

# SHINRYO REPORT 2022

Corporate Profile and Sustainability Report

**English Version** 



## "Create a Freshening World"

#### - Brand Promise -

We would like to provide a comfortable air quality appropriate for where we work, spend our time, and in the surrounding natural environment. We would like to create a rich and pleasant environment.

We, Shinryo Corporation strive to realize an even more comfortable and pleasant lifestyle by providing optimal air quality around the world.

As a means to this end, we strive to provide new value through flexible thinking by heightening the technology we have cultivated up until now even further while sincerely responding to the customers.

We will continue to strive to realize a "Freshening World" by pursuing to offer greater value.

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#### Editorial Policy

The intent of this report is to help all of our stakeholders to deepen their understanding of Corporate Social Responsibility (CSR) activities at Shinryo Corporation.

Some of the images in this report differ from current occupational health and safety measures, but all of the images are either images taken after measures were taken for inclusion in this report or images taken before the measures began.

#### Target period

This report focus on FY2021 (October 1, 2020 to September 30, 2021), including some periods before and after.

#### Scope of report

Sustainability Promotion activities of Shinryo Corporation and the Shinryo Group.

Reference guidelines and standards ISO 26000

- 27 Initiatives to Address Priority Subjects
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## Informational Dissemination System Main Publications such as Pamphlets

All activities such as financial and non-financial information		
SHINRYO Report 2022 (Japanese/English)		
Employment information	Comprehensive corporate activities SHINRYO Corporation homepage (Japanese/English) https://www.shinryo.com/en	
Corporate information	Employment Information Employment website https://www.shinryo.com/saiyo/	
	Technology Technology and Services website	
Various technical catalogs	https://www.shinryo.com/tech/ Sustainability Promotion Activities Sustainability Promotion Website https://www.shinryo.com/sustainability/	

## Message from the President



Company Philosophy

- Be fair and straightforward
- Do your best with all your effort
- Have leadership, irrespective of education, age, or nationality.

This Company Philosophy

clearly expresses the Life

our founder Chairperson

Shinryo Corporation was

established to embody

three principles serve as

Corporation and are the

foundation for all thinking,

decision-making and action

the "roots" of Shinryo

of executives.

this philosophy in the business world. These

and Business philosophy of

Masaru Kagami (deceased).



Company Philosophy (in Japanese)

## To Achieve a Sustainable Society

#### Takeshi Kagami

President, Representative Director

#### **Supporting Health and Safety**

The rampant spread of the COVID-19 infection and the worldwide disarray brought by it has lasted longer than anyone could have anticipated. In spite of all of this, society has persevered with amazing strength. Shinryo Corporation will also show the same fortitude by fully executing the last year plan of the 14th Three Year Management Plan throughout fiscal 2022. I believe this will foster tremendous growth of our organization.

Not long ago, Japan thought the construction market would shrink after the Tokyo Olympics and Paralympics and plunge us into a very harsh business environment. However, that did not happen. Urban redevelopment plans are moving forward today after the Tokyo Olympics and Paralympics ended, and markets are thriving. Even in this business environment, the construction industry struggles to increase orders in the current business environment with the growing sense of uncertainty in society. Guiding corporate organizations as society drastically changes will become even more difficult.

During the ongoing chaos caused by this virus, I am strongly aware of the importance of crisis management and flexible business continuity as a corporate group. Shinryo Corporation has considered how to best support the health and safety of its employees, their families, and our many other stakeholders and will continue to take measures to prevent COVID-19 infection at business sites worldwide. In 2021, our headquarters and the Osaka Branch implemented a workplace vaccination program to prevent the spread of the COVID-19. Even though there was a limited supply, we were able to inoculate employees at these two sites. I think this proved greatly beneficial in our fight as a company. We will never let our guard down as we push forward efforts to protect everyone's health and safety.

#### **Management Vision and Sustainability**

I think the importance of seeing through efforts to foster sustainable development of society has grown during these highly unpredictable times.

Shinryo Corporation has defined a Company Philosophy, Management Vision, and Code of Business Conduct. These give shape to the business outlook and provide the core management platform which allows Shinryo to exist. We have clarified the relationship between this corporate spirit and sustainability as the Sustainability Promotion System, which is also being integrated with management.

Sustainability promotion activities are one driving force fostering growth of the Shinryo Corporation. As an environmental engineering company that contributes to society through technology, Shinryo Corporation has participated in the United Nations Global Compact since 2014 and promotes greater sustainability via the concepts of the Sustainable Development Goals (SDGs). In 2020, Shinryo Corporation determined priority subjects (materiality) it hopes to achieve. Shinryo Corporation has four priority subjects: contributions to realize a decarbonized society, contributions to a resilient society, realization of safe and highly efficient work processes, and building of refreshing environments rich with creativity. These materiality issues have been organized by considering global challenges from the impact of global warming to risks of natural disasters and human rights, domestic challenges from a labor shortage in the construction industry to reforms of long working hours, as well as from a perspective of cultivating an ideal corporate climate. In 2021, we took this another step by laying out various action plans and Key Performance Indicators (KPI) to put these SDG initiatives into practice as much as possible (□>P25-26).



#### Challenge of Realizing a Decarbonized Society

In April 2021, the Japanese government announced a target to reduce greenhouse gas emissions 46% by 2030 (compared to 2013) and achieve net zero emissions by 2050 in order to achieve a decarbonized society. The impact of these numerical targets set by government is significant. In light of these goals, Shinryo Corporation set **Priority Subject 1: Contribute to a Decarbonized Society.** This defines our ambitious target of reducing greenhouse gas emissions 50% (Scope 1 and 2) by 2030 and achieving net zero emissions by 2050 (□→P27).

Shinryo Corporation has always striven to realize a sustainable society through its businesses. For example, we contribute to resource saving through energy saving proposals during the design stage and through efficient construction management. We have also advocated activities such as energy-saving proposals during system operation through commissioning. Going back to 2011, Shinryo Corporation executed the Energy Saving Ecoproject to achieve extensive energy savings at its Headquarters building, proving that proper renovations can enhance energy savings even in a fairly old building.

We will continue to carry out such initiatives through businesses. Besides those initiatives, Shinryo Corporation always offers proposals for design that will help reduce the greenhouse gas emissions of our clients—or Scope 3 emissions.

We are currently focusing our efforts on restructuring the Research and Development Center in Tsukuba City, Ibaraki as a research and development site for decarbonization technology. I think this will cultivate even more leading-edge technology in the future which will in turn bring decarbonization technology to society. The new Research and Development Center will take on the challenge of achieving carbon neutrality (net zero) of research and development activities by 2030 ( $\square$ P29-30). This is an extremely aggressive target. However, looking back 65 years to around when the Shinryo Corporation was founded, we can see a time when air conditioning system were still rare and no one thought every building would install air conditioning systems. Today, it would be harder to find a building without an air conditioning system. Decarbonization may be essentially the same. Right now, the targets to realize a decarbonized society seem unattainable. However, I believe the Shinryo Corporation cannot shy away from this bold challenge.

## Message from the President

#### **To Address Priority Issues**

Shinryo Corporation will also actively strive to address its other priority issues.

Let us look at Priority Subject 2: Contribute to a Resilient Society. We will support activities by recognizing technology through our internal commendation program. I hope we can raise even greater awareness internally about the important work the Shinryo Corporation does to support society through technology.

Shinryo Corporation values construction sites most of all. We will expand our activities on construction sites through Priority Subject 3: Realize Safe and Highly Efficient Work Processes. Shinryo Corporation will aim to achieve on-site operations that are able to improve quality, prevent technical trouble, and provide safety for everyone working there while also rationalizing and enhancing productivity on construction sites.

The robots to draw construction blueprints developed by Shinryo Corporation are one example of these initiatives (E>P48). The use of new technologies is critical to further rationalize, mechanize, and digitalize construction sites. The use of leading technology will also help heighten the appeal of construction sites. Moreover, we will support skill evaluations of everyone at our partner companies working on construction sites and promote broader use of the Construction Career Up System to sustain the highest level of construction quality.

In regards to Priority Subject 4: Build Refreshing Environments Rich with Creativity, Shinryo Corporation will fully execute the 14th Three Year Management Plan in

#### Road Map to Realize a Decarbonized Society ( P27)

addition to work style reforms for the purpose of realizing the ideal work style. We will aim to heighten employee satisfaction as the overall indicator. We are committed to compliance for highly transparent and fair operating practices and view it as the most important management challenge.

#### Four Priority SDG Subjects ( P24)

Contribute to a Decarbonized Society



Realize Safe and Highly Efficient Work Processes



Contribute to a Resilient Society



# **Build Refreshing Environments**

**Rich with Creativity** 



2050 Net Zero Greenhouse Gas Emissions Leverage technologies that use Labor Savings on Construction Sites renewable energy 2030 Promotion of BIM and a Digital Net Zero Greenhouse Gas Emissions from Research Transformation 2040 and Development Activities After FY 2017 Acceleration of Research and Development **Restructuring of Research** of Decarbonization Technologies and Development Center Identification and Mitigation of 2016-2024 **Greenhouse Gas Emissions** Work Style Reform 2010-2019 2020 Renovations to Save Energy at Old **Headquarters Building** Promotion of Environmental Management Systems (EMS) Propose energy savings to customers, improve 2010 on-site productivity, and promote the 3Rs Base year: FY 2009

#### Work Style Reform - Challenge 45

Work style reform is a major challenge of Priority Subject 4.

Work style reforms are prone to focusing on the reduction of long working hours, but the true purpose is to achieve the ideal work style for Shinryo Corporation. This creates a refreshing and open corporate climate which fosters a workplace of pride, a sense of accomplishment, and growth.

These reforms need to achieve a fulfilling work-life balance and work style driving maximum results in a limited amount of time. As we strive toward this goal, we must fully adapt to comply with the amended Labor Standards Act that will go into effect in April 2024 in the construction industry.

Shinryo Corporation began its work style reform initiatives in 2016. I think the Refreshing Work Style Project has raised awareness throughout the organization about work style reforms, encouraged employees to take paid leave, and built an atmosphere where people can quickly wrap up work Even as this corporate climate becomes more common, we still have been unable to get over that last hump to achieve our overtime reduction target. Therefore, we have stepped up the level of our work style reforms in 2021. Challenge 45 has been launched as an initiative aiming to limit monthly overtime to 45 hours. The only question is how many months the Challenge 45 initiative can realize the goal of no more than 45 hours of overtime.

The purpose of the Challenge 45 is to analyze and address the reasons for this constant level of overtime.

By identifying and resolving each and every one of these problems, I hope we can succeed in limiting the amount of overtime to 45 hours throughout the Shinryo Corporation.

The key to overcoming this challenge is gaining sufficient experience in a short amount of time with the aim to realize the ideal work style for the Shinryo Corporation, which will allow every person to have a fulfilling balance between private and professional life (C>P51-52).

#### **To Achieve Sustainability**

Modern society has a greater interest in decarbonization thanks to the SDGs.

A generation where companies earn their reputation by the work done to better society is a fantastic one. The company philosophy of the Shinryo Corporation has a phrase, "Do your best with all your effort." We will do our best with all of our effort through our business activities to achieve the SDGs and realize a decarbonized society, which I hope will have the power to support society. We will continue to work to reflect the feedback we receive from all of our stakeholders in all businesses activities in order to become a company specifically chosen by customers. I ask for your ongoing support and guidance in the future as well.

#### United Nations Global Compact and Sustainable Development Goals (SDGs)

Shinryo Corporation refers to the concepts of the United Nations Global Compact and Sustainable Development Goals (SDGs) in its sustainability promotion activities and advances sustainability promotion management that has adopted the ten principles in four areas (human rights, labor, the environment, and anti-corruption) of the United Nations Global Compact as well as the concepts in the 17 SDGs targets.

These efforts demonstrate the will of Shinryo Corporation to grow as a company earning trust from the international society as it focuses its strengths into the provision of technology overseas.

**WE SUPPORT** 



United Nations Global Compact September 2014



Sustainable Development Goals (SDGs)

#### **Together with Development Worldwide**

Shinryo Corporation will always strive to Create a Freshening World. The business fields in which Shinryo Corporation operates to build this world span the globe. These efforts also contribute greatly to achieving the central, transformative promise of the SDGs to leave no one behind. Our work to build and maintain the air conditioning and mechanical ventilation system for the National Centre for Infectious Diseases, which is on the front lines of the fight to tackle the COVID-19 pandemic, is one example of this in Singapore. Shinryo Corporation technology not only helps build a resilient society in the face of the pandemic but also helps provide safe and secure lifestyles to people. In Indonesia, we are promoting a new work style with reference to the work style reforms in Japan. These reforms pursue a work style that drives maximum results in a limited amount of time rather than simply reducing the number of working hours to offer a fulfilling work-life balance. This effort also contributes to building refreshing environments rich with creativity. The work done by the Shinryo Corporation in each region around the world fosters our growth together with the development of a sustainable society and world.

# Living Up to the Expectations and Trust in a Generation of Sustainability

This is a generation of sustainability, which will transform humanity as much as the industrial and digital revolutions. Our world is seeing the rise of many social issues from climate change to food shortages. Companies must carry out initiatives to address these social issues and need to contribute to the development of a sustainable society through business. As expectations grow for new technologies to address these problems, I think these times make it essential to incorporate ideas of sustainability in sales strategies. I believe this means an era has come for Shinryo Corporation to capitalize on the expertise it has gained to not only build a single building but work with the community where it stands to really consider its entire life cycle. Shinryo Corporation has the duty to use technology in the ongoing search to find the best way to build simple ideal systems with tremendous energy efficiency to help our customers overcome these challenges, while always sincerely living up to their unwavering expectations and trust. I hope our business activities will make the Shinryo Corporation a company which works together with its customers to create social value.



#### Yasunori Abe

Representative Director, Executive Vice President General Manager, Global Finance Division & in charge of Overseas Business, Group Management & New Work Style



Takeo Yamaguchi

Director, Senior Managing Executive Officer General Manager, Marketing Supervision Division



#### Tetsuro Kochiya

Representative Director, Executive Vice President General Manager, Technical Supervision Division & in charge of Group Health and Safety & Compliance & the Environment

# Support of Social Infrastructure to Contribute to the Realization of a Decarbonized Society

The modern construction industry faces challenges from the compliance with regulations about overtime hours, mandated by the amended Labor Standards Act that will go into effect in April 2024, in the construction industry to a labor shortage on construction sites. The solution is to pursue dramatically higher productivity on construction sites while building safe and attractive workplaces. The 14th Three Year Management Plan rolled out in 2019 introduces various ICT tools and uses BIM and a variety of other data in addition to providing active logistical support from off site. These measures aim to greatly enhance productivity on construction sites. In particular, the advancement of BIM and other digital technology has the potential to completely revolutionize the way things are done on construction sites. I believe this directly ties to approaches for addressing the priority subjects of sustainability, which are to realize safe and highly efficient work processes and build refreshing environments rich with creativity. I hope Shinryo Corporation will continue to foster sustainable growth as an attractive corporate group by supporting social infrastructure and helping realize a decarbonized society through its business activities.



#### Katsuhiko Yakita

Director, Managing Executive Officer

General Manager, Corporate Strategy & Planning Division, Corporate Strategy & Planning Department, & Real Estate Development Department & in charge of BPR Promotion, Sustainability Promotion & DX Promotion

#### **Unity is Strength**

The most important topics are the Key Performance Indicators (KPI) set to accomplish the priority SDG subjects. Shinryo Corporation integrates the SDGs and management by taking on these activities to achieve our targets. We will contribute to the realization of a sustainable society and do everything in our power to become the chosen corporate group of customers and society. Through these efforts, we will also enhance corporate value and the sense of employee satisfaction and engagement through the strength found in the unity of work to accomplish common goals. I want this to become a virtuous cycle which drives our corporate growth.

The important key to addressing our priority issues is the use of digital technologies in all operational processes. The essential purpose of using digital technologies is to go beyond the convenience found in the shift from analog to digital mediums in order to achieve seamless cooperation between relevant people and organizations and in turn to create new value. The future will most definitely generate new value worldwide. Through the strength of unity, Shinryo Corporation will also create amazing new value to provide to society.

## Aiming to Create a Freshening World

This section introduces the history of Shinryo Corporation, which was founded in 1956, that has been cultivated to its efforts in developing people toward achieving the management vision to "Create a Freshening World."

#### 1956-1968

#### Founding and Trajectory

#### 1956

- Established our Head Office at 45 Nishikubo Tomoecho, Minato-ku, Tokyo and founded our company with five million yen in capital
- Received our first order for cooling equipment work at the Kaori cafe and restaurant

#### 1957

- Received an order for Shin- Otemachi Building, the largest building in Japan at that time, and established the foundation of our company • Received an order for full retrofitting of
- construction equipment at the Fuji Tsushinki Manufacturing Kawasaki plant
- 1958
- Opened the Osaka Office
- 1960
- Moved Headquarters (2-4, Yotsuya, Shinjuku-ku, Tokyo)
- Completed the Training Dormitory "Kofu Dormitory
- 1961
- Opened the Nagoya Office
- 1964 Established the Construction Division and Equipment Division
- 1965
- Developed and installed Japan's first "3-pipe Air-conditioning System" in the head office of Nippon Fudosan Bank
- 1966 Opened the Hiroshima Office
- 1967
- Opened the Sendai Office

#### 1968

- Deployed three engineers on a fact-finding mission in the U.S.A.
- Introduced a skyscraper building application and refrigerator computer control at the World Trade Center Building

#### 1969-1977

#### **Enhancement of Division-based Organization System and Expansion** to New Business Regions

- 1969
- Opened the Fukuoka Office
- Received an order to install a district heating and cooling system at the Senri New Town Chuo District Center
- Received an order to install a district heating and cooling system in Shinjuku Fukutoshin District 1970
- Completed the new headquarters building
- Established the industry's first research center for air conditioning technology
   Established the Nuclear Power Plant Department to enter the energy plant industry for nuclear
   Department power use
- 1971
- Opened the Chugoku Branch
- 1972 Received the first order for full-fledged overseas work at the Vietnam Cho-Ray Hospital
- Opened the Sapporo Office
- 1975
- Opened the Tohoku Branch
- 1976
- Received the first order for aquarium equipment renovations of the Izu Mito Natural Aquarium (currently Izu Mito Sea Paradise) 1977
- Opened the Maizuru Plant
  Received order for the first phase construction of the Kwun Tong Hong Kong Subway Line

#### 1978-1987

#### **Evolution of Japanese Business and Expansion of Overseas Business** 1978

 Opened the Hong Kong Branch as a base for overseas expansion

#### 1979

- Established overseas department as a major pillar of business for overseas expansion • Acquired the Level 1 Plumbing Registration from
- the Ministry of Construction (currently the Ministry of Land, Infrastructure, Transport and Tourism)
- Developed the NAIAS sludge atmospheric flotation concentrator

#### 1982

- Established a local company in Hong Kong (SHINRYO (HONG KONG) LTD.)
- 1983
- Opened the Singapore Branch
  Established a local company in Malaysia SHINRYO (MALAYSIA) SDN. BHD.
- 1986

• Established a local company in Thailand (THAI SHINRYO LTD.)

