

Part 3

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Quality

# Sustainability

Guided by the Group Philosophy of "To Create a Vibrant Environment for All Members of Society," the Taisei Group places great importance on both "people" and "the environment." We have consistently refined our ability to address the sustainability challenges faced by our clients and society through our business activities. Here, we introduce the cutting-edge initiatives that serve as the source of our strengths.

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### Message from the Chief Sustainability Officer (CSuO)

Enhancing Our Capacity to Address Sustainability Challenges Faced by Clients and Society, and Contributing to the Development of a Resilient Society

> Executive Vice President; Chief Sustainability Officer (CSuO) Chief of Sustainability Division (Integrated); Chief of Clean Energy & Environment Business Promotion Division

**Jiro TANIYAMA** 

### Our Efforts to Date and Recognition of the Current Situation

The Group's fundamental approach is, through our business activities, to contribute to addressing the sustainability challenges faced by our clients and society. As part of our medium- to long-term vision, we have articulated in [TAISEI VISION 2030] our vision of becoming "a pioneering corporate group contributing to the development of a resilient society where people can live affluent and cultural lives."

To promote sustainability-related initiatives towards an achievement of this vision, we established the Sustainability Division (Integrated) in April 2022 and have been implementing various measures since then. (See Table 1)

### Table 1 Major Sustainability Initiatives (from April 2022)

- Revision of Environmental Policy and Group long-term environmental target;
- Promotion of zero carbon construction at worksites;
- Transformation of Group-owned buildings into ZEB and use as our showrooms;
- Commencement of construction of Taisei Group Next-Generation Technology Research Institute, which will be a zero-carbon building;
- Possession of renewable energy power sources to cover the Group power consumption needs;
- Initiation of development of nature positive evaluation methods; and
- Implementation of human rights due diligence and introduction of environmental due diligence, etc.

Furthermore, we have dedicated ourselves to enhancing the disclosure of non-financial information, producing a steady flow of successful results such as receiving the highest rating in CDP's Climate Change List for two consecutive years and improving our ESG score of FTSE Russell. (See Tables 2 and 3)

On the other hand, our society is undergoing rapid transformation, becoming increasingly complex and uncertain. In the field of sustainability, there is a growing recognition of the importance of diverse issues in addition to decarbonization, including the circular economy, co-existing with nature, poverty, and human rights, and companies are now facing mounting pressure to contribute to addressing these sustainability challenges. Therefore, the capability to envision and execute a value creation story to achieve sustainability transformation (SX) is becoming more important. We believe that the effectiveness of this capability will be a key determinant of a company's sustainability in the future.

### Towards the Realization of Our Vision

In light of such changes in the external environment, we established a sustainability strategy focused on the environment, energy, and human rights as the foundation of our business activities within the [TAISEI VISION 2030] Achievement Plan, disclosed in May this year. I will lead the

Table 2 CDP Climate Change Rate					
CY2021	CY2022	CY2023			
A-	А	А			

way and accelerate our efforts towards the realization of this vision to be pursued by our entire Group.

For carbon neutrality, it is crucial to reduce CO<sub>2</sub> emissions under Scope 1, 2, and 3 to achieve the 2030 target in line with the SBT\* 1.5°C target. Specifically, for Scope 1 and 2, we are focusing on TSA: TAISEI Sustainable Action®, an environmental impact reduction activities involving all executives and employees, and possessing renewable energy sources to cover the Group power consumption needs. For the Scope 3 upstream process, we are focusing on the development of low-carbon and decarbonized building materials, including environmentally friendly concrete, and promoting timber structures. For Scope 3 downstream process, we are focusing on advancing and expanding the adoption of new construction of Net Zero Energy Buildings (ZEBs) and renewal ZEBs. As the key to Scope 3, in particular, is the development and promotion of technology, we will work by bolstering our internal and external ties.

Additionally, we are in the process of the construction of a research management building for the Taisei Group Next-Generation Technology Research Institute, which will achieve practically zero  $CO_2$  emissions over the building's entire life cycle. We are conducting demonstration tests towards a realization of a "zero-carbon building."

For circular economy, we are promoting resource recycling by collaborating with manufacturers and logistics companies. For nature-positive initiatives, we are also working with likeminded partners on the initiatives, including the development of quantitative methods for evaluating the impact of construction projects on natural capital, under the guidance of the experts, and forest conservation activities in partnership with local governments, NGOs, and other companies.

For respect for human rights, our basic policy is to honor the human rights of every individual involved in the Group's business. We are deepening our human rights due diligence initiatives throughout the entire supply chain while respecting dialogue with stakeholders.

We are also closely monitoring trends in sustainability

\*Science Based Targets (SBT): An international initiative requiring companies to contribute to the goals of the Paris Agreement, specifically to limit global warming to well below 2°C above pre-industrial levels.



disclosure standards. In preparation for the future mandatory simultaneous disclosure of financial and non-financial information in securities reports, we will make an effort to ensure readiness such as actively collecting relevant information, and reviewing our CO<sub>2</sub> emissions calculation methods.

The Regional Collaboration Strategy, one of the new business models in the [TAISEI VISION 2030] Achievement Plan, is also being spearheaded by the Sustainability Division (Integrated). We aim to build networks with local governments and other entities, starting with addressing regional environmental and social issues, enhancing our advantage in receiving orders, and establishing new business.

### Taisei Group Philosophy and Mission as CSuO

In 1990, we established the Group Philosophy of "To Create a Vibrant Environment for All Members of Society," and have been providing value to society by valuing the importance of both "people" and the "environment." This provision exactly aligns with the implementation of CSV (Creating Shared Value), which is a fundamental concept of sustainability management. We will implement our business operations valuing this concept.

As CSuO, my mission is to lead the Group's sustainabilityrelated initiatives, guided by the Group Philosophy and [TAISEI VISION 2030], and to enhance our capacity to address sustainability challenges for our clients and in society through our business activities. We will fully support "The Works to Create Landmarks; Looking Ahead" from the perspective of sustainability.

In this era of complexity and high uncertainty, we need to enhance the Group's sustainability-related initiatives by utilizing constructive and meaningful dialogue with our stakeholders for our management.

We would like to kindly ask all our stakeholders to understand our efforts to realize the Group's vision and to provide us with their open opinions and suggestions.



# **Sustainability Initiatives**

In 1990, Taisei Corporation established the Group Philosophy of "To Create a Vibrant Environment for All Members of Society." Since then, the Company has been committed to building social infrastructure that supports daily life, with a strong emphasis on valuing both "people" and "the environment." As the concept of "sustainability" has become deeply ingrained in society, the importance of both "people" and the "environment" has grown even more profound. Guided by our Group Philosophy, we will continue to strive for sustainable growth and enhanced corporate value by engaging in "'The Works to Create Landmarks, Looking Ahead" addressing sustainability challenges for our clients and society through value creation and our business activities.

### **Fundamental Policy on Sustainable Development**

We, Taisei Group, set this Fundamental Policy on Sustainable Development to realize Sustainability Transformation (SX), which aims to resolve sustainable development issues through our businesses centered on the construction industry, and to contribute to the development of a resilient society where people can live affluent and cultural lives.

In line with the Group Philosophy and the Taisei Spirit, we have established the "Fundamental Policy on Sustainable Development." This policy identifies the most critical sustainability issues as materiality.

The priority measures, specific actions, and KPIs related to these material issues are integrated into the TAISEI VISION 2030] Achievement Plan and the Medium-Term Business Plan (2024-2026). The Board regularly monitors progress and the degree of achievement.

### Governance

The Group has established a Sustainability Committee as a committee within the Board to ensure that the Board adequately oversees the promotion of sustainability and strengthens the Group's overall sustainability management. This committee, chaired by an External Member of the Board, deliberates on important sustainability-related issues and reports its findings to the Board.

On the executive side, various Operation Committees, including the Sustainability Promotion Committee, have been established under the Management Committee to ensure timely and thorough discussions on individual sustainability-related issues.

For business execution, the Chief of Sustainability Division (Integrated) has been appointed as the Chief Sustainability Officer (CSuO). The Sustainability Division (Integrated), in collaboration with each division, promotes activities aimed at resolving sustainability issues through our business operations.





## Activities of the Sustainability Committee and Various Operating Committees

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### Sustainability Committee

In FY2023, the Sustainability Committee met three times (including written meetings). The main topics of discussion were as follows:

January Februar

August

### Various Operation Committees

Category	Terms of Reference	Chairperson	Results (FY2023)
Technical Committee	Encourages innovative technical development, establishes and contemplate various measures, and monitors their execution.	President	Eight times
Central Safety Committee	Discusses and advances matters concerning the Company's safety management, prevention of environmental accidents, and guidance about safety, health, and environmental management for specialized contractors.	Chief of Safety Administration Division	Five times
Sustainability Promotion Committee	Discusses important environmental and social issues, shares information on sustainability management initiatives, and makes recommendations to the Management Committee.	President	Three times
Risk Management Committee	Selection and deliberation of significant risks throughout the Company, and verification of the status of risk management for both company-wide critical risks and those risks that should be overseen as a headquarters.	Chief of Business Administration Division (CRO)	Once
Central Labor Affairs Committee	Deliberates on the Company's basic policies and advances various initiatives on labor issues, concerning professional contractors.	President	Once
Digital Transformation (DX) Promotion Committee	Establishes, contemplates and monitors the progress of DX advancement measures.	Chief of Corporate Planning Office (CDO)	Nine times
Personnel Committee	Discusses various personnel strategies and follows up and monitors their execution.	Executive Vice President	17 times

# Strategy

In formulating [TAISEI VISION 2030], we identified sustainability transformation (SX) as one of the key medium- to long-term changes in the external environment and structure, and we recognize that these initiatives are becoming increasingly important.

As part of our strategy to promote sustainability, the [TAISEI VISION 2030] Achievement Plan outlines matters related to human capital and technology in the Fundamental Management Policy and matters related to sustainability strategy, safety, and quality in the Policy on Business Foundation Development. The Group is actively pursuing these initiatives

## **Risk Management**

As part of our company-wide risk management, we have developed a comprehensive risk management system that includes measures for addressing sustainability-related risks. **P.116** Risk Management

### Human Rights and Environmental Due Diligence

The Group strives to minimize the adverse impacts of its business on human rights and the environment throughout the supply chain by establishing and continuously implementing due diligence mechanisms for both human rights and the environment.

## Indicators and Targets

In addition to KPIs related to materiality, we have established environmental targets and indicators related to human capital, and we are actively working toward these goals.

