral.

06 Engineering Business

We provide the latest engineering technology with optimal cost performance for a wide range of fields and applications, including production facilities (pharmaceuticals, food products, etc.), environmental facilities (including renewable energy power generation facilities), the use of ICT for buildings and facilities, and soil and water pollution countermeasures. Leveraging the technologies and expertise we have developed as a general construction business, we provide end-to-end support for all types of needs, from project planning to design, procurement, construction, test operations, management, and maintenance.


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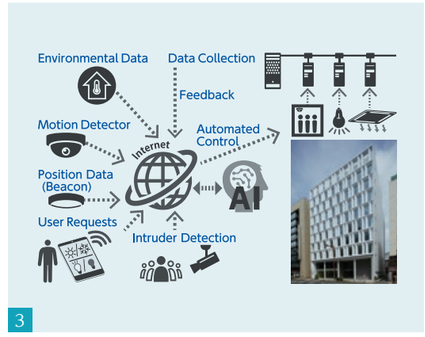

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1 Manufacturing Plant for Highly Active Solid Formulations in the Odawara Central Factory area of Nippon Shinyaku Co., Ltd.

Location: Odawara City, Kanagawa

Pharmaceuticals Plant Benefits from Optimal Systems and Risk Countermeasures

The plant was finished under a full turnkey contract, in which Obayashi undertook everything from design of the plant building and building equipment to conducting test runs. We sought to provide the optimal systems for large-lot production of high-potency pharmaceuticals and implemented thorough countermeasures to anticipated risks. The result was a plant offering high quality and production efficiency.

2 Tempoku Wind Farm

Location: Wakkanai City, Hokkaido

Magnificent Wind Power Station with Some of Japan's Largest Turbines

This wind power station takes advantage of Northern Hokkaido's favorable wind conditions. The 10 turbines each have a capacity of 3 MW, together generating enough electricity for about 19,000 households. Obayashi took charge of the design, procurement, and construction services under an EPC contract. The work included installing 11 km of privately operated electric power lines, constructing the substations that raise the electricity's voltage and connect to the power companies' transmission lines, and assembling some of the largest turbines in Japan, with blades 55 m long. We performed these jobs precisely and efficiently.

3 Smart Building Management System "WellnessBOX" at oak kanda kaji-chou Building

Location: Chiyoda City, Tokyo

Japan's First Building Management System Designed for Wellness

A smart building management system using IoT and AI was implemented at oak kanda kaji-chou, an Obayashi Group property. The system collects temperature, brightness, and other data from inside and outside the building, along with user preferences and condition, in real time. The system enables a comfortable, healthy, convenient, safe, and secure environment optimized for each tenant. Aggregating all the data on the cloud takes building management operations to the next level and makes it more efficient.

4 Kainokuni Ecopark

Location: Fuefuki City, Yamanashi

Ordinary-Waste Disposal Site Helps Build a Recycling-Based Society

Obayashi constructed Yamanashi Prefecture's only final disposal site for ordinary waste. It serves the entire prefecture. We are maintaining and managing the site for the 20 years that began December 2018. The site uses a newly developed "electrically conductive self-repairing mat" as part of an exceptionally reliable water shield structure. Several steps were taken to protect the environment and help build a recycling-based society. A biotope was created, for example, and molten slag from trash was used as a protective soil shield. The aim is to provide a trusted disposal site.

07 Technological Development

Technology is the engine that enables the Obayashi Group to fulfill its social mission. The Technology Research Institute leads Obayashi's proactive technology development efforts. This development not only benefits our customers' projects but also meets society's need to care for the environment and enjoy safety and security.

1 Technology Research Institute

Opened in 1965 as Source of Obayashi Technology

The Technology Research Institute in Kiyose City, Tokyo is our foremost technology development center. It has continued to advance technological frontiers since its opening in 1965. With an eye on society's future, the institute focuses its efforts on the fields of technology innovation, demonstration, and presentation, striving to develop new technologies meeting customers' and society's needs.

2 Techno-Station

First Carbon Neutral Research Facility in Japan

This is the core facility of the Technology Research Institute. The building is powered by renewable energy, making it Japan's first research facility to achieve carbon neutral status. The research facility brings together several Obayashi technologies. For example, Laputa® 2D Super Active Base Isolation System reduces vibration to the point where persons inside do not even feel it. The facility is also built to enhance human health and comfort.

