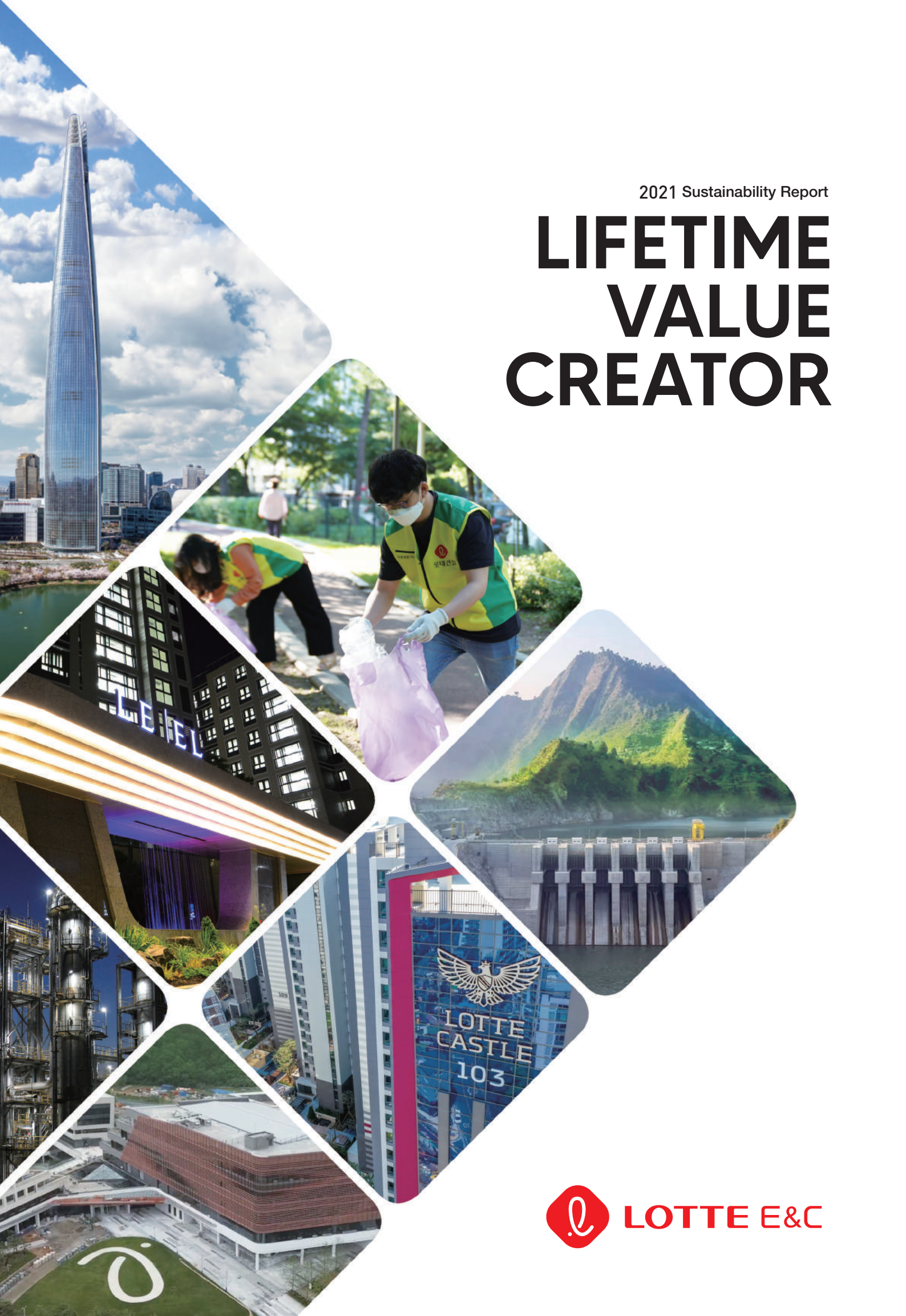


2021 Sustainability Report

# LIFETIME VALUE CREATOR



# ABOUT THIS REPORT

## Features of the Report

LOTTE E&C has published a Sustainability Report every year since 2013 as a means of transparently disclosing its sustainability management activities and performance results to its stakeholders. This report links LOTTE E&C's strategies to sustainability management strategies and covers activities in support of the UN Sustainable Development Goals (SDGs), expressing the company's commitment to and endeavors in support of growth with the local communities in which it operates as a corporate citizen.

## Reporting Period and Scope

This report covers the company's financial and non-financial activities and performances from January 1 to December 31, 2020. For some material issues, information from prior years and more current information up to July 2021 has been included to aid the reader's understanding. With regard to quantitative data, performance over the past three years is reported for comparison purposes. In terms of its scope, this report covers our major domestic sites, including the head office and the Construction Management (CM) Division. For some significant data, the activities of overseas sites have been included as well. There has been no significant change to the size and structure of the organization in 2020, and all modifications to the reported contents have been specified with notes on the relevant page.

## Reporting Standards

This report has been prepared in accordance with the Core Option suggested by the GRI (Global Reporting Initiative) Standards. The issues reported herein have been selected based on materiality tests conducted with the stakeholders, and some major issues related to global industry trends have also been selected and included.

## Reporting Assurance

This report was independently verified by a third-party entity to ensure the level of credibility and reliability. Related information on reporting assurance is described on pages 101-102 of this report.

## Contact Us

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This report was published as an interactive PDF that includes interactive features related to the reference pages, such as jump to the relevant page within the report and direct links to related websites.

## 2021 Cover Story

Through LOTTE Group's vision 'Life Value Creator', LOTTE Engineering & Construction expresses its willingness to provide better value to customers based on its differentiated competitiveness and grow into a sustainable company.



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## Message from the CEO



### Dear Valued Customers and Stakeholders,

As a member of the LOTTE GROUP, LOTTE E&C has incorporated the group's mission of 'We enrich people's lives by providing superior products and services that our customers love and trust' and the vision of 'Lifetime Value Creator' into the basic principles of its business activities. Based on this mission and vision, LOTTE E&C is improving quality of life in a range of areas worldwide and striving to achieve sustainable growth despite the prolonged COVID-19 pandemic.

LOTTE E&C is engaged in the businesses of housing, building, plants, and civil works in both domestic and overseas markets. To meet the needs of different customers at home and abroad, in both the public and private sectors, LOTTE E&C is leveraging its unique competitive strengths across the entire product life cycle. This encompasses feasibility studies at the initial stage, business plan development, design, procurement, construction, project management, management of facilities after completion, financing and developmental projects involving direct equity investments.

LOTTE E&C is working to improve the technology, quality, and services level of its key products, including 'LOTTE Castle,' which we launched as South Korea's first high-end apartment brand in 1999; 'LE EL,' which we launched in 2019 to promote a high-end living culture; super high-rise buildings like LOTTE World Tower; multipurpose and retail facilities; petrochemical and power plants, and ground transportation works including long-span bridges and tunnels.

LOTTE E&C's 2030 vision is 'Global Leading EPC Contractor, Total Service Provider,' which clearly defines our direction as a construction company in the face of changes in global mega trends, markets, and customer needs.

Our mid-to-long-term strategies include strategies for advancing into new markets by reinforcing our ability as a comprehensive developer through active investment development projects and expanding overseas businesses, including existing apartment housing projects and complex development projects by establishing investment strategies for each overseas country.

LOTTE E&C recognizes the importance of contributing to the creation of a sustainable society while carrying out its business activities, through financial outcomes as well as the establishment of ESG (Environment/Society/Governance) management strategies.

To achieve this objective, LOTTE E&C newly established an exclusive internal organization for managing non-financial ESG management indexes, and is continuously trying to establish an integrated strategy system for non-financial performances, including important compliance issues for a construction company, prevention of safety accidents, enhancement of global competitiveness, utilization of eco-friendly construction to respond to environmental issues, management of human resources, co-existence with partner companies, and fulfillment of corporate social responsibilities by helping the disadvantaged.

As we welcome the era of ESG, LOTTE E&C will further refine the sustainable management strategies that we have pursued since our foundation. To all of the customers and stakeholders who have given their support to make LOTTE E&C what it is today, we would like to extend our sincerest gratitude. We promise to do our best to fulfill our role as a good corporate citizen that adheres to fundamentals and principles, and to grow as a company that leads ESG.

November 2021

President and CEO **Suk Joo Ha**

*HA. Suk Joo*

“ LOTTE E&C promises to provide better services, to develop sustainably with your support and trust by creating social value, and to be a good corporate citizen that remains true to its essential principles. ”

# Company Overview

Founded in 1959, LOTTE E&C contributes to enriching people's lives by providing superior products and services that our customers love and trust, and has been working to become a company that grows together with society through principles and fundamentals, mutual growth, and sharing. In 2019, LOTTE E&C marks its 60<sup>th</sup> anniversary. LOTTE E&C is enhancing its capabilities by providing services across the entire value chain to grow to become a global construction company. As we seek to create a better future, we have established our Vision 2030, and are pursuing a phase-by-phase implementation strategy.

**Company Name** — LOTTE Engineering & Construction Co., Ltd. (LOTTE E&C)

**Date of Establishment** — February 3, 1959 (Acquired by the LOTTE Group in 1978)

**CEO** — Suk Joo Ha (Inaugurated in March 2017)

**Head Office** — 29, Jamwon-ro 14-gil, Seocho-gu, Seoul, Korea

**Key Businesses** — Housing — Building — Plant — Infrastructure

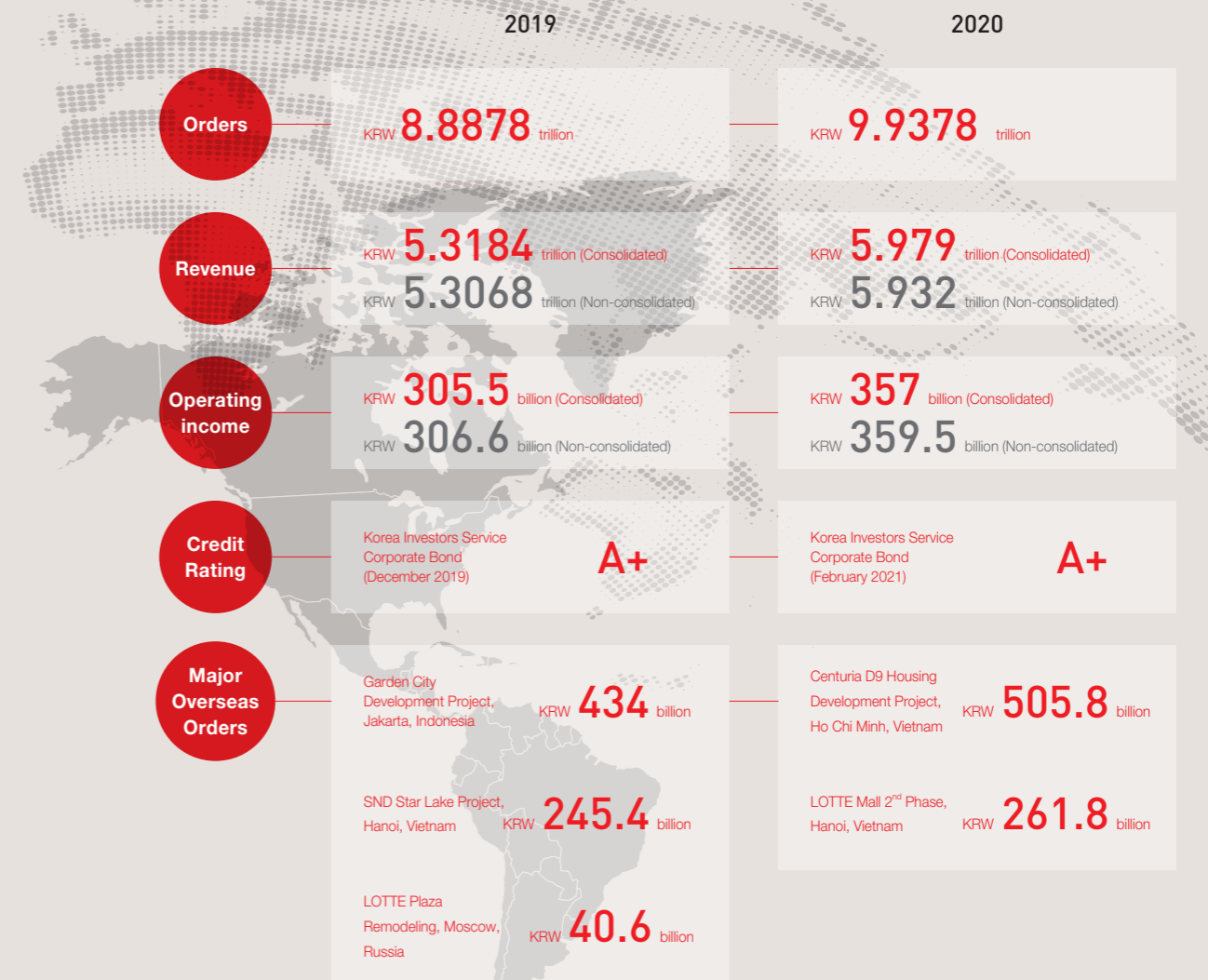
**Major Shareholder** — LOTTE Chemical Corporation (43.79% stake)

**No. of Employees** — 3,323 employees (As of the end of December 2020)

**Branches / Subsidiaries** — 1 domestic branch, 5 overseas subsidiaries / 9 overseas offices/branches



\* PO (Project Office): A temporarily operated organization that is established in a specific area, to perform a specific project



## 1959-1977

### Foundation

1959. 02  
Established Pyong Hwa Construction, Inc.

1977. 10  
Acquired overseas construction business license (No. 34 from the Ministry of Construction)

## 1978-1997

### Acquired by LOTTE Group; Reorganization of Business Structure

1978. 09  
Management right acquired by the LOTTE Group

1986. 09  
Established the LOTTE E&C Technology Research Institute

1990. 02  
Completed construction of Jamsil LOTTE World

## 1998-2003

### External Growth and Brand Management

1999. 03  
Launched the LOTTE Castle brand (Sales initiated for Seocho LOTTE Castle 84)

2000. 11  
Established the Ethics Secretariat

2002. 05  
Received the Grand Prize at the Korea Service Grand Prix (Apartment housing category) from the Korean Standards Association

2003. 07  
Ranked 8<sup>th</sup> in Construction Capability Evaluation by the Construction Association of Korea (Entered the top 10 for the first time)

## 2004-2013

### Introduction and Implementation of the Corporate Vision

2005. 10  
Established Vision 2010

2009. 02  
Acquired LOTTE E&M's construction business division

2009. 09  
Established Vision 2015

2012. 11  
Launched CSR Committee (Name changed to Sustainability Council)

2012. 12  
Established Vision 2018

2013. 07  
Published the Sustainability Report

## 2014-2020

### Mid to Long-term Vision Establishment and Brand Advancement

2015. 04  
Re-established the brand identity of LOTTE Castle

2016. 01  
Established the Rental Housing Business Department (Name changed to Asset Management Business)

2017. 04  
50<sup>th</sup> anniversary of the LOTTE Group  
Opened LOTTE World Tower

2018. 07  
Established the Singapore branch office

2019. 07  
Established Vision 2030

2019. 11  
Launched LE EL, high-end housing brand

2020. 03  
Pledge ceremony for fulfilling code of conduct for emergency management system and ethical management

2020. 07  
Awarded Korea Service Grand Prix for 19<sup>th</sup> consecutive year

2021.08  
Launched LUMINI, an urban housing brand

# OUR BUSINESS



009	HOUSING
015	BUILDING
025	PLANTS
031	INFRASTRUCTURE
037	GLOBAL

# HOUSING

In March 1999, LOTTE E&C introduced its first apartment housing brand in the Korean construction market with 'Seocho LOTTE Castle 84,' which was built in Seocho-gu, Seoul. We have established our brand identity as 'Prestige of Life' and have since been leading the housing culture of Korea.

Our main businesses include apartments, residential, and commercial complexes. We conduct our business in fields such as urban improvement (Redevelopment / Reconstruction), self-financed projects, and others. LOTTE E&C provides satisfaction to customers by offering unique services and the highest quality in all stages of the business process, from product planning, to business analysis, marketing/sales, construction, and post-management.

Furthermore, LOTTE E&C is strengthening its product design, quality, and service competitiveness. With the intention of building the type of houses we would want for our own families, we are constantly striving to provide the best products through product trend analysis.

To respond to the paradigm shift in the housing market, we have been operating "Elyes," an asset management service platform for residents, since 2018. In 2019, we launched LE EL, a high-end housing brand that consolidates our skills to carry forward our existing 'Castle' image and maintain a timeless value. We also launched LUMINI, an urban housing brand with the concept of 'Urban Standard' in 2021. Through this, LOTTE E&C will suggest a lifestyle specialized in urban living and lead a new housing trend.