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е	Main Topics of Deliberation
2023	<ul> <li>Implementation of human rights due diligence</li> <li>Priority risk selection for environmental due diligence</li> <li>Compliance with the Action Guidelines for Taisei Personnel and the Taisei Group as a Whole</li> <li>FY2022 KPI results for the Medium-Term Business Plan (2021-2023)</li> </ul>
2024	Support for TNFD recommendations (Early registration)
y 2024	<ul> <li>CO<sub>2</sub> reduction targets for 2026 and 2030</li> <li>Status of external ESG evaluation</li> </ul>

P.51 Fundamental Management Policy P.54 Policy on Business Foundation Development

**P.83** Environmental Due Diligence **P.87** Human Rights Due Diligence

P.29 Materiality and KPIs P.77 Environment and Energy P.91 Human Capital

# Environment and Energy

### Fundamental Approach: From the Environmental Policy

Based on the Taisei Group Philosophy and our Fundamental Policy on Sustainable Development, the Taisei Group strives to build good quality social capital through corporate activities centered on construction business in harmony with nature. We aim for the "Realization of a Sustainable and Environmentally Friendly Society" by realizing environmental issues as our significant sustainability tasks and fully recognizing the influence of our business activities on the environment, and environmental influence on our business activities.

Responsibilit	ies: To comply with environmental laws and regu	ulations and achieve the Group's long-term environmental targets.
Contribution thro Busine	ugh To accurately identify the environment-related ess: ination of environment-related technologies a society, and a society in harmony with nature	d "risks and opportunities," including climate change, advance the development and dissem- and services, and contribute to the realization of a decarbonized society, a recycling-based a through our business activities.
Risks and C	pportunities	Environmental Policy
	Risks	Opportunities
Environment		P.78, P.81 Measures to Address Risks and Opportunities
Energy	<ul> <li>Decline in competitiveness, stakeholder reputation, and opportunities for receiving orders due to insufficient efforts</li> </ul>	Increased opportunities for receiving orders for renewable energy-related projects     Progress in the development of technologies and services and the promotion of their societal implementation     Evenesian of huminous the anticipating in renewable energy-related projects

# Expansion of business by participating in renewable energy ventures To secure competitive advantage associated with the above, enhance corporate value, and improve stakeholder reputation

## Initiatives to Achieve [TAISEI VISION 2030]

In the [TAISEI VISION 2030] Achievement Plan, our basic policy is to work continuously with stakeholders throughout the entire supply chain to realize the "decarbonized society," "recycling oriented society," and "nature co-existing society" as outlined in the Environmental Policy and "TAISEI Green Target 2050." We are also committed to addressing the two individual issues of "Forest Resources & Forest Environment' and "Water Resources & Water Environment."

### The Taisei Group Long-Term Environmental Targets: "TAISEI Green Target 2050"

### Goals for Realizing the "Three Types of Society"

	Decarbo	nized Society	Recycling Oriented Society	Nature Co-Existing Society	
FY2050 target	To achieve and deepen carbon neutrality		To achieve and deepen carbon neutrality To achieve and deepen a circular economy		Achieving and enhancing nature positive initiatives
	<ul> <li>Scopes 1+2 Zero CO<sub>2</sub> emissions</li> <li>Scope 3 Zero CO<sub>2</sub> emissions throughout the supply chain</li> </ul>		<ul> <li>Green procurement rate: 100%</li> <li>Final disposal rate of construction by-products: 0%</li> </ul>	<ul> <li>To minimize the adverse impacts associated with our construction business</li> <li>To maximize the positive impacts of projects that ensure coexistence with nature</li> </ul>	
FY2030 target	CO <sub>2</sub> emissions (compared to FY2022)		<ul><li>Promotion of green procurement</li><li>Reduction of final disposal rate of</li></ul>	To contribute to nature positive initiatives by the following:	
	Scope	Total emissions	construction wastes to 3.0% or less	<ul> <li>Implementing 50 or more projects per year</li> <li>Applying the evaluation methods to 30%</li> </ul>	
	1+2	-42%		of design & build projects	
	3	-25%		<ul> <li>Responding to marine issues</li> </ul>	

### Targets for Addressing "Two Individual Issues"

### Forest Resources & Forest Environment

• To minimize the adverse impacts on forest resources and forest environment

through wood procurement based on zero deforestation concept

 To maximize the positive impacts on forest resources and forest environment through conservation and restoration efforts



- To minimize the adverse impacts on water resources and water environment by ensuring proper management and reducing usage
- To maximize the positive impacts on water resources and water environment through conservation and restoration efforts

## Information Disclosure of Integrated Environmental Management (TCFD, Circular Economy, TNFD)

Companies are required to disclose information regarding the impacts of their business activities on nature and the reciprocal impacts of nature on their business. They are also expected to address environmental issues through their business operations. The Taisei Group comprehensively discloses information on its environmental management based on four pillars: "Governance," "Strategy," "Risk Management," and "Indicators and Targets."

For a decarbonized society, we refer to the TCFD framework; for a recycling oriented society, we follow the "Guidance for Disclosure and Engagement for Promoting Sustainable Finance toward a Circular Economy" by the Ministry of Economy, Trade and Industry and the Ministry of the Environment; and for a nature co-existing society, we use the TNFD framework.

## Governance

### P.75 Sustainability Initiatives

# Strategy

Risks and opportunities related to a "decarbonized society," "recycling oriented society," and "nature co-existing society" can stem from "transition" factors, such as increased regulations and market shifts to prevent temperature rise, loss of natural capital, and resource depletion, as well as from "physical changes," such as acute and chronic extreme weather events and sea-level rise resulting from these environmental issues.

To formulate management strategies that can flexibly adapt to these environmental and social changes, we identified and evaluated the risks and opportunities that could impact the Taisei Group's business assuming the year 2030. Based on this evaluation, we developed action policies and integrated them into our business strategies.

### Measures to Address Risks and Opportunities [Overview] ) P.81

	Risks	Opportunities	Measures
_	To diminish our reputation among our stakeholders, decline opportu- nities for securing orders, etc., in the event of the Group's initiatives to be evaluated as inadequate	To enhance corporate value and reputation among stakeholders through various initiatives toward Decarbonized Society, Recycling- Oriented Society, and Nature Co-Existing Society	Measures to address risks and opportunities
Decarbonized Society	To decline in productivity and decreased workforce due to a worsened working environment caused by rising tempera- ture in summer, rising labor costs, rising prices of construction materials due to disruptions in the supply chain caused by increasing severity and frequency of natural disasters, etc.	Increased demand for ZEB and renewable energy-related construction works, as well as strengthening facili- ties and infrastructure in order to adapt to climate change, etc.	To develop and promote labor-saving construction technologies, as well as to develop and promote realization in our society: low-carbon and decar- bonized building materials such as T-eConcrete® and T-Near Zero Steel; ZEBs; and Zero Carbon Buildings (T-ZCBs); etc.
Recycling Oriented Society	Rising prices of construction materials due to resource shortages, increased construction costs due to increased waste disposal costs, etc.	Increased use of recycled resources that contribute to the realization of a circular economy, and increased opportunities for securing orders for environmental restoration projects, including soil decontamination	To develop and promote materials and construction methods that take into account of resource-recycling, such as T-eConcrete® and T-Near Zero Steel, sophistication of low-impact soil and groundwater decontamination technolo- gies for substances that are expected to be regulated in the future, such as PFAS
Nature Co-Existing Society	Rising prices of construction materials due to resource shortages, increased construction costs due to the higher levy for restoration and conservation of natural environment, etc.	Increased opportunities for securing orders related to the conservation and creation of a rich natural environment that contribute to the realization of a nature positive society and develop- ment of green infrastructure	To develop nature positive evaluation methods, as well as to develop and promote social implementation of environmental forecasting technolo- gies, biodiversity planning technolo- gies, and green space developing technologies such as T-GI® rain garden

# Introduction

### Sustainability –

### Introduction of Measures to Address Risks and Opportunities

#### **Environmental Impact Reduction Activities** TSA: TAISEI Sustainable Action<sup>®</sup> Initiatives

TSA is an environmental impact reduction initiative in which all Group employees participate to achieve long-term environmental targets. The initiative utilizes the "TSA Action List," which compiles effective practices, and the "TSA Point System," which visualizes and quantitatively assesses the effectiveness of activities, driving changes in employee awareness and behavior.

#### **Ownership of Group Renewable Energy Power Sources** Commencement of Commercial Operation of a Solar Power Plant in Watarai Town, Mie Prefecture

The Miya River Watarai Solar Park Power Plant, one of the largest solar power generation facilities in the Chubu region with an output of approximately 72 MW, was completed and began commercial operation

through Miya River Watarai Solar Park. Moving forward, we will continue to contribute to carbon neutrality by expanding our ownership of various renewable energy sources to meet the Group's power consumption needs.



#### Technology development of Low-Carbon/ **Decarbonized Building Materials** First Use of Carbon-Recycled Concrete as Structural Components in Buildings in Japan

"T-eConcrete®/Carbon-Recycle," a carbon-recycled concrete that utilizes CO<sub>2</sub> emitted from industrial processes, resulting in a negative CO, emission balance, has been used for the first time in Japan as a structural components in a building.

This precast structural component has been applied to the foundation of a newly constructed pedestrian bridge at the Taisei Advanced Center of Technology in Yokohama City.



### Green Renewal ZEB: Converting Existing Buildings into ZEBs through Renovation

Net Zero Energy Building (ZEB) refers to a building that aims to achieve a net-zero annual primary energy balance while maintaining a comfortable indoor environment. To realize carbon neutrality, it is essential to renovate existing buildings, which constitute a significant portion of the total building stock, into environmentally friendly structures. The Taisei Group is committed to contributing to carbon neutrality by developing and enhancing ZEB technology.

### Implementation of General-Purpose ZEB Technology for Medium-Sized Offices



#### The solar power generation system integrated with exterior walls and windows. "T-Green® Multi Solar

### Implementation of Advanced and General-Purpose ZEB Technology to Meet Diverse Client Needs



CO, reduction: 365 t/year Utility cost savings: ¥17.6 million/year

Achieved comfort and energy efficiency

**GREEN RENEWAL ZEB** 

with radiant air conditioning and brightness control

### Supply and Demand Integrated Management System

### T-Green BEMS® RE Optimizer

This system integrates forecasts for renewable energy generation and building electricity demand, allowing for the creation of optimal operation plans that maximize the use of surplus electricity.



#### Forest Resources Regeneration and Conservation Technology Development and Dissemination of Timber and Wooden Building Technologies

In the construction of the Tochigi Prefecture New Youth Education Facility, consideration was given to the sloped terrain, achieving both structural safety and durability through a mixed structure of wood and reinforced concrete,



while actively utilizing locally-sourced cedar timber. The exterior walls feature Nikko cedar and Yamizo cedar from the prefecture, and the gymnasium roof was designed in the style of Kanuma Kumiko, a traditional local craft, creating a welcoming space that embodies the warmth of wood and the region's rich history. Additionally, in the nature experience area, which serves as an environmental educational space, we not only conserved as many existing trees as possible but also planted locally grown acorns and rare plants to restore the satoyama forest, creating an area where visitors can experience biodiversity firsthand.