3 Environmental Engineering Laboratory Gets Advanced Renovations

The laboratory develops technologies for people and their environment. It is equipped to conduct experiments with wind, sound, light, heat, smoke, and living organisms. To help realize a safe and secure society and achieve the Sustainable Development Goals (SDGs), the entire laboratory was renovated in 2019. The wind tunnel and acoustic experimentation facilities were updated.

3 a Wind Tunnel Experimentation Facility

Proposing Solutions to Wind Blast Damage with World-First Experimentation Equipment

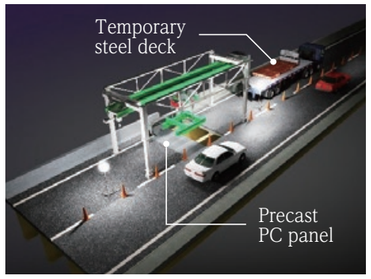
The facility is designed to evaluate the flow of wind around buildings and the wind force acting on them. Because wind noise is a problem that must increasingly be addressed, the entire multi-purpose wind tunnel testing equipment was built to dampen noise so experiments could be more precise. The new multi-fan dynamic flow wind tunnel can reproduce a wide variety of air flows, which researchers use to evaluate wind burst load and develop technologies to address it.

3 b Acoustic Experimentation Facility

Built to International Standards, Proposing Comfortable Acoustic Environments

The facility is comprised of an anechoic chamber and two reverberation chambers. Specimens of partition walls, exterior components, or other materials are placed in an opening between the two reverberation chambers to measure their sound damping performance. The rectangular chamber shape conforming to ISO international standards ensures more realistic evaluation results. Moreover, because the rectangular chamber has such a simple form, it is easier to perform theoretical analysis of experimental results. An automatic transport crane (capacity 9 tons) for moving specimens enhances the efficiency of experiments.

Technology Topics



Technologies for Updating Large-Scale Infrastructure

New Slab Replacement Method DAYFREE® Eases Traffic

With this construction method, slab replacement work when expressways are being repaired can be done with only nighttime traffic restrictions and traffic blocked in only one direction. Conventionally, slab replacement required continuous day and night traffic restrictions. There are two elemental technologies: the Highway Strider® mobile slab installer and slab junctions with Slim NEO Plate®. Together, they make it possible to remove old slabs, put down new ones, and resurface the road in a limited amount of time.

Technologies for Reforming Work Styles and Increasing Productivity

System Uses Real Haptics to Reproduce Skilled Construction Work

Obayashi previously demonstrated real haptics, a technology for reproducing tactile sensation, at a construction site. Now, it has newly developed a system that reproduces skilled construction work allowing an operator to do plasterwork remotely using visual and tactile sensation information. While watching video from the construction site, the operator uses the tactile sensation reproduced from the trowel. The person can feel the same sensations as if directly applying the trowel to the wall.

Logistics Systems Helping to Autonomize Material Transportation at Construction Sites

This logistics system controls AGVs (automated guided vehicles) in synch with elevators to transport materials autonomously over multiple floors. Following a transportation schedule entered via the web, the system fully automates the transportation of materials from the floor where they were received to the place they are needed. Materials can be transported day or night, freeing workers from this task and letting them focus on skilled work.

Infectious Disease Solutions Suited to the Times

New COVID-19 Sick Ward Added to Pandemic® Emergency Center Line

In July 2020, Obayashi announced a new form of its Pandemic Emergency Center (PEC), a building that can be rapidly assembled and which up to now has been designed as emergency hospital space for treating new strains of influenza. The improved types in the PEC Series are designed specifically as facilities to treat COVID-19, bundling each of the functions needed to treat patients into units based on condition. Of the 16 temporary sick wards constructed around Japan, five were designed and constructed by Obayashi.

Multi Mist® for Automatic Surface Disinfection

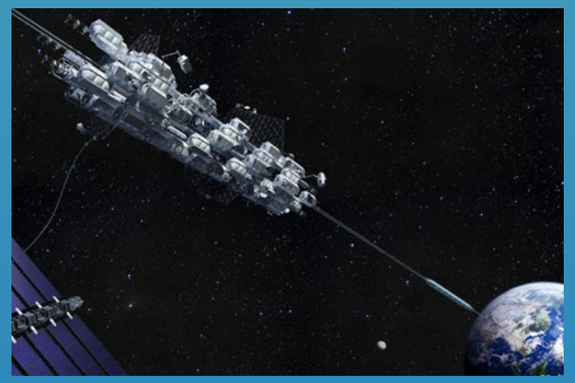
Developed in 2015, Multi Mist is equipment that mixes a chemical with compressed air and sprays the mixture as a fine mist into a room. Many units are in use in medical institutions and childcare centers as an environmental surface technology for eliminating microbes on furniture and fixtures. The equipment is designed to ensure that meeting rooms, hotels, schools, and more are safe and healthy. It can be adapted for a wide range of customer needs according to application and scale.