- 1987
- Established a local company in Taiwan (TAIWAN SHINRYO CO., LTD.)



Cho-Ray Hospital Air conditioning and sanitation systems (Vietnam)



n-Otemachi Building Air conditioning system



Shinjuku Fukutoshin District District Heating and Cooling System

1970~

#### 1980~



H

З an

Established 1956

1960~

「あらん限りの誠実を尽くせ 「正しからざることによするな 一学歴年今を問わない 実力ある者が指揮を 社 是

**Company Philosophy** The Company Philosophy clearly expresses the life philosophy and business philosophy of our founder Chairperson Masaru Kagami (deceased).

れ



Initial Meeting to Establish Shinryo Corporation



The First Members Training at the Takamatsu Dormitory



Enhanced the organization by adopting a division-based organization system. Authority was given to each department for the purpose of teaching junior employees



Completed the headquarters building in Yotsuya located in Shinjuku district. Accelerated autonomy as an organization



1970 Established the industry's first research center (Osaki, Shinagawaku, Tokyo)

#### 1988-1997

#### New Mission and Restructuring of **Core Businesses**

#### 1990

- Opened the Research and Development Center in Tsukuba Academic Town in Tsukuba City, Ibaraki
  Established a local company in the Philippines (SHINRYO (PHILIPPINES) CO., INC.)
- Received an order from THE LANDMARK TOWER YOKOHAMA

#### 1992

- Opened the Technical Supervision Department and Safety Supervision Department
   Passing of Founder Chairperson Masaru Kagami

#### 1994

Established a local company in Indonesia (PT. SHINRYO INDONESIA)

#### 1995

 Received an order for the first overseas district cooling system at the Kuala Lumpur International Airport



Tokvo Dome Air conditioning System



The Hong Kong and Shanghai Banking Corporation Limited, HSBC Main Building

#### 1998-2008

#### **Establishment of Advanced Technology Regions**

#### 1998

- Acquired the ISO 9000s certification
- Began development of numerical fluid analysis technology using super computers • Received an order from the Okinawa Churaumi
- Aguarium 2001
- Acquired ISO 14001 certification
- Received an order for a district heating and cooling system in the Marunouchi District 2002
- Received an order for the Sharp Corporation Kameyama Factory
- 2003
- Released the 3D-CAD "S-CAD" working drawing CAD for construction equipment 2005
- Opened the Middle East (Dubai) Branch 2007
- Established a local company in Vietnam (SHINRYO VIETNAM CORPORATION)
  Opened the Abu Dhabi Branch
- 2008
- Registered the Research and Development Center as a Certified Environmental Survey and Odor Measurement Service

#### 2009 to Present

#### Perseverance and Organizational **Development to Expand Business Regions**

#### 2009

- Started renovations of the headquarters building (energy saving Eco-project at the headquarters building) 2010
- Established the Control & Instrument Engineering Division
- 2012
- Commemorated for the long-time certification of the environmental management system • Opened the Working Drawing Center
- Developed the Space Scanning System using 3D technology
- 2014

2015

- Drafted the "Create a Freshening World"
- management vision Established the CSR Promotion Division and
- Compliance Promotion Division Introduced the overseas practical dispatch
- system and the overseas short term training system for new employees

History of Shinryo Corporation

- Began on-site training for engineers from overseas 2017
- Standardized an English logo
- 2018
- Established a local company in India (SHINRYO SUVIDHA ENGINEERS INDIA PVT. LTD.) 2020
- Moved Headquarters (1-6-1, Yotsuya, Shinjuku-ku, Tokyo)



Petronas Penapisan (Melaka) Sdn Bhd Cogeneration Plant Plant facilities (Malaysia)



THAI KYOWA BIOTECHNOLOGIES CO., LTD. Plant facilities/civil engineering and construction (Thailand)

2010~



Opened the Research and Development Center (Tsukuba City, Ibaraki)



1992 Passing of Founder Chairperson Masaru Kagami

THE LANDMARK TOWER YOKOHAMA Air conditioning System



#### 2006

Moved the Kofu Dormitory to Yokohama



The Kofu Dormitory is used as a facility for overall training in addition to new employee training and education



2015 Start of Japan Invitation Program for Overseas Group Companies



2016 Start of Shinryo Group-wide New Employee Traini SHINRYO Report 2022 10

Sharp Corporation Kameyama Factory Air conditioning System



The Venetian Macao Resor Air conditioning/District Heating and Cooling system (Macau)

2000~





#### **Corporate Profile**

## **Corporate Information**

Company Name	SHINRYO CORPORATION
Headquarters Address	1-6-1, Yotsuya, Shinjuku-ku, Tokyo
Date of Establishment	February 23, 1956
Number of Employees (As of September 2021)	2,251 people (non-consolidated) 5,453 people (including Group companies)
Capital	3.5 billion yen

#### Construction Business License (Japan) (As of January 2022)

License Number	(Special 1) No. 3447 issued by Minister of Land, Infrastructure, Transport and Tourism
Date of License	March 11, 2020
Licensed business	Plumbing, Electrical, Machine and Equipment Installation, Building, Civil Engineering, Steel Structure, Interior Finishing, Water and Sewerage Facilities, Telecommunication, Scaffolding, Earthwork and Concrete, Sanitation Facilities
License Number	(Ordinary 1) No. 3447 issued by Minister of Land, Infrastructure, Transport and Tourism
Date of License	March 11, 2020
Licensed Business	Fire Protection Facilities

#### Main Registered Business (Japan)

Senior registered architect office

Registration Number	No.46232 issued by Governor of Tokyo
Date of Registry	April 10, 2021

#### List of qualifiers (Japan

Name of certification Numb	er of people
Professional Engineer Japan (Engineering Management)	3
Professional Engineer Japan (Environmental Engineering)	44
Professional Engineer Japan (Mechanical Engineering)	3
First-Class Plumbing Work Operation and Management Engineer	1,177
First-Class Electric Works Execution Manager	135
First-Class Building Operation and Management Engineer	17
First-Class Civil Engineering Works Execution Managing Engineer	10
1st class Qualified Certified Electrician	31
3rd Class Electric Works Specialist	31
Class A Fire Defense Equipment Officer	336
Class B Fire Defense Equipment Officer	23
1st-class Kenchikushi (Architect)	42
Qualified Person for Energy Management	124
Building Facilities Diagnostic Technician	97
Building Mechanical and Electrical Engineer	248
The First Level Instrumentation Engineer	379
Professional Engineer (CxPE: Commissioning Professional Engineer)	4

## List of Executives

President, Representative Director	Takeshi Kagami	
Representative Directors	Yasunori Abe Tetsuro Kochiya	
Directors	Takeo Yamaguchi Katsuhiko Yakita Sayaka Kagami Hideaki Fujizuka	Non-Executive Director Outside Director
Audit & Supervisory Board Member	Haruaki Kotani	
Outside Audit & Supervisory Board	Toshihito Furuya	
Member	Koichi Kubo	
President & Chief Executive Officer	Takeshi Kagami*	
Executive Vice Presidents	Yasunori Abe*	General Manager, Global Finance Division & in charge of Overseas Business, Group Management & New Work Style
	Testuro Kochiya*	General Manager, Technical Supervision Division & in charge of Group Health and Safety, & Compliance
Senior Managing Executive Officer	Takeo Yamaguchi*	General Manager, Marketing Supervision Division
Managing Executive Officers	Takeshi Egi	General Manager, Osaka Branch & in charge of Western Japan
	Takao Watanabe	General Manager, Tokyo Metropolitan Area Division & in charge of Eastern Japan
	Koichi Kaji	General Manager, Nuclear Power Plant Division
	Katsuhiko Yakita*	General Manager, Corporate Strategy & Planning Division, & Corporate Strategy & Planning Department, & Real Estate Development Department & in charge of BPR Promotion, Sustainability Promotion & DX Promotion
	Tatsuji Yoshimura	General Manager, Asia Business Division
	Kazuto Inabe	General Manager, Urban Environment Division
Executive Officers	Hideki Hagiwara	President & Representative Director, Shinryo Technical Service Corporation
	Satoru Narisawa	General Manager, Nagoya Branch
	Takuji Fujisawa	General Manager, Air Conditioning Equipment Division
	Yukitoshi Maeda	General Manager, Yokohama Branch
	Hideki Furumoto	General Manager, Corporate Communication Department
	Naoki Uchiyama	In charge of Sales Promotion, Marketing Supervision Division
	Koji Murakami	General Manager, Marunouchi Branch
	Masahiko Kitabayashi	Deputy General Manager, Tokyo Metropolitan Area Division
	Hiromitsu Fujioka	Deputy General Manager, Tokyo Metropolitan Area Division
	Hideyuki Nagasawa	General Manager, Kyushu Branch

\*Executive Officers also acting as Directors

## **Organizational Chart**



## **Overview of the Shinryo Group**

The Shinryo Group provides people-friendly and environmentally-friendly air conditioning, water-supply and drainage sanitation, electrical systems, city-friendly and community-friendly district Heating and Cooling Systems, safe and secure plant systems, and comprehensive information systems that support energy savings.

Overseas, the Group also delivers a "Freshening World" by setting up bases primarily in Asia and the Middle East.



#### Number of Companies

Shinryo Corporation

7 Japanese Group Companies

9 Overseas Local Companies



#### **Business Performance Trends**

#### Orders received



#### Net sales



#### **Operating income**



**Business Network** 

Net sales

Number of Employees



64 Japanese bases 20 overseas bases



183.9 billion yen (non-consolidated)



#### SHINRYO CORPORATION

Design, construction and maintenance of building system work Shinryo Technical Service Corporation

Design, construction and maintenance of plumbing, drainage and sanitary service work Shiroquchi Co., Ltd.

Design, construction and maintenance of electric service work Daiei Denki Co., Ltd.

Design, manufacture, sales, installation and aftercare services of pumps

Shinryo Kougyo LTD.

Development of three-dimensional CAD/FM systems

SYSPRO CORPORATION

International tourist hotel

Akita Castle Hotel Co., Ltd.

Deployment and outsourcing of human resources Global Staff Co., Ltd.

Design, construction and maintenance of buildings and civil engineering/industrial production service work

SHINRYO (HONG KONG) LTD.

SHINRYO TECHNICAL SERVICES LTD.

TAIWAN SHINRYO CO., LTD.

SHINRYO (PHILIPPINES) CO., INC.

THAI SHINRYO LTD.

SHINRYO (MALAYSIA) SDN. BHD.

PT.SHINRYO INDONESIA

SHINRYO VIETNAM CORPORATION

SHINRYO SUVIDHA ENGINEERS INDIA PVT. LTD.

#### Kanto Area

- Shinryo Corporation Headquarters
- Shinryo Corporation 12 bases such as branches and offices
- 🔵 6 Group Companies

#### Ordinary profit



#### Net assets



## **Business Fields**

The features of business at Shinryo Corporation are the state-of-the-art construction technology and track record accumulated in Japan and overseas up until now. Our businesses create people-friendly and environmentally-friendly air conditioning, water-supply and drainage sanitation, electrical systems, and leading-edge production environments in addition to city-friendly and community-friendly district heating and cooling systems and comprehensive information systems that support energy savings. Shinryo Corporation will earn the trust of customers and meet their expectations with technology, proven success and sincerity.



#### **Business Items**

Design and construction of various building services

#### Environmental service work

Air conditioning and mechanical ventilation systems/industrial air conditioning and mechanical ventilation systems/clean room systems/dry room systems/bio-hazard facilities

#### Water-supply, drainage and sanitation

Water supply and hot water supply systems/ soil and waste drainage systems/gas supply systems/kitchen equipment systems

#### Urban utility service work

District heating and cooling systems/energy supply systems

#### **Cogeneration systems**

Power generation system/heat recovery system

#### Electric systems

Power reception and transformer systems/ main and sub main power distribution systems/lighting and small power systems/ extra low voltage systems/lightning protection systems/power generation systems

#### Automatic control service work

Automatic control systems/building management systems/industrial automation systems

#### **Comprehensive information systems**

Various control and management systems for utility plant facilities, industrial production facilities, building facilities and etc.

#### **Firefighting service work**

Automatic fire alarm systems/smoke purge and smoke extraction systems/evacuation guidance systems/indoor and outdoor fire hydrant system, sprinkler system and other types of fire extinguishing systems

#### Power plant service work

Ventilation and air-conditioning systems for nuclear power and thermal power plants/ special filtering systems/waste treatment systems

#### Industrial production service work

Pharmaceutical and food plant facilities/ petroleum-related facilities/other plant facilities

#### Special service work

Aquarium facilities/pool facilities/weather simulation facilities/various environmental reliability testing systems/freezing and refrigerating systems/ultra-low temperature and high accuracy temperature control systems

#### Design and construction of building

Clean rooms/plant buildings/interior finishing work/associated construction work for building services/general building facilities

#### Sales of air conditioning equipment

Air conditioner and other heating and cooling products/fans and blowers/sanitary ware/ other products related to air conditioning and ventilation



**HVAC systems** 



District heating and cooling systems



**Electric systems** 



**Plant facilities** 



**Plumbing and sanitation** 



Cogeneration systems





## **Construction Track Record**



#### Offices, hotels, and district heating and cooling systems



Tokiwabashi Tower (Chiyoda-ku, Tokyo)



Dai Nagoya Building (Nagoya City, Aichi Prefecture)



YOKOHAMA (Yokohama City, Kanagawa Prefecture)



System

Palace Hotel Tokyo · Palace Building (Chiyoda-ku, Tokyo)

Air conditioning System



**Mizuho Marunouchi Tower** (Chiyoda-ku, Tokyo)

System

Air conditioning System



Tokyo Sky Tree<sup>®</sup> District DHC (Sumida-ku, Tokyo)

#### District Heating and Cooling Syster

#### Features of the sc-brain Comprehensive Information System and Main Delivery Record

sc-brain is a comprehensive information system to realize high efficiency operation and energy savings in systems by configuring operational support features to assist the operation of system equipment as well as data management features to analyze energy consumption trends. As a highly universal and easy-to-use system, sc-brain is used in facilities from office buildings and factories to district heating and cooling plants.

#### [Main Delivery Record]

- Sapporo Station area district heating and cooling systems (Sapporo City, Hokkaido)
- Narita International Airport central heating and cooling plant (Narita City, Chiba)
- Adachi Metropolitan Taxation Office (Adachi-ku, Tokyo)
- Marunouchi Center Building/Shin-Marunouchi Center Building (Chiyoda-ku, Tokyo)
- Hisaya-odori Nagoya Municipal Subway Station (Nagoya City, Aichi)
- Osaka Station area district heating and cooling systems (Osaka City, Osaka)
- Japan Post Shin-Osaka Post Office (Osaka City, Osaka)
- Fukuoka City Chiyo area district heating and cooling systems (Fukuoka City, Fukuoka)



Otemachi, Marunouchi 1-chome & 2-chome and Yurakucho Districts DHC (Chiyoda-ku, Tokyo)

District Heating and Cooling System



Minato Mirai 21 Central District DHC (Yokohama City, Kanagawa Prefecture)

District Heating and Cooling System

## Construction track record in districts heating supply operations throughout Japan

51 (Share: 38%)

#### Construction/delivery record/national share

- District heating and cooling systems: 68 (Share: 51%)
- District with sc-brain:

#### Hokkaido Area

District heating and cooling systems: 2 District with sc-brain: 1

#### Chubu/Hokushinetsu Area

District heating and cooling systems: 8 (Share: 66%) District with sc-brain: 5 (Share: 45%)

#### Kansai Area

District heating and cooling systems: 7 District with sc-brain: 4

#### Kyushu Area

District heating and cooling systems: 1 District with sc-brain: 1

#### Kanto Area

District heating and cooling systems: 50 (Share: 60%) District with sc-brain: 40 (Share: 48%)





Kiyohara Smart Energy Center (Utsunomiya City, Tochigi Prefecture)

Civil Engineering and Instruction of Plant Facilities





TOCHIGI SPORTS PARK EAST AREA (Utsunomiya City, Tochigi Prefecture)

Air Conditioning and Sanitation System



(Toshima-ku, Tokyo)

Yokohama City Hall (Yokohama City, Kanagawa Prefecture) Air Conditioning





Kochi Prefectural Ashizuri Aquarium (Tosashimizu City, Kochi Prefecture)

Rearing System



IUHW Narita Hospital (Narita City, Chiba)

Air Conditioning and Sanitation System



Shiseido Nasu Factory (Otawara City, Tochigi Prefecture)

Air Conditioning System



Takasaki City Theatre (Takasaki City, Gunma Prefecture)

Air Conditioning System





Marina Bay Sands Integrated Resort (Singapore)



ciliti



National Centre for Infectious Diseases (Singapore)

Air Conditioning and Mechanical Ventilation Syste



Jewel Changi Airport (Singapore)

Air Conditioning and Mechanical Ventilation Syste



Hong Kong MTRC Airport Express Hong Kong Station (Hong Kong)

Air Conditioning, Sanitation, Firefighting and Electric Systems



Petronas Penapisan (Melaka) Sdn Bhd Cogeneration Plant (Malaysia)



CO., LTD. (Thailand)

Plant Facilities/Civil Engineering and Construction (Air Conditioning, Sanitation, Firefighting, Electric



District Cooling Plant for the New Abu Dhabi International Airport Terminal (United Arab Emirates)

System

## Initiatives at the Research and Development Center

Shinryo Corporation established the industry's first research center in Shinagawa-ku, Tokyo in 1970 with the aim to Create a Freshening World. In 1990, we opened the largest facility in the industry, the Research and Development Center, in Tsukuba City, Ibaraki.

#### Facility and high-precision analysis technologies for large scale experiments

The Research and Development Center has facilities such as a large space to conduct large-scale experiments, sufficient utilities, and high-performance HPC servers able to run highly accurate simulations. Engineers can verify the performance of systems by running large-scale simulations before starting construction.

In addition, the Research and Development Center provides high-precision analysis technologies through analysis instruments such as various chromatography. To maintain analysis accuracy, the Research and Development Center has been registered as a measurement certification business and



Full View of the Research and Development Center

has built a management system for analysis technologies and measurement equipment.