#### Water Resource Regeneration and Conservation Technology Water Circulation Technology to Realize Zero Water Buildings (ZWB)

#### First LEED Zero Water Certification in Japan

At the "Human Space Lab" (ZEB Demonstration Building, Taisei Corporation), we conducted a technical demonstration aimed at achieving Zero Water\*1 as outlined in the LEED Zero Program Guide\*2. In 2024, we obtained Japan's first LEED Zero Water certification. By expanding the use of recycled water-including purified rainwater and wastewater from handwashing within the building-for toilet flushing and other

purposes, we demonstrated over a year that the total amount of rainwater and recycled water (alternative water) exceeded the amount of tap water used annually.



#### Flow of Rainwater and Wastewater Recycling (Example)



\*1: Defined by the Leadership in Energy and Environmental Design (LEED) as the sum of alternative water (rainwater and recycled water) used and the amount of water returned to groundwater (water source return; not applicable in this case) being equal to or greater than the amount of tap water used annually \*2: A guide that complements the LEED Green Building Rating System developed in the United States, setting net-zero targets for carbon, energy, water, and waste \*3: Capital (stock) that forms the basis of the economy and society, including animals, plants, water, soil, and air.



generation as part of its efforts to decarbonize the factory. By utilizing green hydrogen produced from surplus electricity generated by solar power, the plant aims to reduce its reliance on fossil fuels and advance its decarbonization efforts





\*Short for "Power to Gas," this system produces hydrogen gas using renewable energy.

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### Forest Resources and Environmental Conservation Implementation of Conservation Activities



The Group is committed to addressing issues related to forest resources and the environment through a cycle of sustainable wood use (USE), forest resource regeneration (GROW), and conservation of high-quality natural forests (PROTECT). As part of these efforts, in April 2024, we signed a partnership agreement for promoting green infrastructure with Kosuge Village in Yamanashi Prefecture and the NPO Tama Genryu Kosuge. We also signed a partnership agreement for the use and conservation of Ikawa Forest in Shizuoka Prefecture with Tokushu Tokai Paper Co., Ltd., and JUZAN Co., Ltd. We aim to establish a virtuous cycle model for natural environmental conservation by effectively utilizing forest resources for building materials and tourism.

Note: The photos show new employee training in Kosuge Village, Yamanashi Prefecture

### **Development of the "Nature Positive Evaluation** Method"

We have initiated the establishment of a "Nature Positive Evaluation Method" to quantitatively assess the impact of construction projects on the natural environment from the perspective of natural capital\*3. This method evaluates how the five elements-animals, plants, water, soil, and air-are affected before and after construction. Under the guidance of Professor Shunsuke MANAGI of Kyushu University, who has extensive research experience and knowledge in natural capital assessment, we aim to promote construction projects that contribute to Nature Positive through quantitative evaluation specifically tailored for the construction industry.



# Sustainability -

Environment and Energy

Measures to Address Risks and Opportunities [Details] Risks, opportunities, and countermeasures related to a decarbonized society, a recycling oriented society, and a nature co-existing society are as follows.

<ul> <li>Decarbonized</li> <li>Society</li> </ul>	Oriented Society	<b>Mature</b> Co-Existing Society	2030 Vision	Risks and Opportunities	Impact Level	Countermeasures
~			<ul> <li>Increased burden on businesses due to stricter CO<sub>2</sub> emissions regulations and the introduction of carbon pricing mechanisms (such as carbon surcharges and carbon taxes)</li> </ul>	<ul> <li>Risks:</li> <li>Reduction in construction investments due to stricter CO<sub>2</sub> emissions regulations and the introduction of carbon pricing</li> <li>Increased business costs due to carbon pricing on CO<sub>2</sub> emissions from business activities</li> <li>Rising construction costs due to higher prices for building materials and electricity, leading to a decline in profitability</li> </ul>	Medium	<ul> <li>Acquisition of renewable energy sources to cover the electricity used by the Group</li> <li>Ensuring the implementation of TSA* key priority and key policy implementation items</li> <li>Improving the performance of the CO<sub>2</sub> calculation system</li> <li>*TAISEI Sustainable Action®: Environmental impact reduction activities involving all group employees</li> </ul>
~			<ul> <li>Growing societal demand for carbon neutrality and tightening of regulations</li> <li>Rising demand for energy- efficient and renewable energy solutions</li> <li>Mandatory compliance with ZEB standards and the resulting generalization of solar power installations</li> </ul>	<ul> <li>Risk:</li> <li>Deterioration of profit due to delayed responses to changes, business opportunities lost, and increased cost</li> <li>Opportunities:</li> <li>Growing demand for low-carbon designs and materials</li> <li>Increased demand for zero-carbon buildings, ZEBs, ZEB renovations, and smart cities</li> <li>Rising demand for renewable energy construction, such as offshore wind power, and CCS (carbon capture and storage) busi- ness opportunities</li> </ul>	High	<ul> <li>Promoting the technology development and dissemination of zero-carbon buildings and ZEBs</li> <li>Accelerating the development of low-carbon materials such as T-eConcrete® and strengthening collaboration with relevant companies to promote adoption and to establish a supply system</li> <li>Developing and spreading technologies related to renewable energy, energy creation, and energy efficiency</li> <li>Advancing construction techniques for renewable energy facilities, including offshore wind power</li> <li>Promoting the development of CCS (carbon capture and storage) technologies and participating in related projects</li> </ul>
~			<ul> <li>Expansion in the use of next-generation energy sources such as hydrogen and ammonia</li> <li>Progress in restarting nuclear power plants and increasing demand for next-generation innovative reactors</li> </ul>	Risk:         Missed opportunities in terms of orders and project participation due to delays in response Opportunities:         Increased opportunities to construct facilities related to hydrogen and ammonia, including their transport and storage         Growth in business opportunities related to restarting nuclear power plants and advancements in next-generation innovative reactor projects	High	<ul> <li>Engaging in demonstration projects for next-generation energy technologies and accel- erating the development of related technologies</li> <li>Participating in projects related to restarting nuclear power plants and promoting the devel- opment of next-generation innovative reactors, while strengthening relationships with relevant companies</li> </ul>
~			<ul> <li>Escalation and increased frequency of natural disasters and rising sea levels due to climate change, including global warming</li> </ul>	<ul> <li>Risks:</li> <li>Work stoppages, project delays, and increased labor and temporary structure costs due to damage at construction sites caused by natural disasters</li> <li>Increased procurement costs and delays in project timelines due to damage suffered by business partners</li> <li>Decreased productivity and worsening working conditions due to higher average temperatures in the summer, leading to a faster decline in the available workforce</li> <li>Opportunities:</li> <li>Increased demand for post-disaster recovery and reconstruction services and relocation from high-risk areas</li> <li>Expansion of projects for urban flood control and national resilience efforts, such as flood and sediment control</li> </ul>	High	<ul> <li>Further improvements to working conditions, such as thorough measures to prevent heat-stroke incidents</li> <li>Developing and promoting labor-saving and automated construction technologies</li> <li>Development of green infrastructure and disaster prevention/mitigation technologies as well as their expansion through proactive proposals</li> </ul>
~	~	~	<ul> <li>Increased societal demand for a circular economy and stricter environmental regulations</li> <li>Mandatory measures for resource conservation, strict separation of waste, and expanded use of recycled resources</li> <li>Strengthened regulations on recycling of plastic resources</li> </ul>	Risk:         • Deterioration of profit due to delayed responses to changes, business opportunities lost, and increased cost         Opportunities:         • Growing demand for new and upgraded facilities for recycling materials, particularly for plastics         • Increased demand for revitalization of disposal sites and effective use of construction-generated soil         • Rising demand for buildings utilizing recyclable materials and those that use water efficiently         • Growing demand for soil and groundwater remediation technologies for substances such as PFAS that are expected to be regulated	Medium	<ul> <li>Strengthening collaboration with arterial and venous industries to promote resource recycling and circulation</li> <li>Encouraging the development and spread of materials and methods that consider resource circulation, such as T-eConcrete® and T-Near Zero Steel</li> <li>Promoting the design and proposal of buildings that consider resource circulation, such as zero-water buildings and wooden/timber structures</li> <li>Reducing construction waste, including plastics, and promoting green procurement</li> <li>Accelerating the development of technologies related to biomass energy</li> <li>Enhancing in-situ soil and groundwater remediation technologies with low environmental impacts to handle substances that are likely to be regulated in the future</li> </ul>

Decarbonized Society	Oriented Society	Co-Existing Society	2030 Vision	Risks and Opportunities	Impact Level	Countermeasures
~	~	~	<ul> <li>Standardization of regulations for wooden buildings leading to the proliferation of high-rise wooden structures</li> <li>Decreasing forest resources in timber-exporting countries and expanding markets for domestic timber</li> <li>Incorporating resource circula- tion and nature co-existence as components of real estate value</li> </ul>	<ul> <li>Risks:</li> <li>Missed business opportunities due to delayed in response</li> <li>Missed business opportunities due to delays in developing wooden construction technologies and a shortage of skilled workers</li> <li>Increased difficulty and costs in securing procurement routes for certified timber due to rising demand</li> <li>Opportunities:</li> <li>Increased demand for wooden and timber buildings</li> <li>Growing needs for design and development that enhance real estate value through resource circulation and co-existence with nature</li> </ul>	Medium	<ul> <li>Advancing and differentiating technologies related to wooden and timber construction while simultaneously ensuring retention of skilled workers</li> <li>Promoting appropriate timber procurement by securing procurement routes that consider circular economy principles and nature positive impacts</li> <li>Building a circular platform integrated with BIM/ CIM to promote resource circulation and visibility throughout construction project lifecycles</li> <li>Promoting development plans that fully consider resource circulation and co-existence with nature</li> </ul>
		~	Growing societal demand for nature positive initiatives     Strengthening regulations on conservation of natural capital	<ul> <li>Risks:</li> <li>Deterioration of profit due to delayed responses to changes, business opportunities lost, and increased cost</li> <li>Reduced construction investments due to challenges in site selection and tightened regulations</li> <li>Opportunities:</li> <li>Increased demand for buildings and projects that consider co-existence with nature and the use of green infrastructure technologies</li> <li>Growth in opportunities to utilize technologies that contribute to nature positive outcomes</li> </ul>	Medium	<ul> <li>Developing and applying nature positive assessment methods to projects</li> <li>Accelerating the development and proposal of green infrastructure technologies</li> <li>Promoting the creation and protection of nature and ecosystems in large-scale urban redevelopment projects</li> </ul>
	~	~	<ul> <li>Difficulty in procuring raw mate- rials due to resource depletion</li> <li>Adverse impacts on construc- tion activities due to water shortages</li> </ul>	<ul> <li>Risks:</li> <li>Rising business costs and reductions in project scale due to resource shortages</li> <li>Construction delays or cancellations due to water resource shortages</li> <li>Opportunities:</li> <li>Increased demand for water-saving buildings and facilities, and those related to water resource management</li> <li>Expansion in demand for designs, materials, and methods that prioritize resource circulation</li> </ul>	Medium	<ul> <li>Building resource circulation systems throughout the construction lifecycle</li> <li>Developing and promoting the spread of zero- water building technologies</li> <li>Establishing a strong network of suppliers</li> <li>Ensuring thorough water risk management during construction</li> </ul>
	~	~	Deterioration of ecosystems, water quality, soil, and air if nature positive goals are not met	<ul> <li>Risk:</li> <li>Difficulty in procuring construction materials due to the depletion of natural resources such as timber</li> <li>Opportunities:</li> <li>Increased opportunities for nature restoration projects and business opportunities</li> <li>Growing demand for technologies that contribute to nature positive outcomes</li> </ul>	Medium	<ul> <li>Promoting initiatives ("use, create and protect") to expand sustainable use of timber, forest resource regeneration, and conservation of high-quality forests</li> <li>Development of green infrastructure and nature positive technologies and their expansion through proactive proposals</li> <li>Developing and applying nature positive assessment methods to projects</li> <li>Engaging suppliers based on the Sustainable Procurement Guidelines and promoting green procurement</li> </ul>