## Housing Works Strategy

Reinvent product, design, quality, and service

Expand and strengthen asset management service

Strengthen capability as a comprehensive developer

## PERFORMANCE

(Based on 2020 data)

Orders  
KRW **5.5662** trillion

Sales  
KRW **2.5575** trillion

## HIGHLIGHT

Awarded Korea Service Grand Prix for **20<sup>th</sup>** consecutive year (Jul. 2021)

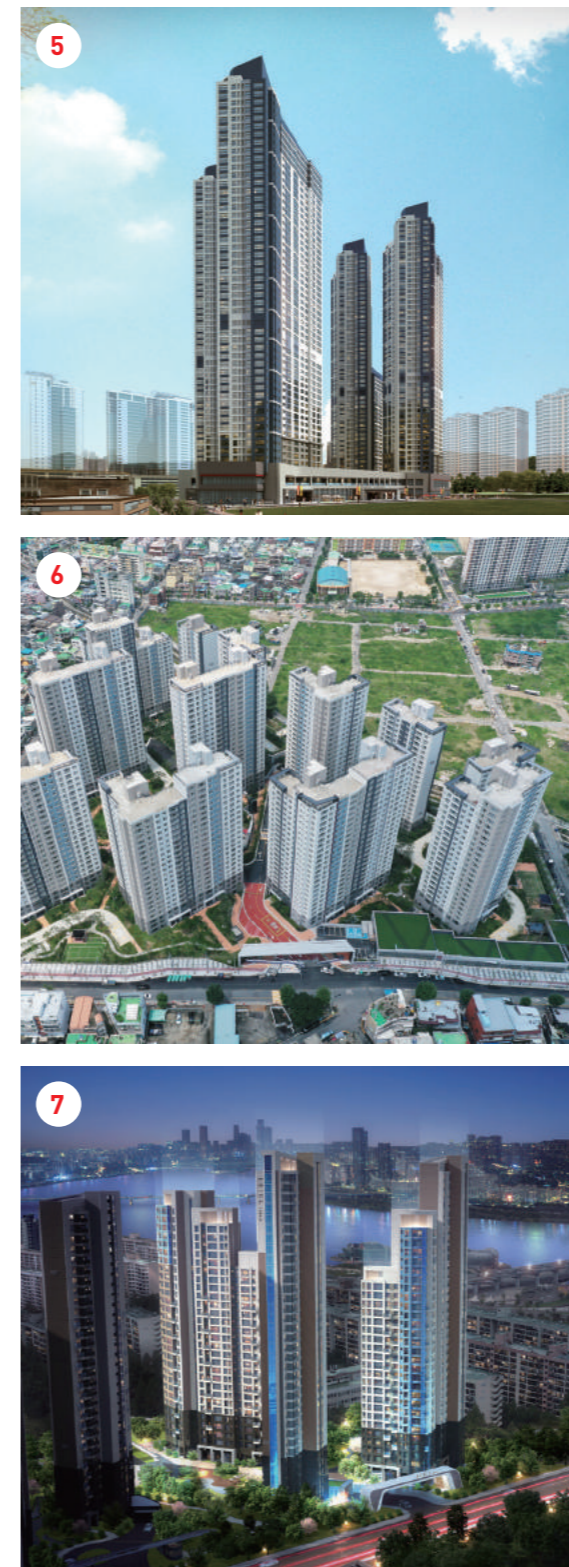


**LE EL Daechi (Apr. 2019 - Sep. 2021)**

**Location** Daechi-dong, Gangnam-gu, Seoul (Reconstruction of Daechi Old Town)  
**Summary** 3 stories below ground and 15 stories above, 4 buildings, 273 units

# HOUSING

## Apartments·Residential and Commercial Complexes



1	5
2	6
3	
4	7

- 1 Namsan LOTTE Castle Central Sky (Nov. 2018 - Sep. 2021)**  
 Location Namsan-dong, Jung-gu, Daegu (Redevelopment of Namsan District 2-2)  
 Summary 2 stories below ground and 34 stories above, 11 buildings, 987 units
- 2 Seongbok Station LOTTE Castle Park Nine II (Jun. 2018 - Jan. 2021)**  
 Location Seongbok-dong, Suji-gu, Yongin-si, Gyeonggi-do  
 Summary 3 stories below ground and 20 stories above, 20 buildings, 1,094 units
- 3 Sangdo Station LOTTE Castle (Jun. 2018 - Feb. 2021)**  
 Location Sangdo-dong, Dongjak-gu, Seoul (Sangdo Station Local Housing Association)  
 Summary 5 stories below ground and 20 stories above, 13 buildings, 950 units
- 4 DMC LOTTE Castle The First (Sep. 2017 - Jun. 2020)**  
 Location Susaek-dong, Eunpyeong-gu, Seoul (Redevelopment of Susaek District 4)  
 Summary 2 stories below ground and 15 stories above, 15 buildings, 1,192 units
- 5 Haeundae LOTTE Castle Star (Mar. 2017 - Sep. 2020)**  
 Location Jung-dong, Haeundae-gu, Busan  
 Summary 4 stories below ground and 49 stories above, 4 buildings, 906 units (828 apartment units, 78 studio units)
- 6 Changwon LOTTE Castle Premier (Dec. 2017 - Jul. 2021)**  
 Location Masanhappo-gu, Changwon-si, Gyeongsangnam-do (Redevelopment of Hoewon District 1)  
 Summary 2 stories below ground and 25 stories above, 11 buildings, 999 units
- 7 LE EL Sinbanpo (Dec. 2019 - Dec. 2022 (expected))**  
 Location Jamwon-dong, Seocho-gu, Seoul (Reconstruction of Sinbanpo 14th)  
 Summary 3 stories below ground and 22-34 stories above, 3 buildings, 280 units

# HOUSING

## Apartments·Residential and Commercial Complexes



8	11
9	
10	12

**8 LE EL Sinbanpo Central (Aug. 2019 - Aug. 2022 (expected))**

Location Jamwon-dong, Seocho-gu, Seoul  
(Reconstruction of Banpo Woosung Apartment)  
Summary 3 stories below ground and 35 stories above,  
7 buildings, 596 units

**9 LE EL Sinbanpo Park Avenue (Apr. 2020 - Jun. 2023 (expected))**

Location Jamwon-dong, Seocho-gu, Seoul  
(Reconstruction of Sinbanpo 13th)  
Summary 3 stories below ground and 35 stories above,  
3 buildings, 330 units

**10 Songpa Signature LOTTE Castle (Feb. 2019 - Jan. 2022 (expected))**

Location Geoyeo-dong, Songpa-gu, Seoul  
(Redevelopment of Geoyeo 2-1)  
Summary 3 stories below ground and 33 stories above,  
17 buildings, 1,945 units

**11 Cheongyangni Station LOTTE Castle SKY-L65 (Jan. 2019 - Jul. 2023 (expected))**

Location Jeonnong-dong, Dongdaemun-gu, Seoul  
(Cheongyangni District 4)  
Summary 7 stories below ground and 65 stories above,  
4 buildings, 1,425 units

**12 Seomyeon LOTTE Castle L'Luca (Nov. 2019 - Sep. 2023 (expected))**

Location Bujeon-dong, Busanjin-gu, Busan  
Summary 3 stories below ground and 49 stories above,  
3 buildings, 802 units (450 apartment units,  
352 studio units)



# BUILDING

We engage in construction and renovation works for urban buildings that include super high-rise buildings such as the LOTTE World Tower, multi-purpose and retail buildings, offices, facilities for education, medical service, logistics, and leisure.

While most domestic and international companies with high-rise building experience tend to limit themselves to construction activities, LOTTE E&C, in collaboration with LOTTE Group affiliates, provides differentiated solutions including project development and planning, technical and economic feasibility studies, tenant marketing, design & engineering, and construction & operation, all of which add value to the customers' real estate assets.

In overseas markets, particularly the ASEAN countries including Southeast Asia, LOTTE E&C is pursuing both technical bidding projects and investment development projects based on the conditions in each country. The company is improving its development capabilities in order to secure business opportunities in areas that are expected to grow in the future, such as urban development and reconstruction projects, both domestically and overseas.

## Building Works Strategy

Strengthen the company's capabilities in high-rises, multipurpose and retail facilities

Two-pronged approach of pursuing technical bidding and investment development projects

Improve development capabilities to take advantage of expanded business opportunities in urban development and reconstruction



## PERFORMANCE

(Based on 2020 data)

Orders  
KRW **2.5532** trillion

Sales  
KRW **1.3136** trillion

## HIGHLIGHT

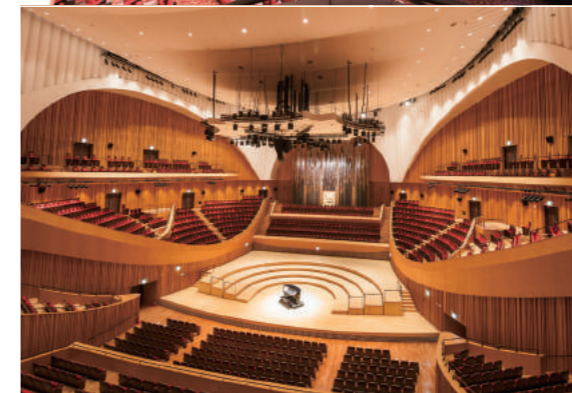
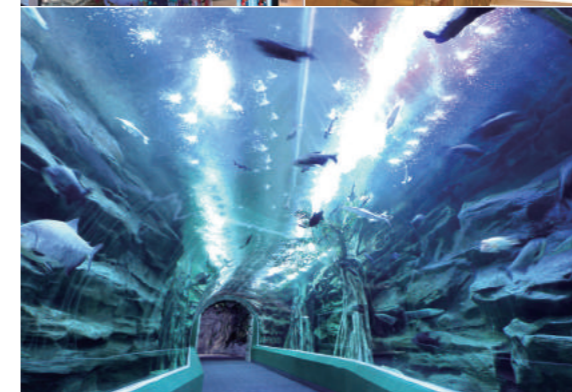
Awarded Grand Prize of Excellent Case Presentation Contest for 2021 Korea National OSH Week (Jul. 2021)

**LOTTE World Tower (Nov. 2010 - Feb. 2017)**  
Summary 3 stories below ground and 15 stories above, 4 buildings, 273 units

**LOTTE World Mall (Nov. 2020 - Oct. 2014)**  
Summary 6 stories below ground and 12 stories above, gross floor area of 385,562m<sup>2</sup> (total 805,872m<sup>2</sup>)

# BUILDING

## High-Rise Buildings



### 1 LOTTE World Tower (Nov. 2010 - Feb. 2017)

**Location** Shincheon-dong, Songpa-gu, Seoul  
**Summary** 6 stories below ground and 123 stories above, gross floor area of 420,310m<sup>2</sup> (total 805,872m<sup>2</sup>)  
**Features** A South Korean landmark that has global significance, encompasses Korea's traditional beauty, and harmonizes cutting-edge technology and nature

### 2 LOTTE World Mall (Nov. 2020 - Oct. 2014)

**Location** Shincheon-dong, Songpa-gu, Seoul  
**Summary** 6 stories below ground and 12 stories above, gross floor area of 385,562m<sup>2</sup> (total 805,872m<sup>2</sup>)  
**Features** Eco-friendly complex boasting a range of facilities including a duty-free shop, shopping mall, hypermarket, cinema, aquarium, and concert hall

# BUILDING

## Multipurpose Facilities



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- 1 Vietnam SND Star Lake Project (Mar. 2022 - Jun. 2025 (expected))**  
 Location Star Lake site in the vicinity of West Lake, Hanoi, Vietnam  
 Summary 4 stories below ground and 40 stories above, 2 buildings, gross floor area of 215,099m<sup>2</sup>
- 2 Vietnam LOTTE Center Hanoi (May 2010 - Jun. 2014)**  
 Location Hanoi, Vietnam  
 Summary 5 stories below ground and 65 stories above, height of 272m, gross floor area of 253,134m<sup>2</sup>, 258 units for service residence, 318 rooms for hotel, commercial and offices
- 3 Songdo Shopping mall and Studio (Apr. 2016 - Jul. 2019)**  
 Location Songdo-dong, Yeonsu-gu, Incheon  
 Summary 3 stories below ground and 41 stories above, gross floor area of 148,873m<sup>2</sup>  
 Features Multi shopping mall development such as movie theater and sales facilities
- 4 New Construction of Hanam Misa 2,3BL Complex (Oct. 2017 - Jan. 2020)**  
 Location 2012-2,3, 2013-1,2,3, Mangwol-dong, Hanam-si, Gyeonggi-do  
 Summary 5 stories below ground and 10 stories above, 2 buildings, gross floor area of 79,167m<sup>2</sup>
- 5 Hwaseong Dongtan New Town 2 C11 Block Residential and Commercial Complex (Jul. 2017 ~ Jun. 2021)**  
 Location Hwaseong-si, Gyeonggi-do (Dongtan New Town 2)  
 Summary 6 stories below ground and 49 stories above, gross floor area of 505,189m<sup>2</sup>
- 6 Giheung HIGGS Urban Advanced Industry Complex (Jan. 2017 ~ Nov. 2019)**  
 Location Yeongduk-dong, Giheung-gu, Yongin, Gyeonggi-do  
 Summary 5 stories below ground and 24 stories above, gross floor area of 198,236m<sup>2</sup>

# BUILDING

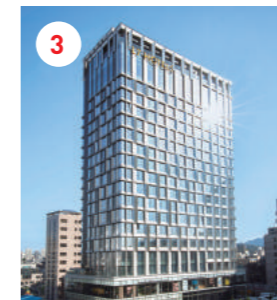
## Retail Facilities



- 1 LOTTE Outlet Giheung (Apr. 2017 - Dec. 2018)**  
 Location Giheung-gu, Yongin, Gyeonggi-do  
 Summary 3 stories below ground and 3 stories above, gross floor area of 175,031m<sup>2</sup>
- 2 LOTTE Mall Suwon (May 2012 - Sep. 2014)**  
 Location Gwonseon-gu, Suwon-si, Gyeonggi-do  
 Summary 3 stories below ground and 8 stories above, gross floor area of 213,566m<sup>2</sup>
- 3 Gimpo International Airport SKY PARK Development Project (Nov. 2007 - Nov. 2011)**  
 Location Banghwa-dong, Gangseo-gu, Seoul  
 Summary 5 stories below ground and 9 stories above, gross floor area of 316,152m<sup>2</sup>, composed of shopping mall, department store, mart, cinema, and hotel
- 4 Pyeongtaek Bijeon-dong Garosu-gil Development Project (Sep. 2017 - Apr. 2019)**  
 Location Bijeon-dong, Pyeongtaek-si, Gyeonggi-do  
 Summary 2 stories below ground and 4 stories above, gross floor area of 45,279m<sup>2</sup>

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## Office·Lodging and Leisure Facilities



- 1 New Construction of Osiria Theme Park (May 2019 - Aug. 2021)**  
 Location Entire area of San 46, Sirang-ri, Gijang-eup, Gijang-gun, Busan  
 Summary 2 stories below ground and 3 stories above, 17 attractions, building area of 21,872.49m<sup>2</sup>
- 2 G Valley G-Square Development Project (Dec. 2017 - Nov. 2020)**  
 Location Guro-dong, Guro-gu, Seoul  
 Summary 7 stories below ground and 39 stories above, gross floor area of 172,551m<sup>2</sup>
- 3 LOTTE Hotel L7 Hongdae (Jul. 2015 - Feb. 2018)**  
 Location Donggyo-dong, Mapo-gu, Seoul  
 Summary 5 stories below ground and 22 stories above, 340 rooms
- 4 LOTTE Resort Sokcho (Dec. 2014 - Jul. 2017)**  
 Location Daepo-dong, Sokcho-si, Gangwon-do  
 Summary 3 stories below ground and 9 stories above, 392 rooms (173 rooms for hotel, 219 rooms for condo)
- 5 Hanam Misa 1-1, 2BL Knowledge Industry Center (Nov. 2019 - Dec. 2021 (expected))**  
 Location Mangwol-dong, Hanam-si, Gyeonggi-do  
 Summary 4 stories below ground and 10 stories above, gross floor area of 315,935m<sup>2</sup>

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# BUILDING

## Airport·Logistics·Educational and Research Facilities



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- Incheon International Airport Terminal 2 Frontal Area (Superstructure and Finishing Works) (Aug. 2014 - Jan. 2018)**  
 Location Incheon International Airport in Unseo-dong, Jung-gu, Incheon  
 Summary 4 stories below ground and 2 stories above, gross floor area of 139,038m<sup>2</sup>, Transportation facilities such as transfer facilities, bus platforms, and KTX lobby
- Incheon Port International Passenger Terminal (Dec. 2016 - May 2019)**  
 Location Songdo-dong, Yeonsu-gu, Incheon  
 Summary 5 stories above ground, gross floor area of 66,690m<sup>2</sup>
- LOTTE Logistics Center Yangsan (Jul. 2019 - Jun. 2021)**  
 Location Yusan-dong, Yangsan-si, Gyeongsangnam-do  
 Summary 1 story and 7 stories above ground, gross floor area of 46,987m<sup>2</sup>  
 Features Integrated operations of seven logistics centers and a smart center
- LOTTE Logistics Central MEGA HUB Terminal (Jun. 2019 - Mar. 2021)**  
 Location Chopyeong-myeon, Jincheon-gun, Chungcheongbuk-do  
 Summary 1 story and 4 stories above ground, gross floor area of 167,180m<sup>2</sup>  
 Features The first project built after the integration of LOTTE Group's logistics companies, this facility is specialized for e-commerce with cutting-edge automation equipment. It can handle an average volume of 1.5 million parcels per day. (Largest logistics facility within the group)
- Incheon Hangdong Logistics Center (May 2019 - May 2021)**  
 Location 1 area in addition to 104-1, Hangdong 7-ga, Jung-gu, Incheon  
 Summary 1 story below ground and 8 stories above, gross floor area of 148,112m<sup>2</sup>
- Rebuilding of Lotte Academy Osan Campus (Jul. 2019 - Jul. 2021)**  
 Location 88, Busan-dong, Osan-si, Gyeonggi-do  
 Summary 2 stories below ground and 4 stories above, 3 buildings, gross floor area of 56,832m<sup>2</sup>
- LOTTE Magok R&D Center (Feb. 2015 - Jun. 2017)**  
 Location Magok-dong, Gangseo-gu, Seoul  
 Summary 3 stories below ground and 8 stories above, gross floor area of 82,929m<sup>2</sup>  
 Features Comprehensive food R&D center of LOTTE Group subsidiaries

# PLANTS

LOTTE E&C is involved in building national and industrial infrastructures in many areas domestically and overseas, ranging from petrochemical product manufacturing plants to raw materials storage facilities, industrial plants, and power plants.