#### Registration as a measurement certification business

Business classification	Register number	Date of registration	
Concentration (in the atmosphere, water, and soil)	Ibaraki Prefecture No. 68	June 2, 2008	
Sound pressure level	Ibaraki Prefecture No. 28	February 20, 2009	
	Ibaraki Drofosturo No. 20	February 20, 2000	

Oscillating acceleration level Ibaraki Prefecture No. 20 February 20, 2009





Large-scale Experiment Space



Environment Simulation Room

Anechoic Room



Chemical Experiment Laboratory

#### **Open innovation**

#### Cooperative research

Shinryo Corporation cooperates in research with many different universities, public research institutes and companies to bring about the highest level of research success. By leveraging mutual technology and know-how, we are building a system to broadly expand debate and ideas.

#### Numerous of visitors

People from all walks of life, from customers to students, come to tour the Research and Development Center aimed at an open laboratory. Researchers provide detailed explanations about the research and development themes using demonstration equipment and other such tools. The Research and Development Center also acts as a technical showroom that offers visitors a look and experience into actual research and development. We offered tours online in fiscal 2021.



#### Shift in the number of visitors



#### Promotion System for Research and Development

The Research and Development Center is furthering research and development with particular focus on four research regions based on its seven fundamental technologies. This section introduces some of the new technologies and value created by the Research and Development Center.



Research into accurate measurement technology, corrosion diagnosis technology for construction equipment as well as measurement and control technology for noise and vibrations in equipment on construction sites.

#### Research is underway for technology to run equipment optimally based on Building Information Modeling (BIM) and operational data, indoor environmental predictions

Information Modeling (BIM) and operational data, indoor environmental predictions through Computational Fluid Dynamics (CFD).

## Examples of Creating New Technology and Value\*

#### Formaldehyde Removal System

The airflow control technology "U flow system<sup>®</sup>" and the removal device "MediECO<sup>®</sup>-FA" are technologies developed for formaldehyde control in hospitals. The system combining the two technologies realizes a safe working environment and an energy-saving ventilation and air conditioning system.





Airflow control technology "U flow system®" Removal device "MediECO®-FA'

#### Corro-Guard<sup>®</sup> Non-chemical Corrosion Prevention System

Corro-Guard<sup>®</sup> lengthens the lifespan of piping through technology to reduce the risk of occurrence of local corrosion and monitor the level of corrosion. This system improves the water quality with an ion exchange process without the introduction of rust inhibitors.





Without introduction of the corrosion prevention system

With introduction of the corrosion prevention system

\*Please see the Shinryo Corporation homepage for more detailed information. https://www.shinryo.com/corp/rdcenter.html

#### Optimal Heat Source Control Systems

These optimal heat source control systems achieve the optimal operation of equipment by using design and operational know-how and energy simulation tools for heat source systems to derive operational conditions with the minimal amount of energy consumption.



#### Space Scanning System

A 3D laser scanner measures real spaces and creates BIM models. By automating the plan for setting up scanners, this system can create highly accurate models more easily than ever before.



BIM model



Illustration of Scanner Layout

## **Sustainability Promotion Management**

#### Toward the development of a sustainable society

Shinryo Corporation started CSR activities by establishing the CSR Promotion Division in 2014. The CSR Promotion Division was reformed into the Sustainability Promotion Division to expand these activities in April 2019. In October 2019, we integrated activity promotion operations with the Corporate Strategy & Planning Division to strengthen strategic activities in accordance with management policies based on the incorporation of the Sustainable Development Goals (SDGs) into management as well as the growing importance of factors such as stakeholder communication.

In 2020, we determined priority SDG subjects (materiality) to engage in through our business activities to tackle social issues. In 2021, we formulated Key Performance Indicators (KPI) to enhance the effectiveness of our work in overcoming these challenges (CP25-26). In the future, Shinryo Corporation will promote more specific activities with the hope of better integrating SDGs into management.



# Creating a Freshening World and Contributing to the Development of a Sustainable Society



Sustainability Promotion System

#### Priority Subjects (Materiality)

In 2020, Shinryo Corporation incorporated ISO 26000 and Sustainable Development Goal (SDG) concepts as a central part the 14th Three Year Management Plan. While referencing feedback from the management team and outside experts, we also determine four priority SDG subjects (materiality). There are six Sustainability Development Goals of particular importance: Goal 7. Affordable and Clean Energy, Goal 8. Decent Work and Economic Growth, Goal 9. Industry, Innovation and Infrastructure, Goal 11. Sustainable Cities and Communities, Goal 13. Climate Action, and Goal 16. Peace, Justice and Strong Institutions. These priority subjects not only define important social responsibilities for Shinryo Corporation to fulfill in order to realize a decarbonized and resilient society but also include goals to better construction sites and provide refreshing environments unique to Shinryo Corporation.

We will continue to contribute to a sustainable society by further integrating the SDGs and management while spearheading reforms at appropriate times, such as when updating medium-term management plans.

#### **Review Process**



#### Sustainability Promotion System



#### **Initiatives to Address Priority SDG Subjects**

Shinryo Corporation set Key Performance Indicators (KPI) in 2021 to tackle the priority subjects (materiality) identified in 2020. These KPI will be fully rolled out throughout the Shinryo Corporation in 2022. The KPI that we have set for the initial fiscal year aim to build upon the activities already underway. Shinryo Corporation will raise awareness and ensure full participation in these efforts by working to bring understanding among employees about the ongoing initiatives to address SDG issues.

Priority Subjects (Materiality)	Policy	Action Plan	
Priority Subject 1	Reduce greenhouse gas emissions from business activities	<ul> <li>Reduce Scope 1 direct greenhouse gas emissions</li> <li>Reduce Scope 2 indirect emissions associated with energy sources</li> </ul>	
Contribute to a Decarbonized Society		Promote designs and proposals to reduce greenhouse gas emissions from Scope 3 Category 11 emissions (use of sold products)	
	Strive to employ the latest energy- saving technologies	Broadly promote energy-saving technology throughout the society by soliciting entries for external energy-saving commendations and other such initiatives	
Priority Subject 2 Contribute to a Resilient Society	Contribute to building resilient social infrastructure	<ul> <li>Provide resilient, efficient, and high-quality equipment and systems</li> <li>Recognize technology through an internal commendation program (President's Awards)</li> </ul>	
	Improve productivity on construction sites	Streamline construction sites and promote a digital transformation	
<b>Priority Subject 3</b> Realize Safe and Highly	Provide high quality equipment and systems	Improve quality and prevent technical issues through construction carried out according to a quality manual	
Efficient Work Processes	Manage safe and work-friendly constructions sites	Prevent human error by strictly following operational procedures that incorporate risk management	
	Improve fair evaluations of engineers and construction quality	Promote the expansion of the construction career up system	
<b>Priority Subject 4</b> Build Refreshing Environments Rich with Creativity	<ul> <li>Achieve the ideal work style for the Shinryo Corporation</li> <li>Work-friendly environment with a refreshing and open corporate climate</li> <li>Pride, satisfaction, a sense of accomplishment, and growth</li> <li>A fulfilling work-life balance</li> <li>A work style driving maximum results in a limited amount of time</li> </ul>	<ul> <li>Fully execute the medium- to long-term plans and achieve the three-year vision</li> <li>Advocate the work style reforms promoted in Priority Subject 4 as one initiative <ul> <li>Refreshing Work Style Project</li> <li>Challenge 45</li> </ul> </li> </ul>	
	Comprehensive Compliance	Implement comprehensive compliance education	

#### **KPI Decision Making Process**

Shinryo Corporation reviewed KPI together with the 14th Three-Year Management Plan and its internal promotion targets based on the various goals advocated throughout society and the industry at large.

As the Shinryo Corporation furthers activities in the future, we will freely review targets and add KPI according to changes in social requirements and trends. This will ensure even more effective activities. Various Goals Advocated throughout Society and Industry at Large

14th Three Year Management Plan

EMS, Health and Safety, Work Style Reform and Other Internal Promotion Targets Organize these goals and targets and review effective policies and objectives to address the four priority subjects (materiality).

Key Performance I	ndicators (KPI)	FY 2021 Activity Results	Reference page	Priority Sustainable Development Goals (SDGs)
Reduction rate of Scope 1 and 2 emissions	<ul> <li>Base year for greenhouse gas reductions: 2009</li> <li>Greenhouse gas emissions</li> <li>- 50% reduction by 2030</li> <li>Net zero by 2050</li> </ul>	<b>37%</b> *FY 2020 Results	27, 32	7 MINIMUT NO 12 COUNT
Implementation rate of design proposals to reduce greenhouse gas emissions during system operations	100% implementation rate	97%	32	
_	_	Include award-winning technologies in the SHINRYO Report	33-35	
_	_	Include main initiatives and award-winning technologies in the SHINRYO Report	37-44	9 RADATING LANKAURAN A IN INASATINGUTUR A INASATINGUTUR
_	_	Include main initiatives in the SHINRYO Report	47-48	
Construction cycle implementation rate	100% implementation rate	Start in FY 2022	45-46	8 DECENT WORK AND 9 PROSTRY, INVOLUTION ICOMMUNIC GRIWTH 9 PROSTRY, INVOLUTION
Frequency rate	Frequency rate of 0.40 or less	0.14	49	
Registration rate of Safety and Health Council members	Registration rate of 80% or more	72%	49	
Employee satisfaction	4.0 or higher *Index based on internal research (Evaluation on a scale from 0 to 5)	Start in FY 2022	_	
Rate of annual paid leave taken by employees	Year-on-Year Increase	<b>85%</b> (up 21 points compared to previous fiscal year)	52	8 RECEIPTION AND 16 FRAME AND NO.
Participation rate in compliance training	100% participation rate	Start in FY 2022	60	





## **Contribute to a Decarbonized Society**

Achieving the goals of the Paris Agreement and realizing a decarbonized society are pressing issues as the effects of global warming grow.

Shinryo Corporation will strive to reduce greenhouse gas emissions and other such measures in its business activities from design, installation and maintenance to research and development as a way to help realize a decarbonized society as an environmental engineering company.

## Adapt to Climate Change

In October 2020, the Japanese government committed to net zero greenhouse gas emissions and carbon neutrality by 2050. The administration followed up this announcement by setting a goal in April 2021 to reduce emissions 46% compared to fiscal 2013 by fiscal 2030.

The realization of a decarbonized society is an important challenge to build a sustainable society. Shinryo Corporation will promote the five items below to ensure initiatives to overcome this challenge are effective.

As KPI for Priority SDG Subjects, we have set Scope 1 and 2

- Promote an Environmental Management System (EMS)
- Identify and mitigate greenhouse gas emissions
- Promote labor savings as well as BIM and a digital transformation on construction sites
- Leverage technologies that use renewable energy
- Accelerate research and development of decarbonization technologies

targets to reduce greenhouse gases 50% by 2030 and reach carbon neutrality by 2050. Shinryo Corporation has set a KPI for Scope 3 emissions that aims for a 100% implementation rate of design proposals to reduce greenhouse gas emissions during use of our systems. We will do everything in our power to propose even better technologies to our customers. Shinryo Corporation will also accelerate its research and development into new technologies to contribute to greater reduction of Scope 3 emissions.



KPI Outline of KPI for Priority SDG Subjects (Detailed List on ➡P25-26)

#### Road Map to 2050

#### 2050 Net Zero Greenhouse Gas Emissions





## Environmental Management System (EMS)

Shinryo Corporation received the ISO 14001 Environmental Management System (EMS) certification from the Management System Assessment Center (MSA) in 2001 and has been promoting these activities for two decades.

Efforts started by reducing power and paper consumption before expanding to on-site initiatives from activities to improve on-site productivity to proposals for reducing CO2 in design operations ( $\square$ P32).

In addition, Shinryo Corporation sees legal compliance as one vital aspect of EMS. Therefore, we have been emphasizing

efforts which adapt to the Waste Management and Public Cleansing Act, Act on Rational Use and Proper Management of Fluorocarbons, Construction Material Recycling Act, and other such laws and ordinances. We have also been focused on educating all of our employees and partner companies.

The importance of reducing energy consumption, resource recycling, and other environmental initiatives is greater than ever before. Shinryo Corporation will engage in even more exhaustive EMS initiatives to make larger contributions to the realization of a decarbonized society.

#### **Basic Philosophy**

As a company connected to the environment, Shinryo Corporation has been practicing environmental preservation through building equipment based on our mission to Create a Freshening World. We actively work to reduce our environmental burden and conserve the global environment in the future.

#### **Environmental Policy**

Shinryo Corporation recognizes its social responsibility in realizing a sustainable society.

In doing so, Shinryo Corporation will acknowledge the needs and expectations of its stakeholders and conduct the following to balance business development and environmental conservation.

- 1. We shall control greenhouse gas emissions in business activities to realize a decarbonized society.
- 2. We shall promote the 3Rs\* of construction byproducts to realize a recycle-oriented society.
- 3. We shall put in place and utilizes proper business processes to comply with all laws, regulations, and requirements.

Each one of us will operate under an Environmental Management System and commit to make a contribution to ensure these initiatives are effective.

We will raise awareness about this policy with not only our employees but everyone involved in our businesses.

\*3Rs: Reduce, Reuse, and Recycle

#### **Environmental Promotion System**

Shinryo Corporation manages the entire organization through an Environmental Management Supervisor according to directives from the executive in charge of environmental activities. Moreover, we appoint environmental managers as the person in charge of EMS operations of the corporate divisions, regional offices, and the administrative sections who are supervised by the general managers of those departments. Shinryo Corporation is also building a system to promote environmental preservation activities.

The Environmental Management Supervisor and Environmental Managers lead the actions taken on a wide range of environmental risks and opportunities, whether environmental target and compliance initiatives or environmental education efforts and the response to environmental emergences.

#### ISO 14001-certified Divisions, Branch Offices, and **Administrative Sections**

- Tokyo Metropolitan Area Division Yokohama Branch Hokuriku Branch
- Urban Environment Division
- Air Conditioning Equipment Division
   Nagoya Branch
- Nuclear Power Plant Division
- Electric & Instrument Division
- Hokkaido Branch
- Tohoku Branch
- Marunouchi Branch
- Osaka Branch Chugoku Branch • Kyushu Branch
- Research and Development Center
  - Administrative Sections

**Environmental Promotion System** 



## Challenge of Decarbonization

Shinryo Corporation has always striven to provide peoplefriendly and environment-friendly building equipment. Since its founding, we have offered numerous energy-saving technologies. Since the adoption of the Paris Agreement in December 2015, society is taken even greater action toward decarbonization. Shinryo Corporation has also stepped up to overcome the challenge of a decarbonized society through technology as an environmental engineering company.

#### Approach to a Decarbonized Society: Restructuring the Research and Development Center

Various global initiatives are already underway to realize a decarbonized society. The reduction of carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions is essential to helping the world take an even larger step toward a decarbonized society. This pursuit also means systems must adopt technologies which can reduce greenhouse gas emissions, which include the introduction of highly energy-efficient equipment that minimizes resource losses through optimal designs and broader use of renewable energy.

The categories with the largest greenhouse gas emissions throughout the Shinryo Corporation supply chain are Scope 3 Category 11 emissions related to the use of building equipment after delivery to customers and Scope 3 Category 1 emissions related to resource harvesting and manufacture of purchased goods (CPP31). To reduce these emissions, we must provide equipment systems which use as little energy as possible, precisely grasp the materials used in construction, and design and install optimal systems with zero waste.

Modern decarbonization needs have become even more sophisticated. Totally new ideas going against convention are

necessary to address these needs. Therefore, Shinryo Corporation has restructuring the Research and Development Center as a site researching and developing decarbonization technology as an approach to achieve a decarbonized society.

The new Research and Development Center has been designed to overcome two challenges. The first is the challenge of reducing greenhouse gas emissions through the power of research and development. Shinryo Corporation will achieve its target of net zero greenhouse gas emissions from research and development activities by 2030 by researching and developing various net zero technologies to implement at research and development center.

The second is testing new operational processes using BIM. Shinryo Corporation is striving to provide the best construction processes that use BIM in an effort to decarbonize the entire life cycle from the building design and construction through maintenance. Our goal is to contribute to a decarbonized society by providing all the technology and expertise gained from these efforts to society.

![](_page_29_Picture_11.jpeg)

Main Building Mock Up of the New Research and Development Center

#### CHALLENGE 1 Reducing Greenhouse Gas Emissions through the Power of Research and Development

Shinryo Corporation has set a target of net zero greenhouse gas emissions from its business activities (Scope 1 and 2) by 2050 (C>P27). As a means to this end, we have also set the ambitious goal of achieving net zero greenhouse gas emissions from research and development activities at the Research and Development Center by 2030. The plan for the main building wing currently under construction details a Net Zero Energy Building (ZEB) by 2024 followed by the systematic introduction of technologies to drive energy savings and use renewable energy.

## Shinryo Corporation Greenhouse Gas Reduction Target (Scope 1 and 2)

![](_page_30_Figure_3.jpeg)

Shinryo Corporation will also work to reduce Scope 3 greenhouse gas emissions. We will focus more heavily on the research and development of decarbonization technologies. The Research and Development Center will validate concepts leveraging the spacious premises while testing the effectiveness of some of this new technology. The proposal of technologies, products and services in line with customer needs based on the technology and expertise gained from research and development will contribute to a decarbonized society.

#### Acceleration of the Development of Technologies to Reduce Scope 3 Emissions and Realize a Decarbonized Society

![](_page_30_Figure_6.jpeg)

#### CHALLENGE 2 Optimizing New Operational Processes with BIM

The construction of this new main building provides us with the opportunity to test new operational processes that fully leverage BIM from design and installation through energy management and maintenance. It also lets us take on the challenge of optimizing the construction process. This initiative aims to improve construction quality and decarbonize every aspect of the life cycle from the design and installation through maintenance. We hope to take full advantage of BIM to provide our customers with efficient design, construction, and maintenance processes using the knowledge cultivated through this reconstruction project.

#### Use of BIM Throughout the Entire System Life Cycle

![](_page_30_Figure_10.jpeg)

The Ministry of Land, Infrastructure, Transport and Tourism has even adopted our use of BIM in the construction of this new main building as a building production and maintenance process facilitation model project using BIM. Shinryo Corporation rationalizes construction using BIM through this business based on the clear benefits of using BIM from the stance of customers placing orders. BIM smoothly connects operational processes from design through construction to rationalize and fully optimize building system work. Our goal is to establish a construction technology consultancy to further validation in each project.

#### **Consulting on Construction Technologies**

![](_page_30_Figure_13.jpeg)

Consulting on Construction Technologies to Integrate BIM in Design through Construction

## Initiatives to Mitigate Greenhouse Gas Emissions from the Supply Chain

Shinryo Corporation strives to identify hot spots that impact the environment by calculating Scope 1, 2 and 3 greenhouse gas emissions. Of the 10,717,000 ton-CO<sub>2</sub> emissions in fiscal 2020, most came from Scope 3 Category 11: Use of Sold Products. Shinryo Corporation actively engages in numerous initiatives to help mitigate greenhouse gas emissions from not only construction but throughout the entire life cycle of construction equipment such as efforts to propose solutions to customers and improve productivity.