### **Risk Management**

Based on the Risk Management Policy and the Basic Risk Management Rules, we have established a company-wide, systemized risk management system. Under the supervision of the Board, we have developed an appropriate management system that addresses major ESG-related risks, including quality, compliance, information, safety, and the environment. **P.116-118** Risk Management

### **Environmental Due Diligence**

As moving forward to "realization of a sustainable and environmentally friendly society" in Environmental Policy, the Group has established and continues to implement a system of environmental due diligence in accordance with international guidelines. This system aims to halt, prevent, and mitigate the adverse impacts of our business activities on the environment. We are committed to continuously reviewing and improving this system to deepen our efforts.

### Embed Environmental Due Diligence into Policies and Management System

Environmental Due Diligence

### Identification and Assessment of Adverse Environmental Impacts

To identify and assess the adverse impacts on the environment caused by the businesses of the Taisei Group, the Sustainability Division (Integrated) and the Sustainable Procurement Council, under the guidance and recommendations of an outside expert (Mizuho Research & Technologies, Ltd.), referred to various guidance from Japan and abroad including CDSB (Climate Disclosure Standards Board) guidance, TCFD and TNFD and identified the risks related to all of the businesses of the Taisei Group for each value chain. The identified environmental risks (contamination and degradation of the atmosphere, the eco-system, water quality, and soil; the progression of climate change including global warming; health hazards, etc.) were subjected to quantitative analysis and assessment from the two aspects of "the degree of impact," should such risks materialize, and "the probability of occurrence." Following discussions at the Sustainability Committee and the Board, these risks were identified as "the risks that must be dealt with on a priority basis." (hereinafter referred to as "identified priority environmental risks.")

### Cease, Prevent, or Mitigate Adverse **Environmental Impacts**

With regard to the "identified priority environmental risks." related to the business of Taisei that must be dealt with on a priority basis, the headquarters in charge plays the principal role in taking various measures to achieve prevention and mitigation, including compliance with environmentrelated laws and regulations and initiatives of the TAISEI Sustainable Action<sup>®</sup> (TSA) to reduce environmental impacts at worksites.

Furthermore, with regard to the identified priority environmental risks related to the supply chain, we are implementing measures to achieve prevention and mitigation such as the promotion of green procurement and collaboration with suppliers based on the Sustainable Procurement Guidelines, etc., and for the identified priority environmental risks related to clients, through proposals of environmentally-friendly construction materials and design.



### Track Implementation and Results

The effectiveness of activities to address the "identified priority environmental risks." related to the business of Taisei that must be dealt with on a priority basis is assessed through, among others, various patrols of worksites, monitoring by various committees.

For activities to address the identified priority environmental risks related to the supply chain that must be dealt with on a priority basis, annual self-assessments by suppliers are conducted, and based on the results thereof, suppliers are visited and audited and an exchange of views is conducted for improvement.

Additionally, we strive to secure traceability by implementing wood procurement survey and visiting overseas subcontractors and suppliers, etc. The effectiveness of activities to address the identified priority environmental risks is also assessed by confirming the status of compliance with environment-related laws and regulations through the operation of the environmental management system (EMS) based on ISO 14001 and the degree of achievement of environmental targets.

### Disclose Information

The status of implementation of Environmental Due Diligence activities is regularly reported to the Sustainability Promotion Committee, the Management Committee, the Sustainability Committee, and the Board. These reports are disclosed in a timely and appropriate manner on the official website and in Integrated reports.

#### 6 Provide for or Cooperate in Remediation When Appropriate

Consultation contacts and whistle-blower contacts for violations of environmental laws and regulations have been established for consultations from all stakeholders within and outside the company. In the event that the Taisei Group has been determined to be the cause of, or a contributing factor to, an adverse impact on the environment. Taisei takes prompt action using appropriate means to provide remediation and implement corrective action in accordance with the Environmental Policy.

### Indicators and Targets

To achieve the Taisei Group's long-term environmental targets, TAISEI Green Target 2050, we have set FY2030 targets as milestones. In formulating the [TAISEI VISION 2030] Achievement Plan, we revised the targets for FY2030 and newly established targets for FY2026. We are actively working towards these goals.

# **Decarbonized Society (Consolidated)**

CO Emission Beduction Targets					
Compared to FY2022)		Results		Tar	gets
Total emissions: $10^3 \text{ t-CO}_2$ Em	nissions intensity: t-CO <sub>2</sub> /¥ Billion	FY2022	FY2023	FY2026	FY2030
Scope 1+2	Total emission reduction rate	291 _	283 _	240 -18%	169 -42%
	Reduction rate per sales (intensity)	1.84 _	1.71 -	1.35 -26%	0.87 -53%
Scope 3 Category 1+11	Total emission reduction rate	6,712 -	5,287 -	-	5,033 -25%
lote: The calculation method for Categories 1 and 11 was revised in FY2023. Therefore, FY2022 emissions have been recalculated using the new method for consistency. For further details, please refer to the annotations in the Material Flow section on the Taisei Corporation website.					
<b>Taisei Group CO</b> <sub>2</sub> <b>Emissions</b> Over 90% of the Taisei Group's CO, emissions are		Category 1	roduction of steel	Category 11	during the use phase

) Emission Roduc	ntion Targets				
ompared to FY2022)		Results		Targ	gets
l emissions: 10 <sup>3</sup> t-CO <sub>2</sub> Em	issions intensity: t-CO <sub>2</sub> /¥ Billion	FY2022	FY2023	FY2026	FY2030
Scope 1+2	Total emission reduction rate	291 _	283 _	240 -18%	169 -42%
	Reduction rate per sales (intensity)	1.84 _	1.71 -	1.35 -26%	0.87 -53%
Scope 3 Category 1+11	Total emission reduction rate	6,712 -	5,287 -	-	5,033 -25%
The calculation method for Categories 1 and 11 was revised in FY2023. Therefore, FY2022 emissions have been recalculated using the new method for consistency.					
Taisei Group CO <sub>2</sub> Emissions		Category 1 CO emissions from the production of steel Estimated CO emissions dur		during the use phase	

from Scope 3, with Categories 1 and 11 accounting for over 90%

**Recycling Oriented Society (Non-Consolidated)** 

	Res	ults	Tar	gets
	FY2022	FY2023	FY2026	FY2030
Final disposal rate of construction waste	2.8%	2.9%	3.0% or lower	3.0% or lower



## Nature Co-Existing Society (Non-Consolidated)

	Res	ults	Targets		
	FY2022	FY2023	FY2026	FY2030	
Promotion of projects that contribute to biodiversity improvement	50 cases	44 cases	-	-	
Promotion of projects that contribute to Nature Positive	-	-	50 cases or more	50 cases or more	
Nature Positive evaluation method	Positive evaluation		Establishment of evaluation methods and commence- ment of operation	Apply to 30% of design and construction projects	

### **TNFD** Core Global Disclosure Metrics

The TNFD recommendations require companies to first identify their priority locations and then disclose metrics for those specific locations. We will proceed with identifying priority areas and consider the disclose of metrics required by TNFD. Environmental data including the following items is disclosed on our website.

flow

cement, concrete, etc.

of buildings delivered during the year.

INPUT	Energy, main construction materials, and water
OUTPUT	CO <sub>2</sub> (Scopes 1, 2, 3), NOx, SOx, CFCs, construction by-products, and water
uction waste / urces)	Total construction by-product, emissions by type, quantity of direct final disposal, quantity recycled and recycling rate
nt of Jantity	Hazardous waste quantity , PCB waste, volatile organic compounds
	INPUT DUTPUT iction vaste / urces) nt of iantity

# Special Feature 3 Construction Systems in the New Era

# [First in Japan] Realizing "Zero Carbon Buildings" with Effectively Zero Life-Cycle CO, Emissions

-Research Management Building, Taisei Group Next-Generation Technology Research Institute-The Taisei Group has developed the T-ZCB® (Zero Carbon Building) system, which evaluates the life-cycle CO<sub>2</sub> emissions and reduction effects of buildings. By visualizing the CO<sub>2</sub> reduction progress, we aim to achieve net-zero CO<sub>2</sub> emissions in buildings together with our clients. This system is being applied to the Research Management Building at the Taisei Group Next-Generation Technology Research Institute, currently under construction in Satte City, Saitama Prefecture, in an effort to realize zero-carbon buildings.

### CO, Reduction Effect by Phase

2						2 2
Phase	Procurement	Construction	Operation	Maintenance and Demolition	Total	CO <sub>2</sub> Reduction (Reduction Rate)
Standard building (Base specification)*	2,357 ↓	267 ↓	8,614 ↓	2,471 ↓	13,709 ↓	-14,221
New research management building	2,110	0	-4,787	2,165	-512	(-104%)

\*Calculated based on the LCA guidelines.



### The Honmachi 4-Chome Project (tentative name): **T-ZCB®** Oriented

The Honmachi 4-chome Project (tentative name) in Chuo-ku, Osaka City, a joint project with SOAI Gakuen, is a large-scale complex building development where the entire Taisei Group is responsible for planning, design, construction, and operation. In the office section of this project, we aim to achieve a "ZCB-Oriented (Zero Carbon Building-Oriented)" approach, reducing CO, emissions across the building's life cycle by 40%. We will promote the adoption of zero-carbon buildings in large-scale office projects in urban centers, where site conditions and restrictions are particularly challenging.

### Three "Zeros" to Achieve Zero Carbon Buildings

CO<sub>2</sub> Reduction in the Procurement Phase

Zero Carbon Design We reduce CO<sub>2</sub> emissions by procuring materials with minimal environmental impact and by reducing the amount of building materials used.



CO, Reduction in the Construction Phase Zero Carbon Construction We aim to reduce CO<sub>a</sub> emissions during construction by introducing electric and hybrid construction machinery, using decarbonized and low-carbon fuels, obtaining ZEB certification for temporary offices, and adopting renewable energy sources.