We provide one-stop services as Project Manager, EPC Contractor, and IPP Developer throughout the value chain covering project planning, technical & economic feasibility studies, design and engineering, procurement, construction, commissioning, project management, and O&M.

With the investments in petrochemical industries expected to increase due to economic development in both advanced countries and newly industrialized Asian countries and a shift in demand to high-value products, LOTTE E&C is enhancing its petrochemical plant EPC execution capabilities and its IT system, and training highly-skilled human resources to increase our competitiveness.

In response to changes in the domestic and international power generation market, LOTTE E&C is enhancing its global competitiveness through a range of approaches that include developing businesses, conducting feasibility studies, financing, EPC, and general construction in many projects like LNG combined cycle power plants, cogeneration plants, and renewable energies like wind, solar, and others.

**Plants  
Work  
Strategy**

Strengthen our capabilities in all areas of petrochemical plant operation

Develop differentiated competitiveness in LNG and renewable energy power generation businesses



## PERFORMANCE

(Based on 2020 data)

Orders  
KRW **1.1883** trillion

Sales  
KRW **767.7** trillion

### HIGHLIGHT

Signed business contract for Nonsan Hydrogen Complex Private Investment Project (Jun. 2021)

Completed Hyundai Chemical HPC Project (Aug. 2021)

#### Hyundai-Chemical HPC Project (Sep. 2019 - Aug. 2021)

Location Hyundai Chemical Plant, Daesan-eup, Seosan-si, Chungcheongnam-do  
Summary 250,000 tons/year of HDPE, 250,000 tons/year of PP, 16 offsite tanks

# PLANTS

## Petrochemical Plants



**1 LOTTE GS Chemical G1 Project (Jul. 2020 - Mar. 2022 (expected))**

Location Jungheung-dong, Yeosu-si, Jeollanam-do  
 Summary 130,000 tons/year of BD<sup>1)</sup>, 20,000 tons/year of MTBE<sup>2)</sup>, 60,000 ton/year of BN1<sup>3)</sup>, 100,000 tons/year of TBA<sup>4)</sup>

**2 LOTTE Fine Chemistry G Project (May 2019 - Dec. 2020)**

Location Yecheon-dong, Nam-gu, Ulsan  
 Summary 13,800 tons/year of Mecerlose

**3 LOTTE Chemical D-NC\_R Project (Mar. 2020 - Nov. 2020)**

Location LOTTE Chemical Plan, Daesan-eup, Seosan-si, Chuncheongnam-do  
 Summary Demolition, restoration/improvement work of existing facilities (1.1 million tons/year of ethylene)

**4 LOTTE Chemical 4EOA Project (Jun. 2019 - Oct. 2020)**

Location Wolha-dong, Yeosu-si, Jeollanam-do  
 Summary 100,000 tons/year of EOA<sup>5)</sup>, 100,000 tons/year of HPEO<sup>6)</sup>

- 1) BD : Butadiene
- 2) MTBE : Methyl Tertiary Butyl Ether
- 3) BN1 : Butene-1
- 4) TBA : T-Butyl Alcohol
- 5) EOA : Ethylene Oxide Adduct
- 6) HPEO : High-Purity Ethylene Oxide



**5 LOTTE INEOS Chemical B Project (Apr. 2019 - Aug. 2020)**

Location LOTTE INEOS Chemical Plant, Cheongnyang-eup, Ulju-gun, Ulsan  
 Summary 250,000 tons/year of VAM<sup>7)</sup>

**6 LOTTE Chemical HC2 Project (Mar. 2018 - Aug. 2019)**

Location Jungheung-dong, Yeosu-si, Jeollanam-do  
 Summary PC<sup>8)</sup> (110,00 tons/year), DMC<sup>9)</sup> (29,000 tons/year) production plant expansion (EPC)

**7 Malaysia TPP3 Project (Dec. 2016 - Jun. 2018)**

Location Pasir Gudang, Johore, Malaysia  
 Summary 200,000 tons/year of PP<sup>10)</sup>

**8 Malaysia TE-3 Project (Feb. 2016 - Jul. 2017)**

Location Pasir Gudang, Johore, Malaysia  
 Summary 91,000 tons/year of Ethylene, 125,000 tons/year of Propylene, 134,000 tons/year of BTX<sup>11)</sup>

- 7) VAM : Vinyl Acetate Monomer
- 8) PC : Poly Carbonate
- 9) DMC : Dimethylcarbonate
- 10) PP : Polypropylene
- 11) BTX : Benzene, Toluene, Xylene

# PLANTS

## Power Plants



- 1
- 2
- 3
- 4



- 1 Gwangyang Biomass Plant EPC (Jul. 2021 - Oct. 2024 (expected))**  
 Location Hwanggeum-dong, Gwangyang-si, Jeollanam-do (E Block, Hwanggeum General Industrial Complex)  
 Summary 220MW (CFBC<sup>1)</sup> Boiler 329.6T/H<sup>2)</sup> 2 units, ST 110MW 2 units  
 Features Construction of power plant using pure woody substances (wood pellets, wood chips) as fuel
- 2 Facility Purchase for Daegu Green Energy Improvement Project (Nov. 2020 - Apr. 2024 (expected))**  
 Location 351, Dalseo-daero, Dalseo-gu, Daegu  
 Summary 270MW (GT<sup>3)</sup> 167MW X 1 unit, ST<sup>4)</sup> 103MW X 1 unit, HRSG<sup>5)</sup> 1 unit
- 3 Facility Purchase for Cheongju Green Energy Improvement Project (Nov. 2020 - Apr. 2024 (expected))**  
 Location 220, Juklim-dong, Seowon-gu, Cheongju-si, Chuncheongbuk-do  
 Summary 270MW (GT 167MW X 1 unit, ST 103MW X 1 unit, HRSG 1 unit)
- 4 Naepo New Town Cogeneration DH<sup>6)</sup>/CHP<sup>7)</sup> (DH: Aug. 2016 - Jul. 2021, CHP: Nov. 2020 - May 2023 (expected))**  
 Location Hongbuk-myeon, Hongseong-gun, Chungcheongnam-do / Sappgyo-eup, Yesan-gun, Chungcheongnam-do  
 Summary - DH: HOB 68.8 Gcal/h 1 unit, thermal storage tank 20,000m<sup>3</sup> 1 unit  
 - CHP: 495MW/GT 329.5MW 1 unit, ST 165.5MW 1 unit, HRSG 1 unit



- 5
- 6
- 7
- 8



- 5 Indonesia Riau Combined Cycle Power Plant (Aug. 2018 - Oct. 2021)**  
 Location Near Pekanbaru, Riau, Sumatra, Indonesia  
 Summary 275MW (GT 80.9 MW 2 units, ST 126 MW 1 unit, HRSG 2 units)
- 6 Seoul Combined Cycle Power Plants 1 and 2 (Oct. 2015 - Jun. 2020)**  
 Location Hapjeong-dong, Mapo-gu, Seoul (Former thermoelectric power plant in Dangin-ri)  
 Summary 2 units rated at 400MW (800MW) (GT 267.5MW 2 units, ST 127.9MW 2 units, HRSG 256Gcal/h 2 units)  
 Features The world's first underground combined cycle power plant project
- 7 Indonesia Grati Combined Cycle Power Plant (Jun. 2016 - Feb. 2019)**  
 Location Near Surabaya, Java, Indonesia  
 Summary NG Combined Cycle Power 501MW (GT 151.4MW 2 units, ST 198.2MW 1 unit, HRSG 2 units)
- 8 Gwangju and Jeollanam-do Cogeneration Plant (Apr. 2015 - Dec. 2017)**  
 Location Sanpo-myeon, Naju, Jeollanam-do  
 Summary 22MW power generation facility, 45Gcal/h heating facility (ST 22MW 1 unit, SRF<sup>8)</sup> boiler 1 unit)  
 Features Cogeneration plant project utilizing SRF from Korea District Heating Corp.

1) CFBC: Circulating Fluidized Bed Combustion  
 2) T/H : Ton per Hour  
 3) GT : Gas Turbine  
 4) ST : Steam Turbine  
 5) HRSG : Heat Recovery Steam Generator  
 6) DH : District Heating  
 7) CHP : Combined Heat & Power  
 8) SRF: Solid Refuse Fuel



# INFRASTRUCTURE

LOTTE E&C contributes to national land development and infrastructure expansion at home and abroad, including transportation and logistics facilities (roads, railways, subways, airports, and ports), landfill and site renovation (housing sites, industrial complexes, and port hinterlands), water treatment systems (water supply, water cleaning, and sewage & wastewater treatment), and irrigation facilities (dams, waterways, and hydro power plants).

We provide total solutions in public financing projects (turnkey, technical proposal, and contracted works) and private investment projects (PPP, BOT, BTO, BOO, BTL, etc.) ranging from project planning, technical & economic feasibility analysis, financing & direct investment, and design & construction to post-construction facility maintenance.

We are strengthening the planning, feasibility analysis, and technology for each business model in a variety of ways, focusing on marketable and differentiated products (land transportation facilities, site creation, water environment facilities, and ports) based on roads, railways and subways, areas in which we have a strong track record of successful performance.

For ground transportation facilities in particular, we have increased our competencies in the area of long-span bridges and tunnels. We have developed various water treatment technologies in areas such as water supply, water purifying, and wastewater treatment, both exclusively at our own Technology Research Institute and jointly with specialized external companies and institutions. We are striving to showcase our differentiated competitiveness driven by technological prowess at home and abroad.

## Infrastructure Works Strategy

Obtain differentiated technology and business competitiveness in all products

Increase capability in technology proposals and public-private partnership-based projects

Enhance capacity to perform overseas projects

## PERFORMANCE

(Based on 2020 data)

Orders

KRW **630.1** trillion

Sales

KRW **426** trillion

## HIGHLIGHT

Obtained construction order for Section 4 of Yeongdong-daero Underground Space (T/K)

Obtained construction order for Section 1 of National Road No. 77 Sinan Aphae ~ Haenam Garden (Undersea Tunnel) (T/K)



### Sandal-do Water Bridge (Sep. 2013 - Dec. 2018)

**Location** Soryang-ri-Beopdong-ri, Geoje-myeon, Geoje-si, Gyeongsangnam-do

**Summary** Total extension 1.413 km(B=11.0m 15.7m, 2-lane road)

Main span (cable-stayed bridge) L=280m

Connection (advanced PSC beam bridge) L=340m

**Features** Special sea-crossing bridge

# INFRASTRUCTURE

## Ground Transportation



1
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**1 Gyeongin Expressway 2 (Anyang ~ Seongnam) Section 4 (May 2012 - Sep. 2017)**

Location Unjung-dong, Bundang-gu to Yeosu-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do  
 Summary Total 7.82km, total 4 lanes, 9 bridges (1.6km), 1 tunnel (0.9km), 1 entrance facility, and 1 tollgate & office

**2 5 Sections of National Expressway Route 30 – Sangju ~ Yeongdeok (Sections 3, 4, 5, 15, 18) (Jul. 2010 ~ Dec. 2016)**

Location Saengsong-ri, Danmil-myeon, Uiseong-gun to Wonjik-ri, Ganggu-myeon, Yeongdeok-gun, Gyeongsangbuk-do  
 Summary Total 34.86km, total 4 lanes, 32 bridges (5.091km), 9 tunnels (10.953km), 1 service area (Uiseong)

**3 Seocho Station ~ Bangbae Road Connecting Road Construction (Seoripul Tunnel) (Oct. 2015 - May 2019)**

Location Naebang station crossroads, Bangbae-dong to Seocho station crossroads, Seocho-dong in Seocho-gu  
 Summary Total 1.28km, width 40m (6-8 lanes), NATM tunnel (260m), open-cut tunnel (140m)

**4 Seoul Metro Line 9 Phase 3 Section 920 (Dec. 2009 - Dec. 2018)**

Location Seokchon-dong(Seokchon station) to Bangi-dong (Olympic Park 4<sup>th</sup> south gate), Songpa-gu, Seoul  
 Summary Total 1.391km (TBM Shield Tunnel 945m, Open Cut BOX 119m), 1 station (Songpanaru)



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**5 Dongi Bridge (Jeokseong ~ Jeongok National Road Section 2) (Jul. 2009 - Jan. 2016)**

Location Namgyeo-ri, Gunnam-myeon to Dongi-ri, Misan-myeon, Yeoncheon-gun, Gyeonggi-do  
 Summary Total 2.34km, width 20.0m, total 4 lanes, 1 cable-stayed bridge (L=0.4km, W=20.9m), 1 interchange

**6 Busan LOTTE Town Yeongdo Bridge Improvement & Restoration (Jul. 2007 - Jul. 2014)**

Location Jungang-dong, Jung-gu to Daegyo-dong, Yeongdo-gu, Busan  
 Summary Total 0.215km, total 6 lanes, bascule bridge

**7 Eulsukdo Bridge Private Investment Construction Project (Jan. 2005 - Jan. 2010)**

Location Sinpyeong-dong, Saha-gu to Myeongji-dong, Gangseo-gu, Busan  
 Summary Total 5.205km, width 25.5-35m, total 6 lanes

**8 Banghwa Bridge (Dec. 1995 - Nov. 2000)**

Location Banghwa-dong, Gangseo-gu, Seoul to Gangmae-dong, Goyang-si, Gyeonggi-do  
 Summary Total 2.559km, width 27.8m, total 6 lanes 26,320m

**9 Geumgang Pedestrian Bridge (Jul. 2018 - Oct. 2021)**

Location Seojong-ri, Yeongi-myeon to Boram-dong, Sejong-si  
 Summary Pedestrian bridge total extension (L): 1,651m, breadth (B): 12-30m, Main bridge extension (L): 1,412m, breadth (B): 12m (top layer), 7m (bottom layer), Approach bridge (2 bridges) extension (L): 239m, breadth (B): 30m

**10 Saemangeum 2 East-West Corridors Road (Section 2) (Jun. 2015 - Jun. 2020)**

Location 6.5km ~ 16,472km point from Saemangeum Embankment  
 Summary New road L=9.972km (B=20.0m, total 4 lanes), 2 bridges (305m), 1 temporary grade intersection, etc.

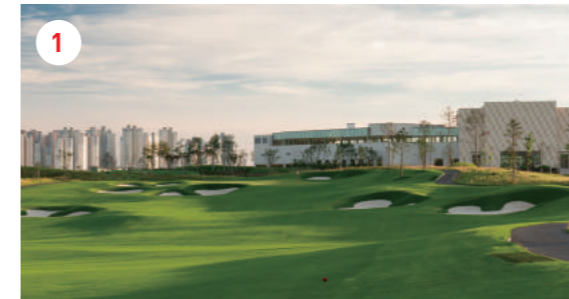
# INFRASTRUCTURE

## Water Treatment Systems



- 1 Treated Sewage Water Recycling Facility in Pohang (Private Investment Project) (Feb. 2012 - Jul. 2014)**  
 Location Sangdo-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do (Within the Pohang Sewage Treatment Plant)  
 Summary Site area of 16,122m<sup>2</sup>, building area of 2,282m<sup>2</sup>, recycling facilities with capacity of 100,000 tons/day, concentrate stream of 9,000 tons/day, supply pipeline of 11.5km (D200 ~ 900), Ultra-Filtration (U/F) + Reverse Osmosis (R/O)
- 2 Nongso Sewage Treatment Plant (Private Investment Project) (Feb. 2013 - Feb. 2016)**  
 Location Sangan-dong, Buk-gu, Ulsan  
 Summary Sewage treatment plant (100,000 tons/day), 2 pumping stations, interceptor of 7.5km, recycling pipeline of 2.2km, discharge pipeline of 0.4km, MSBR + tertiary treatment (Biofilm filtration, ultraviolet sterilization)

## Golf Courses · Dams · Site Renovation



- 1 Cheongna Bear's Best Country Club (Sep. 2009 - Jan. 2012)**  
 Location Cheongna-dong, Seo-gu, Incheon (Cheongna International City)  
 Summary Total area of 1,360,105m<sup>2</sup>, 27 holes, 28 greens, 116 tee boxes, club house
- 2 LOTTE Skyhill Buyeo Country Club (Jun. 2010 - Apr. 2013)**  
 Location Gyuam-myeon, Buyeo-gun, Chungcheongnam-do  
 Summary Total area of 950,640m<sup>2</sup>, 18 holes, 18 greens, 58 tee boxes, club house
- 3 Work of Heightening the Agricultural Reservoir Embankment at Damyang Lake (Sep. 2011 - Mar. 2014)**  
 Location Daeseong-ri, Geumseong-myeon, Damyang-gun, Jeollanam-do  
 Summary Embankment (W=20m, L=306m), overflow weir (L=62m), drainage canal (L=293.5m), road relocation (L=1.89km)
- 4 Housing Site Development in Ungcheon District (Apr. 2004 - Jun. 2016)**  
 Location Ungcheon-dong, Yeosu, Jeollanam-do  
 Summary Total area of 2,800,000m<sup>2</sup>, ground cutting of 8,523,919m<sup>3</sup>, ground fill-up of 6,281,776m<sup>3</sup>, water supply pipeline of 50,015m, rainwater pipeline of 41,492m, and sewage pipeline 26,320m
- 5 Sejong Ray Castle Golf & Resort (May 2017 - Jun. 2019)**  
 Location 252, Uidangjeonui-ro, Jeonui-myeon, Sejong-si  
 Summary Total area of 1,389,331m<sup>2</sup>, 27 public holes, 27 greens, 81 tee boxes, club house, tee house

# GLOBAL

Overseas business offers many risks as well as opportunities. Therefore, with the goal of achieving stable and robust growth from a long-term perspective, LOTTE E&C is focusing on improving its capabilities in investment-based development projects, and on securing project orders where technological competence is key.