#### Image of the Shinryo Corporation Supply Chain Management

![](_page_31_Figure_5.jpeg)

#### FY 2020 Scope 1, 2 and 3 Calculation Results (Construction Sites for Properties with Orders of 30 Million Yen or More)

Cat	egory	Calculation scope	Result (ton-CO <sub>2</sub> )
Sco	ope 1	Direct emissions from fuel consumption at Shinryo facilities, leakage of fluorocarbons, and use of company vehicles	386
Sco	ppe 2	Indirect emissions from the use of electricity and heat purchased by Shinryo facilities	2,380
Sco	ope 3	Indirect emissions from third-party companies involved with business activities (total of all categories)	10,714,814
	1 Purchased goods and services	Emissions from resource harvesting and manufacture of sold goods	202,744
	2 Capital goods	Emissions from manufacture and construction of capital assets	13,595
Ca	3 Fuel and energy activities not included in Scope 1 and Scope 2	Emissions from manufacture such as electricity and fuel bought by the headquarters, branches and offices	415
	4 Upstream transportation and distribution	Emissions from transportation of goods from seller to construction sites	23,560
egor	5 Waste generated in operations	Emissions from disposal of waste produced on construction sites	4,376
Y *1 and 2	6 Business travel	Emissions from fuel and power consumption of transportation agencies used for business travel of employees	1,160
	7 Employee commuting	Emissions from electricity consumption of transportation agencies used for employee commuting	560
	11 Use of sold products	Emissions from the operation of building equipment after delivery (operation period set to 15 years)	10,468,204
	12 End-of-life treatment of sold products	Emissions from duct and piping waste during demolition	200
Tot	tal of Scope 1 to 3		10,717,580

\*1 Calculations based on the Basic Guidelines on Accounting for Greenhouse Gas Emissions throughout the Supply Chain (Ver.2.3) from the Ministry of the Environment and the Ministry of Economy, Trade and Industry

\*2 Categories 8 through 10 and 13 through 15 are activities not related to our businesses

#### Scope 1 and 2 Reduction Initiatives

The challenge of realizing carbon neutrality and a decarbonized society is a global one. Shinryo Corporation aims to reduce its Scope 1 and 2 greenhouse gas emissions 50% by 2030 compared to 2009 and to become net zero by 2050.

Our priority thus far has been decarbonization and energy savings. Shinryo Corporation has already begun work to achieve these goals. Various initiatives have been reducing our greenhouse gas emissions from the Energy Saving Eco-Project which renovated the old headquarters building in 2011 to the restructuring project of our Research and Development Center (**⊡**>P29).

Changes in Scope 1 and Scope 2 CO<sub>2</sub> Emissions (FY 2009 Onward)

Scope 1 and 2 reduction rate:

(Target: 50% by 2030; Net zero by 2050)

![](_page_32_Figure_5.jpeg)

#### Scope 3 (Category 1 and 4) Reduction Initiatives

Efforts to improve productivity on construction sites and achieve efficient site management using ICT technology are only a few of the important initiatives necessary to further the reduction in Category 1 and Category 4 greenhouse gas

#### Scope 3 (Category 5) Reduction Initiatives

We are working to properly sort and recycle waste in an effort to reduce greenhouse gas emissions (Category 5) generated during industrial waste disposal processes.

Of the industrial waste produced on construction sites, Shinryo Corporation is promoting recycling of four main materials (concrete, metal scrap, waste plastics, and waste glass, ceramics and pottery). We achieved a recycling rate of 88% in fiscal 2021 by outsourcing recycling to industrial waste disposal and recycling companies with superior technology for processes that include material recycling and thermal recycling.

emissions (E>P47-48).

Shinryo Corporation actively worked to improve productivity using these technologies, which succeeded in reducing CO2 emissions 28% in fiscal 2021.

#### Industrial waste emissions and Recycling rate

![](_page_32_Figure_14.jpeg)

Design proposal implementation rate:

8

28%

CO<sub>2</sub> reduction rate:

Recycling rate: 88%

#### Scope 3 (Category 11) Reduction Initiatives

Shinryo Corporation contributes to the reduction of greenhouse gas emissions during the use of construction equipment (Category 11) through many different technologies owned by the Company. We have set a 100% design proposal implementation rate as our KPI for the reduction of Category 11 emissions. Shinryo Corporation makes every effort to propose the best and most beneficial drive methods to our customers through airflow and temperature distribution simulations made possible by CFD\* technologies, which is an industry-leading technique and achievement, the adoption of equipment and systems with high energy savings, commissioning, and other such initiatives.

\*CFD: Computational Fluid Dynamics

#### Implementation Rate of Design Proposals

(Target: 100%)

![](_page_32_Figure_20.jpeg)

#### Scope 3 (Category 11) Reduction Initiatives

# High-efficiency Heat Source Systems Using Heat from River Water Sources

#### Nakanoshima 2-Chome District Heating and Cooling System

The Nakanoshima 2-Chome District Heating and Cooling System is building a heat source system using heat from river water sources as a renewable energy with the hope of easing the impact of heat island phenomenon and improving energy efficiency in heating and cooling.

Shinryo Corporation was in charge of the Nakanoshima Festival Tower West plant for this district heating and cooling system. We were involved in enhancements to drive energy efficiency after the system was up and running as well.

By directly using the river water as a heat source more stable than air, we were able to not only reduce heat loss but also build a thermal stratification water storage tank using a simple diffuser as a few of the efforts to provide greater energy savings. As a result, the Shinryo Corporation has achieved a heat source system with the highest Coefficient of Performance (COP) in Japan.

#### Operational Enhancements of the Heating Tower Heat Pump System

### Tokyo Sky Tree<sup>®</sup> District Heating and Cooling Facility

Tokyo Sky Tree District Heating and Cooling Facility provides a highly efficient supply of heat by integrating equipment from the turbo chillers and heating tower heat pump system (HTHP system) to the large-capacity water thermal storage tank.

The HTHP system is a highly efficient heat source system that heats circulating water by recovering heat from cold outdoor air in the heating tower during winter heating to generate hot water from that heat using the heat pump.

Shinryo Corporation has striven to improve operations for the purpose of heightening HTHP system efficiency. As a result of ongoing operational enhancements using analyses and simulations based on actual data, we have been able to reduce energy consumption 8% compared to conventional HTHP systems.

## Energy-saving Lighting Equipment

#### Shinryo Shinjo Building

The Shinryo Shinjo Building is an environmentally friendly office building which has acquired the ZEB Ready certification from the Building-Housing Energy-efficiency Labeling System (BELS). The Shinryo Group was in charge of system installations (air-conditioning system: Shinryo Corporation; sanitation system: Shiroguchi; electric system: Daiei Denki).

This building took advantage of high-efficiency LED lighting throughout while also adopting light guide plates for office spaces. These innovations insured a space with a bright feel by reflecting a low intensity of light off the ceilings and walls. Illuminance and motion sensors automatically control lighting adjustments to provide the highest level of energy savings. The lighting layout takes advantage of the suspended ceiling using support beams to create an accommodating design while maintaining functionality. 2020 Energy Conservation Grand Prize Award in the Energy Conservation Best Practice at Workplaces Category

The Energy Conservation Center, Japan Chairman's Award

![](_page_33_Figure_18.jpeg)

System Image of the Nakanoshima Festival Tower West Plant

FY 2021 Heat Pump & Thermal Storage Technology of Japan Award of Excellence for Impeccable Improvements to Operational Management

#### **Changes in Unit Primary Energy Consumption**

![](_page_33_Figure_22.jpeg)

#### 2020 Good Lighting Award Tokyo Chapter Jury Special Award

![](_page_33_Picture_24.jpeg)

Lighting System Using Acrylic Light Guide Panels

#### Japan's First Zero Energy School Coexisting with Nature

#### Mizunamikita Junior High School

Mizunamikita Junior High School opened its doors in Mizunami City, Gifu in April 2019 as the first zero energy school in Japan with the aim of maximizing the use of natural energy creating a learning environment of wellbeing. This education institution was also recognized as a Super Eco School Demonstration Project by the Ministry of Education, Culture, Sports, Science and Technology.

Shinryo Corporation was in charge of the mechanical system installation and built a system capitalizing on ground heat, solar heat and other natural energy sources. As part of a learning environment teaching through the five senses, we put in place innovations such as mechanisms for the children to touch and feel the air passing through the ducts as well as see and learn the various duct materials. The use of these technologies for environmental systems succeeded in an energy reduction rate of 101% during the school's first year.

#### System Plan for Smart City Considering Energy Savings

#### Sapporo City Redevelopment Project for Four Northern and Six Eastern Wards

The Sapporo City Redevelopment Project for Four Northern and Six Eastern Wards introduced regional heating and cooling as well as power supply systems with a high level of BCP performance in addition to a Community Energy Management System (CEMS) for the entire area. Moreover, the redevelopment project aims to achieve a smart city\* through the promotion of area management in which everyone in the local community takes part.

Shinryo Corporation was in charge of building heat source and distribution systems of the energy center linked to the CEMS as well as the district conduits. These systems contributed to the configuration of a local production and consumption energy system that uses renewable energy and highly efficient equipment.

\*A smart city is an urban area with higher quality lifestyles and services using IoT and AI to make energy, telecommunications, and other infrastructure more efficient.

# Realization of a Comfortable Environment Maximizing the Creativity of Animators

#### TOEI ANIMATION Oizumi Studio

TOEI ANIMATION aims to build a comfortable environment at the Oizumi Studio which would bring out the most creativity from its animators. Shinryo Corporation was in charge of building the air-conditioning system.

This new studio adopts a personalized heating and air conditioning system which not only provides air conditioning to entire floor but also blows hot air on the backside of employees. This enhances the comfort level by enveloping employees in an area of their own. The Oizumi Studio also takes advantage of energy-saving technologies that effectively use the natural ventilation as the changing seasons. These innovations have reduced primary energy consumption (actual values) roughly 50% on weekdays compared to standard office buildings. The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan

35th Awards of Promotion & Technological Promotion

![](_page_34_Figure_15.jpeg)

Illustration of Energy Supply

The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan 35th Awards of Promotion & Technological Promotion

![](_page_34_Figure_18.jpeg)

#### 9th Carbon Neutral Award JABMEE Special Selection Committee Prize

Effective Reduction in Primary Energy Consumption Compared to the Base Model

![](_page_34_Figure_21.jpeg)

#### Successful Balance Between Stronger Resilience and Better Environmental Performance SUITA MUNICIPAL HOSPITAL

#### SOTIA MONICIPAL HOSPITA

The SUITA MUNICIPAL HOSPITAL is one of several urban development projects built in the Northern Osaka Health and Biomedical Innovation Town as an international medical and pharmaceutical complex to embody the concepts of health and healthcare. This environment-friendly hospital constructed as highly reliable infrastructure for disaster prevention has earned the CASBEE S Rank certification.

Shinryo Corporation was in charge of installing the air conditioning system in this hospital, which required a large volume of fresh air to prevent the spread of infections throughout the facility. We helped improve the environmental performance of the entire complex by building a system that reduces the load of air conditioning, such as second-floor pre-heating and pre-cooling of outdoor air coming into the facility in two stages using ground heat and well water.

#### Contributions to the Reduction of Energy Consumption Through Commissioning

#### Nagasaki Prefectural Office

The Nagasaki Prefectural Office utilizes a high-efficiency heat source system with a thermal storage tank for the purpose of saving energy and resources. It also acts as a resilient office coexisting with environment which also functions as a disaster prevention site during emergencies.

Shinryo Corporation was in charge of building an air conditioning system with features that include a high-efficiency heat source system and an air conditioning system separating latent and sensible heat in offices. We also participated in the Commissioning and Performance Testing (Cx) Meeting and helped reduce energy consumption by getting involved in other aspects of the process from the review and construction of systems and automated control to BEMS\* verifications. Shinryo Corporation has been continually inspecting and enhancing this system even after completion, which resulted in a 40% reduction in primary energy consumption compared to standard government buildings.

\*BEMS: Building and Energy Management System

The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan 35th Awards of Promotion & Technological Promotion

![](_page_35_Figure_11.jpeg)

Image of Air Conditioning System Using Heating and Cooling Trench and Well Water

Annual Primary Energy Consumption for the Entire Building

Engineers of Japar

The Society of Heating, Air-Conditioning and Sanitary

35th Awards of Promotion & Technological Promotion

![](_page_35_Figure_14.jpeg)

#### **Electronic Manifest and Contracting System Initiatives**

Shinryo Corporation uses electronic manifests (industrial waste management ledgers) to properly dispose of industrial waste in accordance with the Waste Management and Public Cleansing Act. The electronic manifest system reduces the operational burden of managing industrial waste and even strengthens compliance.

In fiscal 2021, 97% of all issued manifests had transitioned to electronic manifests. We have also rolled out an electronic contracting system to conclude waste disposal contracts with industrial waste disposal companies. The electronic contracting system not only establishes outsourcing contracts quickly but also links to the electronic manifest system to reduce the risk of breaches to consignment standards or other legal violations.

The use of electronic manifest and electronic contracting systems at the Shinryo Corporation will reduce the operational

burden of properly managing industrial waste in accordance with the law as well as drive efficiency on construction sites.

#### **Usage Ratio of Electronic and Paper Manifests**

![](_page_35_Figure_21.jpeg)

#### Participation in the Japan Climate Initiative

Shinryo Corporation announced its support for and participation in the Japan Climate Initiative (JCI) in 2021. The JCI launched as a network of companies, local governments, NGOs and other leaders who want to not only join the front lines of the global push for decarbonization from Japan to fight against climate change but also foster new growth and development opportunities. Shinryo Corporation will place even greater emphasis on climate change issues and further its initiatives to realize a decarbonized society through its support for and participation in the JCI.

#### Rated an Excellent Company (S Class) Under the Energy Saving Act

Shinryo Corporation was rated an excellent company (S Class) in 2019 and again in 2020 by the Business Classification Evaluation System under the Act on the Rational Use of Energy (Energy Saving Act).

The Energy Saving Act categorizes all regularly reporting

#### Donations to the Keidanren Nature Conservation Fund

The Keidanren (Japan Business Federation) established the Keidanren Nature Conservation Fund in 1992 to support nature conservation activities. Shinryo Corporation has continued to donate to this fund. We also participate in the Japan Business and Biodiversity Partnership, whose secretariat

#### Ecological Conservation Activities Enlightenment Program "The Environmental Renaissance Activities"

Shinryo Corporation has been promoting the Environmental Renaissance Activities Enlightenment Program since 2015 for the purpose of heightening employee awareness about ecological conservation.

This program supplies book coupons to employees engaged in activities related to ecological conservation and environmental education to subsidize the purchase of environmental books. This also deepens understanding of ecological conservation and heightens motivation toward ongoing activities. These efforts have become a matching gift system to donate the equivalent book coupon costs that are supplied over one year to international environment NGOs engaged in biodiversity conservation and other environmental activities.

#### Framework of Environmental Renaissance Activities

![](_page_36_Figure_12.jpeg)

businesses into four SABC stages according to the level of their energy savings. Each business location will continue various activities on operational building improvements and other efforts to control energy consumption.

is handled by the Keidanren Committee on Nature Conservation.

Shinryo Corporation recognizes the importance of conserving biodiversity and will always help build a society which coexists with nature.

#### **Activity Report Introduction**

#### Norio Takeshima

Quality & Environmental Management Department, Technical Supervision Division

Activity to Preserve Little Tern Nesting Areas (Little Tern Project)

I have volunteered for activities for six years that help the nesting of little terns which have lost their traditional breeding grounds. Little terns began to nest on the roof of the water reclamation center after losing their natural breeding grounds, which made it difficult for the chicks to leave the nest. We helped build a more comfortable nesting area for these birds by weeding, removing mud, cleaning drainage, setting up leveling strings to repel crows, and building brick shelters. I hope our hard work will help many of these young birds leave the nest safely.

![](_page_36_Picture_21.jpeg)

Refurbished Nesting Ground

Little terns

**Initiatives to Address Priority Subjects** 

![](_page_37_Picture_1.jpeg)

## **Contribute to a Resilient Society**

With escalating risks of natural disasters, the construction of strong infrastructure is essential to ensure sustainable corporate activities as well as safe and secure life in society. Shinryo Corporation helps build safe, long-lasting social infrastructure by providing high-efficiency, high-quality systems and proposing optimal maintenance and renewal plans.

#### Supporting the Energy Supply of a Port City

## Toyosu Smart Energy Center

Completed: March 2020 Power supply capacity: Approx. 14,000 kW; Approx. 115 GJ/h cryogenic power; Approx. 51 GJ/h thermal power Building application: Special Energy and District Heating and Cooling Systems

![](_page_37_Picture_7.jpeg)

![](_page_37_Picture_8.jpeg)

Cogeneration Plant

![](_page_37_Picture_10.jpeg)

Heat Source Machine Room

![](_page_37_Picture_12.jpeg)

Toyosu 2-Chome and 3-Chome District Heating and Cooling System Supply Area

![](_page_38_Picture_1.jpeg)

#### About the Toyosu Smart Energy Center

The Toyosu District is rapidly developing as the new urban area of Tokyo. The Toyosu Smart Energy Center is an energy plant built during the redevelopment of the central area in front of the Toyosu Train Station. This energy plant supplies power and heat to the existing Toyosu Center Building as well as the new Toyosu Bayside Cross Tower. The Toyosu Smart Energy Center effectively uses heat produced during power generation to supply heating, cooling and hot water for a compact standalone distributed energy supply realizing local production and consumption of power and heat by the city, contributing to the creation of a resilient and eco-friendly town.

The facility has also adopted the latest energy management system for managing the energy throughout the entire district. This system collects information about actual supply demands, the weather, events, and various other factors to analyze the big data to anticipate the next day's power and heating demands of the offices, commercial complexes, hotels, and other facilities spread throughout the district. The results of the forecast allow the system to provide the best operational control of plant equipment according to the target values of the system, such as the energy savings and CO<sub>2</sub> emission reductions. This control can even tune and tailor operations as needed when the actual demand deviates from forecasts. These specifications are able to achieve an even higher level of energy savings.

#### **Our Work** Air Conditioning, Electricity, CGS, and Civil Engineering

Shinryo Corporation received a bundled order (joint venture) and handled the installation of the air conditioning, electricity, and cogeneration systems (CGS) as well as the civil engineering work.