Se Alt

CO Emissions (t-CO)



### CO<sub>2</sub> Reduction in the Operation Phase Zero Carbon Operation

In the operation phase, it is essential to achieve CO<sub>2</sub> reductions not only through thorough energy conservation "ZEB" but also through energy generation. We propose various advanced technologies, such as the T-Green® Multi Solar a multi-functional solar power system integrated with building materials, to realize zero-carbon buildings.







The Taisei Group's basic stance on respecting human rights is to contribute to the realization of an inclusive society by voluntarily, proactively, and actively fulfilling its corporate responsibilities to prevent any adverse impact on human rights related to its business activities. Additionally, the [TAISEI VISION 2030] Achievement Plan outlines our fundamental policy to "respect the human rights of each employee involved in the Group's business." Through appropriate actions, we aim to enhance the reputation of the entire Group's supply chain, increase business opportunities and securing human capital, thereby leading to medium- to long-term increases in corporate value.

#### Human Rights Policy

### **Risks and Opportunities**

Risks

Opportunities

• Risks associated with insufficient efforts to respect human rights, including potential health issues among employees, decreased engagement, and the possibility of facing compensation claims or social sanctions in the event of human rights violations.

• A decline in competitiveness and stakeholder reputation, as well as a reduction in business opportunities, due to inadequate information disclosure regarding these efforts and initiatives.

• Securing top talent, improving engagement among executives and employees, and revitalizing the organization by promoting initiatives to respect human rights.

• Gaining a competitive advantage, enhancing corporate value, and improving stakeholder reputation as a result of these initiatives.

### Initiatives to Achieve [TAISEI VISION 2030]

	Focus Areas for 2030	
Enlightenment and dissemination through continuous implementation of human rights due diligence	Enhancement of dialogue with stakeholders	Ensuring a comfortable working envi- ronment and promoting ethical consumption

### Human Rights Due Diligence

To fulfill its responsibility to respect human rights, the Group revised its Human Rights Policy in April 2022. In line with the United Nations Guiding Principles on Business and Human Rights and the Japanese government's Guidelines on Respecting Human Rights in Responsible Supply Chains, the Group has established a human rights due diligence system and is continuously implementing related initiatives.

We collaborate with our subcontractors and suppliers to promote respect for human rights throughout the supply chain. The status of these initiatives is regularly reviewed and discussed at the Management Committee and reported to the Sustainability Committee and the Board for monitoring.

Drawing on insights gained from the implementation of various measures and dialogue with stakeholders, we will continuously review and improve our systems and initiatives, deepening our commitment to respecting human rights in partnership with our subcontractors and suppliers.

Human Rights Due Diligence



Human Rights Due Diligence Process and Supporting Measures

### **Prioritized Human Rights Issues**

With the advice and guidance of Sompo Risk Management Inc., an external expert, we identified human rights risks related to the Group's business activities based on international human rights guidelines, such as the United Nations Environment Programme Finance Initiative Human Rights Guidance Tool. The identified human rights risks were quantitatively analyzed and evaluated from two perspectives: "Impact on human rights (severity, number of people affected, remediability, probability of occurrence)" and "connection to the Company." Based on this analysis, we have identified "priority human rights issues" that require focused attention. For these prioritized human rights issues, we have established specific measures to prevent and mitigate adverse impacts, evaluate their effectiveness, and are actively working on these efforts.

Human Rights Risk Map

## Collaboration with the Supply Chain

### Prevention and Mitigation 1: Ensuring Worksite Safety

Regarding human rights issues in the supply chain, ensuring the safety of skilled construction workers at worksites is of paramount importance.

To achieve this, we have established the Occupational Health and Safety Management System (TAISEI OHSMS) as the foundation of our health and safety management. In collaboration with Soyukai and the Safety, Health and Environment Cooperation Association, we continuously strive to improve safety and health standards and eliminate work-related accidents.

# Prevention and Mitigation (2): Sustainable Procurement Guidelines

To contribute to solving sustainability issues, including human rights and the environment, through our business activities, we have disseminated the "Taisei Group Sustainable Procurement Guidelines" to all our business partners and requested that they implement activities based on these guidelines.

To ensure thorough understanding, we continue to hold briefings and training sessions for subcontractors and suppliers. In January 2024, we published the "Taisei Group Supply Chain Sustainability Handbook," which clearly explains our due diligence efforts. This handbook is utilized in training sessions to deepen understanding among our business partners and promote these initiatives.



Subcontractors and suppliers training at the National Safety Conference (February 2024)

### Priority Human Rights Issues for Group Employees

We have identified four priority human rights issues for Group employees: "long working hours," "discrimination and harassment," "health and safety (physical and mental)," and "personal information and privacy." Among these, we are particularly focusing on "long working hours" and "discrimination and harassment" as urgent issues, and are making company-wide efforts to improve and eliminate them.

Issues	Main Measures
Long working hours	<ul> <li>Implementing thorough workload management and appropriate personnel allocation</li> <li>Conducting regular interviews by managers</li> <li>Strengthening the working hour management system</li> <li>Promoting the taking of leave</li> </ul>
Discrimination and harassment	<ul> <li>Implementing training for managers</li> <li>Providing e-learning for all executives and employees</li> <li>Formulation of a basic policy against nuisance acts by clients and others</li> <li>Enhancement of various consultation services</li> </ul>

### Effectiveness Evaluation: Self-Assessment

We conduct annual self-assessments by subcontractors and suppliers regarding social and environmental issues, including human rights, within the supply chain, following the procedures outlined below:

- ①Conduct a questionnaire-style survey on sustainability activities to confirm the extent to which subcontractors and suppliers have implemented measures and initiatives based on the Taisei Group Sustainable Procurement Guidelines, addressing various issues, including human rights and the environment.
- ②Quantitatively analyze the self-assessment results and identify specific subcontractors and suppliers whose initiatives require further review, based on predetermined criteria.
- (3) Confirm the status of initiatives and improvement plans with the identified subcontractors and suppliers through written communication, phone calls, etc.
- ④If necessary, visit the subcontractors and suppliers to request a reduction in adverse social and environmental impacts, and exchange opinions and share best practices for improvement with business owners and other stakeholders.

Through these procedures, if a high risk is identified, we will regularly follow up on the improvement status and work to mitigate risks related to social and environmental issues within the supply chain.

Furthermore, since FY2023, we have been requesting primary contractors to educate and guide their subcontractors and have been conducting trial direct dialogues with some secondary subcontractors and suppliers. These efforts aim to raise the overall level of our supply chain and strengthen our initiatives.

### Enhancement of Dialogue with Stakeholders

Dialogue with Subcontractors and Suppliers ①: Subcontractors and Supplier Visits Based on Self-Assessment Results

Based on the results of the annual questionnaire-style survey on sustainability activities (self-assessment), we visit specialized contractors and suppliers. During these visits, we exchange opinions with business owners and share best practices to enhance our collaborative efforts.

### Results of Hearings (FY2023)

A common issue raised as a significant human rights concern was "long working hours" due to labor shortages. Additionally, there were calls for the Company to take a leading role in addressing the legal upper limit on overtime working hours that have been applied to the construction industry since FY2024.

#### Our Respons

The results of these hearings are shared with relevant divisions within the company. Recognizing that long working hours are an urgent issue affecting the construction industry as a whole, we are committed to improving construction efficiency, reducing labor demands, and ensuring appropriate construction timelines. These efforts will be guided by the KPI of "the worksite implementation rate of an 8-day site closure per 4 weeks."

### Dialogue with Subcontractors and Suppliers 2: Hearing for Business Owners Accepting Foreign Technical Intern Trainees

In addition to the questionnaire-style survey on sustainability activities (self-assessment), we also conduct targeted surveys for business owners who accept foreign technical intern trainees. Based on the results, we carry out on-site interviews to understand and confirm the actual conditions and engage in opinion exchanges.

### Dialogue with Subcontractors and Suppliers ③: Interviews with Foreign Technical Intern Trainees

As a priority in our human rights due diligence efforts, we have identified "migrant labor (foreign workers)" as a critical human rights issue. We are working to prevent and mitigate the adverse impact on the human rights of foreign workers. Since FY2022, we have been conducting interviews with foreign technical intern trainees to understand their working conditions. In FY2023, we interviewed technical interns employed by a partner company at Group company's PC (precast concrete) factory.

### Results of Interviews (FY2023)

Within the scope of our interviews, no issues were identified concerning working hours, wage payments, or related matters.

All trainees reported that they felt comfortable consulting with colleagues or Japanese supervisors if they encountered any problems.

#### Our Response

We recognize that foreign technical intern trainees, who may be in a vulnerable position, require particular attention to ensure their human rights are not adversely impacted. We will continue to conduct interviews to better understand their actual conditions and address any potential issues.

	FY2022	FY2023
Self-Assessment Questionnaire Respondents	1,590 companies	1,756 companies
On-site interviews conducted	20 companies	37 companies



Visits to primary and secondary subcontractors and suppliers

	FY2022	FY2023
Questionnaire respondent companies:	251 companies	314 companies
On-site interviews conducted	5 companies	5 companies

	FY2022	FY2023
Interviewee companies	2 companies	4 companies
Number of interviewees	5 persons	10 persons



Interviews with foreign technical intern trainees

#### **Dialogue with NGOs**

In December 2023, we invited and consulted Hideki WAKABAYASHI, a Director at the Japan NGO Center for International Cooperation (JANIC) and the Director of THINK Lobby, regarding our human rights initiatives in a dialogue with the Chief of Sustainability Management Promotion Division.

# Key Points from the Consultation on Our Human Rights Initiatives

- Regarding human rights due diligence, it is crucial that each executive and employee possesses a strong awareness of human rights and collaborates with various stakeholders to ensure these efforts are not merely formalities. It is important to utilize the due diligence process to identify and address the core issues.
- It is necessary to establish "meaningful stakeholder engagement" by effectively incorporating the opinions gathered from dialogues with various stakeholders into management practices.
- Concerning the grievance mechanism, while there remains a tendency in Japan to view a low number of complaints as positive, it is considered normal for complaints to arise in a global context. It is important to effectively integrate the insights and lessons learned from addressing complaints into management processes.
- One solution to the labor shortage in labor-intensive industries, including construction, is to secure foreign workers. It is imperative to treat foreign workers the same as Japanese workers and to establish support systems that consider cultural and religious differences.
- Internationally, companies are entering a phase where they need to consider "corporate social justice" to achieve a peaceful, fair and sustainable society.

We received numerous valuable suggestions and opinions during this discussion, which we have incorporated into the "Sustainability Strategy (Human Rights)" section of our [TAISEI VISION 2030] Achievement Plan. Details of the discussion are available on our website.