LOTTE E&C is expanding its business in neighboring countries in Southeast Asia, with Vietnam, Indonesia, and Singapore as its main targets. In Vietnam and Indonesia in particular, we have shifted much of our sales activities to local branch offices to put us in a better position to secure new projects. In 2019, LOTTE E&C established local real estate development corporations to pursue investment-based development projects in earnest. LOTTE E&C also entered the Singapore market where there is high demand for infrastructures, and acquired the mechanical and electrical works project ordered by the Land Transport Authority (LTA) in 2021, building a foundation for increasing its competitive strengths in advanced construction markets.

We provide differentiated values to customers through our flagship products that include high-rise buildings, multipurpose and retail facilities, residential buildings, petrochemical plants, industrial plants and power plants, and ground transportation facilities. Moreover, from a value chain perspective, we are working hard to meet the demand from customers for better value, from planning and financing to management after the completion of construction. This is why we are augmenting our capabilities in all elements of the construction business, not just in erecting buildings and facilities.



Kota Kasablanka 2<sup>nd</sup> Phase in Indonesia



Thủ Thiêm Eco Smart City in Ho Chi Minh, Vietnam



LOTTE Center Hanoi, Vietnam

## PERFORMANCE

(Based on 2020 data)

Orders  
 KRW **1.0023** trillion

Sales  
 KRW **192.6** trillion  
 (Including overseas branches)



## HIGHLIGHT

Expanded business field of Vietnam development subsidiary (region/business method)

Acquired order for Pakistan Lower Spat Gah Hydropower Project

Acquired order for mechanical and electrical works in Singapore

TE-3 Project in Malaysia



Lo Te-Rach Soi Expressway in Vietnam



Pursue growth with a business model tailored for each country and type of product (technical bidding and investment development)

Increase the localization of overseas subsidiaries engaged in investment-based development projects

# GLOBAL

## Southeast Asia



**1 Vietnam LOTTE Mall Hanoi (Mar. 2020 - Apr. 2023 (expected))**

Location Hanoi, Vietnam  
 Summary 2 stories below ground and 23 stories above, 4 buildings, gross floor area of 386,347m<sup>2</sup>, Shopping mall, mart, aquarium, hotel (264 rooms), service president room (198 rooms), office, etc.

**2 Yen Vien-Lao Cai Railway Upgrading Project Construction Package No.3 in Vietnam (Mar. 2013 - Jul. 2015)**

Location Lao Cai Province, Vietnam  
 Summary Upgrading of the existing railway (73.9km) and 5 bridges, slope protection, communications & signaling system

**3 Da Nang-Quang Ngai Expressway Construction Package A4 in Vietnam (Mar. 2014 - Apr. 2019)**

Location Da Nang - Quang Ngai, Vietnam  
 Summary Total 14.6km, total 4 lanes, 8 bridges



**4 Kota Kasablanka 2<sup>nd</sup> Phase in Indonesia (Oct. 2015 - Sep. 2018)**

Location South Jakarta, Indonesia  
 Summary 5 stories below ground and 41 to 43 stories above, gross floor area of 365,251m<sup>2</sup>, 2 apartment buildings (1,211 units), 1 office building

**5 New construction of Sathapana Bank Head Office in Cambodia (May 2018 - Jan. 2021)**

Location Phnom Penh, Cambodia  
 Summary 4 stories below ground and 19 stories above, gross floor area of 35,135m<sup>2</sup>

# GLOBAL

## Southeast Asia



**6 La Premier Development Project in Ho Chi Minh City (Tu Duc), Vietnam (2018 ~ 2024 (expected))**

Location Thanh My Loi, Ho Chi Minh City District 2, Vietnam  
 Summary 25 stories above ground, 2 buildings, 725 units  
 Features Joint Venture with Phu Cuong, local developer

**7 New East 2 Development Project, Jakarta Garden City, Indonesia (2019 - 2030 (expected))**

Location Jakarta Garden City, East Indonesia  
 Summary 1 story below ground and 32 stories above, 7 buildings, 3,310 apartment units, 64 shop houses  
 Features J/V project with Indonesian developer Modern Land



**8 Charmington Dragonic Development Project, Ho Chi Minh, Vietnam (2020 ~ 2025 (expected))**

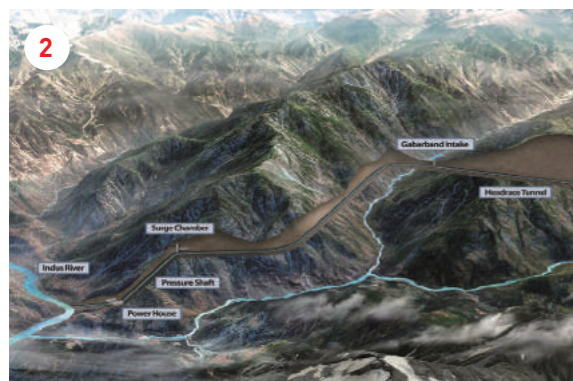
Location District 5, Ho Chi Minh, Vietnam  
 Summary 3 stories below ground and 35 stories above, 2 buildings, 418 apartment units  
 Features J/V Project with Vietnamese developer TTC Land

**9 Nhon Duc Villa Development Project, Ho Chi Minh, Vietnam (2019 ~ 2025 (expected))**

Location Nha Be, Ho Chi Minh, Vietnam  
 Summary 311 units (phase 1), 402 units (phase 2) of villas, shop houses, and town houses  
 Features J/V project with Vietnamese local developer Van Phat Hung

# GLOBAL

## Middle East·Southwest Asia



- 1 Gulpur Hydropower Plant in Pakistan (Sep. 2014 - Mar. 2020)**  
 Location Kashmir, Pakistan (Poonch River)  
 Summary Power plants with combined capacity of 102MW (2 units of 51MW), dam (H=66.5m, L=205m)
- 2 Lower Spat Gah Hydropower in Pakistan (2022 - 2030 (expected))**  
 Location Indus River branch, KP, Pakistan  
 Summary Power plants with combined capacity of 470MW, Dam (H=34m, L=123m), sluice, urban tunnel, underground plant
- 3 Qatar Metro Red Line North Elevated and At-grade Sections (Dec. 2014 - Nov. 2019)**  
 Location Doha, Qatar  
 Summary Total 6.7km (Viaduct of 2.3km, elevated section of 1.8km, open-cut tunnel of 0.3km, trough of 1.9km, stations)

## CIS



- 1 1st stage of New Arbat LOTTE Plaza in Russia (Sep. 2003 - Jul. 2007)**  
 Location Moscow, Russia  
 Summary 4 stories below ground and 21 stories above, gross floor area of 84,700m<sup>2</sup>
- 2 2nd stage of New Arbat LOTTE Plaza in Russia (Feb. 2008 - Aug. 2010)**  
 Location Moscow, Russia  
 Summary 4 stories below ground and 10 stories above, 304 rooms, gross floor area of 62,609m<sup>2</sup>
- 3 LOTTE Business Center in Russia (Jan. 2011 - Mar. 2013)**  
 Location Moscow, Russia  
 Summary 2 stories below ground and 22 stories above, gross floor area of 58,660m<sup>2</sup>
- 4 LOTTE Hotel St. Petersburg (Feb. 2015 - Aug. 2017)**  
 Location St. Petersburg, Russia  
 Summary 1 story below ground and 6 stories above, 154 rooms, spa, banquet, restaurant, etc.

# ESG STRATEGY



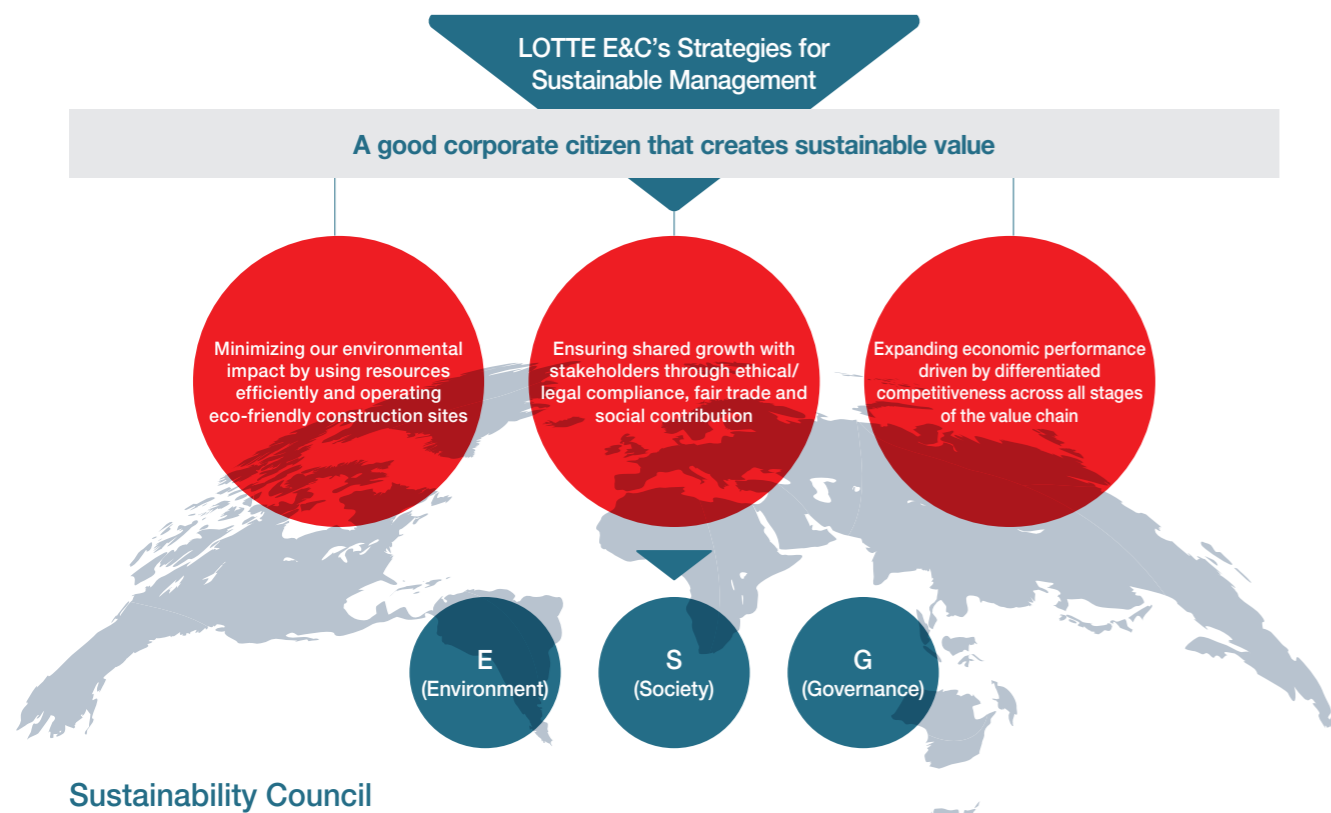
- 047 Sustainability Management Strategies and System
- 049 Participation of Stakeholders and Materiality Assessment
- 051 Sustainable Development Goals (SDGs)
- 052 Strategic Response to Mega Trends in the Construction Industry
- 053 Reinforcing Future Competitiveness



# Sustainability Management Strategies and System

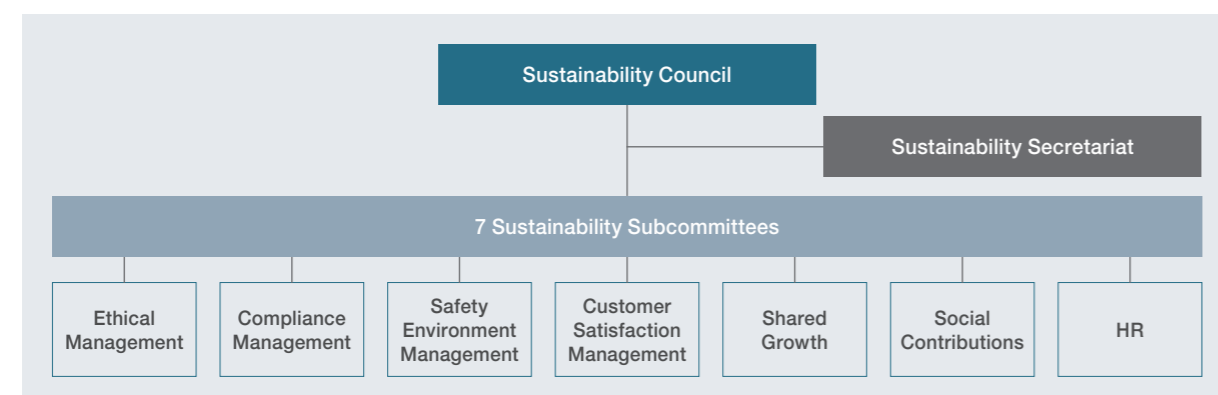
## Sustainability Management Strategies

LOTTE E&C established the new ESG team in 2021 to play its role as a good corporate citizen in creating sustainable value, and is currently establishing ESG strategies in terms of the environment, society, and governance by updating the existing sustainability strategies. Through our sustainability strategies, we are contributing to environmental and social advancement in addition to creating economic value by setting and fulfilling strategic goals for each sustainability subcommittee based on the opinions of various stakeholders. LOTTE E&C will continue to strive toward achieving our 2020 vision of 'Global Leading EPC Contractor, Total Service Provider.'



## Sustainability Council

LOTTE E&C operates a Sustainability Council made up of 7 subcommittees, reporting directly to the CEO, for the purpose of improving sustainability and fulfilling social responsibilities. The sustainability secretariat functions as the executive office of sustainability management and conducts activities such as establishing mid-to-long-term strategies and forming and implementing detailed strategic plans for each of the subcommittees, managing performance and responding to external policies and regulations.



## Strategies and Performance Results of Subcommittees

Subcommittee	Strategy Objectives	Strategy Direction	2020 Performance Results			
Ethical Management	Become an ethical company that operates based on principles and trust	<ol style="list-style-type: none"> <li>Enhance ethical management implementation system</li> <li>Internalize the ethical awareness of employees</li> <li>Enhance communication program for ethical management</li> </ol>	90 points Ethical management evaluation score	113 cases Number of post-audit improvement cases	3,323 employees Number of employees who attended education sessions on ethical management	214 cases Number of reports through cyber ombudsman channel
Compliance Management	A company that leads the culture of compliance	<ol style="list-style-type: none"> <li>Operate an effective compliance program</li> <li>Internalize and raise employee awareness related to legal compliance</li> <li>Preemptive management of risks</li> </ol>	Expanded Operation of Compliance Programs	3,123 employees Number of employees* who have received compliance education (*Daily workers included)	Improved customized computer system according to the Subcontract Act	Promoted validity evaluation of compliance and customized improvement measures
Safe Environment Management	Safety in practice, a bright and clean working environment	<ol style="list-style-type: none"> <li>Improve safety and health competency</li> <li>Strengthen field safety management system</li> <li>Raise safety awareness (I Respect U)</li> </ol>	0.41 <sup>0</sup> /000 Mortality rate per 10,000 workers	1,028 cases Number of Site Safety Inspections	1,234 employees Total number of employees attending safety education (Employees of partner companies included)	
	Achieve zero environmental accidents	<ol style="list-style-type: none"> <li>Increase eco-friendly awareness</li> <li>Expand eco-friendly business activities</li> <li>Establish proactive response systems for environmental regulations</li> </ol>	41,151 tCO <sub>2</sub> e Achieved target reduction rate (8.5%) compared to forecasted GHG emission rate	KRW 64.03 billion Procurement of certified eco-friendly products	KRW 131 million Eco-friendly R&D Expenditure	
Customer Satisfaction Management	Impress customers and create better value with products and services of the highest quality	<ol style="list-style-type: none"> <li>Develop products based on customer needs</li> <li>Precision construction / Quality innovation</li> </ol>	30 sessions Quality inspections complete	15 sessions Quality innovation online education	48.6% Satisfaction rate with Happy Call	Carried out 'COVID-19 Prevention Service' for public areas of the complex
Shared Growth	A company leading shared growth based on fair trade and mutual interactions	<ol style="list-style-type: none"> <li>Build fair-trade relationships</li> <li>Reinforce the support system for partner companies</li> <li>Establish trust with partner companies</li> </ol>	KRW 321.3 billion Total financial support	Excellence rating 2020 shared growth index		
Social Contributions	A company that seeks to grow together with the local communities in which it operates by sharing love	<ol style="list-style-type: none"> <li>Expand flagship social contribution program</li> <li>Launch social contribution activities that are beneficiary-oriented</li> <li>Establish a culture of voluntary employee participation</li> </ol>	KRW 3,298 million Social contribution expenditure	238 teams Charlotte Voluntary Service Group	4,564 hours Volunteer hours of Charlotte Voluntary Service Group	988 employees No. of employees that took part in social contribution activities
HR	Create a corporate culture of communicating with and training future talents	<ol style="list-style-type: none"> <li>Build a culture in which diversity is a fundamental feature</li> <li>Strengthen implementation of corporate culture</li> <li>Cultivate the human talent needed for sustainable business growth</li> </ol>	3,323 employees No. of employees who attended educational programs	117 hours No. of hours of education per employee	KRW 2,480 million Education expenditure	
			Grievance handling program for employees	Corporate culture TFT		

# Participation of Stakeholders and Materiality Assessment

## Participation of Stakeholders

We operate a number of on/offline communication channels for different groups of stakeholders to gain insights regarding their expectations on major issues and positively reflect their opinions in our management activities.