We placed core equipment on the fifth or higher floors as a measure to combat the risks of floods in the event of guerrilla rainstorms or other such disasters. In addition, Shinryo Corporation constructed supports packing seismic isolation and resistance measures with the main equipment brought in and installed above to ensure a high level of earthquake proofing. The energy plant leverages a high-capacity, high-efficiency CGS inside a facility constructed to stand up against disasters, which enables the supply of electricity even during power outages. Adoption of a high-efficiency CGS and the use of waste heat during power generation has reduced CO<sub>2</sub> emissions about 20%\*<sup>1</sup> compared to standard thermal power plants.

We employed measures against salt damage and installed roughly 290 filters to remove salt on outdoor air inlets that can process 950,000 m<sup>3</sup>/h of outdoor air throughout the complex. Shinryo Corporation even considered the ease of maintenance and strove to realize a long-lasting and efficient facility even after the completion of the project by planning stairs and a simple elevator as well to use when replacing these filters.

Our civil engineering work employed a thrusting method\*<sup>2</sup> to minimize the effects of traffic congestion and noise for constructing the district heating and cooling conduits and private electricity pipelines across the roughly 50-meter width of Harumi-dori Street.

The prospecting process before construction began discovered many obstructions not indicated on the design blueprints. We succeeded in finishing the project on schedule through pure tenaciousness from more comprehensive prospecting to reviewing piping routes and shaft positioning while working closely with every company involved in the project.

Shinryo Corporation also achieved efficient energy use by building a Community Energy Management System (CEMS) equipped with advanced features to predict future heat and power loads using AI and automation and optimization functions taking into account the best mix of power and heat supply systems. This is what allowed us to build systems that help reduce the environmental load.

\*1 Compared to the per unit energy consumption of standard buildings in Tokyo.
\*2 Construction method to create conduit lines by gradually adding existing piping behind the excavator.

# VOICE

![](_page_38_Picture_16.jpeg)

Taku Watanabe (On-site Project Manager) Manager, Technical Section 3, Technical Department 2 Urban Environment Division

#### A Project Bringing Together Extensive Cooperation and Expertise

As a large-scale private urban special energy project with a district heating and cooling system, this project was the first order of its kind for us. It was a big project bundling everything from air conditioning and electricity to CGS and civil engineering work.

We had to tackle numerous challenges, but were able to complete the project without any major problems by bringing together the knowledge, innovativeness and effort of everyone working on site with the expertise of the Shinryo Corporation thanks to the cooperation of so many people at the company. Our client even sent us a letter of thanks. I have a great sense of accomplishment and joy for the recognition that I've received from the company, such as the President's Award and other commendations.

#### Supporting Operations of a Large-scale Convention Center

## G MESSE GUNMA

Completed: March 2020 Total floor area: 33,150 m<sup>2</sup> Building application: Meetings and exhibitions

![](_page_39_Picture_4.jpeg)

![](_page_39_Picture_5.jpeg)

Exterior

![](_page_39_Picture_7.jpeg)

![](_page_39_Picture_8.jpeg)

Exhibition Hall

Main Hall

#### About the G MESSE GUNMA

G MESSE GUNMA is the largest convention center in the northern Kanto area built on the enormous roughly 110,000 m<sup>2</sup> lot of the former Takasaki Racetrack. The complex offers a variety of venues, such as an exhibition hall with a capacity of 10,000 people and 17 small and large meeting rooms, to use for everything from exhibitions and concerts to international conferences. The site is only a 15 minute walk from JR Takasaki Station which services the Joestu and Hokuriku Shinkansens. It also provides visitor with a parking area that is able to accommodate about 2,000 vehicles. The basic concept strove to build a facility sprinkled with traces of Gunma Prefecture as a manufacturing heartland incorporating the unique history, traditions, climate, industry and technology in its design.

G MESSE GUNMA can even act as a local disaster prevention site. In the event of a large-scale disaster, the complex should be able to house up to 7,000 local residents and people stranded in the area. The exhibition hall can function as a site to sort or distribute relief goods while the premises outdoors can become a temporary base of operations for the Self-Defense Forces, fire fighters, and police.

G MESSE GUNMA is expected to not only revitalize the local economy but also share the magnificence of Gunma Prefecture with Japan and the rest of the world.

#### Our Work Air-conditioning and mechanical ventilation systems

Shinryo Corporation was in charge of the air conditioning and mechanical ventilation systems for the exhibition and meeting buildings together with a local joint venture company. We paid close attention to creating both efficient and comfortable air condition for the huge-space accommodating such a large number of people.

The very high ceilings of the main and exhibition halls

would make adjusting the air outlets almost impossible after construction. The Shinryo Corporation took advantage of Computational Fluid Dynamics (CFD) technology to carefully examine the best layout and direction for each and every air outlet before construction. As a result, we were able to achieve comfortable air conditioning while eliminating the need for any adjustments after the system was built.

The approximately 10,000 m<sup>2</sup> exhibition hall was equipped with an on-demand environment system using infrared array sensors. The sensors installed in the ceiling by dividing the hall into twelve different sections detect the floor temperature, the return air temperature, and the number of people in the space to control the air temperature, air volume of the air conditioner as well as the amount of outdoor air in real-time. The concourse area handles a large flow of foot traffic. Motion sensors and variable air volume control systems have the ability to adjust the air volume by minimizing airflow when the space is empty, quickly maximizing airflow when people are detected, and then strategically decreasing the airflow as necessary thereafter. This type of meticulous control with immediacy pursues a space that is not only comfortable but also saves energy.

Modularization and the use of ICT tools during construction increased operational efficiency. The 84 gas heat pump chillers were used to satisfy the broad usage requirements of the convention center. By breaking down and delivering this equipment as chiller and heat transfer units, Shinryo Corporation cut the lifting workload in half which in turn shortened the time required for the delivery. We also distributed tablet terminals to every employee and encourage a paperless workplace by shifting drawings to a construction management app that enhances work style efficiency.

# VOICE

![](_page_40_Picture_12.jpeg)

Toshio Sakai (On-site Project Manager) Manager, Technical Section 1,

Technical Department 4 Tokyo Metropolitan Area Division

#### Overcoming Challenges to Complete a Large-scale Project

The biggest challenge for us was whether or not we could more efficiently and safely execute work on an air conditioning system for the exhibition hall which is a huge space. We visited similar buildings, ran CFD simulations of the air conditioning, and undertook many other exhaustive measures to complete the project without any rework or major problems. During the construction, we worked hard to overcome adversities from continual labor shortages to delays in material due to torrential rains. In spite of all of that, I am proud to have been involved in a project to build the largest convention center in northern Kanto which carries the hopes and dreams of the prefecture.

#### Supporting Disaster and Emergency Medical Care at a Local Hospital

## Iwaki City Medical Center

Completed: March 2021 Total floor area: 64,286.88 m<sup>2</sup> Building application: Hospital

![](_page_41_Picture_4.jpeg)

![](_page_41_Picture_5.jpeg)

Exterior

#### About the Iwaki City Medical Center

The Iwaki City Medical Center provides state-of-the-art advanced medical care as one of the largest general hospitals in Fukushima Prefecture. It has also been designated as the base hospital to handle disaster and emergency medical care. Over the more than 70 years since it opened in 1950, this hospital has served as the core medical care facility in the region. However, the hospital had to be rebuilt as a disasterresistant medical institution due to the aging building and in light of the Great East Japan Earthquake.

The new facility integrated the medical wing and energy center with a base isolation structure to reduce the impact of earthquakes on the building. Even if power and water supply systems are cut, the facility is equipped with water storage tanks and power generation systems to allow medical services to continue for 72 hours or more. The parking lot outside has also been equipped with manhole toilets where emergency restrooms can be set up. The facility has other innovations to ensure stable medical services continue even when disaster strikes, such as a space to act as a patient intake area during emergencies and a heliport on the roof.

#### Our Work Air Conditioning and Sanitation System

Shinryo Corporation was in charge of building the air conditioning and mechanical ventilation system as well as sanitation systems for the 13-floor, 700-bed hospital wing.

The air conditioners in headquarters clinic use fan coil units that operate at low power as an energy-saving measure and ozone deodorizers as an odor control measure. In rooms for dialysis, radiant air-conditioning that can sustain a comfortable temperature with a gentle airflow create a medical space that reduces the burden on patients who have to spend many hours at the hospital.

The use of piping prefabricated at the plant as well as light and durable resin tubes during construction increased the efficiency and safety of on-site operations. We incorporated innovations using colored bands to hang each piping system which helped prevent connection errors during construction and improved the ease of maintenance after completion.

#### Supporting Educational Environments at an integrated Elementary and Junior High School

## Seto City Nijinooka Gakuen

Completed: First phase of construction: January 2020; Second phase of construction: February 2021 Total floor area: 12,134 m<sup>2</sup> school building; 3,234 m<sup>2</sup> gymnasium; 102 m<sup>2</sup> swimming pool Building application: Education facility Aichi Prefecture

![](_page_42_Picture_3.jpeg)

Exterior

#### About the Seto City Nijinooka Gakuen

The Nijinooka Gakuen was established through consolidation of five elementary schools and two junior high schools in the eastern district of Seto City, Aichi in April 2020 as part of the efforts undertaken in the system for unified elementary and junior high schools advocated by the Ministry of Education, Culture, Sports, Science and Technology. By unifying nine years of education under one roof, the school teaches cooperative problem-solving skills. Children educated at the school in Seto City not only develop a love for their home province but also learn about careers through unique local education and international studies (foreign language activities), which nurture pride and joy for one's roots in Seto.

The new school uses systems and equipment providing a high level of energy savings, which satisfy the Ministry of the Environment's standards as a demonstration project of an advanced energy-saving structure toward the realization of ZEB\*. The school can even act as a local disaster prevention site.

\*A Net Zero Energy Building (ZEB) is a structure that uses natural energy and high-efficiency equipment systems with the goal of making the balance zero between energy consumption and renewable energy generation on primary annual energy consumption.

#### Our Work Mechanical System Work

Shinryo Corporation was in charge of the mechanical systems (air conditioning and sanitation systems) for the school buildings (south wing, north wing, and administrative building), swimming pool, and gymnasium with a local joint venture company. We aimed to create a safe and comfortable educational environment for the children and students.

As some of the measure to satisfy the ZEB standards, the facilities adopted solar heat collecting panels as a heat source, and used hot water heated up by the system according to the temperature zones in stages, for cold and hot water generators, hot water storage tanks, heat exchangers to heat warm water during the winter season, and other such equipment to reduce primary energy consumption and heighten energy efficiency.

A central monitoring system collects electricity, water, gas, amount of heat, and other data to visualize, analyze, and manage data using a function that creates various graphs. This system is effective in extracting problems related to energy use and improving the operation efficiency of equipment.

The school uses this operational data to display information in an easy-to-understand format on digital signage in the main entrance, which plays a role in raising awareness and educating the children and students about daily energy use.

#### Supporting Digital Infrastructure

## Equinix Japan Inzai Izumino Building

Completed: December 2020 Total floor area: 15,054 m<sup>2</sup> Building application: Data center

![](_page_43_Picture_4.jpeg)

![](_page_43_Picture_5.jpeg)

East-side Exterior

#### About the Equinix Japan Inzai Izumino Building

Equinix, Inc. operates 220 locations worldwide with 12 data centers in Japan as a company building global digital infrastructure. The Inzai Izumino Building is a large capacity, high-density, hyperscale data center operated by Equinix-GIC Private Limited joint venture firm targeting major IT service providers.

The facility employs extremely stringent access management and top-notch security measures in order to handle critical data. The building is fully equipped with BCP response measures from a base isolation structure to power generation systems and emergency waste water tanks to achieve a high level of disaster resistance. The highly energy-efficient design, construction and operation has earned a sliver rating for the Inzai Izumino Building in the LEED green building rating system.

#### Our Work Air-conditioning, Sanitation, and Firefighting Systems

The Shinryo Corporation was in charge of building the air conditioning, sanitation, and fire-fighting systems. This data center requires the configuration of systems that never stop the function of equipment under any circumstances. The data hall housing all of the server racks also requires temperature and humidity management to always keep the temperature and humidity within a certain range. Therefore, Shinryo Corporation prepared emergency backup equipment and other response measures, including a loop piping system running through the thermal storage tank, to ensure a constant supply of cold water through the cold water pipes.

We also employed a wide range of other innovations to eliminate risks which could cause trouble after the facility was up and running. The Data Center had to scatter cold water thermal storage tanks across each floor to handle the total water capacity of 160 m<sup>3</sup> due to space constraints. We were able to ensure stable and uniform pipe welding by fabricating everything at the plant. Moreover, we used down piping from the heat source equipment on the roof to the air conditioners on each floor to eliminate the risk of the flow of cold water stopping.

To prevent any delays in the work to install the heat source equipment on the roof during the construction, we broke down large-radius pipes (550 A), including the earthquake-resistant bases, into modular units at the plant and completed all of the water pressure testing before delivery and installation on site. These approaches saved labor on site which in turn reduced the construction schedule.

## GSPP Cogeneration Plant

Completed: April 2021 Lot area: 8,472 m<sup>2</sup> Building application: Energy plant

![](_page_44_Picture_3.jpeg)

![](_page_44_Picture_4.jpeg)

Full View

#### About the GSPP Cogeneration Plant

GS Paperboard & Packaging Sdn Bhd (GSPP), an Oji Group company, constructed a new raw paper production facility for manufacturing corrugated boards to expand the production capability of existing factory amid growing demand of corrugated boards in Asia. The GSPP Cogeneration Plant operated by GSPP, is a combined heat and power facility that was built along with the construction of the new facility.

The cogeneration plant consists two lines of combined heat and power system. Each line equipped with a 16,000kW gas turbine generator that uses natural gas as fuel and a 71.6 ton/ hr heat recovery steam generator. The plant supplies total of 30,000kW and 141 ton/hr of steam to the entire factory including the new facility. Through the addition of the plant, the factory is able to generate its own energy and enabled stable supply of electricity and steam.

#### Our Work Plant Facilities / Civil Engineering and Constraction

Shinryo Corporation's scope of work was Engineering, Procurement, Construction and Commissioning (EPCC) of all the services including plant facilities, air conditioning, plumbing and sewerage, fire protection, electrical as well as civil engineering. We have made use our extensive experiences of plant construction in Malaysia to carry out the engineering and construction.

During the engineering stage, we used 3D-CAD to efficiently design the detailed plant layout and optimized the position of valves and instruments to allow the customer to easily operate and carry out maintenance of the plant.

In construction, we optimized construction quality and efficiency by promoting prefabrication such as erection of furnace for duct burner at an external workshop as well as adopting modular type boiler. Due to the COVID-19 pandemic, some technical advisers for imported equipment were unable to attend the commissioning at the project site. However, we managed to carry out remote commissioning for some of the activities and completed the project as planned.

The cogeneration plant enables low nitrogen oxide (NOx) operation by dry low emission combustion even in Malaysia where gas calorific value fluctuates greatly compare to Japan. The plant also has highly efficient, energy saving and low CO<sub>2</sub> emissions performances. The NOx emissions are significantly lower than Malaysia's emission regulations, achieving environmentally friendly plant facility.

![](_page_45_Picture_1.jpeg)

## **Realize Safe and Highly Efficient Work Processes**

More efficient operations and higher productivity are essential issues in the Japanese construction industry. Internationally, human rights of workers and labor management have also become issues. Shinryo Corporation will establish safe and highly efficient work processes with the goal of realizing safe work-friendly environments and efficient construction site operations.

## Quality Management System (QMS)

#### **Quality Policy**

Provide quality earning trust from our customers with all our effort.

Shinryo Corporation acquired the ISO 9001 quality management system certification at corporate divisions and branches in Japan and overseas. We strive to practice quality assurance activities in systems and services to provide quality that satisfy our customers based on common company-wide quality policies.

Customer satisfaction surveys after the completion of a project will provide insight about the needs of society in our effort to ensure the quality which will earn customer trust.

#### ISO 9001-certified Divisions and Branch Offices as well as Overseas Branches

- Tokyo Metropolitan Area Division
- Urban Environment Division
- Nuclear Power Plant Division
- Electric & Instrument Division
- Hokkaido Branch
  Tohoku Branch
- TOHOKU BIAHCH
- Marunouchi Branch
- Hokuriku Branch
  Nagoya Branch
  Osaka Branch
- Chugoku Branch

Yokohama Branch

- Kyushu Branch
- HONG KONG Branch
- SINGAPORE Branch

![](_page_45_Figure_22.jpeg)

#### ISO 9001 Internal Audit

Shinryo Corporation positions internal audits as part of the check process of the PDCA cycle as an important operational process to verify whether Quality Management Systems (QMS) are effectively functioning on construction sites.

We certify employees who have taken the internal auditor training course as internal auditors to promote internal audits on construction sites.

#### **Operational Flow According to a Construction Cycle**

Construction sites utilize a construction cycle outlined in a quality manual. In addition to holding construction review meetings at the start of a project, quality patrols and internal audits at various times appropriate for the progress of construction act as functions to check construction quality by identifying and finding solutions to any problem points. Securely implementing the construction cycle is the foundation of the Shinryo Corporation's construction management.

#### Example of Operational Flow According to a Construction Cycle

![](_page_45_Figure_29.jpeg)

![](_page_46_Picture_1.jpeg)

## Improve Quality and Prevent Technical Issues Through the Construction Cycle

Shinryo Corporation has set a 100% implementation rate of the construction cycle as a KPI to guarantee the construction cycle is carried out in accordance with the Quality Management System (QMS) to provide high-quality facility systems which earn customer trust.

The construction cycle is vital to building facility systems that can sufficiently satisfy the quality required by customers. The construction cycle plays an important role in putting in place preventative measures from the construction stage to ensure not only higher quality construction but also no technical trouble after delivering systems to the customer. By regularly checking what is happening on construction sites, we can work to better occupational health and safety, the environment, and productivity, view construction sites from work style reform and other perspectives, and promote safe and secure on-site management.

![](_page_46_Picture_6.jpeg)

VOICE

Hiromitsu Fujioka Executive Officer Deputy General Manager, Tokyo Metropolitan Area Division

![](_page_46_Picture_9.jpeg)

The ability to ensure the construction cycle is carried out on construction sites is indispensable in continually identifying the progress and any potential problems, which helps to make improvements at the appropriate time. We are able to enhance quality and prevent any potential technical or safety trouble by checking and taking corrective actions from multiple perspectives. This includes design requirements, compliance with laws, regulations, and technical criteria, appropriate construction plans and progress, and clearly safe construction practices. I also think checking to make sure employees can work enthusiastically is important and strive for work style reforms on construction sites.

#### **Quality Patrol**

Quality patrols on construction sites check to make sure various aspects of construction are done properly, such as aspects related to design requirements and legal, regulatory and internal technical standards.