Conceptual Visions for the Future

Aiming to resolve social challenges and realize a sustainable society, the Obayashi Group envisions advanced societies, cities, and businesses powered by innovative future technologies.
Below are a few examples.

Linking the Earth to space
The Space Elevator Construction Concept

A space elevator is a transportation system for carrying people and goods to space, economically and in large numbers. A cable 96,000 km long would lead from earth to space. Obayashi will install experimental and research facilities to heights suited to their applications. As space development proceeds, going into space is no longer just a dream but becoming a social need. For example, space-based solar power generation and space resource exploration and usage are important elements that could be foundational to society in future. People are also interested in space tourism now. If the space elevator concept is realized, it will expand the possibilities in many space-related fields.



A city that coexists with the forest
The “LOOP50” Construction Concept

LOOP50 would be a recycling-oriented, self-supporting community that makes its buildings and energy solely from forest resources. Trees would grow for 50 years in the community-owned forest and then harvested to add a new section to the structure each year. Another section of the structure, having reached 50 years of age and served its purpose, would be dismantled and its wood used as an energy source (biomass power) for the community. While Japan has the second greatest forest cover of all OECD nations, its forests are being devastated by the decline of the forestry industry and the country’ s depopulation. In the concept, the LOOP50 community would be in a semi-mountainous area. It would make maximum use of Japan’ s abundant forest resources and use the trees in a cycle synchronized with the growth rate of the forest. The community would offer both sustainability and an attractive lifestyle.

The sustainable agriculture of the future
The “COMPACT AGRICULTURE” Concept

This concept visualizes what agriculture may look like in the future after the technology sufficiently develops. Specifically, in this vision, agriculture would supply people with an appropriate amount of food to sustain their lives, no matter the environment in which it is practiced. There would be local production for local consumption. And all of this could happen without damaging the global environment. Features of the concept include an automated, efficient food production system, a closed resource loop, and the use of AI and big data to control supply and demand. Together, these could realize sustainable agricultural practices anywhere in the world. Compact Agriculture could solve many social issues, such as eliminating the food waste that happens in processes from production to consumption and limiting food loss. It could also inspire ideas for ways to achieve the SDGs.

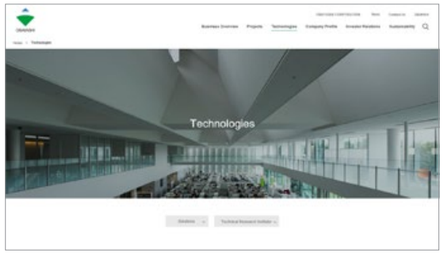
Website Profile https://www.obayashi.co.jp/en

Obayashi’s website is a communication tool that helps us foster good relations with our stakeholders.
We manage our website to be useful and convenient for users by posting content about Obayashi’s past and present and the future we aim to achieve.

Projects

Showcases some of our construction projects. Regional landmarks, social infrastructure and many other buildings and structures can be searched by facility type, year of completion, and location.

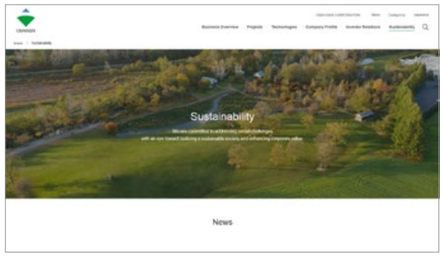
https://www.obayashi.co.jp/en/works



Technologies

Topics include Obayashi’s technology and ideas for solving problems. Content is arranged according to type of need (safety and security, environment, etc.) and facility application.

https://www.obayashi.co.jp/en/solution_technology



Sustainability

Introduces our initiatives aimed at realizing a sustainable society. Conveys information on the ways we provide things like quality structures and contributes to local communities and environmental protection.

https://www.obayashi.co.jp/en/sustainability

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This booklet is printed on FSC™-certified paper.
This booklet uses environmentally sensitive plant-based ink.
This booklet is printed with a water-free method that does not cause discharge of harmful effluents.
This booklet uses characters with an easy-to-read design based on universal design (UD) principles.

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