Employees	Partners	Customers	Communities
<ul style="list-style-type: none"> <li>Operating on/offline channels dedicated to managing complaints</li> <li>Performing an organizational diagnosis</li> <li>Organizing regular/special labor-management council sessions</li> <li>Presenting the Best Employee Award on a quarterly basis</li> <li>Operating a junior board</li> </ul>	<ul style="list-style-type: none"> <li>Holding regular meetings for shared growth</li> <li>Operating portal sites of partner companies and shared growth homepages</li> <li>Holding meetings with CEOs of exemplary partner companies</li> </ul>	<ul style="list-style-type: none"> <li>Operating a renewed LOTTE Castle homepage for the convenience of customers</li> <li>Operating the Happy Call Center (customer hotline)</li> </ul>	<ul style="list-style-type: none"> <li>Operating the Charlotte Voluntary Service Group (Engaged in volunteering activities in domestic and international areas where we conduct our business)</li> <li>Operating social contribution programs</li> </ul>

## Materiality Assessment

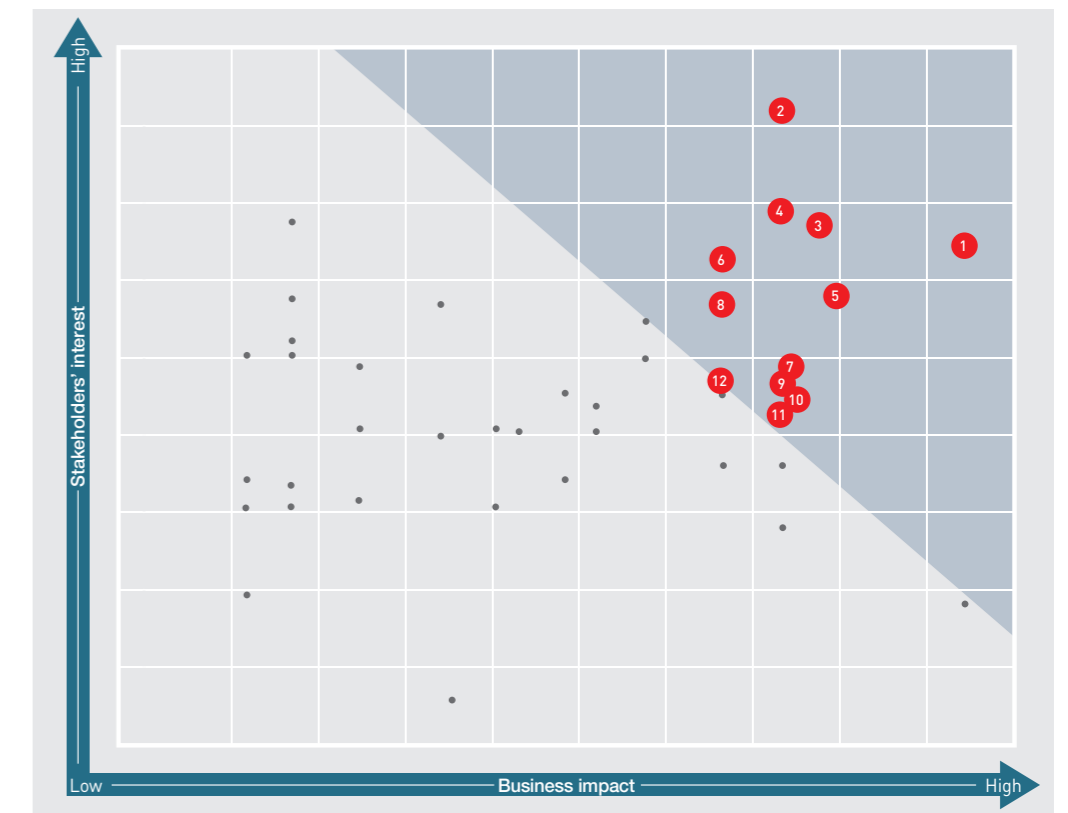
Every year, we perform a materiality assessment in order to identify and select the issues that our stakeholders consider important. In 2020, we established a pool of stakeholder issues based on the requirements of global standards, such as the Global Reporting Initiative (GRI), a global standard for devising sustainability reports, CSR standard ISO 26000, and the UN's Sustainable Development Goals (SDGs) as well as information disclosure requirements that are stakeholders' requirements, such as MSCI and DJSI. Then, we conducted a materiality assessment over a period of two weeks. Based on our pool of 45 issues, we selected 12 material issues through the assessment. These consisted of media research, benchmarking of leading businesses, and analysis of internal strategies and policy issues, as well as internal/external questionnaire-based surveys. We intend to disclose the results of major activities carried out in 2019 concerning the selected issues in this sustainability report.

## Assessment Process



## STEP 3.

### Selecting Material Issues



Category	Materiality Issues	GRI Standards Topic	Page of Report
1	Spread of safety culture and raising safety awareness/preemptive safety management activities	●	63-65
2	Improvement of labor-management culture and labor conditions	●	66-70
3	Response to climate change	●	57-58
4	Strengthening management of waste and wastewater (Reduction of water contaminant discharge, activation of recycling and reuse, etc.)	●	59
5	Strengthening of R&D	●	53-54
6	Eco-friendly products and services (Eco-friendly buildings, development of eco-friendly products, etc.)	-	60
7	Sound governance	●	83
8	Systematization of social contribution activities (Contribution to society, resolution of actual social issues, etc.)	●	79-80
9	Strengthening of customer satisfaction activities (Enhancing customer convenience and product quality, etc.)	●	71-76
10	Establishment of fair trade (Prohibition of unfair acts and monopoly, etc.)	●	77
11	Shared growth and win-win cooperation (Financial / technical / HR development support, etc.)	●	77-78
12	Securing new growth engines (Business diversification, advancement to new market, etc.)	●	53-54

# Sustainable Development Goals (SDGs)

## LOTTE Group's SDGs Implementation Directions

In association with our affiliate companies of the LOTTE Group, LOTTE E&C has set the direction to execute the Group's SDGs, based on the UN's 17 SDGs, and has also set women/children, the environment, and mutual growth as three themes. Guided by these directions, LOTTE E&C, as a sustainable company, intends to further fulfill its obligations as a corporate citizen that contributes to building a sustainable society.



## LOTTE E&C's SDGs Execution Activities

Working from the perspective of the LOTTE Group's SDGs themes of 'Green LOTTE (Environment)' and 'Together LOTTE (Mutual growth),' LOTTE E&C carries out design and procurement activities by considering the environment. We also have social contribution activities that lead the sustainable development of the local communities in which we operate. Through these activities, we seek to achieve the 11th SDG: Sustainable Cities and Communities.

### Green Design and Purchase of Green Materials

LOTTE E&C takes green factors into account across all three project phases: design, construction, and maintenance. Since 2013, LOTTE E&C has consistently been awarded the Green Building certification for its contributions to reducing energy consumption and environmental pollution. In 2020, the company received the highest rating for 'LOTTE Caste Bene Luce.'

Through its eco-friendly designs, the company contributes to suppressing global warming and reducing the consumption of energy and water resources. A case in point is Jamsil's LOTTE World Tower, which relies on renewable energy sources such as solar and wind. We also installed a sewage recycling system in Pohang City, which supplies around 100,000 tons of industrial water each day in the form of purified sewage water. In the future, we plan to complete the construction of a facility that will generate biogas and electricity through the treatment of food waste in Changwon.

Moreover, LOTTE E&C is taking the lead in protecting the environment by procuring certified eco-friendly products every year. Moving forward, we will construct sustainable buildings and cities, with fewer negative environmental impacts, through the active utilization of eco-friendly and future energy technologies that are leading green growth.

### Love House of Dreams and Hopes

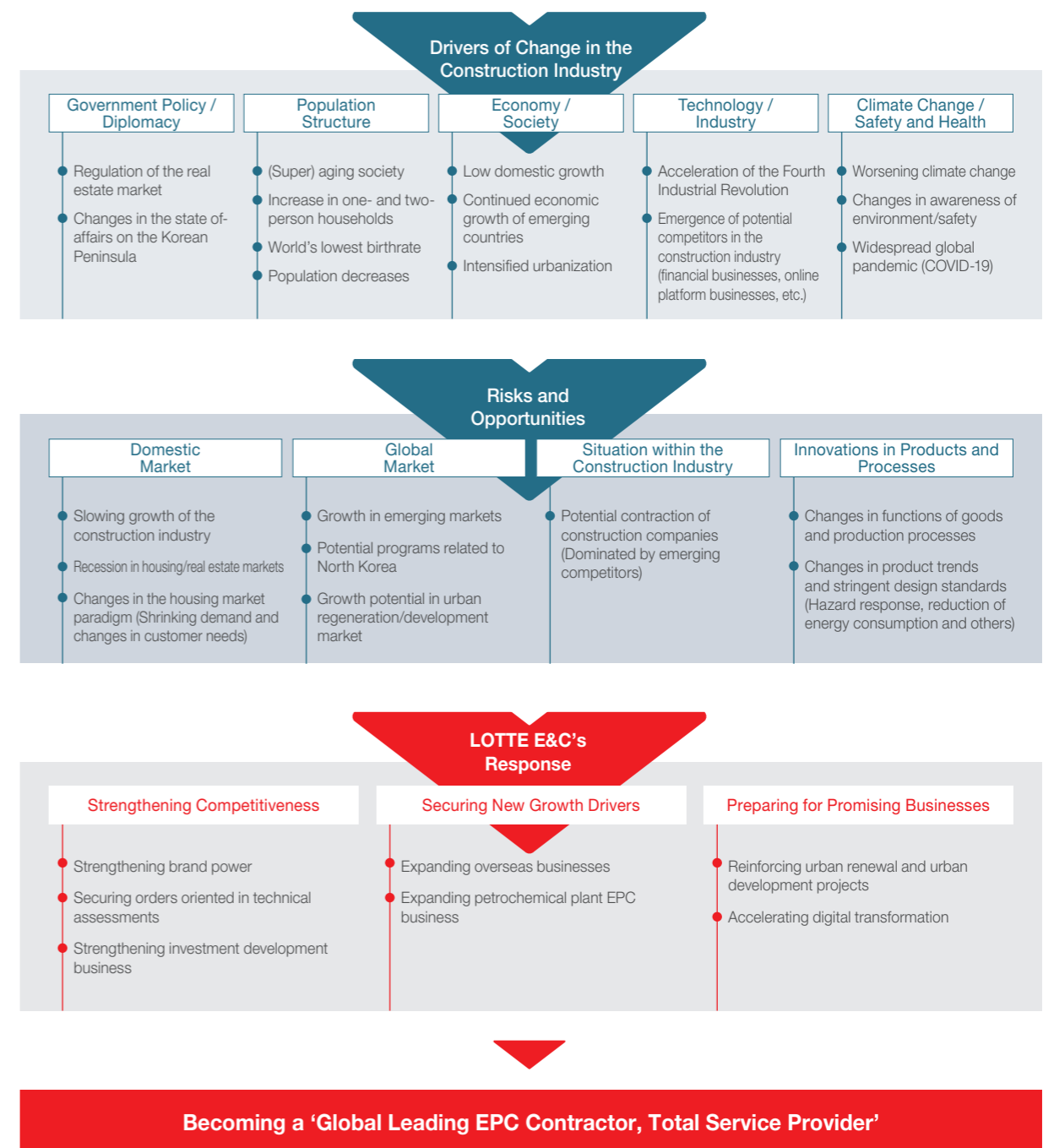
'Love House of Dreams and Hopes' is a volunteering program run by LOTTE E&C to improve housing situations for low-income families and the environments of social welfare facilities. Through this program, the company is helping members of local communities enjoy the right to live in adequate housing as well as supporting the provision of basic social services. Love House volunteer activities began in 2012, and by the end of 2020, had been conducted in a total of 107 facilities, at 71 locations in Seoul and 36 in Busan. In 2020, we supported online education tools (laptops, tablet PCs, and other computer devices) to improve the educational environment for children at child welfare centers who had difficulty attending school due to the spread of COVID-19. We also implemented contactless DIY volunteer activities that can be carried out at employees' homes or preferred locations.

LOTTE E&C will fully utilize the characteristics of the construction industry and the expertise of its employees to resolve the problems of society and create value from mutual growth.

# Strategic Response to Mega Trends in the Construction Industry

## Strategic Response to Mega Trends in the Construction Industry

LOTTE E&C formulated our mid to long-term strategy by analyzing the drivers of change in the construction industry based on global mega trends, in order to respond to the opportunities and threats present in the future. We seek to supplement our operational structure, which is heavily dependent on domestic projects, by expanding our overseas business and diversifying our portfolio with projects that require cutting-edge technology and development projects. We are also striving to attract more talented employees and strengthen our systems to further build our capacity in the area of chemical plants, which are expected to lead future business growth, while exploring promising business opportunities related to global urbanization and digital transformations. Through these efforts, LOTTE E&C plans to solidify the foundation for sustainable development and will achieve Vision 2030, to become a 'Global Leading EPC Contractor, Total Service Provider.'



# Reinforcing Future Competitiveness

## Technologies to Lead the Future Market

LOTTE E&C is focused on developing the high value-added technologies that can lead the future market to secure competitiveness in response to the mega-trends of the construction industry. We will strive to become a sustainable company by coping with rapid changes in the construction environment and enhancing customer satisfaction.

### Site Management Platform for Smart Construction (Ellosseum)

Ellosseum, a site management platform for smart construction, integrates advanced ICBAM+ technologies into construction sites and collects, operates, and controls all information in the construction stage using digital infrastructures. Since 2018, we have been developing and improving the relevant technologies by participating in government-run tasks under the Ministry of Land, Infrastructure and Transport and carrying out in-house tasks. We try to achieve efficient site management by using AI analysis and the big data accumulated through Ellosseum.



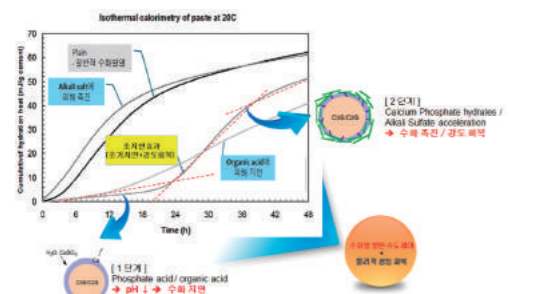
\* ICBAM : IoT, Cloud, Big Data, AI & Mobile



Site management platform for smart construction

### Hydration Heat Reduction Concrete

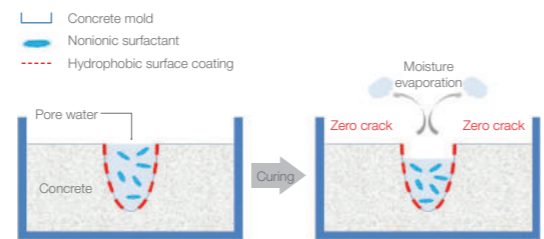
There has been an increase in quality problems with mass concrete components (thickness of 1.0m or above) due to high heat of hydration and cracks. In response, we have developed a technology that reduces maintenance costs by securing quality and reducing the heat of hydration of concrete, even at high outdoor temperatures, through the use of organic-inorganic composite materials. We registered one patent in Korea and applied for one overseas patent in Vietnam for this technology, which we plan to apply at work sites on the Indochina Peninsula (extreme environment).