People in charge of quality management regularly patrol construction sites to verify whether construction satisfies the conditions included in design drawings and construction quality plans as well as construction blueprints by following a checklist. These patrols also check the implementation level of important management items which organize things such as past examples of problems and specific areas pointed out by customers on customer satisfaction surveys. Quality patrols continually improve quality as a system that makes every effort to further improve quality.

![](_page_46_Picture_14.jpeg)

Quality Patrol

#### Internal Expansion of Proprietary Technology

We strive to broadly expand the latest technology and superior construction site efforts, to provide even higher quality to customers.

In fiscal 2021, we held technical seminars for Shinryo Corporation and Shinryo Group employees to encourage the use of Research and Development Center technologies. Approximately 600 employees took part both in person and online. In addition, Shinryo Corporation has striven to internally disseminate technical information by publishing technical reports, including topics such as design and construction technologies and explanations of the laws and ordinances, and by an Idea Proposal Contest for the purpose of sharing the rationalization for technology and other excellent ideas with the entire organization.

![](_page_46_Picture_19.jpeg)

Technical Seminar at the Research and Development Center

## Initiatives to Improve Productivity on Construction Sites

#### **Delivery Management System Using BIM Data**

Shinryo Corporation has developed a Delivery Management System to manage material orders utilizing BIM data to make purchasing and management on construction sites more efficient.

Material purchases have traditionally involved multiple people to handle everything from setting delivery dates to inspecting the delivered items. The adoption of this system allows the entire process to be managed centrally with data.

The system accurately extrapolates the type, quantity and other information about materials using BIM data and prevents human error in the purchasing process. The framework allows the entire process to be completed by simply sending the material data from the system to the supplier, and then scanning tags attached to the materials using a dedicated terminal upon delivery to manage the delivery status. Through this type of centralized management, we are able to streamline procurement to reduce the operational burden of construction sites.

![](_page_47_Figure_6.jpeg)

## More Efficient Spiral Duct Production Processes Using BIM

Generally, the installation of air conditioning ducts requires each duct to be measured, cut, and hung on the construction site. The Shinryo Corporation has been working to shift to a prefabrication process at plants using BIM data to drive the efficiency of on-site operations.

This new approach breaks down the ducts into individual parts according to BIM data and exports the part list required by each construction site. By directly importing the exported data into the processing machine at the duct manufacturer, the system eliminates any input work on the manufacturer side to enhance efficiency of the duct production process. This technique contributes to resource savings as well because it eliminates material waste resulting from duct production.

#### Shinryo Corporation

We use BIM data to create duct distribution drawings and a parts list necessary to produce the spiral ducts.

#### Duct Manufacturer Company

The manufacturer produces the spiral ducts by importing the duct distribution drawings and parts list data into the processing machine.

![](_page_47_Picture_14.jpeg)

#### Promotions of ICT Tools for on-site Management

Conventional on-site management operations verify the progress of construction through a manager who reviews paper blueprints on the construction site before returning to the on-site office to create a report and share their findings. Today, the use of ICT tools lets anyone share information more rapidly and eliminates the time necessary for returning to the on-site office because inspectors can display blueprints and other materials, record inspection details, take photographs, and much more using tablet terminals. These ICT Tools also help drive the efficiency of measurement work because airflow, pipe pressure and other measurement data can be directly input from measurement instruments to the tablet terminal.

![](_page_47_Picture_17.jpeg)

Airflow Measurement

![](_page_47_Picture_19.jpeg)

Measurement Data Input on Tablet Terminal

#### **Online Confirmation of On-site Progress**

Shinryo Corporation is actively incorporating methods to confirm the progress on construction sites online via video. For example, the person in charge on site can wear a portable camera and patrol the construction site so that the video can be shared online with project managers who can then report the progress of work and confirm particular installation areas while watching the video. Videos and photos taken of the site are saved in the cloud to provide a means of confirmation at a later day, which enhances efficiency by allowing participants to check the progress of work according to their own schedule.

In addition, we have installed fixed cameras in areas on construction sites requiring regular inspections and are testing the use based on the progress of the work, such as checking the progress via cameras online as necessary.

![](_page_48_Picture_3.jpeg)

Confirmation from the On-site Office

Robot to Draw Construction

Blueprints

![](_page_48_Picture_5.jpeg)

On-site Verification of Work Progress

+3100

1000+3100

3000

# Realization of a Digital Transformation in Construction Using Robots to Draw Construction Blueprints

Shinryo Corporation is developing and operates robots to draw construction blueprints using information extracted from BIM data to fully automate the drawing of blueprints on floors, such as the position to install equipment as well as routes for piping and ducts.

In 2021, we built 20 more units to roll out to construction sites throughout Japan. This is the largest number of robots in operation in the construction industry.

The use of robots can reduce labor by 25% because it eliminates the need for marking work generally done by hand. Moreover, this contributes to the realization of a digital transformation in construction by revolutionizing the workflow by creating all the construction drawings to get the work done without construction blueprints for part installations and other work.

# Design and Construction Process Optimization

#### of Heat Source Systems Using BIM

Shinryo Corporation is advancing research and development to limit energy consumption and life cycle costs by optimizing design and management methods of heat source systems. We have developed tools to perform detailed energy-cost simulations which have proven to dramatically improve the efficiency of creating simulation models and the accuracy of simulation results by linking to BIM data. The use of this tool allows simulations at each stage whether during the basic and practical designs or construction phase. We created methodologies to confirm optimization at each stage of the construction process from design through construction and demonstrated its effectiveness. The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan

59th SHASE Award for Technical Papers (Academic Papers Category)

Drawing of Floor

#### Simulation Results at Each Stage Using BIM Attribute Data

![](_page_48_Figure_17.jpeg)

KPI Outline of KPI for Priority SDG Subjects (Detailed List on ➡P25-26)

## Health and Safety Initiatives

Shinryo Group Health and Safety Policy Safety First for our Prosperity

Shinryo Group has prioritized safety above all else based on the Health and Safety Policy unchanged since its founding. All employees and our partner companies engage in health and safety activities to prevent labor accidents.

To eradicate occupational accidents, it is important to nurture a higher sensitivity to dangers and extract latent onsite hazards before executing any type of countermeasure. Shinryo Corporation actively creates education and training opportunities to teach these skills. The production of work manuals and thorough checks also prevent human error. We are also focusing on ways to prevent any serious incidents caused by unscheduled work.

Shinryo Corporation has set a 0.40 or less frequency rate of occupational accidents as a KPI to realize its commitment to manage safe and work-friendly constructions sites. With the cooperation of the Safety and Health Council, we are making every effort to prevent occupational accidents for the safety and security of construction sites.

![](_page_49_Picture_7.jpeg)

#### Cooperation with the Safety and Health Council

At the headquarters and branches, the Safety and Health Council play central role in formulating annual plans and conduct training for managers, health and safety supervisors as well as diverse specialty training and education for partner companies.

In particular, we consider managers who act as the deputy of the business proprietor as key persons for health and safety management who clearly identify dangers and hazards. We also ask training be taken to better the skills of managers as well as health and safety supervisors so that they can formulate measures to prevent occupational accidents. We plan and hold special training necessary for full harness safety belts, scaffolding assembly, procedures for handling asbestos and other such work while actively promoting employees of partner companies to acquire certifications.

During the busiest times for the industry, Shinryo Corporation regularly conducts safety patrols to identify onsite construction hazards and guide corrective actions. In fiscal 2021, we conducted these patrols using comprehensive measures to prevent the spread of the COVID-19.

![](_page_49_Picture_12.jpeg)

Special Training on Full Harness Safety Belts

#### Promotion to Expand the Construction Career Up System

The Construction Career Up System, launched in April 2019, is a certification system developed by the Ministry of Land, Infrastructure, Transport and Tourism in cooperation with construction industry organizations and other entities for the purpose of certifying the skills and experience that an engineer has amassed from an objective standpoint. The adoption of this system is expected to drive on-site work quality and efficiency by enhancing registration of practical experience and certification of engineers and ensuring fair evaluation of those skills.

Registration rate of Safety and Health Council members 72% (Target: 80% or higher)

Shinryo Corporation promotes the use of the Construction Career Up System with the hope of improving construction quality by not only visualizing the careers of individual engineers but also capabilities of partner companies through experienced engineers they employ. Currently, we have put this system into practice on construction sites in an effort to encourage and expand the certification to partner companies.

#### Measures to Prevent the Spread of the COVID-19 Infection on Construction Sites

Shinryo Corporation does everything in its power to prevent the spread of COVID-19 on construction sites with the formulation of guidelines founded in the Ministry of Land, Infrastructure, Transport and Tourism Guidelines for Preventing the Spread of COVID-19 in the Construction Industry.

Especially in staff offices that tend to become crowded, we have put up desk partitions, use staggered lunch schedules, and other such measures to ensure safe spaces for employees to take breaks.

![](_page_49_Picture_22.jpeg)

Safe Meetings Ensuring Social Distancing

![](_page_49_Picture_24.jpeg)

Measure to Combat COVID-19 in Staff Office

#### **Overseas Health and Safety Activities**

The Shinryo Group has a broad range of construction sites in Southeast Asia, India, the Middle East, Africa, and many other parts of the world. We strive to undertake health and safety management practices unique to the circumstances of each country.

Cambodia and its capital of Phnom Penh in particular are showing significant economic growth recently. Many skyscrapers and public facilities are being built, but there is a lack of a skilled and experienced workforce. Shinryo Corporation has been working to provide the same level of health and safety management on construction sites as that of Japan in accordance with the various laws and regulations of the country. A person in charge of safety is always assigned to construction sites to provide safety guidance during morning and daily meetings. We also take advantage of other safety

Asbestos and RCF Management

The Shinryo Group has put in place asbestos and Refractory Ceramic Fiber (RCF) management systems to prevent any adverse health effects to employees, on-site staff, customers, or anyone else involved with renovation work. To promote proper management on construction sites, Shinryo has established standard Group guidelines to ensure thorough on-site management through an asbestos and RCF construction cycle.

We hold meetings with everyone in charge of asbestos and RCF management twice a year to review and share the level of asbestos and RCF management. In fiscal 2021, these meetings successfully raised awareness about amendments to the Air Pollution Control Act, the Ordinance on Prevention of Health Impairment Due to Asbestos, and other applicable laws and regulations.

#### Use of Green Site Construction Website

Green Site is a system to create, submit, and manage labor and safety documents online (Operated by: MC Data Plus, Inc.). This website is used by many construction companies to create documents more efficiently.

Shinryo Corporation has formed a dedicated team and built a system for that dedicated team to review documents from not only primary suppliers but also secondary and subsequent suppliers. We engage in uncompromising compliance with laws measures that include conducting safety patrols, training personnel new to the site, and inspecting any equipment brought onto the site. These efforts aim to improve safety awareness as well as nurture a culture of safety.

![](_page_50_Picture_10.jpeg)

Morning Meeting on Construction Site (Cambodia)

Moreover, a check list to prevent asbestos exposure published by the Ministry of Health, Labour and Welfare in March 2021 was distributed to people in charge of construction work on-

site to promote even greater awareness about the measures which should be taken during demolition and renovation work on construction sites.

![](_page_50_Picture_14.jpeg)

Removal Operations for Products that Contain RCF

and regulations by using this system to properly manage the documentation required under the Construction Industry Law and other statutory regulations. The Green Site Construction website also helps reduce the administrative work of partner companies because it links to the Construction Career up System (□>P49), such as the registration of information about engineers and other staff.

## CSR Procurement Guidelines

Shinryo Corporation pursues initiatives through cooperation and coordination with its business partners, especially partner companies, to expand activities to not only its own business activities but also throughout our supply chain.

In terms of procurement, we have established Shinryo CSR Procurement Guidelines and have asked over 500 companies to cooperate while deepening understating about corporate social responsibility.

#### Shinryo CSR Procurement Guidelines and Items Therein

- 1. Fair and sound corporate activities
- 2. Quality, safety, and business continuity
- 3. Consideration of human rights, labor, and occupational health and safety
- 4. Consideration of the environment
- 5. Legal compliance
- 6. Management of information

![](_page_51_Picture_1.jpeg)

## **Build Refreshing Environments Rich with Creativity**

The construction industry in Japan faces the major challenges of reforming long work hours and building flexible work environments. Shinryo Corporation will build workplaces where diverse human resources are motivated and can each reach their full potential with the goal of realizing a refreshing, highly productive company rich with creativity.

## Work Style Reform

Shinryo Corporation has been working to reform work styles since 2016. These reforms go beyond simply addressing long working hours as an effort to realize the ideal work style, which should help heighten employee satisfaction. With only three years until the amended Labor Standards Act goes into effect in April 2024 in the construction industry, we launched the Challenge 45 project as an initiative aiming to limit monthly overtime to 45 hours.

#### Refreshing Work Style Project - Phase 5

Shinryo Corporation has continued to use the Refreshing Work Style Project as an initiative for employees to review their own approach to work since 2016. This work style reform initiative shares specific ways to enhance work styles from innovations to increase productivity to invigorating communication and cultivate broader awareness.

In May 2021, about 180 employees from the Shinryo Corporation and Shinryo Group companies participated in an online meeting to report on Refreshing Work Style Project results. All of our corporate divisions, branches, and three Shinryo Group companies announced a total of 20 examples of successful work style reforms, including the use of digital tools to enhance communication and management techniques on construction sites. Among these reports, the presentations from our Asian branches engaging in work style reform together with employees from various countries with different perspectives on labor by country attracted much attention.

We are bundling and sharing the many innovations realized through this activity which encourages employees to think about how to change their own work style in a Work Style Reform Guidebook (Collection of Case Studies).

Through the Refreshing Work Style Project, Shinryo Corporation has gradually shifted its corporate climate from one only seeing work style reforms as impossible to one that makes employees feel at ease taking paid leave or going home early. In the future, we aim to achieve even a better work style through a wide range of initiatives.

\*Shinryo Technical Service Corporation, Shiroguchi Co., Ltd., and Daiei Denki Co., Ltd. were involved in the system design and installation.

#### Ideal Work Style of the Shinryo Corporation

- Work-friendly environment with a refreshing and open corporate climate
- Pride, satisfaction, a sense of accomplishment, and growth
- A fulfilling work-life balance
- Work style driving maximum results in a limited amount of time

#### Some Examples in the Work Style Reform Guidebook (Collection of Case Studies)

#### Job Visualization

- Analyze the time required for a job
- Visualize on-site jobs using white boards

#### Reforms to Ensure Work Continues When Jobs Arise Suddenly

• Introduce concentration times and booths

#### Preparations to Build a More Work-friendly Environment

• Negotiate and enhance larger on-site offices

#### Introduce dual displays

#### **On-site Morning Meeting Reforms**

- Abolish on-site morning meetings
- Share information on monitors at morning meetings

#### Use of ICT Tools

- Share information using on-site messaging tools
- Conduct project manager meetings online
- Conduct on-site inspections remotely
- Provide video training to new on-site personnel

## Reforms Through Cooperation with Other Companies

- Reform work styles through discussions with construction companies
- Negotiate to eliminate urgent work requests

![](_page_52_Picture_1.jpeg)

![](_page_52_Figure_2.jpeg)

#### Challenge 45 to Comply with the Amended Labor Standards Act Going into Effect April 2024

![](_page_52_Figure_4.jpeg)

![](_page_52_Figure_5.jpeg)

## Cultivating an Enthusiastic Workplace

#### **Promotion of Health Management**

#### **Health Declaration**

Shinryo Corporation has striven to develop human resources and build a work-friendly environment since its founding based on the belief people are the most valuable asset. We also think supporting physical and mental health is key to cultivating enthusiasm in every employee. The promotion of health management is a critical management challenge for the Shinryo Corporation. In March 2021, our President announced the Health Declaration. This commitment will enhance the vitality of the Shinryo Corporation and contribute to the development of a sustainable society with the hope of realizing our management vision to *Create a Freshening World*.

#### Better Health for an Enthusiastic Workplace

Shinryo Corporation engages in a broad range of activities to promote better health so that every employee can actively participate thanks to good health and enthusiasm.

To promote health management, we coordinated with the Safety and Health Committee to build a system that links health officer, health manager, and industrial physicians at each location throughout Japan.

Shinryo Corporation focuses on communicating information which can help raise awareness about health. Thus far, we have held lectures on sleep, smoking, alcohol, medicine, and infectious diseases as well as distributed a public nurse health newsletter. With the adoption of a retirement age of 65 in 2020, measures to address the health of older employees have become more important. Therefore, we held lectures on depression and dementia for these older employees as well as a locomotive syndrome\* classroom to sustain the function of locomotive organs. Shinryo Corporation has also put in place measures to promote the health of female employees. We held seminars to teach how to do selfscreenings for breast cancer at the headquarters and six other branches and locations with the participation of 152 employees.

\*Locomotive syndrome is a condition that reduces the ability to stand and walk due to the impairment of locomotive organs.

#### Progress and Target Values of Health Initiatives

#### **Health Declaration**

The Shinryo Corporation is committed to promoting health management.

- 1. We will support the physical and mental health of every employee.
- 2. We will build a workplace where everyone can feel safe and secure to reach their full potential.
- 3. We will heighten the vitality of our organization and contribute to the development of a sustainable society through employees' healthy body and mind, and better workplace environments.

#### Health Management Promotion System

![](_page_53_Figure_17.jpeg)

	5				
Performance Indicator/Fiscal Year	Annual Health Examination Rate	Rate of Employees Undergoing Necessary Follow-ups/Health Guidance	Stress Check Rate	Rate of Annual Paid Leave Taken by Employees	Ratio of Persons Getting Enough Rest by Sleeping
FY 2017	100%	5.4%	99.0%	62.0%	66.0%
FY 2020	100%	69.7%	96.2%	85.2%	72.3%
FY 2023 Target	Sustain 100%	80%	Sustain 90% or higher	Year-on-year increase	80%
FY 2026 Target	Sustain 100%	100%	Sustain 90% or higher	Year-on-year increase	90%

Item	Policies/Education
Physical Health	<ul> <li>Follow-up after regular health checkup</li> <li>Health Consultation Office through the industrial doctors (offered once a week)</li> <li>24-hour health consultation service (telephone/email consultations)</li> <li>Support for dental check-ups (provides free check-ups at the headquarters and 1,200 dental clinics contracted by Shinryo Corporation throughout Japan)</li> <li>Grants for rubella vaccinations (provides support to employees and family members who live with them)</li> <li>Implementation of flu vaccinations right in offices (Headquarters, Yokohama Branch, etc.)</li> <li>Full support for treatments to quit smoking (provides full support to employees who quit smoking for three or more months after starting treatment)</li> </ul>
Mental Health	<ul> <li>Implementation of stress-checks, creation of opportunities for employees who would like consultations and advice from doctors, and implementation of PDCA to improve the workplace environment</li> <li>Consultation Office through industrial mental health professionals (offered once a month)</li> <li>Implementation of mental self-care education for new employees</li> <li>Implementation of mental health education (35 newly appointed managers and 35 specialized education candidates took this program in fiscal 2021)</li> </ul>

#### Introduction of Programs to Support Flexible Work Styles

Shinryo Corporation is introducing various policies to encourage employees to take leave thanks to policies and mutual support that build a flexible workplace so that employees can work while taking care of family as well as having and raising children.