Expert consultation on human rights (Japanese only)

### Ensuring a Comfortable Working Environment for Everyone

At construction sites, which are at the forefront of manufacturing, establishing an environment where a diverse range of individuals including employees and workers—can work comfortably and fully utilize their abilities is not only essential from the standpoint of respecting human rights and considering working conditions, but it is also crucial for improving productivity, work engagement, and ultimately, each individual's well-being.

At the Company, we are not only attentive to the needs of female engineers and workers, but we are also committed to ensuring that all employees and workers can work together seamlessly in our manufacturing efforts. To achieve this, we are promoting the spread of "Wellness Worksites." Specifically, we advance worksite wellness by implementing the most appropriate measures for each site, selected from the "Wellness Recipes," a collection of 100 items devised by our Design Division.

# Dialogue with Indigenous Peoples on Timber Procurement

In November 2023, in collaboration with domestic subcontractors and suppliers, we visited the TA ANN Group, a local company engaged in logging, afforestation, manufacturing, and processing on Malaysian Borneo. During this visit, we conducted a wood procurement traceability survey and engaged in dialogue with the indigenous people living in the logging areas.

The survey and dialogues confirmed that biodiversity and the needs of local residents were being appropriately considered, including the conservation of trees prohibited from logging by laws and regulations, as well as trees that local residents requested to be conserved.

We will continue our efforts to prevent adverse impacts on the environment and human rights, including discrimination and inequality against indigenous peoples, arising from material procurement.



Logging and reforestation site



Interaction with indigenous people (Iban Tribe)



The Taisei Group's greatest asset is its human capital, and the vitality of our employees is the driving force behind enhancing corporate value. We aim to foster innovation and create value by recruiting talent with diverse capabilities, respecting diversity, and cultivating an internal environment where every executive and employee can actively contribute while maintaining high levels of engagement. Moreover, in the [TAISEI VISION 2030] Achievement Plan, the fundamental policy is to "recognize that human capital is a source of our competitiveness, and swiftly implement the necessary measures."

Human Resources Development Policy (Diversity, Equity & Inclusion Policy)

### **Risks and Opportunities**

Pieke	<ul> <li>Loss of human capital with diverse abilities due to insufficient efforts to leverage diverse attributes and talents, leading to stagnation in innovation and other initiatives.</li> </ul>
RISKS	<ul> <li>Decreased competitiveness and lower stakeholder evaluation resulting from inadequate disclosure of information about the aforementioned efforts, and a reduction in opportunities for securing contracts.</li> </ul>
	<ul> <li>Securing diverse talent by promoting diversity, equity, and inclusion (DE&amp;I) initiatives, enhancing employee and executive engagement, and revitalizing the organization.</li> </ul>
portunities	<ul> <li>Securing a competitive edge, enhancing corporate value, and improving stakeholder evaluation as a result of the aforementioned opportunity.</li> </ul>

### Initiatives to Achieve [TAISEI VISION 2030]

- To create an environment in which employees can realize their full potential to enhance their engagement.
- To expand human capital investment to support the Group's sustainable growth.
- Physical, mental, and social health and feelings of happiness (well-being), and realization of diverse career paths.



### Improvement of Employee Engagement

In FY2022, the Company and its major Group companies began conducting engagement surveys. The three surveys conducted up until FY2023 resulted in "average" scores compared to other companies' data held by the survey company, indicating the need to address various issues to better harness employee vitality. In FY2023, we established a dedicated department to improve engagement and address these challenges.

KPI	Focus	Dec. 2023	Jun. 2024	FY2030
Indicator	company	Result	Result	Target
Engagement score	Taisei Corporation	B 50.2	BB 53.2	A 60.0
lote: Engagement Survey by Link and Motivation Inc.				

The survey used their evaluation system, which ranks on an 11-point scale from AAA to DD.

DD	DDD	С	CC	CCC	В	BB	BBB	А	AA	AAA
Under	Over									
33	39	42	45	48	52	55	58	61	67	67

As a company-wide issue, it was identified that there were differences in engagement levels between management and employees. To address this, we have implemented numerous direct dialogues aimed at promoting mutual communication between management and employees. These dialogues serve to reconfirm what the company should aim for and management policies, as well as to share issues identified on the ground. Additionally, we continuously work to incorporate employees' feedback into our management measures. [See (\*1) in Table 1]

### Creating Opportunities for Communication Between Management and Employees



### Promotion of Health and Productivity Management

Health is an essential element for a vibrant workplace and the happiness of families. We provide both mental and physical supports to our employees. Specifically, we focus on reducing health problems by implementing follow-up measures based on health checkup results and offering face-to-face guidance to employees experiencing high levels of mental and physical fatigue. Utilizing our proprietary health examination management system, we statistically analyze health checkup results and daily lifestyle and dietary habits. Additionally, we are working to improve employee health literacy through initiatives that make company health issues more visible.

### Table 1 Initiatives to Improve Engagement

- Communication from Executives to Employees Executives communicate policies related to engagement and pledges their own actions.
- Direct Dialogue between Executives and Employees (\*1) Approximately 90 sessions were held in FY2023 with 640 participants, and approximately 370 sessions are planned for FY2024 with 2,000 participants.
- Briefings for Managers (\*2) Survey interpretation and insights were explained to approximately 1,300 managers.
- Division-Specific Improvement Initiatives Specialized departments support the interpretation of survey results and the planning and execution of improvement initiatives.
- Horizontal Sharing of Best Practices Making a booklet for managers and other measures to share best practices.

In addition to these company-wide initiatives, we believe that voluntary efforts by each organization are also crucial for improving engagement. To this end, we conduct surveys twice a year to enable managers to accurately assess the status of their respective organizations and promptly implement improvement activities. Nationwide training sessions were held to help all managers understand and interpret the survey results. [See (\*2) in Table 1] Furthermore, individual consultation meetings with external consultants are available for managers who feel they need additional support in addressing organizational challenges, providing them with valuable insights for improvement. Our goal is to create a highly engaged organization that fosters both job satisfaction and ease of work.

# Company-Wide Improvement Cycle for Engagement



### Promotion of Diversity, Equity & Inclusion (DE&I)

Since establishing a specialized organization in 2007, the Group has actively promoted diversity, with a particular focus on advancing women's participation in the workforce. We have continuously evaluated and improved the effectiveness of our efforts. Moving forward, we will place greater emphasis on ensuring diversity and equity, considering each employee's unique attributes (gender, child-rearing, caregiving, disability, sexual orientation, etc.). Our initiatives have evolved into a broader effort to "Promote Diversity, Equity & Inclusion," and we are implementing the following measures:

### **Five Numerical Targets**



### Accelerating Women's Empowerment

To accelerate the empowerment of women, we conduct training for female employees who are candidates for leadership positions, focusing on improving and acquiring the qualities and skills necessary for management. These efforts are followed up over multiple years to ensure continuous development.

### [Number and Ratio of Female Employees by Age Group]



### **Promoting Diversity and Equity** Addressing Women's Health Concerns

In order to address the unique health challenges that women face and to ensure they can continue to work comfortably and thrive in their careers, we believe that it is necessary to improve the health literacy of our employees and to create a workplace environment where they can understand and support each other. We have implemented several initiatives, including:

#### Establishment of External Specialist Consultation Services

Employees and their families can utilize this service. As of the end of March 31, 2024, 268 employees had registered for the service, bringing the total number of consultations to 280.

#### **Preconception Care**

Seminars were held to raise awareness about health management to prepare for future pregnancies, and simple fertility test kits were distributed free of charge to those who wished, regardless of gender.

### Work-Life Balance Support System for Employees Undergoing Infertility Treatment

Employees can utilize the flextime system and use up to 80 days of paid leave for hospital visits related to infertility treatment.

### Efforts to Prevent Employees from Leaving Due to Caregiving Responsibilities

We believe that one of our responsibilities in an era of declining population is to create an environment where employees who provide caregiving can continue to play an active role without quitting their jobs, and we have established various support programs to balance work and caregiving responsibilities.

Work-Life Balance Support System for Employees Who Provide Caregiving	For each family member requiring care, we provide 15 days of caregiver leave per year (20 days per year if there are two or more family members).
Regular Caregiving Seminars	We hold regular seminars on various topics (e.g., stress management during caregiving, financial aspects of caregiving) that employees and their families can participate in together. These seminars are designed to raise awareness of caregiving issues, regardless of whether they are currently providing care.

### Supporting Men's Participation in Childcare

We distribute the "Papa's Support Book for Balancing Childcare and Work" to male employees who are expecting a new child, providing suggestions on preparing to take childcare leave, utilizing childcare-related systems, and how to spend time during childcare leave. Furthermore, even after returning to work, employees can utilize the "Flextime System for Balancing Childcare and Work" and an increased number of telework days to balance childcare and work. In addition, we are expanding flexible working options so that employees can continue to participate in family life.

### Support for LGBTQ Employees

### Awareness-Raising Activities for Employees

A dedicated LGBTQ page has been set up on the Company's intranet to provide employees with basic knowledge on topics like sexual orientation, gender identity, outing, and harassment. Additionally, e-learning is available for all employees, and it is incorporated as one of the themes in training programs for young employees within three years of joining the Company.

#### Establishing Internal and External Specialist **Consultation Services**

In August 2020, we established a dedicated consultation desk staffed by specialists for employees. To further enhance the psychological safety of those affected, we partnered with external experts (Out Japan Co., Ltd.) in May 2023, creating an external consultation service. This service is available not only to employees directly affected but also to their supervisors and colleagues. The external service maintains strict confidentiality and will not disclose any personally identifiable information to the company without the explicit consent of the individual seeking consultation

### **Initiatives for Human Capital Development**

We aim to realize the Taisei Group philosophy by supporting each employee in continuous learning, fostering independent career development, acquiring liberal arts knowledge in addition to strong human qualities and expertise, and driving innovation while embodying the Taisei spirit.



### Introducing Liberal Arts Education

In the VUCA era, business success requires not only logical thinking but also a rich sensitivity, imagination, and creativity. To promote holistic personal growth, we will offer all management-level employees educational opportunities to learn liberal arts thinking.

We aim to achieve synergistic effects through a training system that encourages interaction among employees from different fields, allowing them to enhance both their business skills and humanity while broadening their perspectives. We offer diverse programs for reskilling, regardless of age.

### Supporting Self-Driven Career Development

We support our employees with a variety of development initiatives so that they can continuously learn and challenge themselves, fostering independent career development. We are also strengthening partnerships with external educational institutions that offer programs to support learning for acquiring qualifications and improving skills. These partnerships provide our employees with access to corporate discounts, further encouraging self-directed learning among our employees.



Executives convenes for keynote lectures from external speakers and engages in discussions on management challenges, gaining valuable insights to enhance organizational effectiveness.

Embodying the Taisei Spirit (Active and Transparent Culture, Value Creation, Evolution of Tradition) A collective of bright, passionate, sincere, and disciplined professionals

### Enhancing corporate value

### Expanding Interprofessional Training Opportunities

### To Introduce Innovation Training

We will launch "New Business Proposal Training." This program includes workshops designed to teach the mindset and skills necessary for creating new businesses and planning innovative projects. Creative proposals generated during the training will be considered for further development and potential implementation. This program will serve as a catalyst for business transformation by fostering the creation of new business ventures.