Hydration Heat Reduction Concrete

### Advanced Crack Reduction Concrete

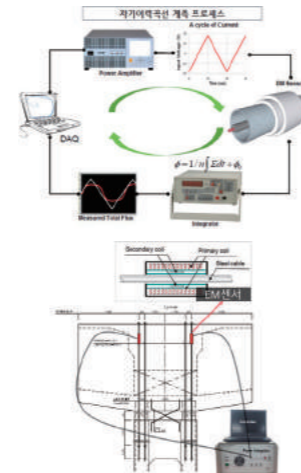
We have developed our crack-resistant concrete that contains an advanced high-performance admixture which can be applied to conventional concrete and reduces dry shrinkage by more than 160% compared to conventional concrete. This product can lower maintenance costs by reducing cracks, and minimizes cracking when applied to large-scale structures with concrete floors, which are particularly vulnerable to plastic and dry shrinkage cracks. This concrete has been tested through its application to Jeungpyeong Fresh Food Logistics Center, Samseong-dong Multipurpose Facility, Incheon Hang-dong Logistics Center, and Oryu-dong Happy House.



Advanced Crack Reduction Concrete

### Tension Measurement Technology of Major Materials for Special Bridges

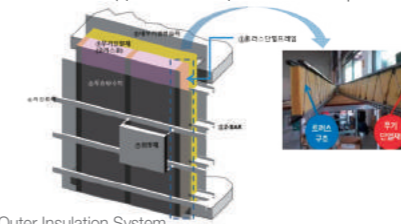
This technology measures the strength of steel rods used to stabilize the construction of the supercapital of a bridge using the free cantilever method (FCM). We attached elasto-magnetic (EM) sensors that enable the calculation of force by measuring the magnetic force that changes according to the stress of the steel rods. We have verified this technology by applying it to the Hyeonchungsa Bridge in section 2 of the Asan-Cheonan Expressway, and are currently applying it to Jusangcheon Bridge in section 1 of the Saemangeum South-North Way to improve the accuracy and build a monitoring system.



Tension Measurement Technology of Major Materials for Special Bridges

### Fireproof Dry Outer Insulation System

This fireproof outer insulation construction technology consists of a truss insulation frame (newly developed) that reduces the thermal bridge breaks of the conventional curtain walls and a water repellent glass wool. Having improved the energy efficiency of buildings by reducing the thermal bridge and secured fire and structural safety, this technology acquired new construction technology certification (no. 901) in 2020 and green technology certification (no. GT-21-01154) in 2021. Its on-site application is expected to be expanded in the future.



Fireproof Dry Outer Insulation System

### Slope Displacement Measurement Technology Using Drones

We developed a drone-based measurement technology to improve the efficiency of road slope surveying. Measurement technologies have been limited due to the interruption from vegetation, making it impossible to measure the displacement with conventional images and sensors. LOTTE E&C has enhanced the stability of slopes by developing drones with L-Band SAR sensors\* that are not affected by vegetation. Test flights and displacement measurements were performed using a tunnel pit slope as the testbed. We have registered two domestic patents and applied for two domestic patents using this technology.

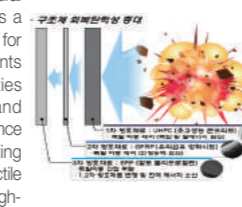
\*L-Band SAR sensors: All-weather observation image radar (synthetic aperture radar) in the L-band



Slope Displacement Measurement Technology Using Drones

### Research to Develop Structural Materials and Design Techniques for Protection Against Explosion Shock

We are developing anti-shock structural materials and design techniques as a proactive approach to technologies for protection against explosion accidents in the living space, such as facilities for autonomous driving electric and hydrogen vehicles. We plan to enhance the stability of structures by evaluating performance of reinforced seats, ductile panels, and buffer materials through high-velocity collision tests, and optimizing the anti-shock structure model.



Structural Materials and Design Techniques for Protection Against Explosion Shock

### Development of Off-Site Construction-Based Production System Innovation Technology (Development of Digital Platform Based on OSC)

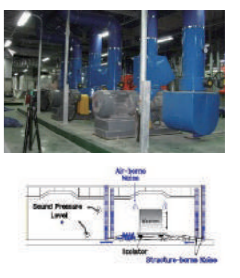
This research task was selected as a government-run task in April 2020 and will be conducted over the next four years to develop a digital platform. We will enhance the existing functions of Real-time PC Management Systems (RPMS) and develop a digital platform that improves the efficiency of various tasks related to the completion stage of construction projects, such as furniture and windows. The platform will enable comprehensive management of materials in the design, production, transport, and construction phases, design management, construction plans, ordering/receiving plans, and construction cost management. In particular, the PC system will build a work process frame for plants and work sites in September 2021, which will be verified through on-site demonstrations. We have secured four intellectual property rights (two patent registrations and two applications) for technologies related to this platform. We plan to add functions associated with pre-con services and enhance the platform in the mid-to-long term.



OSC-Based Digital Platform

### Vibration Reduction Concrete

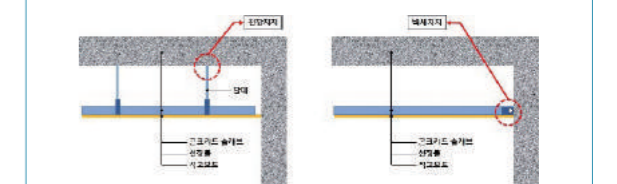
Recently, problems have arisen in residential areas with complaints about noise and vibrations. To address this, LOTTE E&C has applied for a patent on a polymer concrete technology that reduces vibrations using inorganic polymer as the raw material. We have made a large-scale structure for experimentation and reviewed vibration reduction performance. This technology will be applied to elevator room and machine room floors in the future.



Vibration Reduction Concrete

### Ceiling System to Reduce Noise Between Floors

There have been various attempts made to enhance floor noise blocking performance and improve floor structures, but it is difficult to meet the level of noise reduction demanded by our society. We have developed a new ceiling system that minimizes the part connected with the floor slab of the upper floor to additionally reduce the floor impact noise on parts other than the floor section. This technology will be applied to small-sized apartment buildings that are vulnerable to floor impact noise.



Ceiling System to Reduce Noise Between Floors

# ENVIRONMENTAL SUSTAINABILITY

Since the enforcement of the Paris Agreement of 2016, the international community has tightened its environmental regulations. In these conditions, global investors are prioritizing environmental factors.

LOTTE E&C practices environmental management with the Safety and Environment Management Subcommittee. We strive to minimize our environmental impact through eco-friendly products and technologies, applying eco-friendly technologies to construction projects throughout the entire process.



\* Business As Usual (BAU): Total amount of greenhouse gases expected if measures to reduce greenhouse gases are not taken

- 057 Environmental Management
- 059 Eco-friendly Management
- 060 Eco-friendly R&D

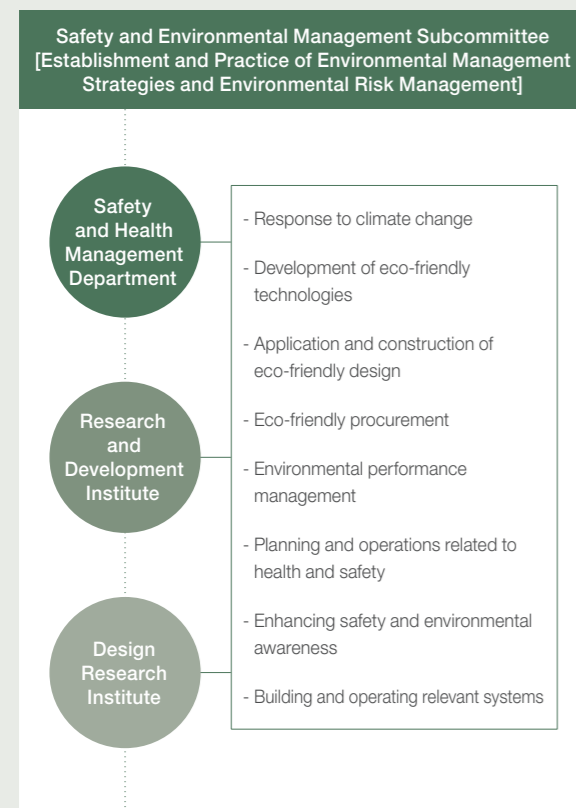
# Environmental Management

## Environmental Management System

### Units to Promote Environmental Management

LOTTE E&C operates the Safety and Environmental Management Subcommittee under the Sustainable Management Committee to cope with climate change, check global trends in environmental management, and derive proactive measures for dealing with environmental issues. The subcommittee handles matters related to the establishment and practice of company-wide environmental management strategies and environmental risk management.

### Roles of Safety and Environmental Management Subcommittee



### Establishment of Environmental Management System (ISO 14001 Certification)

Since acquiring ISO 14001 (environmental management system) certification in 1996, LOTTE E&C has continuously improved its foundation for promoting environmental management. In 2017, we took steps to comply with the revised requirements of ISO 14001. We conducted renewal audits in 2019 and post-audits in 2021 to maintain our certification status.

## Environmental Policy

### Environmental Management Policy

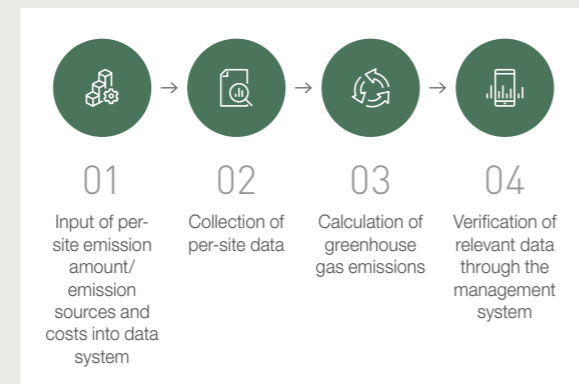
As a corporate citizen that produces sustainable values for people, nature, and the future, LOTTE E&C practices the following to accomplish 'Green LOTTE.'

- 01 We minimize our adverse environmental impact by using resources efficiently and building eco-friendly construction sites based on the ISO 14001 environmental management system.
- 02 We fulfill our social responsibilities by establishing and complying with internal standards that are stricter than domestic and foreign environmental laws.
- 03 We regularly monitor our GHG emissions and energy usage, and respond to climate change by applying green technologies to the entire business process.
- 04 We continue to improve our environmental management system through regular management review and transparent communication with stakeholders.

## Response to Climate Change

### Response to and Management of Climate Change

With an emphasis on the roles of corporations in reducing greenhouse gases, LOTTE E&C is working systematically to reduce its environmental impact at business sites through the greenhouse gas and energy management system. In addition, we actively implement environmental management by conducting campaigns and education programs to enhance the environmental awareness of employees.



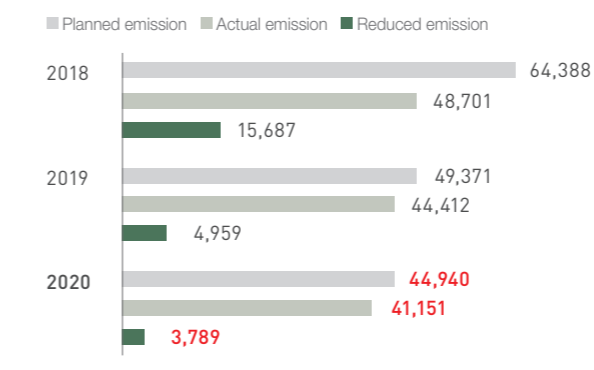
## GHG Emission Reduction Activities

After being selected for the GHG energy target management system demonstration project in 2014, LOTTE E&C established a greenhouse gas inventory system to monitor the GHG emitted from all business sites. We were excluded from the target management system in 2019, but have been striving to set and attain our own GHG reduction goals.

In 2020, we developed and applied GHG reduction technologies, changing the fuel used to generate the heat required for concrete curing from brown coal to kerosene and replacing lighting fixtures during the construction of the LOTTE Welfare Center with LEDs. As a result, we emitted 41,151 tCO<sub>2</sub>eq of GHG and reduced emissions by 8.5% compared to BAU. In the future, we will promote further GHG reduction through additional activities, such as power-saving campaigns involving all employees.

\* Business As Usual (BAU): Total amount of greenhouse gases expected if new measures to reduce greenhouse gases are not taken

### GHG Reduction Amount (Unit: tCO<sub>2</sub>eq)



## Enhancing Environmental Awareness at Construction Sites

### Strengthening Environmental Management Education

We post environment-related educational materials on the in-house intranet, including best practices, cases that need to be improved, and media coverage. In 2021, we carried out contact-free hands-on training covering environmental laws, the latest issues, and legal violations for environmental managers of each work site. We will continue to distribute educational materials and increase in-house environmental management activities.

### Awarded at Construction Environment Management Contest

We are consistently submitting cases to and receiving awards at the Exemplary Construction Environment Management Contest, hosted by the Korea Construction and Environment Association and supervised by the Ministry of Environment and the Ministry of Land, Infrastructure and Transport. In the 14<sup>th</sup> contest, two of our sites were selected as best practices and awarded by the

Minister of Environment and the Chairman of the Environment Corporation. In the 16<sup>th</sup> contest held in 2020, we were awarded by the Chairman of the Environment Corporation.

### Coping with Special Act on Reduction and Management of Fine Dust

With the recent rise of issues related to fine dust and an increase in air quality inspections, we have distributed a fine dust response guideline to work sites. We share details of the air quality inspections with all sites to prevent related violations.

In addition, through signing an agreement on the voluntary reduction of fine dust with the Air Quality Management Division of the Ministry of Environment in December 2019 and activities like sprinkler operation, road cleaning, and dust collector installation, we are leading the efforts to reduce fine dust.

## Strengthening Environmental Inspections at Construction Sites

### Conducting Systematic Environmental Inspections

We establish inspection plans focused on seasonal and monthly environmental issues at the beginning of each year. We conduct regular environmental inspections at major work sites and inspections to support initial construction sites. We reflect the inspection results in our KPI, confer awards to excellent sites, and provide special education for under-performing sites to ensure the effectiveness of the inspections. In 2020, we performed 104 environmental inspections, including 76 regular inspections, 20 early construction inspections, and 8 spot inspections. In addition, we make efforts to enhance environmental management awareness by offering reviews and training to supervisors at work sites and partner companies.

### Environmental Management Using IT System

LOTTE E&C appoints an environment manager among workers at construction sites to check the installation and operation of environmental pollution prevention facilities and submit reports to relevant authorities. The environment manager registers the inspection status on a monthly basis using the in-house registration system. We regularly monitor the inspection status through cross-checking between construction sites and the head office, preventing violation of environmental laws.

# Eco-friendly Management

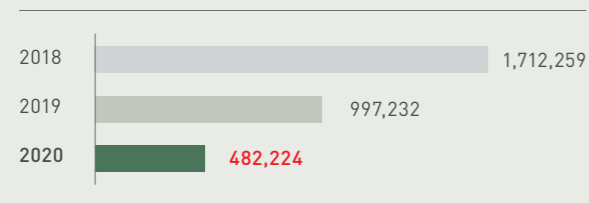
## Eco-friendly Construction

LOTTE E&C establishes environmental management plans when commencing construction works to minimize the environmental impact on the surroundings, identifies and controls factors that affect the environment, and implements the environmental impact assessment required by environmental laws. In addition, we perform regular monitoring to prevent environmental impacts on the air and water quality of the noise, vibrations, and wastes generated during construction.

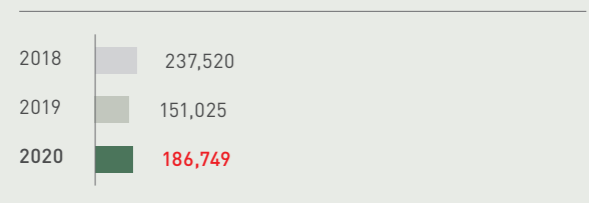
### Turbid Water and Wastewater Management

We install and operate water pollution prevention facilities, such as septic tanks, wastewater treatment facilities, and tunnel wastewater treatment facilities, to reduce the environmental impact of wastewater discharge. We also install grit chambers and settling tanks to retain turbid water until it can be discharged as clean water. Beyond this, we are making a range of efforts to reduce our water usage. We used 668,973 tons of water in 2020, which was 479,284 tons less than the previous year.

### Water and sewage usage (Unit: Tons)



### Underground water usage (Unit: Tons)



### Fine Dust Particle Management

LOTTE E&C carries out diverse activities to reduce the amount of flying dust particles generated in its sites. These activities include the operation of a facility to clean the tires of vehicles leaving the sites, sprinkling water on unpaved roads, making it mandatory to cover the cargo section of trucks and open yards storing materials, and the operation of street sweepers. In addition, we comply with legal work standards to prevent the scattering of asbestos dust during demolition works.

## Waste Management

We monitor the volume of wastes generated at our sites using the relevant waste treatment system and control monthly emissions by operating an in-house waste registration system. When waste-related issues arise, we provide guidelines for classifying and discharging construction wastes so they can be discharged legally.

In addition to this, we keep our sites clean by standardizing on-site waste storage for each case and installing it neatly.

## Eco-friendly Demolition

### Noise and Demolition Works Management

When using noise-generating equipment and machinery at sites, we install moveable anti-noise walls to minimize noise generation, measuring and managing noise periodically. In residential areas, we place noise warning signs on anti-noise walls in accordance with the laws.