Program	Overview
Telework Program	• This program provides work-from-home and other telework options to smoothly execute the Business Continuity Plan (BCP) if working on-site is difficult when pregnant or raising children or when caring for oneself or sick family or in large-scale natural disasters or pandemic-type situations.
Transfer System to Accompany Spouse	• This policy allows employees to transfer when an employed spouse has been transferred if they want to keep working at a Shinryo Corporation office and a place at that office is available.
Come-back System	• This policy allows regular employees who have worked at Shinryo Corporation for more than three years and resigned to (1) raise children, (2) care for family, or (3) transfer with a spouse to return to work within five years of their resignation as a general rule.
Occupational System	• This policy supports ongoing employment by providing work transfers based on the desires of regular employees who would like to limit their work area or type of job according to their circumstances, such as care to a sick family member. We also offer this program to employees hired mid-career.
Half-day leave acquisition system for annual paid leave	• This system allows employees to take annual paid leave in half day increments.
Expanded administration of an accumulation system	• This expansion allows employees to carry over the number of days left in annual leave to the next fiscal year to use the paid leave they have left the previous year and the year before that for non-work related injuries and illnesses as well as to care for children and other family members.
Special allowances for annual paid leave	• Employees who do not have 20 days of total annual paid leave carried over from the previous year and provided in the current fiscal year may take special leave (paid) according to their tenure at the company in the event of an absence for the reason of sickness after all of the annual paid leave is extinguished.
Leave acquisition promotion system	<ul> <li>Project leave policy: Employees in construction roles may take consecutive leave at appropriate times such as at the completion of on-site construction (up to five business days that may be taken by splitting).</li> <li>Anniversary leave policy: All employees may take leave on days recommended by the company such as their birthday, birthdays of family members or school events (three working days per year).</li> </ul>
Special leave program	• Refresh leave policy: Employees may take designated consecutive leave as commemoration for 10, 20 and 30 years of work.
Maternity leave program for spouses	• This program allows employees to take up to five days of leave from one month before the due date to one year after their spouse gives birth. It also lets employees take leave in half-day increments.

#### Activities to promote active participation of diverse human resources

Shinryo Corporation has established systems and policies to promote and support the active participation of diverse human resources. We also promote the active participation of women and conduct activities to communicate the appeal of the construction industry.

Purpose	Systems/Policies/Events
Promote the success of female employees	<ul> <li>Release of information and action plans based on the Law to Promote Women in the Workplace on the Ministry of Health, Labour and Welfare Positive Ryouritsu website</li> <li>Publication of an Independent Conduct Plan for Female Employees Participation on the Keidanren (Japan Business Federation) website</li> </ul>
Promote active participation of senior employees with rich experience	<ul> <li>Revisions of the retirement age to 65 (60 before the change in April 2020) with raises, promotions and ongoing additions of points for retirement benefits from the date of joining of the company to the age of 65</li> <li>Life plan seminars for 58-year old employees</li> </ul>
Promote active participation of employees hired mid- career	<ul> <li>Implementation of training for new employees (company philosophy, founding spirit, programs and regulations, compliance, occupational health and safety management, disaster prevention measures, etc.)</li> </ul>
Promote active participation of foreign nationals	<ul> <li>Japan invitation program for overseas Group companies (annual seminar, but not held in fiscal 2021)</li> <li>Practical technical training of engineers from the SHINRYO (PHILIPPINES) CO., INC.</li> <li>Implementation of a variety of education for overseas branches and overseas Group company staff (compliance, safety and technical education)</li> </ul>
Promote active participation of employees with disabilities	<ul> <li>Work assignments according to aptitude in fields such as design and legal affairs</li> <li>Establishment of satellite offices equipped with environments offering amenities such as work support systems and barrier-free designs</li> </ul>

## Human Resource Development Rich with Creativity

#### Promotion of education and training

Shinryo Corporation plans and launches educations programs centered upon the education and training committee for the purpose of improving business execution skills by bringing understanding of the corporate philosophy and basic philosophy. The Examination Committee drives forward training practically in each department while improving the skills of each employee through promotion examinations.

#### **Development Training System Framework**

![](_page_55_Figure_5.jpeg)

#### Development training system

We designate group training and internal testing as required training to recognize the roles of employees and improve their knowledge and skill by level.

New employee training and education provides the training and education necessary for new employees to learn the basics. This program also provides promotions in stages from the second year by passing internal tests and external certification exams, which takes the skills of managers to the next level. The broad curriculum such as elective external seminars by duty and position and practical education according to department and occupation also establishes a development training system able to ensure the continued learning of each and every employee.

#### Group training by level and year

![](_page_55_Figure_10.jpeg)

#### Training and Education for Diverse Human Resources

## Active Participation of Human Resources Regardless of Education, Age or Nationality

Shinryo Corporation has translated the Japanese in its company philosophy that states to "have leadership, irrespective of education and age" to include nationality in the English translation. To develop as a global enterprise, we need to build an environment able to cultivate and facilitate a wide range of human resources to actively participate unbounded by nationality.

#### Human Resources Active on the Global Stage

Shinryo Corporation opened branches and overseas Group companies focusing on Asia and the Middle East. Launched in 2014, the overseas practical dispatch system is for employees who have worked for the company between four to eight years that have first-hand experience in Japan, as a way to cultivate human resources active on the global stage.

In this program, employees selected from an open solicitation each year are appointed overseas from one to three years to gain experience from the start to the completion of an overseas project.

#### New Employee Training for Mid-career Hires

Shinryo Corporation provides training to mid-career employees with experience working at another company or institution. Shinryo Corporation offers opportunities to deepen understanding about important matters that include the founding spirit and basic philosophy in addition to the management vision. In addition, we provide company policy, regulation, compliance, health and safety management training.

#### Human resources with diverse skills

Shinryo Corporation provides support such as subsidies for the cost of acquiring certifications to employees and incentives for employees who have acquired certifications in order to cultivate human resources who have a high level of technical and specialized abilities and skills. We broadly support not only certifications required by the business but also from a perspective of ability development.

#### New Employee Training and Education

Over the one-year of new employee training and education, we have established the perfect curriculum for each technical and administrative system to teach the skills necessary to create an organization where everyone can work with confidence right after assignment.

![](_page_56_Figure_2.jpeg)

#### Training Dormitory "Kofu Dormitory"

The overall training and education at Kofu Dormitory for approximately one year is an ongoing tradition at Shinryo Corporation since its founding. Employees who enter the company in the same year are able to build bonds by living and learning together. The system helps employees in many ways, such as alleviating concerns about the job and seeking advice from those with more experience at meetings held by each team at the dormitory.

\*This dormitory puts in place various measures in 2021 to avoid the Three Cs and prevent the spread of the COVID-19 infection.

![](_page_56_Picture_6.jpeg)

Kofu Dormitory

![](_page_56_Picture_8.jpeg)

Dormitory

#### **Education Programs**

#### Primary training and education

Primary training and education teaches the posture necessary for professionals from the corporate philosophy, policies, and other basic knowledge to business manners over the first month after joining Shinryo Corporation. This program also provides the essential basics for safety management on construction sites as well as on-site operations while interweaving technical experience. In addition, employees learn basic knowledge about Shinryo Corporation businesses through mediums such as courses to teach basic knowledge on construction equipment as well as information related to the main equipment and materials handled on construction sites.

#### Practical on-site training and education

We conduct practical training and education for roughly six months after the primary training and education for not only technical employees but also administrative employees on construction sites in metropolitan areas. Senior employees are in charge of this practical education and teach a broad range of knowledge, including overall management operations related to processes, quality and safety as well as handling procedures for work drawings and the main equipment. This helps deepen understanding about its business through practical training on construction sites, which are most important to Shinryo Corporation.

#### Overseas short term training system

Overseas short term training system for new employees held every year. This system helps deepen understanding about living and working overseas by providing an opportunity for new junior employees to travel to construction sites overseas and work on-site there for one week. Communication with local staff also cultivates human resources who have a global perspective and will to work overseas.

\*This training program was not implemented in fiscal 2021.

#### Education by Assignment

Shinryo Corporation provides practical education by assignment by dividing engineers and administrators. Engineers take part in training to learn how to create work drawings using 3D CAD software while administrators learn the basic foundation to sales and accounting through hands-on training. These programs also provide an opportunity to reaffirm the attitude as a professional in secondary training after the initial training is done.

# VOICE

![](_page_56_Picture_21.jpeg)

Taku Shimosaka New employee

I learned and lived with everyone at the Kofu Dormitory, which built strong bonds with my colleagues. Each one of us underwent practical training on different construction sites. We would come back to the dormitory and talk about the things we had learned that day, which helped us gain new knowledge and communication skills. My time there was priceless. I think it was an invaluable experience that I could only have had during my first year on the job. I hope to become a technician trusted by my colleagues while we work together to hone our skills even more in the future. Masato Ito Dormitory Officer Sales Section 1, Sales Department 2 Urban Environment Division

![](_page_56_Picture_25.jpeg)

## Corporate governance

#### **Corporate Governance System**

The Board of Directors deliberates submitted agenda items based on agenda and reporting criteria stipulated by agenda items and by Board of Directors rules set forth in the Companies Act. The Management Council deliberates on important matters concerning company management, in addition to proposals submitted to the Board of Directors. The Executive Officers communicates reports on the status of work execution by executives and resolutions of the Management Council, and performs prior hearings on opinions concerning matters for deliberation by the Management Council. The Audit Division verifies compliance and the efficacy and efficiency of systems, organizations, and work activities. In addition, it has performed audits of not only domestic and overseas workplaces but also of construction sites.

The Compliance Committee seeks to enforce and improve awareness of legal compliance in conjunction with corporate ethics in collaboration with the Committee and supervisors in each department and Group company, while also conducting policy decision-making and corrective guidance with regard to reports and consultations through the Shinryo Hotline reporting and consultation service.

The Risk Management Committee is also extracting vital technological and contractual risks in large-scale jobs which have the potential to greatly affect management and periodically engages in discussions about measures to respond to these risks.

#### **Corporate Governance System**

![](_page_57_Figure_8.jpeg)

#### Internal Control

Since the construction of the internal control system is mandated by the Companies Act, Shinryo Corporation has performed reviews of the system as necessary, and works to fully secure compliance and enhance consistency and efficiency in work execution.

#### Overview of Shinryo Corporation's basic policy on internal control system

- 1. Systems to ensure that the execution of duties of executives and employees of the Group conforms to laws, regulations, and the Articles of Incorporation
- 2. Systems concerning the preservation and management of information pertaining to the execution of duties of directors
- 3. Rules and other systems concerning management of the risk of loss in the Group
- 4. Systems to ensure the efficient execution of duties of directors in the Group
- 5. Systems to ensure reasonable work in the Group composed of our company and Group companies
- 6. Matters concerning the employees in cases of auditors requesting the appointment of employees to assist the duties of auditors
- 7. Systems by which executives and employees of the Group or those that received the report to inform to auditors, and other systems concerning reporting to auditors
- 8. Systems to otherwise ensure the effective conduct of audits by auditors

#### **Business Continuity Plan (BCP)**

Shinryo Corporation has established a Business Continuity Plan (BCP) to ensure business activities continue during large-scale disasters and other such emergencies. In times of peace, we strive to improve the practicality of the BCP by conducting regular training while pushing forward preliminary measures such as building internal infrastructure and preparing cooperative systems with partner companies. Shinryo Corporation concluded cooperative disaster management agreements with local governments and other such partners to respond to requests for support at the time of natural disasters.

## Business Continuity Plan (BCP) Basic Policies of Shinryo Corporation

- 1. Immediately provide support by prioritizing the safety of executives and employees.
- 2. Sustain ongoing operation of corporate functions by recovering company facilities as soon as possible.
- Cooperate with the recovery of sites currently under construction or completed properties as support toward the business continuity activities of our customers.
- Introduce support to recovering infrastructure and support for residence affected by the disaster as much as possible as a member of the local community.

#### **Risk Management**

Shinryo Corporation has built systems and measures to minimize the damage caused by quality, safety, environmental, compliance, information security and various other risks in the business environment surrounding the Group to ensure business continuity. We have also put in place Risk Management Regulations that gather basic risk management items and Crisis Management Measure Regulations. Specific response guidelines were also created to ensure the ability to rapidly respond to risks worldwide.

#### Risk Management System

![](_page_58_Figure_10.jpeg)

![](_page_58_Figure_12.jpeg)

#### **Organizational Structure During Disasters**

# Initiatives to Address Priority Subjects

#### Information Security Management Systems

Shinryo Corporation has established Management Rules of Corporate Information and regularly conducts security audits of primary business and construction site offices to properly manage customer and supplier information. We have focused efforts on holding internal liaison conferences on information security and activities to improve information literacy. In March 2021, an e-Learning program taught the importance of information security as well as the threats and measures against targeted email attacks.

#### **Response to the COVID-19 Pandemic**

Shinryo Corporation established the Shinryo Group Risk Response Task Force while advancing efforts to prevent the spread of the virus at all of its business locations worldwide starting at the end of January 2020 to guide the decisions and execution of measures to ensure business continuity.

To protect the health and safety of Shinryo Group executives and employees worldwide, the task force is working to check the health of everyone involved, gather and share information about the COVID-19, and procure masks, antiseptics and other preventative articles.

Between June and October 2021, our headquarters and the Osaka Branch implemented a workplace vaccination program to prevent the spread of the COVID-19 which inoculated approximately 2,800 people. We have striven to properly manage vaccines during this vaccination program.

## Compliance

#### Legal Compliance System

#### **Compliance Promotion System**

The Shinryo Group believes uncompromising compliance is the highest priority subject for management. All executives and employees of the Group will practice legal compliance, which is at the heart of the Company Philosophy to "be fair and straightforward" in their actions while striving to gain the support of all of our stakeholders.

#### Compliance Promotion System diagram

![](_page_59_Figure_6.jpeg)

#### Shinryo Group Code of Business Conduct

We, the executives and employees of Shinryo Group, have basic and common awareness of corporate ethics and compliance in accordance with Shinryo Group's company philosophy and this Code of Business Conduct and Standards of Conduct, and positively practice compliance in our daily business with a strong sense of belonging to the company.

- 1 Pursue customer satisfaction by standing in customers' positions.
- 2 Pursue management efficiency for the sake of shareholders.
- 3 Create energetic and comfortable workplaces that staff can show their families how proud they are of their Company.
- 4 Together with our business partners, thoroughly comply with corporate ethics, laws, and regulations and conduct fair, transparent, and open.
- 5 Constantly pursue how we should be as a member of a healthy society.
- 6 As a global enterprise, contribute to the societal development of related countries.

#### **Guidelines and Other Policy Measures**

#### **Japan Compliance Guidelines**

## Compliance Guidelines/Collection of Compliance Examples

Shinryo Corporation formulated the Shinryo Group Compliance Guidelines founded in the basic principles of the Company Philosophy, Code of Business Conduct, and Standards of Conduct. We have also created the Explanations on Related Laws and Regulations booklet bringing together systematically organized laws such as the Antimonopoly Act and Construction Industry Laws. Shinryo Corporation and all of the executives and employees of Group companies have taken the guideline education and have committed to compliance.

We have also created a Collection of Compliance Examples bringing together specific examples related to compliance as a way to educate and raise awareness about compliance in our executives and employees.

#### **Global Compliance Guidelines**

#### Formulation of Overseas Guidelines

We formulated the Compliance Guidelines (Global Version) for Japanese employees active globally as well as executives and employees of overseas Group companies. We are defining basic mandatory principles in-line with different cultures and customs everyone should adhere to based on compliance with each type of international rule which includes compliance to the laws and regulations in each country and region as well as human rights.

#### Thorough Compliance to Guidelines for Anti-corruption Overseas

Shinryo Corporation has brought together compliance items and the compliance system related to government officials when conducting business overseas, as Guidelines for Anticorruption Overseas. These guidelines also include countermeasures tailored to the circumstances of each country and region in addition to basic principles as well as anticorruption concepts common to each country. We respond to changes both statutory and political and make revisions in a timely manner. All of the Japanese employees who work at overseas bases as well as executives and employees from local companies participate in training about these guidelines.

## Shinryo Group Basic Principles on Anti-corruption Overseas

- 1. We will not pursue the acquisition, expansion or profit in business through bribery or any other inappropriate means.
- We will comply with bribery and anti-corruption laws and regulations in each country and region while adhering to Article 18 of the Unfair Competition Prevention Act in Japan (prohibition of illicit profits to foreign public officials).
- 3. We will never give gifts with the intention of acquiring business or gaining favor even if such practices are customary in the country or region.

#### **Understanding and Practice of Compliance**

#### Implementation of Comprehensive Compliance Education

Implementation of education for every executive and employee throughout the Group

Compliance education is regularly held for Shinryo Corporation and Group companies worldwide. In fiscal 2021, the education addressed fraudulent accounting. Shinryo Corporation strives to build a corporate climate to engage in operations that broadly address social issues in a timely manner while always keeping in mind compliance.

Target Trainees	Training Content
Engineers	Compliance violations likely to occur on construction sites
New employees	Explanation on Compliance Guidelines
New mid-level employees	Explanation on Compliance Guidelines
Newly promoted employees	Companies and compliance
Managers	Explanation on civil code amendments
Employees in each department	Various compliance violations likely to occur in business

#### Periodic Distribution of Shinryo Compliance News

Shinryo Compliance News is distributed periodically by email to all of our executives and employees. The news covers a broad range of topics from legal explanations about the Construction Industry Law and other statutory regulations relevant to Shinryo Group businesses, and points on legal amendments to compliance in the workplace. Each issue also provides a system to easily offer feedback and make inquiries about compliance through a questionnaire.

#### **Responding to Antisocial Forces**

We will work to stay faithful to our Code of Business Conduct and Standards of Conduct stating our intention to never Participation rate in compliance training: Target: 100% \*Start in FY 2022

#### Launch of an Internal Reporting System

Shinryo Corporation has revised its Compliance Reporting and Consultation Regulations with the objective of preventing legal violations or inappropriateness as well as quickly discovering and correcting signs of these issues. Pursuant to the Whistleblower Protection Act, we have set up and are running an internal reporting system that places emphasis on the protection of whistleblowers. The SHINRYO Hotline has also been set up as a reporting and consultation service in an effort to raise awareness.