### Supports for Certification Exams and Language Learning

We partner with external educational institutions that offer corporate discounts for various courses (correspondence and in-person) related to national qualifications and certification exams, providing these courses to our employees at reduced rates.

### Developing Female Managers

Based on the concept of "positive action" - initiatives aimed at eliminating the gender gap in employment—we support the development of female managers through training focused on building networks and enhancing the skills necessary for female employees to actively seek and embrace promotions and demonstrate their management abilities.

#### Famous Guest Speaker Series

As part of our reskilling efforts to foster personal and professional growth among our employees, we regularly invite famous guest speaker to deliver public lectures.

### Next-Generation Executive Development Program

Each year, we carefully select candidates for future executive positions and systematically develop them through a structured training program.

### **Executive Seminar**



As part of its core principle in [TAISE] VISION 2030], the Taisei Group upholds the "Optimal utilization of Human Capital, Technology and Intelligence." We aim to drive technological development that addresses environmental and social issues through the use of open innovation. Furthermore, under the [TAISEI VISION 2030] Achievement Plan, we have identified four key technology areas to focus our efforts on: Social and Environmental Issues, To Strengthen Social Infrastructure, Regional Revitalization, and New Frontier Business. Our basic policy is to drive technological development with clear timelines and measurable outcomes.

### **Risks and Opportunities**

Risks	<ul> <li>Insufficient efforts in technology development may lead to an inability to provide high-quality, high-performance construction products and related services that meet client needs.</li> <li>Decline in competitiveness, stakeholder evaluation, and order opportunities as a result of the above.</li> </ul>
<b>a</b>	• To promote technological development to "create added value that exceeds client expectations" and the "realization of employee work style reform."
Opportunities	• To secure competitive advantages, increase order opportunities, enhance corporate value, and improve stakeholder evaluation as a result of the aforementioned opportunity.

### Initiatives to Achieve [TAISEI VISION 2030]

### Technology Mapping

We have identified four key materiality areas to focus on and are promoting technological differentiation and innovation in our production processes.

Specifically focused areas		Perspectives and Approaches to Address					
		<ol> <li>Response to individual projects</li> </ol>	② Response to enhancement of the productivity and innova- tion of production process		(3) Response to construction- related business and new business	(4) To explore future issues and innovative initiatives	
Areas to Be Addressed	Social and environ- mental issues (CN, CE, NP, working environment, etc.)	ZEB / RNZEB, ZCB, wooden buildings (Next-Generation Technology Research Insitute), Smart buildings (Honmachi 4-Chome Project) Floating offshore wind power Utilizing T-eConcrete®	Construction robots 3D printers T-iDigital® Field T-BasisX®	Utilization of ger	Hydrogen utilization Energy storage Biomass CO <sub>2</sub> fixation, CCS	Wood waste utilization Green chemistry Algae sustainable aviation fuel (SAF)	
	To strengthen social infrastructure (natural disasters, infrastructure)	Highway renewal Earthquake-resistant reinforcement of infrastructure	Remote control, automation, and autonomy of heavy machinery and its simulation and sophistication of the analysis		Business continuity planning (BCP) support (development of SOKUSHIN NAVI®, etc.)	Sophistication of disaster information (response to Mt. Fuji eruption, etc.)	
	Regional revitaliza- tion (community design, infrastructure)	Sophistication of integrated supply and demand energy management system (AEMS, etc.)	Metaverse utilization (digital communication, etc.)	nerative Al	Automatic operation/wireless power supply (collaborations with startups, etc.)	Optimization of wood circulation (production utilization, recycling)	
	New frontier busi- ness (business model)	Development of service robots (transportation, guidance, cleaning, etc.)	New construction materials		Development of T-eConcrete® Agricultural land utilization Embodied carbon reduction technology	Utilization of lunar space and lunar surface energy utilization	

### R&D Promotion System and Policy on Intellectual Property

To drive the development of innovative technologies, we have established the Technical Committee, chaired by the president and with the Chief of Taisei Advanced Center of Technology serving as secretary. This committee reviews, drafts, and monitors the implementation of various measures, while promoting the integration of technologies across relevant departments to facilitate their practical application. Regarding intellectual property, we have established a Policy on Intellectual Property to ensure the creation, protection, and utilization of intellectual property across the entire Group, aiming to enhance corporate value.

### Towards the Realization of Innovation

The pursuit of innovative value creation (innovation) is essential for enhancing corporate value over the medium-to-long-term. To this end, we have established the Innovation Strategy Department within the Taisei Advanced Center of Technology to systematically promote innovation-focused initiatives. In order to address the increasing sophistication and diversification of technological needs, we are actively strengthening alliances with universities, research institutions, and other companies, while also proactively engaging in open innovation.

# \varTheta DX

### **Fundamental Approach**

Through digital transformation (DX), the Taisei Group aims to significantly improve productivity and reduce costs by transforming its production systems, revamp its organization, processes, and corporate culture through data-driven management, accelerate decision-making, and enhance competitiveness by creating new service solutions. The fundamental policy for promoting DX in the [TAISEI VISION 2030] Achievement Plan is to "enhance corporate value of the Group through swiftly utilizing information (digital technology and data)."

### **Risks and Opportunities**



### Initiatives to Achieve [TAISEI VISION 2030]

0	Fundamental Approach / Promotion policies / Key themes						
ompany-Wide DX Strategy	Core technology / Digital human capital strategy						
	Digital twin	AI	Remote technology				
	Digital human capital						

To achieve the Group's vision of DX, we have organized the "Fundamental Approach," "Policies," and "Key Themes" into a Comprehensive company-wide DX strategy. This strategy is supported and driven by the core technology strategy (focused on digital twin, AI, and remote technology) and the digital human capital strategy.

### To Foster the Development of Digital Human Capital

In 2023, we launched the DX Academy, a digital training program for all executives and employees, to revolutionize our production system and work style through DX. Moving forward, we plan to expand the program to include Group companies and business partners, fostering the development of digital talent across the entire Group.

• Risk of system failures caused by the leakage of important or personal information of stakeholders, and virus infections due to

• Decline in competitiveness, stakeholder evaluations, and reduced order opportunities as a consequence of the above.

• To promote technological development to "create added value that exceeds client expectations" and the "realization of work

• To secure competitive advantages, increase order opportunities, enhance corporate value, and improve stakeholder evaluations

To create new service solutions to enhance competitiveness in the construction and construction-related business

### **DX Promotion Framework**

In 2020, we established a cross-functional organization called the Digital Transformation (DX) Promotion Committee, which examines, drafts, and provides follow-up support for the implementation of DX-related initiatives. To further accelerate our efforts toward achieving [TAISEI VISION 2030], we launched the Digital Transformation Strategy Planning Department in January 2024. This department formulates and drives company-wide DX strategies, creates new digital services, and implements the digital human capital strategy. Additionally, it works closely with business divisions to propose and implement digital solutions, driving transformation across the company.

	Board	
Ma	anagement Commit	tee
Digital Transformation (DX) Promotion Committee Chairperson: CDO Secretariat: Digital Transformation Strategy Planning Department, Corporate Planning Office		
Com	pany-Wide DX Stra	ategy
Production Process	Management Foundation	Service / Solutions
Core technology strategy / Digital human capital strategy		

### Sustainability -

Technology and DX

# with Technology and DX

#### Social and Environmental Issues Promoting the Development of "T-3DP®" 3D Printing Technology for Construction

We have developed the mobile "T-3DP® (Taisei-3D Printing)" system, which combines articulated robots with 3D printing technology for construction, enabling on-site fabrication of large reinforced concrete components. This system allows for the creation of structures with optimal cross-sectional



dimensions by enabling the production of larger components and utilizing a three-dimensional approach for the printing nozzle, leading to further improvements in construction productivity.

Construction near reinforcing bars

#### Strengthening of Social Infrastructure New Method for Half-Section Floor Slab Replacement Used in Expressway Renewal Projects, Significantly Shortening Construction Periods

In collaboration with Kitagawa Corporation, we have developed a half-section floor slab replacement machine that is not classified as a crane and can be used with lane restrictions on only one lane of a two-lane road. The introduction of this system reduces the number of days required for the machine's assembly, disassembly, and inspection to one-third of conventional methods, and shortens the floor slab replacement period for weekend construction to one-quarter of the usual time. Moving forward, we will actively propose and implement this machine in expressway renewal projects across Japan, aiming to further improve the safety and productivity of floor slab replacement work.



This replacement machine consists of two large components, the new side frame and the existing side frame, along with various units attached to them.

### Development of Silencer for Social and Environmental Issues 24-hour Ventilation Air Supply Port "T-Silent® Sleeve"

In collaboration with MIYACHU Co., Ltd., we developed the "T-Silent® Sleeve -SHIZUKANKI-," an air inlet sound insulation device for 24-hour ventilation systems in residential buildings, combining superior design aesthetics with excellent ventilation performance. This device achieves sound insulation performance comparable to conventional soundproof vent caps\* while preserving the architectural aesthetics of the building's exterior and maintaining optimal airflow. It is suitable for both new and existing homes and has already been installed in apartment complexes in Tokvo. Going forward, we will actively propose this technology as a noise reduction solution for air inlets. \*Ventilation cap placed on air supply/exhaust openings on exterior walls.

Examples of Our Solution We continuously refine our technologies, which serve as the source of our competitive edge, and enhance our ability to solve client and societal issues at every stage of the construction value chain.

### Promoting the Development of Strengthening of Social Infrastructure T-iRobo® Series for Construction Machinery Automation Expanding the Functionality of the Autonomous T-iRobo<sup>®</sup> Bulldozer

Since 2013, we have been developing the "T-iRobo® Series," a line of autonomous and remote-controlled construction machinery. In 2023, we enhanced the capabilities of conventional automated construction machines by introducing a bulldozer capable of detecting sand and soil piles and autonomously

determining the optimal route for earthmoving and leveling. By advancing autonomous operation technology, we aim to further improve productivity and safety while promoting unmanned and labor-saving construction operations.



sensing results

#### Regional Revitalization and New Frontier Business Leading the Way in Urban Development for an Autonomous Driving Society

We are collaborating with Tier IV, Inc., a leading developer of autonomous driving software, to jointly develop infrastructure technology for autonomous vehicles. By applying highly reflective paint to tunnel walls to aid in vehicle positioning, we have successfully reduced the positional error within tunnels from a previous maximum of 100 cm to approximately ±10 cm. Moving forward, we aim to further improve accuracy and contribute to the realization of safe autonomous driving. We will continue our efforts nationwide to support the government's goal of deploying autonomous driving services in at least 50 locations by FY2025 and over 100 locations by FY2027.