## Eco-friendly Procurement

In 2009, we signed the 'Voluntary Agreement on Green Procurement in Businesses.' Since then, we have endeavored to find qualified suppliers and purchase eco-friendly materials by operating an eco-friendly materials procurement system. In 2020, we purchased certified eco-friendly products worth KRW 64.03 billion, an increase of KRW 11.41 billion compared to the previous year.

### Procurement Records of Certified Eco-friendly Products (2020) (Unit: KRW million)

	HB Mark	13,690
	Eco Mark	17,599
	High-efficiency Energy Equipment	2,845
	GR Mark	4,041
	Energy Efficiency Rating 1, 2	25,851

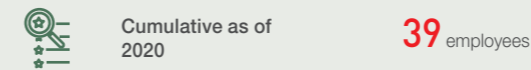
# Eco-friendly R&D

## Eco-friendly Construction

### Eco-friendly Design

We consider acquiring green construction certifications regarding building materials, other resources, designs, structures, and functions in the early stage of all construction projects. In addition, we have strengthened our design capabilities in the area of eco-friendly products by constantly securing human resources specializing in eco-friendly construction (LEED AP).

### Status of Holders of LEED AP License



### Status of Major Projects that Earned Green Building Certification

Housing Works		
Project Name	Certification Grade	Date of Certification
Gileum New Town LOTTE Castle Golden Hills	Evaluated as 'Great' in main Green Building Certification	2019-01-29
Gyeonghugung LOTTE Castle	Evaluated as 'Great' in main Green Building Certification	2019-03-27
Yongsan LOTTE Castle Center Foret	Evaluated as 'Great' in main Green Building Certification	2019-04-22
Geumcheon LOTTE Castle Gold Park TOWER 960	Evaluated as 'Excellent' in main Green Building Certification	2019-05-29
Seongbok Station LOTTE Castle Gold Town	Evaluated as 'General' in main Green Building Certification	2019-06-18
Doryang LOTTE Castle Gold Park	Evaluated as 'General' in main Green Building Certification	2019-08-27
Hannam Nine One	Evaluated as 'Great' in main Green Building Certification	2019-11-13
LOTTE Castle Beneluche	Evaluated as 'Excellent' in main Green Building Certification	2020-01-22
Mullae LOTTE Castle	Evaluated as 'Great' in main Green Building Certification	2020-03-13
LOTTE Castle Golden Foret	Evaluated as 'Great' in main Green Building Certification	2020-06-22
Yeonsan LOTTE Castle Gold Foret	Evaluated as 'General' in main Green Building Certification	2020-09-07

### Building Works

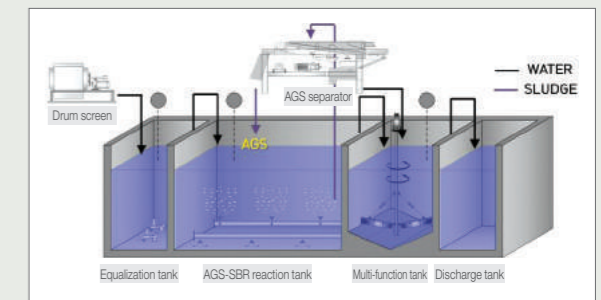
Project Name	Certification Grade	Date of Certification
Ailex Square	Evaluated as 'Superior' in main Green Building Certification	2019-07-30
Incheon Port International Passenger Terminal	Evaluated as 'Excellent' in main Green Building Certification	2019-09-03
G-SQUARE	Evaluated as 'Excellent' in main Green Building Certification	2020-10-27

## Eco-friendly Technology

### Technologies to Create Environmental Value

#### Aerobic Granular Sludge (AGS) Wastewater Treatment Technology

Our advanced sewage treatment method using AGS, a high-density complex microbial agent, is an eco-friendly sewage treatment technology that can reduce power costs and waste generation by more than 30%. LOTTE E&C obtained a new environmental technology certification and verification from the Ministry of Environment for 'Advanced, continuous-batch sewage treatment technology for maintaining aerobic granule sludge concentrations with a belt filter.' We participate in tasks run by the Ministry of Environment to commercialize this technology for sewage with high salt concentrations.



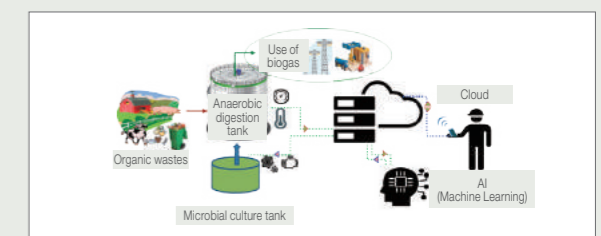
Aerobic Granular Sludge (AGS) Wastewater Treatment Technology

#### Scattering Dust Reduction System for Construction Sites

We developed spray blowers for reducing scattering dust and applied them to demolition projects and earthworks to respond to complaints about scattering dust at construction sites. We have registered one domestic patent for this technology, which is being applied in our Banpo Woosung Apartment reconstruction project and Jamsil Miseong Clover Apartment reconstruction and maintenance project.

#### Technology for Smart Biogas Plant System

A biogas plant is a facility that converts organic wastes, such as livestock manure, food waste, and sewage sludge, into biogas (comprising methane and carbon dioxide) through an anaerobic digestion process. Since 2018, we have been participating in a national project sponsored by the Ministry of Trade, Industry and Energy to develop an integrated biogas plant operation system incorporating Industry 4.0 technologies, such as an IoT platform and AI, to develop a differentiated business in line with the government's policy for expanding renewable energy and resource recycling. We have completed one patent registration and one patent application in Korea for this technology.



Technology for Smart Biogas Plant System

# SOCIAL RESPONSIBILITY

Customers are LOTTE E&C's most valuable asset, and our partner companies are the key to our competitiveness. The existence of LOTTE E&C is based on social contributions and consideration of the local communities in which we operate. Our culture and human resource management to make a happy workplace and grow talents is a part of our public image in which we take pride.

We endeavor to create value for our customers and with our partner companies. Our happy employees grow with society.



- 063 Safety Management
- 066 Human Resource Management
- 071 Customer Satisfaction
- 077 Win-Win with Partner Companies
- 079 Social Contributions





# Safety Management

## Safety and Health Management System

### Safety and Health Management Organization

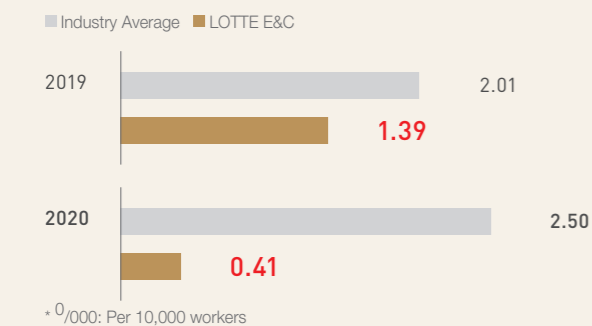
LOTTE E&C operates the Safety and Health Management Department, reporting directly to the CEO, to establish a company-wide safety and health strategy, settle a safety and health culture, and prevent safety accidents at construction sites. The Safety and Health Management Department, which also participates in the Safety and Health Management Subcommittee of the Sustainable Management Committee, identifies domestic and international policies and construction industry trends in the field of safety and health, checks and evaluates the safety and health level at construction sites, and educates employees in related fields.

### Establishment of Safety and Health Management System

LOTTE E&C has obtained safety and health management system certifications (KOSHA-MS, ISO 45001) at home and abroad and engages in activities to prevent safety accidents, such as operating a risk assessment system to manage risk factors and selecting safety measures. In addition, we operate safety inspections at work sites that involve high-risk works. We have strengthened our safety inspections for high-risk works in connection with the mobile safety management system.

Through these efforts, LOTTE E&C recorded a mortality rate per 10,000 workers of 0.410/000 in 2020, which has been reduced compared to the previous year and is below the average of 2.500/000 for the construction industry.

### Current mortality rate per 10,000 workers (Unit: 1/000)



### Operation of Industrial Safety and Health Committee

The Industrial Safety and Health Committee, which is made up of an equal number of employee and employer representatives, manages the safety and health matters of employees in every quarter. In addition, the committee makes a range of efforts to establish a safety and health culture, including accident prevention activities, performance management of on-site safety management operations, and discussion of improvement measures.

### Safety and Health Management Meeting

Every month, we hold the Health and Safety Management Meeting led by the CEO to check the results of health and safety management activities, share information about future plans, and derive points for improvement.

### Safety and Health Management Programs

#### Proactive Safety and Health Management

LOTTE E&C has introduced and operates safe IoT devices to match the accelerating digital transition of the construction industry. We use wearable cameras to perform on-site inspections of construction equipment and monitor high-risk works closely. We provide realistic safety education programs to employees and workers by implementing simultaneous experience VR.

#### Strengthening On-Site Safety Management

We strive to prevent safety accidents by improving our safety inspections at high-risk work sites. We perform customized inspections in vulnerable seasons like the thawing season and active working season. We support on-site safety inspections on the 'High-Risk Safety Inspection Day' in each quarter. In 2020, we had 82 joint inspections with the business headquarters and R&D center. 'High-Risk Safety Inspection Day' was held at 31 work sites.

#### Establishing Mobile Safety Management System

We have built an in-house mobile safety management system. The mobile safety management system enables us to share on-site risk factors and take countermeasures immediately upon their discovery. In addition, we enhanced the work efficiency in connection with internal systems, sharing safety information among work sites in real-time and suggesting methods for improving problems.

**Safety Checks**

- Create a complementary database during safety inspections
- Report to management and spread to all sites in case of disaster

**Communication Square**

- Follow up on instructions of head office in real-time
- Share safety information among work sites

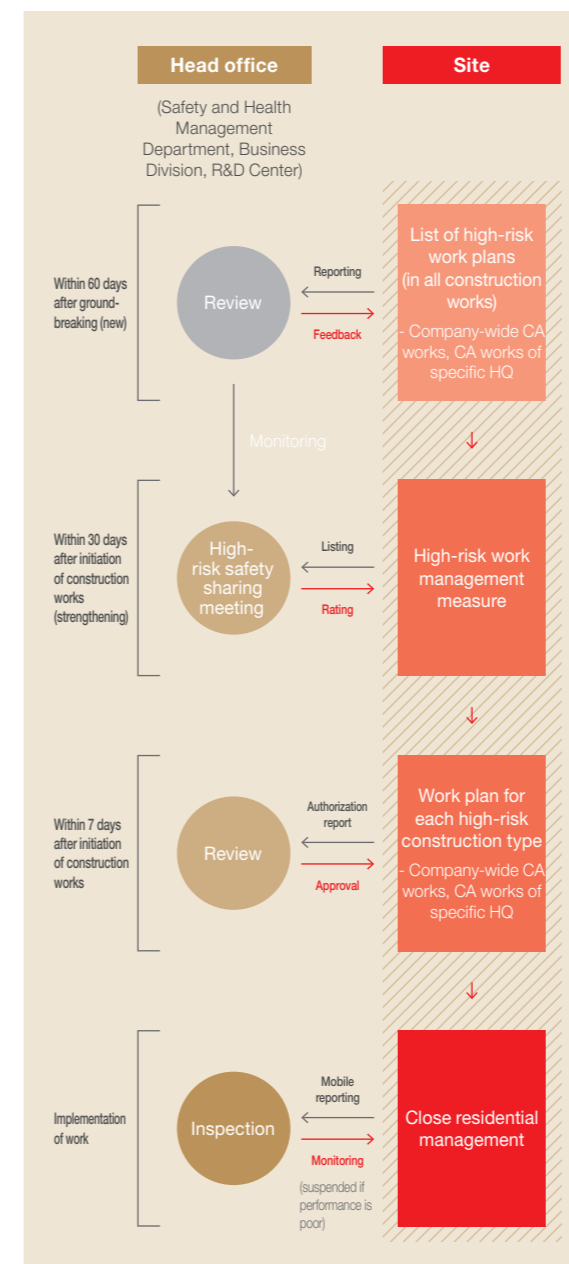
**Information Space**

- On-site information search (construction overview, site organization, location, etc.)
- View safety instructions and training materials
- Inventory search for temporary safety materials

Mobile Safety Management System

### Strengthening Risk Assessment System

We operate the CA rating system, an in-house safety management system for high-risk works. CA stands for Class Absolute, and the CA rating system is a rating system to manage high-risk works. We have six CA works, including the removal of tower cranes and the installation of supporting posts with a height of 5m or higher. CA works of the head office correspond to the characteristics of public works, plants, architecture, and housing. During CA works, we strive to prevent large-scale technical accidents through the improved risk assessment system, which involves a preliminary study, technical review, stepwise measures, and monitoring.



## Establishing a Safety and Health Culture

### Strengthening Equipment Safety Management Activities

We have reinforced our methods of operating high-risk tower cranes to accomplish zero equipment accidents in 2020. We operate an autonomous tower crane installation and disassembly team, and a prior approval system for new tower cranes. We have strengthened our on-site equipment safety management by distributing standard manuals for construction machinery, forklifts, and pile drivers and conducting equipment inspections at different times. In addition, we are working in collaboration with external institutions to run education programs for training employees in charge of equipment in order to ensure expertise. We distribute inspection manual videos to work sites on the five types\* of high-risk equipment to prevent accidents.

\* Five types of high-risk equipment: Moveable cranes, aerial work vehicles, pile drivers, aerial work platforms, forklifts



High-Risk Equipment Inspection Manual Video

### Health Management for On-Site Workers

LOTTE E&C appoints a health manager at work sites at which the agement system by installing ventilation facilities, managing the work environment, and identifying harmful gases. In 2020, our efforts to manage worker health related to COVID-19 included operating thermal imaging cameras to manage on-site workers, providing masks to be worn, and establishing standard guidelines for on-site quarantine and response to confirmed cases.

# Safety Management

## Opening LOTTE E&C Safety and Health Experience Center 'Safety On'

In January 2022, LOTTE E&C will open its own safety and health experience center called 'Safety On.' We are constructing this experience center within the Osan LOTTE Human Resource Academy to offer diverse experience programs related to 17 kinds of safety accidents, such as construction safety, living safety, and health. The center will also offer education programs using VR. We plan to utilize this center as a safety education site for our employees and partner companies.



Layout of 'Safety On'

## Implementing Safety Communication Day

We have held a 'Safety Communication Day' in each quarter since 2016 to vitalize safety communication between the head office and construction sites. The CEO, executives of the head office, and team managers visit work sites to support safety inspections, listen to the opinions and difficulties of on-site employees and partner companies, and carry on communication between the head office and work sites.

## I Respect U Safety Culture Campaign

LOTTE E&C promotes a safety culture campaign called 'I Respect U' to habituate safety awareness and spread its own unique workplace safety culture.

As part of our workplace safety culture, workers show respect for one another by using proper titles to address each other at construction sites. We also have an ongoing campaign to keep work sites clean through the operation of clean zones. In addition, we hold an annual ceremony to announce our commitment to expand the safety culture as an integral part of our daily lives at the Business Strategy Meeting, which is attended by high-ranking executives, including the CEO. We prioritize safety in our corporate management, and are preparing ourselves to habituate a culture of safety.

## Winning Award for Presentation on Safety Management Best Practices

At the competition for presenting best practices in safety management in 2021, which was hosted by the Ministry of Employment and Labor and the Korea Occupational Safety and Health Agency, LOTTE E&C won the Grand Award and the Best Award in the Business Site Health Management category, and the Excellence Award in the categories of Risk Assessment and Safety and Health Education. These achievements were made possible by our continuous support and PR to revitalize the movement of spreading a workplace safety culture. We will continue with this movement and make our unique safety culture a part of our brand.

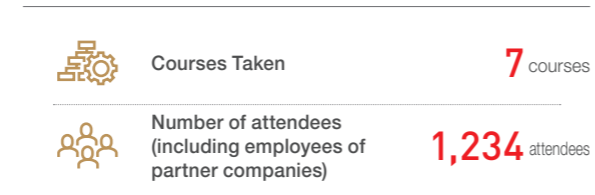


Competition for Presenting Best Practices in Safety Management

## Enhancing Safety Education

We hold safety education for employees every year to raise their safety awareness and increase their understanding of safety systems. In 2020, we introduced and strengthened a contact-free education method to prevent the spread of COVID-19. We provided safety education for managers and beginners' education for new safety and health managers using online content and video lectures. Also, we held personalized education programs for foreign workers, including education on each construction type in their native languages and distribution of multilingual safety rules, to improve their safety awareness. We will continue to strengthen our safety and health education programs with the mid-to-long-term goals of training safety education experts, distinguishing between education and training, and developing safety and health content.

## Status of Employees Attending Safety Education (2020)



# Human Resource Management

## Direction for Promoting Human Resource Management

### Securing Top Human Resources

LOTTE E&C selects professional human resources based on principles of fairness, diversity, suitability, and rationality to ensure there is no unreasonable discrimination related to gender, region, and school attended of job applicants. Also, we operate campus recruiting programs and job cafes to publicize the recruitment of new employees. We make consistent efforts to secure outstanding human resources with a strategy to find core human resources with career experience who can embark on new businesses.

### Strengthening Core Capabilities

We strengthen the leadership, expertise, and global capabilities of our employees to secure the global competitiveness of our organization and create future corporate value.