SHINRYO Hotline Reporting and Consultation Service		
Internal Service Office: Shinryo Corporation/Compliance		
Promotion Division		
E-mail: soudan@shinryo.com		
External Service Office: Wakaba Partners Law and Account		
Firm		
E-mail: soudan@wakaba-ps.jp		
This service is available to anyone whether a Shinryo Group		
executive and employee or not. *Please see the Shinryo		
Corporation website for more information.		

https://www.shinryo.com/corp/compliance.html

#### **Cooperation Between Group Companies**

We regularly hold informational liaison meetings with Group companies in Japan and share information about compliance such as response to legal reforms and formulation of internal rules to unify compliance awareness and operation as the Shinryo Group. In fiscal 2021, the revised Collection of Compliance Examples was rolled out for use in training at each company.

succumb to the threats of antisocial forces and resolutely eliminate them in a courageous manner.

## Sustainability Promotion Activities at Shinryo Group Companies

Each company of the Shinryo Group is aiding in the growth of society from initiatives to solve social issues through its businesses.

#### Shinryo Technical Service Corporation

#### **Construction Equipment Optimization Aiming for Greater Efficiency**

![](_page_61_Picture_5.jpeg)

Hideki Hagiwara President, Representative Director Date of Establishment: 1989 Address: Shinryo No. 5 Bldg., 14 Arakicho, Shinjuku-ku, Tokyo

Shinryo Technical Service launched in 1989 has continued to prove itself as a company specializing in construction equipment upgrade, maintenance, and management services. The passage of time has set us on a trajectory toward a sustainable society, which has shifted the construction industry into an era of stock and renovations. In this business climate, I think our business is an essential one.

The merger of six Group companies involved with systems and instrumentation work in 2015 created a life cycle management service system and established an organizational structure that can provide everything from new construction through maintenance and renewals through one-stop service. Our regular efforts in preventative equipment maintenance combined with maintenance cost and labor reductions and a synergistic effect, such as renovation work, aim to optimize construction equipment and improve efficiency.

We devise maintenance plans that consider a wide range of standpoints from the run time and type of use to the maintenance period recommended by each manufacturer and carefully propose the best equipment and systems for each client to save energy throughout the entire life cycle so that customers can use equipment longer.

In the last few years, Shinryo Technical Service has also started training to enhance the skills of technical employees. We constantly offer educational opportunities in an effort to improve our technical skills. This includes mentor training where veteran engineers provide guidance to young technicians, courses to enhance the ability to propose renovations, and seminars to study for various certifications.

![](_page_61_Picture_13.jpeg)

High-efficiency Equipment Upgrade Handled by Shinryo Technical Service

#### Shiroguchi Co., Ltd.

#### Social Contributions by Expanding and Enhancing Hygienic Environments

![](_page_61_Picture_17.jpeg)

Takehiro Masuda President, Representative Director

Date of Founding: 1917 Date of Establishment: 1926 Address: Shinryo Shinjo Bldg., 2-9-2, Kandata-cho, Chiyoda-ku, Tokyo

Shiroguchi provides society with environments offering an easier way of life and work, safety, security, and comfort through the design, installation, and maintenance of water supply, drainage and sanitation systems necessary for daily life. In 2017, we celebrated a century in business since our founding in 1917. Throughout all of that time, we have continued to research and innovate the world with unfettered ingenuity prioritizing people's lifestyles.

We are actively adopting prefabrication and precutting methods for standard piping used in condominiums and various other projects to increase productivity on construction sites. The piping material plants also connect the pipes, joints and fasteners and test for any leaks, which means only the installation work needs to be done on site. This fabrication method provides a fully integrated system from material procurement to fabrication, inspection and installation and offers stable quality and higher operational efficiency. We limit the amount of packaging waste by sorting the various piping parts fabricated at each plant by room for installation and

delivering those parts in reusable boxes.

Shiroguchi has also started internal team projects for work style reforms, on-site support, ICT promotion, human resource strategies, and numberbased management in preparation for the amended Labor Standards Act going into effect in April 2024 in the construction industry. Everyone is striving to innovate their work styles and increase productivity in an effort to reach the same targets.

![](_page_61_Picture_25.jpeg)

Inspection of Piping Parts Fabricated at the Plant

#### Daiei Denki Co., Ltd.

## Social Contributions by Shifting Train Stations to LED Lighting

Daiei Denki has been involved with the construction of railway infrastructure for a very long time. Many projects that we are handling recently are work to shift train stations to LED lighting systems. Lighting has become a vital system at train stations used day or night in modern times. Due to the constant use of the lights, the systems require economical maintenance and management as well as ways to save energy. By installing the proper lightning

equipment, Daiei Denki not only helps extend the life of each system and increase energy savings but also contributes to greater comfort and safety of passengers using the train station.

![](_page_62_Picture_4.jpeg)

Train Station Using LED Lighting

#### Shinryo Kougyo LTD.

#### Disaster Recovery Support of the Tohoku Region

The heavy rains brought to East Japan by Typhoon Hagibis in 2019 devastated Tohoku, Japan. The Tohoku Region has only recently restored its drainage pump station and recovered the rest of the functions halted by the disaster due to the record-breaking rainfall in each area. With the increasing risk of natural disasters every year, Shinryo Kougyo will continue to propose and provide the proper maintenance and improvements for drainage pump stations and other public utilities. Therein, we will contribute to ongoing urban

redevelopment that can provide a safer, more secure community for the local people to live.

![](_page_62_Picture_10.jpeg)

Shimo Ogawa Drainage Pump Station After Restoration

#### Akita Castle Hotel Co., Ltd.

#### Original Product Development Through Partnerships with the Local Community

The Akita Castle Hotel began sales of a cheese terrine fragrant with fermented sake lee in June 2021. The use of the sake lee byproduct of the rice wine production process brings a rich flavor to the cheese terrine. Akita Prefecture has more than 30 different Japanese sake breweries. Japanese sake is one invaluable resource sharing the mystique of Akita. Our hotel has striven to develop products that use Japanese sake and sake lees taking the creation of an

original Japanese sake in 2018 as an opportunity. We will continue to deepen partnerships with local businesses while using local resources.

![](_page_62_Picture_16.jpeg)

Cheese Terrine Fragrant with Fermented Sake Lee

#### Global Staff Co., Ltd.

#### **Diversification of Educational Opportunities**

Education is more important than ever before in order to adapt to a generation rapidly evolving technology and the labor environment. Global Staff provides a learning environment for CAD software to temp staff as demand for these skills grows. More and more of our staff is showing interest in these programs thanks to the distance-learning format. In the last six months, approximately 80 people have taken part and learned practical skills they can actually use on the job. As a way to offer human resource development adapting

to the needs of each generation, Global Staff will find solutions to overcome the limitations of time and place and realize diverse educational opportunities.

![](_page_62_Picture_22.jpeg)

Remote CAD Software Training

#### SYSPRO CORPORATION

#### Young Employee Project to Invigorate the Organization

SYSPRO worked to develop a scheduling app for the purpose of employee training and organizational revitalization. This new app makes it easier to divide tasks and adjust plans, leading to improvement in productivity because it can

be viewed while out of the office or working remotely. In the future, we hope to focus on enhancing the app features by putting our effort into making it more useful for people outside the company. Through these types of activities, SYSPRO will help promote a digital transformation.

![](_page_62_Picture_29.jpeg)

Young employee Project

#### SHINRYO HONG KONG

#### **Steady Participation in Volunteer Welfare Activities**

SHINRYO HONG KONG supports Open Door Community Services as a non-profit organization engaged in volunteer activities and community services for people in need. We have been sponsoring and volunteering for this organization for eleven consecutive years since 2011.

In June 2021, a team of five volunteers participated in an effort working to donate masks, antiseptic gels, foodstuff and other such supplies. The pandemic has constricted volunteer activities, such as those to support nursing homes. In spite of these limitations, SHINRYO HONG KONG hopes to contribute to the development of the local community in Hong Kong by continuing to volunteer for Open Door Community Services activities.

![](_page_63_Picture_5.jpeg)

Volunteer Activities

#### SHINRYO MALAYSIA

#### Measures to Prevent the Spread of COVID-19 Infection at Offices

Shinryo Malaysia has thoroughly implemented measures to prevent the spread of the COVID-19 infection at offices based on the standard management procedures to prevent the spread of the COVID-19 infection issued by the Malaysian Government.

These measures of course include taking temperatures and disinfecting hands upon arrival at work as well as using sprayers to disinfect the office on a daily basis and taking voluntary COVID-19 tests using antigen testing kits once every two weeks. We also have put in place an environment where employees can feel safe to work using daily countermeasures, from entry and exit management using an app developed by the Malaysian government to reports to the Ministry of Health if

someone does test positive.

![](_page_63_Picture_12.jpeg)

Entry and Exit Management Using the App

#### THAI SHINRYO

## Management of Safe and Work-friendly Constructions Sites

Thai Shinryo appoints safety officers as specialized staff trained in safety management to lead safety management on construction sites. The safety officers strive to manage the safety on their construction site through initiatives that maintain a high-level of safety. Safety meetings share a broad range of information from safety management procedures to safety education and examples of accidents on each construction site. The safety officers also participate in on-site safety patrols on a rotational basis where executive officers participate to learn safety measures outside of one's field in order to improve safety awareness and support construction site management that is able

to achieve a safe and work-friendly environment.

![](_page_63_Picture_18.jpeg)

Safety Patrol

#### SHINRYO INDONESIA

#### **BIM Promotion to heighten Productivity**

The use of BIM is even expanding in Asia, especially in Singapore and Honk Kong. Needs for BIM are growing too in Indonesia, such as adjustments to fit equipment and systems as well as confirmations of material quantities during customer presentations and at the design stage.

Shinryo Indonesia has a history using BIM software. In 2020, we established a BIM promotion department and began to fully ramp up BIM use. This department works in tandem with the BIM Promotion Office at the Shinryo Corporation and shares the latest information in regular meetings in an effort to improve technical capabilities and train operators in BIM software. The support of BIM operations on construction sites helps increase on-site productivity.

![](_page_63_Picture_24.jpeg)

Work of the BIM Promotion Department

## Social Engagement

Shinryo Corporation actively conducts activities to demonstrate the importance of community and culture as a company that contributes to the development of sustainable society. We also believe that steadily accumulating small, close-at-hand activities is important in engaging with local

we also believe that steadily accumulating small, close-at-hand activities is important in engaging with local communities.

#### **High School Internships**

In July 2021, sophomore living environment system students from Fujisawa Koka High School took part in an internship at the Yokohama Branch. These interns took classes on the fundamentals of air conditioning and sanitation systems and gained practical design experience on the first day while making sure to take the utmost care to prevent the spread of the COVID-19 infection. Over the next few days, the students toured various facilities to see heat source and air conditioning equipment, central monitoring systems, and other installations on renovation sites. These high schoolers experienced duct production through visits to partner companies, and learned that the construction industry exists through cooperation of many companies and their employees. Shinryo Corporation will continue to cultivate more interest and understanding about

the construction industry in youths through these internships. We will also support opportunities for students to consider and design a future career path.

![](_page_64_Picture_6.jpeg)

High School Internship at the Yokohama Branch

#### Donations to Organizations Supporting Disaster-afflicted Areas

Shinryo Corporation has been a supporting member of the non-profit organization Japan Voluntary Organizations Active in Disaster (JVOAD) since 2018. This organization provides a system to quickly obtain information from disaster-afflicted areas to make contributions according to needs.

In light of the growing number of serious and more frequent natural disasters of modern times and need for support in disaster-afflicted areas over the longer term, we also continue to donate funding to organizations that actively support the recovery of disaster-afflicted areas. In November 2020, we donated 5 million yen to JVOAD to provide relief to people and for recovery support activities of areas afflicted by the disaster.

## Model Company Safely Using Bicycles

Shinryo Corporation encourages the safe use of bicycles to reduce the use of corporate cars and improve the commuting environment for employees. Bicycles are not only used for commuting but also for getting around large construction sites and traveling between accommodations and construction sites in areas with minimal public transportation. The Marunouchi Branch uses bicycles to travel between the construction sites in central Tokyo and the office, which even reduces the time it takes to go back and forth.

Employees use these bicycles safely according to internal rules that include strict compliance with traffic laws and enrollment in insurance to be ready for any unexpected incident. In September 2021, the Yotsuya Police Department

designated the Shinryo Corporation a model company safely using bicycles.

![](_page_64_Picture_15.jpeg)

Using a Bicycle Between the Office and Construction Site

#### Clean-up Activities Around the Takamatsu Warehouse

Shinryo Corporation engages in a clean-up activity around the Takamatsu Warehouse in Nerima-ku, Tokyo every Wednesday. This warehouse is located in a residential district. The cleanup effort started as an activity to share our gratitude with the

local community that supports us on a daily basis. Our partner companies even lend a hand in the clean-up activity which has been done for about 12 consecutive years.

![](_page_64_Picture_20.jpeg)

Clean-up Activity

## Support for Culture and the Arts

Shinryo Corporation promotes activities to support the development of superb and vibrant arts and culture.

#### We support the following organizations:

NHK Symphony Orchestra, Tokyo/Orchestra Ensemble Kanazawa/Osaka Symphony Orchestra/Osaka Philharmonic Orchestra/ Kanagawa Philharmonic Orchestra/Kansai Philharmonic Orchestra/The Kyushu Symphony Orchestra/Sapporo Symphony Orchestra/New National Theatre, Tokyo/New Japan Philharmonic/Sendai Philharmonic Orchestra/Central Aichi Symphony Orchestra/Tokyo Symphony Orchestra/Tokyo Metropolitan Symphony Orchestra/Tokyo Nikikai Opera Foundation/Tokyo Philharmonic Orchestra/Nagoya Philharmonic Orchestra/The Japan Opera Foundation/Japan Century Symphony Orchestra/Japan Philharmonic Orchestra/Japan Performing Arts Foundation/Hiroshima Symphony Orchestra/Asami Maki Ballet/Yomiuri Nippon Symphony Orchestra

## **Third-party Opinion**

Hidemi Tomita, Managing Director of LRQA Sustainability KK who has given his insight into our selection process for priority subjects and other efforts in the past, joins us again to give his third-party perspective.

![](_page_65_Picture_2.jpeg)

Hidemi Tomita LRQA Sustainability KK Managing Director

Mr. Hidemi Tomita cultivated experience in CSR management at a business firm before joining Lloyd's Register Quality Assurance Ltd. in 2013. He was appointed the Managing Director of Lloyd's Register Japan K.K. in 2020. Throughout his career, Mr. Hidemi Tomita has been involved with many government committees and international standards.

\*Company name changed from Lloyd's Register Japan K.K. to LRQA Sustainability K.K. in January 2022.

The Editorial Policy for the SHINRYO Report 2022 states that this report has been compiled focusing on the initiatives for sustainability promotion, but it also includes summaries from Shinryo Group business profiles to the history of the organization. The broadness of the information herein provides an overall view of the Shinryo Group that is easy for readers to understand, even though it is not in an integrated reporting format. The SHINRYO Report 2022 offers the information which effectively deepens the understanding of employees, customers, and various other internal and external stakeholders.

The comprehensiveness of information about sustainability promotion illustrates the promotion system and the four priority subjects (materiality) unique to the Shinryo Corporation in a very clear way. The materiality identified by companies often becomes too technical and is generally hard for employees to understand. I think the four priority subjects presented in this report have found harmony with each business and are very compelling to employees. I must also praise how the KPI set for each priority issue define a fixed target. I hope the Shinryo Corporation will update the KPI and target values from a medium- to long-term perspective in the future.

Priority Subject 1: Contribute to a Decarbonized Society sets a target to reduce emissions 50% by 2030 and achieve net zero emissions by 2050, which compares favorably to the target levels expect of modern companies. I also would like to commend the clear emission reduction trends over the last several years and the formulation of actual scenarios centered upon research and development. However, as Takeshi Kagami wrote in his Message from the President, "Today, it would be harder to find a building without an air conditioning system." In the future, people will expect even more ambitious reduction target settings and specific scenarios to achieve those goals from a stance aiming to contribute to a decarbonized society. This not only includes Scope 1 and 2 emission reductions for Shinryo Corporation but also Scope 3 emissions resulting from the use of air conditioning systems in particular. Shinryo Corporation has already put in place a variety of measures and has been bettering its performance. However, I think there is a high chance of expectations to accelerate initiatives, considering the problem of climate change will become more urgent. Shinryo Corporation is not a publicly listed company. However, I think following the information disclosure guidelines of the Task force on Climate-Related Financial Disclosures (TCFD) as a future effort would benefit the Shinryo Corporation from a corporate resiliency standpoint.

The in-depth coverage of several specific initiatives to address the three other priority subjects provides a real feeling of disclosure. In the future, I would like to see higher targets and systematic initiatives to overcome each of these challenges.

I also applaud the information about Priority Subject 4: Build Refreshing Environments Rich with Creativity. The report offers a sincere look at the results achieved up until now, including targets that were not met. Unfortunately, many companies shy away from disclosing unfavorable information in an effort to make themselves look good. I hope the Shinryo Corporation will continue to provide even more comprehensive information while remaining steadfast to its company philosophy and sincere-disclosure of information.

#### **Reflection on the Third-party Opinion**

#### Katsuhiko Yakita

Director and Managing Executive Officer in Charge of Sustainability Promotion

Thank you very much for the invaluable feedback about our sustainability promotion activities. Mr. Hidemi Tomita advised us during the 2019 and 2020 idea exchange meeting concerning the priority SDG subjects to aim to set priority issues unique to the Shinryo Corporation which would be compelling to employees. We discussed what might be unique to our organization once again based on his guidance and successfully found priority subjects and KPI to address those issues. His recognition of our priority subjects and KPI this year is encouraging to our future activities. In regards to his point about our climate change initiatives, we are raising awareness about the importance of these efforts and hope to promote even stronger research and development as well as planning capabilities. We will also consider reduction targets to set for Scope 3 greenhouse gas emissions and relevant disclosure in the future. Shinryo Corporation will respond to demands of society through its businesses to build a sustainable society and create a freshening world.

#### SHINRYO REPORT 2022

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#### Shinryo Corporation

Sustainability Promotion Department, Corporate Strategy and Planning Division COMORE YOTSUYA/YOTSUYA TOWER, 5th Floor, 1-6-1, Yotsuya, Shinjuku-ku, Tokyo 160-8510, Japan

#### https://www.shinryo.com/sustainability/

SHINRYO CORPORATION

![](_page_67_Picture_1.jpeg)

![](_page_67_Picture_2.jpeg)