Providing tunnel automated driving assistance technology (infrastructure coordination technology)

#### Social and Environmental Issues **Construction Begins on** Next-Generation Pavement Test Track

Taisei Rotec Corporation has commenced construction on a Next-Generation Pavement Test Track (tentative name) at the East Industrial Park in Tamura City, Fukushima Prefecture. With the goal of achieving a carbon-neutral society, we will conduct durability tests on various technologies, including

concrete pavement that

and asphalt pavement

utilizing plant-derived

decarbonization

facilitates CO, fixation, solar

power-generating pavement.

materials, all contributing to



Large pavement test track

#### DX of Production Process Began Development of the Construction Approval Metaverse<sup>™</sup> to Accelerate the Transition to Next-Generation Workstyles

We have commenced the development of the Construction Approval Metaverse, a collaborative project with Hitachi Consulting Co., Ltd., GlobalLogic Japan, Ltd., and Hitachi Social Information Services, Ltd. This metaverse, built on BIM\* (Building Information Modeling), aims to centralize the information necessary for consensus building among project stakeholders (such as clients, designers, and contractors) within a three-dimensional virtual space. By eliminating misunderstandings among stakeholders during project presentations and the process of reaching agreements on



specifications, the system will enable more efficient project execution while contributing to operational efficiency and work style reform at construction sites

DX of Production Process

Introductory video of the Construction Approval Metaverse concept

\*BIM: Building Information Modeling is a system for creating and managing a digital representa tion of a building. It integrates 3D geometric information with a wide range of building attributes, including room names, areas, material specifications, and perform

### Development of "T-Pile 3D Monitor" Technology for Measuring Excavated Ground

We have developed the T-Pile 3D Monitor, a 3D measurement technology that enables accurate and guick assessment of the shape of excavated around during the construction of foundation structures such as cast-in-place piles and diaphragm walls. This system uses an ultrasonic measuring instrument that rotates circumferentially inside the borehole, performing automated measurements at user-defined angles. By using this technology, we can reduce the amount of residual concrete and CO<sub>2</sub> emissions during the installation process. In the future, the T-Pile 3D



Monitor will be actively applied across both civil engineering and building construction fields, as part of our series of technologies for pile and diaphragm wall construction.

T-Pile 3D Monitor measurement image

#### DX of Production Process Development of "Field Checker" Application for Supporting Surveying with Cloud

We have expanded the functions of T-iDigital® Field, an integrated system that supports construction management by utilizing various digital data obtained at construction sites. As part of this expansion, we developed the Field Checker application, which allows one person to efficiently carry out basic surveying tasks that previously required two people.

This application leverages positioning equipment and cloud technology to significantly improve the efficiency of survey work.

#### DX of Management Foundation Establishment of Taisei-DaaS (Taisei-Data as a Service), a Company-Wide Integrated Platform for Data Utilization and Sharing

We have built Taisei-DaaS, an integrated platform that seamlessly connects and utilizes various data generated throughout the construction life cycle-from planning and proposal to design, construction, and renewal. By facilitating better-informed management decisions and operational enhancements across various business areas, we can now guickly and accurately propose and respond to customer needs across the entire construction life cycle.



Conceptual diagram of data integration and utilization through Taisei-DaaS

#### DX of Production Process Development of Specialized Technology Search System Using Generative AI

We have developed a Specialized Technology Search System that utilizes generative AI to provide highly reliable answers to technical queries. This system enables us to leverage the vast amount of technical data stored in internal documents, enabling significant improvements in operational efficiency, productivity, and the smooth transfer of specialized knowledge to the next generation. The first practical application of this system is a search system specializing in acoustic technology. We plan to apply this system to various other specialized fields in the future.



System Configuration and Search Procedures

#### DX of Services & Solutions Development of T-Hospital® Connect for Medical and Nursing Care Facilities

In collaboration with InfocubeLAFLA, Inc., we have developed T-Hospital<sup>®</sup> Connect, an IoT data platform for medical and nursing care facilities. This platform integrates, manages, and enables the effective utilization of location, and video data as well as health, environmental data for patients and long-term care recipients. By consolidating and visualizing data from various IoT devices related to patients, medical equipment, and the environment, this platform enables centralized management and facilitates efficient utilization of information, thereby streamlining healthcare professionals' management tasks and enhancing patient safety while improving overall medical services.



Taisei Corporation, grounded in its Occupational Health and Safety Management System (TAISEI OHSMS), prioritizes "Safety First" in its approach to safety and health management. We are committed to enhancing and maintaining a safe and secure environment for all workers, with the goal of being trusted and respected by society. Under the [TAISEI VISION 2030] Achievement Plan, the fundamental policy is to maintain zero fatal accidents, zero serious accidents, and zero environmental accidents.

### **Risks and Opportunities**

isks	Occurrence of industrial accidents and legal violations due to insufficient efforts.
	<ul> <li>Risk of being subject to criminal penalties, administrative actions, or claims for damages resulting from accidents.</li> </ul>
	<ul> <li>Decline in competitiveness, stakeholder evaluation, and order opportunities as a result of the above.</li> </ul>
rtunities	• To secure excellent business partners and human capital by promoting proactive safety measures.
	<ul> <li>To occupational health and safety management capabilities and productivity through the use of new technologies such as automation, robotics, and digital technologies.</li> </ul>
	<ul> <li>To secure a competitive advantage, enhance corporate value, and improve stakeholder evaluation as a result of the aforemen- tioned opportunities.</li> </ul>

### Initiatives to Achieve [TAISEI VISION 2030]

#### To Enhance Our Efforts to Maintain Zero Fatal Accidents, Zero Serious Accidents, and Zero Environmental Accidents

We, in collaboration with our partner companies (specialized contractors), have successfully achieved zero fatal accidents for two consecutive years by thoroughly enforcing the safety and health management system based on TAISEI OHSMS. To sustain this achievement, it is crucial to reaffirm the importance of "safety awareness and proactive action" at construction sites, assess its effectiveness, and steadily implement the safety process of Plan-Do-Check-Action (PDCA). Furthermore, during on-site patrols by senior management, employees are instructed to rigorously enforce safety management according to worksite-specific conditions. Together with the Foreman's Association\*1, both employees and supervisors actively promote comprehensive safety management, implementing measures to prevent occupational accidents and unsafe behavior.

\*1 A collaborative organization comprised of representatives (foremen) from each trade and specialized contractors at the worksite.

### To Make Technical Improvements in Accident Analysis (DX and Secondary Use of Work-at-Site Data, Etc.)

At our worksites, we introduced the "Construction Site Face Recognition for Green Site" system in October 2022 and have been expanding its use. We analyze accident trends to proactively prevent future incidents using employment data obtained through the facial recognition system. In addition, safety performance and frequency rates for each contractor are monitored based on employment and accident data. We evaluate and select contractors based on their



Newsletter for business partners mentioned Face Recognition

safety records and frequency rates, which are derived from employment and accident data. By doing so, we are enhancing overall safety levels.

### To Upgrade Safety Training for Our Employees

In 2023, we launched the Safety Academy aimed at young employees with limited on-site management experience. The academy enhances sensitivity to risks through hands-on simulated experiences, such as identifying blind spots and malfunctions using actual equipment like mobile cranes and backhoes, as well as simulated accident experiences using

VR (virtual reality). Moving forward, we will expand the reach of this training to include group and partner companies, further enhancing safety manage ment at worksites.



Safety and Health Policy

Hands-on experience with improper slinging using actual machinery

### To Enhance Environmental Training and Patrols

To prevent and eliminate environmental accidents, we conduct environmental education and patrols through the Safety, Health and Environment Cooperation Association, which includes all specialized contractors involved in our projects. These initiatives focus on identifying and preventing environmental risks.

### To Support Soyukai\*2 Member Companies to Secure Appropriate Workforce

We provide online training that incorporates the metaverse to support the development of skilled workers for Soyukai members. Additionally, we assist in their recruitment activities by organizing joint company briefings for Soyukai members. We also offer resources and information on balancing work and caregiving responsibilities to help prevent employee turnover. \*2: An association of key subcontractors and suppliers (partner companies).

# 😌 Quality

### **Fundamental Approach**

The Taisei Group considers it its crucial mission to efficiently and continuously provide high-guality construction products and related services to clients and society. In order to fulfill this mission, we strive to meet the expectations and gain the trust of both our clients and society by conducting business activities in accordance with the Group Action Guidelines on Quality. Furthermore, under the [TAISEI VISION 2030] Achievement Plan, the fundamental policy is to uphold proper quality control, aim to eliminate all defects attributable to quality mismanagement and improve customer satisfaction. Quality Policy

### **Risks and Opportunities**



### Initiatives to Achieve [TAISEI VISION 2030]

### To Establish a Quality Control Monitoring System and Uphold Proper Quality Control Aligned with the Quality Control Process Through Cooperation Among Relevant Divisions

In response to last year's quality defect incident, all executives and employees have returned to the core principle of "TAISEI QUALITY – Quality is Our Pride." We are working to strengthen collaboration among internal departments involved in quality management and ensure proper management aligned with the quality control process. In civil engineering, the Civil Engineering Division, branches, and worksites coordinate closely, while in construction, the Building Construction Division, Quality Control Division, branches, branch quality specialists, and worksites collaborate to ensure adherence to

quality control processes and establish a robust monitoring system. To prevent risks, quality patrols are conducted from an

impartial third-party perspective, "cold eye review," to identify and mitigate risks. In the event of a quality issue, the head office and branch offices are set up to support the worksite and prevent the issue from escalating.



### To Maintain ISO 9001 External Audits and Certification

Each division and group companies have obtained ISO 9001 certification, the international standard for guality management systems, and continues to undergo audits conducted by third-party organizations to maintain this certification.

- To improve quality control and productivity by leveraging new technologies, such as automation, robotics, and digital tools, and

• To secure a competitive advantage, enhance corporate value, and improve stakeholder evaluation as a result of the aforemen-

### To Share Quality-Related Information Utilizing Digital Technology

We are strengthening the development of a quality record database to enable employees at worksites and partner companies to share drawings, quality control, and process control data.

Using a cloud-based system, we make visible various aspects of quality control, such as the status of quality patrols, to increase the effectiveness of quality management activities. Additionally, we are developing a comprehensive technical database to ensure employees can quickly access the necessary information from our extensive internal technical resources.

### To Use Customer Evaluation Results Effectively

During the design and construction phases, we carefully gather our clients' thoughts and strive to offer comprehensive plans based on clear concepts. After the handover, we conduct customer satisfaction surveys. We conduct management reviews of these results and share them internally. Furthermore, the results are used to incorporate client feedback into design and after-sales services.

### To Collect and Evaluate Trouble Cases and Share Them with All the Executives and Employees

Quality-related issues arising at worksites are swiftly collected by head office via branch offices. Each case is evaluated based on the event and its causes. After verifying the countermeasures and recurrence prevention measures, the information is shared horizontally across all branches, helping to prevent similar issues from reoccurring.