## Empowerment Programs

### Leadership-Related Capability

#### Leadership Diagnosis

We implemented the leadership diagnosis program in 2014. Through this program, we guide executives, team managers, and site managers to understand their leadership style and capability and see how they need to change their behavior as leaders. We pursue the balanced growth of the organization and leaders by fostering the appropriate leadership styles for different situations. In 2020, 254 employees completed the leadership diagnosis program.

#### CEO Course

We provide CEO courses at leading universities of Korea to our high-ranking executives to develop their capabilities as entrepreneurs and build a network of human resources. A total of 40 executives have completed the CEO course so far, with one executive completing the course in 2020.

#### Executive Forum

Each month, LOTTE E&C holds an Executive Forum supervised by the LOTTE Academy. At this forum, executives from LOTTE Group affiliates discuss issues of common interest, such as social and technical trends at home and abroad, and we invite experts to present in order to help enhance our strategic perspectives.

### EMBA

We run an EMBA program to train our executives to become business leaders equipped with management knowledge and expertise. The EMBA program covers basic knowledge and the latest theories related to HR, finance, marketing, and strategic management, and is a practical course on solutions to hands-on issues. In particular, the senior EMBA program is the top-level course to train core individuals. Learners analyze domestic and foreign cases based on management theories and put them into practice, cultivating a macroscopic view. A total of 158 executives have completed the program to date, with 11 executives completing the program in 2020.

### Job-Related Capability

Job training of each department covers theories, case analysis, team project presentation, and evaluation. We share technical know-how and cultivate a company-wide learning culture. We will further increase the technical expertise of employees by creating an autonomous and routine system to support job training.

### Global Operation-Related Capability

#### Overseas Job Training

We are working to reinforce our global competitiveness by training global human resources through overseas job training in construction skills. We help workers who are currently or are scheduled to be working at overseas sites to understand practical construction duties, from bidding to completion. We also provide in-depth training on contract management, procurement, and site management with internal instructors and programs entrusted to external institutions.

#### Global School

We run the 'Global School' course to improve the global communication capabilities of employees related to overseas businesses, including prospective overseas employees. This course covers education on the languages and local cultures of major overseas countries. As language education by its nature requires long-term study, this course is offered over a period of 20 weeks. We maximize the learning effects by combining the course with telephone and online channel education.

# Human Resource Management

## Adopting Oral Proficiency Interview-Computer (OPIC)

LOTTE E&C has adopted OPIC, an official foreign language speech test to evaluate the foreign language proficiency of individuals and secure global human resources. All of our employees took the OPIC in 2018, and any employee who wishes to do so may apply for the test once a year. In addition, we have added a foreign language criterion (OPIC AL or higher) to promotion screening, which is encouraging more employees to learn foreign languages. We expect that OPIC test results will create a pool of human resources who can work in foreign countries.



## Fair Evaluation of Results and Adequate Compensation

We evaluate the achievements of our employees fairly and provide reasonable compensation according to the results. Most importantly, we motivate employees with outstanding performances by providing rewards and incentives. We also build an enjoyable work environment for all employees by spreading a Great Workplace culture.

## Diversity and Non-Discrimination

### Enforcing Policy to Employ Veterans and Disabled Persons

We regularly hire national veterans and disabled persons, both to fulfill our social responsibilities and secure diverse human resources. We provide job opportunities to veterans and encourage their participation in the Memorial Month recruitment fair. In addition to the recruitment of veterans and disabled persons, we have implemented an all-year recruitment system to offer diverse opportunities to office workers and engineers. We also allow job applicants to show their capabilities through mentorship and job training.

As a result, we were maintaining a 4.1% rate of disabled employees as of the end of 2020, which is a high rate among construction industry employers. Also, we enforced a mandatory disabled worker employment system at all work sites to maintain the employment rate, and proposed a new model for employing disabled persons by opening the first cafe run by disabled baristas in the construction industry during 2020.

Cumulative Number of Disabled Persons Employed (Unit: Person)



### Flextime System for Women

We have a flextime system to offer women a better workplace. We gradually adapted this system through a process of monitoring its status, and are invigorating the system by operating Family Day and a concentrated working hours system. In terms of childcare, we operate a parental leave system for parents of children entering school, and a mandatory parental leave system for men. In addition, we operate an automatic parental leave system, encourage the extended use of parental leave, revitalize the use of maternity protection information websites, have expanded the parental leave system, and run infertility treatment support program.

We are expanding the recruitment of women based on our organizational culture. We have been increasing the ratio of women among new employees recruited every year, and are expanding the recruitment of female workers at the professional level, including specialized jobs and attorneys. Furthermore, we run an annual leadership education program for women to train and secure female managers. We are hiring female leaders with career experience.

## Fostering Creative Organizational Culture

### Direction for Revitalizing Organizational Culture

LOTTE E&C strives to prepare a creative foundation through mutual trust and cooperation between employees and the management for corporate growth, the happiness of employees, and social values. We try to attain common goals with the organization. In addition, we engage in a range of activities to build a creative organizational culture, such as innovative activity competitions, ERRC campaigns, leadership forums for women, and counseling programs.

### Fostering a Company-Wide Innovation Culture

We pursue innovation in a variety of areas, including activities to enhance our competitiveness, improve construction methods and quality, reduce costs, and encourage employees to make suggestions. At the end of each year, we share exemplary innovation cases during the year within the company and hold the 'Innovation Contest' to reward employees who performed innovation activities well. By creating a company-wide innovation culture, we encourage employees to work toward achieving management goals.

### Invigorating On-Site Communication

We promote communication among employees by establishing various channels for communication, such as our Completion Support Day and Safety Communication Day. In addition, we make efforts to improve our understanding of work sites by reinvigorating communication between the head office and sites, listening to the difficulties and suggestions of site workers, and deriving improvement measures.

### 'ERRC Campaign' to Innovate Work Culture

We promote the ERRC\* campaign to innovate the work culture and produce results. Through this campaign, we reward employees who come up with good ideas and put the best ideas into practice, enhancing the work satisfaction of employees and improving the work culture.

\* ERRC: Eliminate (eliminate malpractice) / Reduce (reduce time and cost) / Raise (raise communication and collaboration) / Create (create new work methods)

### Communication Between Employees and Management

We regularly convene the labor-management council, which is made up of five members from each side, to discuss major pending issues, such as employee welfare, wages, health, and safety. Through this council, we work to build mutual trust and harmony between employees and management.

## Assessing Value Creation Culture

We assess our value creation culture to measure employees' awareness of our corporate culture and improve the work environment by identifying areas for improvement.

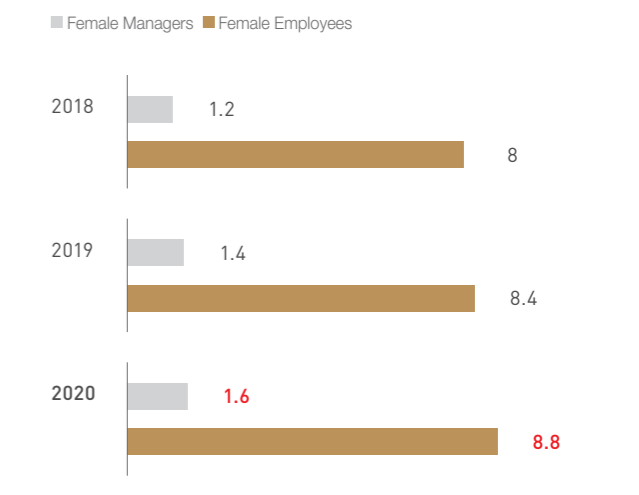
We carry out improvement activities in areas that lack awareness among three areas, including the basis (fundamental belief in core values), practice (happiness, corporate values, social values), and result (creation of happiness, corporate values, social values).

## Women's Leadership Forum

We implemented the Women's Leadership Forum in 2018 as a channel to share our commitment to fostering female human resources and boosting the pride of female leaders.

The Women's Leadership Forum involving 128 female employees produced positive outcomes at the organizational level by dealing with the importance of women, future directions, and exchanges. We will continue to expand leadership education for women to foster female leaders and managers.

Ratio of Female Leaders (Unit: %)



## Work-Life Balance

We were acknowledged as a company that maintains a good 'work-life balance' for its employees by acquiring family-friendly company certification in 2015 and the leisure-friendly company certification in 2019.

In 2021, in addition to operating the automatic parental leave system and workplace daycare center, we implemented a professional counseling program for employees to address job stress and COVID-19 blues. Our employees and their family members can use the counseling program in different areas, including work, childcare, and family relationships. Details of counseling are kept confidential in accordance with the relevant laws.

# Human Resource Management

## Welfare Benefits

We operate a selective employee welfare system in which individual employees are allowed to choose welfare items that meet their specific requirements. These include a health diagnosis for their spouses and group insurance and welfare cards that accrue points. We pay our employees' health diagnosis and insurance/medical expenses while also providing housing loans, paying tuition fees for their children and paying congratulatory and condolence money on important occasions.

At the beginning of each year, we inform employees of the plan for annual leave. The types of leave from work we provide include flexible arrangement of multiple holidays interspersed with workdays, refreshing leave, summer holidays, etc. Our welfare system, which is designed to help employees work for the company pleasantly and stably, includes workers' compensation insurance, insurance for family members of employees working abroad, safety management service for employees working abroad, rewarding long-term employees, allowing employees to extend their retirement age, the salary peak system, and the provision of benefits under the four social insurances.

In 2017, we initiated a minimum one-month parental leave for male employees when their spouse gives birth. Beginning in 2018, we had male employees in single-income families use parental leave within three months (previously one year) after birth. The income of the first month of leave was 100%\* of the ordinary salary, and the program has since been expanded to provide 50% of the ordinary salary from the fourth to sixth months. In 2019, we raised the congratulatory money by KRW 1.5 million, from KRW 0.5 million to 2 million, for every child after the first one.

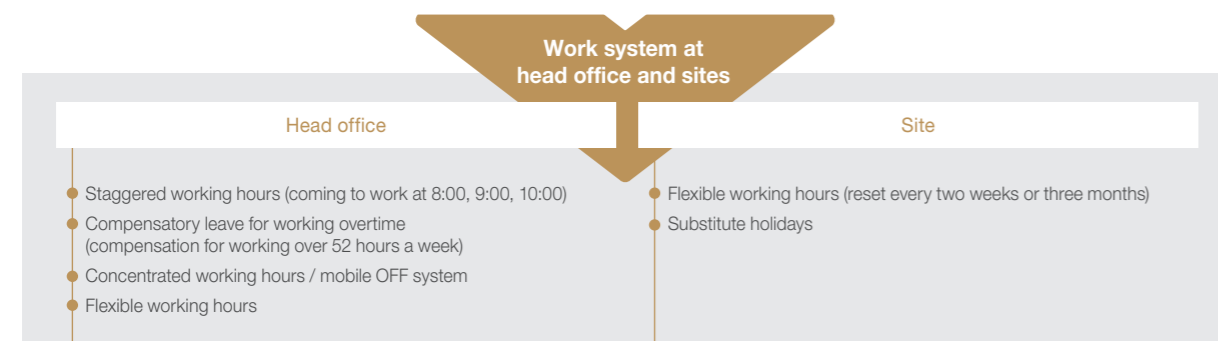
In addition, we established a counseling program in 2021 to help employees and their family members to manage job stress and COVID-19 blues, endeavoring to increase their work efficiency. Also, we offer welfare benefits related to COVID-19, such as gift certificates for families of employees with confirmed COVID-19 cases, vaccination leave (up to three days), and quarantine allowances to employees going to and coming back from overseas.

\* Including government grants

## Reducing Long Working Hours

We observe the statutory working hours stipulated in the amended Labor Standards Act by operating a working hours management system and utilizing various work systems.

## Working Culture Improvement System



## Working Culture Improvement System

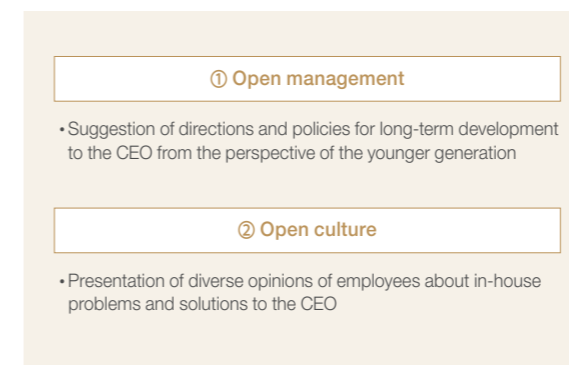
Concentrated Working Hours	PC ON-OFF system	Mobile OFF system	Family Love Days
<ul style="list-style-type: none"> <li>Operation of concentrated working hours (10:00-12:00)</li> <li>No meetings and work instructions</li> <li>No private duties (phone calls, Internet, social media, etc.)</li> <li>No outings for personal reasons</li> <li>No leaving of desk without a proper reason</li> </ul>	<ul style="list-style-type: none"> <li>Applied to all employees as of June 30, 2018</li> <li>Entry of personal working hours → Link to PC ON-OFF system → PC shut down after the entered working hours</li> <li>Granting of compensatory leave to employees working overtime with team manager's approval</li> </ul>	<ul style="list-style-type: none"> <li>No work instructions given using mobile devices (messenger, text message, phone call, etc.) after working hours</li> </ul>	<ul style="list-style-type: none"> <li>Every Wednesday and Friday are designated as Family Love Days to encourage employees to leave work on time (reminded twice using in-house broadcast and message)</li> <li>* Third Wednesday of each month is a Day of Acknowledgment and Compliments, and fourth Wednesday is Day of Club Activities</li> </ul>

## Human Rights Protection

### Operating Junior Board

We have organized a Junior Board consisting of young employees at the senior level position or lower (35 years old or below) as a way of promoting direct communication between the younger generation (MZ) and the CEO. With the Junior Board, we revitalize communication among generations and reflect the fresh ideas of the younger generation in our policy and management, contributing to open management, open culture, and sustainable growth.

### Communication Topics of Junior Board



We selected members of the Junior Board starting in January 2021 and conducted four regular meetings after going through an orientation and CEO Town Hall Meeting. Three out of nine major agenda items proposed at the regular meetings have since been handed over to the relevant departments and addressed. The remaining six agenda items are in progress.

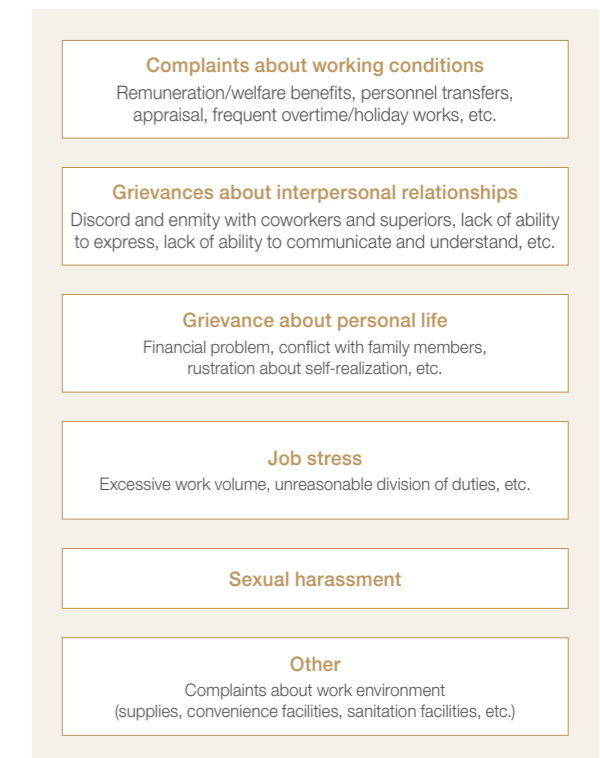
### Operating Grievance Handling Program

We run an online grievance handling program to guarantee anonymity. This program offers feedback on grievances received within ten days from the requested date. As of 2020, we have received and taken care of 19 grievances related to working conditions, work environment, and appraisal.

### Grievance Handling Procedure



## Types of Grievances



## Details and Results of System

### Online Grievance Handling

**Details of system**

- Revitalization of grievance handling by operating a separate grievance handling website
- Anonymous checking on the online grievance handling website and removal of login records and IP addresses to ensure anonymity

**Results**

- Received and handled 19 grievances in 2020
- 10 related to work environment, 5 related to working conditions, and 4 related to personal life
- \* Complaints about work environment: Request to wear masks, supplies/convenience facilities, etc.
- \* Complaints about working conditions: Grievances related to salary peak, promotion, and job group
- \* Grievances about personal life: Conflicts among coworkers, frustration about self-realization, etc.

### Offline Grievance Handling

**Details of system**

- Work performed by grievance handlers (3 men, 3 women)
- All grievance handlers are licensed counselors

**Results**

- Provision of frequent individual counseling
- \* Job stress, working conditions, interpersonal relationship, sexual harassment, work environment, etc.

# Customer Satisfaction

## Quality Competitiveness Improvement

LOTTE E&C is improving the quality of its completed housing and construction projects and strengthening customer services to fulfill its vision of customer value management by providing the best products and services for customer satisfaction and better value. Significantly, we reinforced the internal system to enhance quality inspections and customer satisfaction by improving the design document process and building a system to share technical information in 2022.

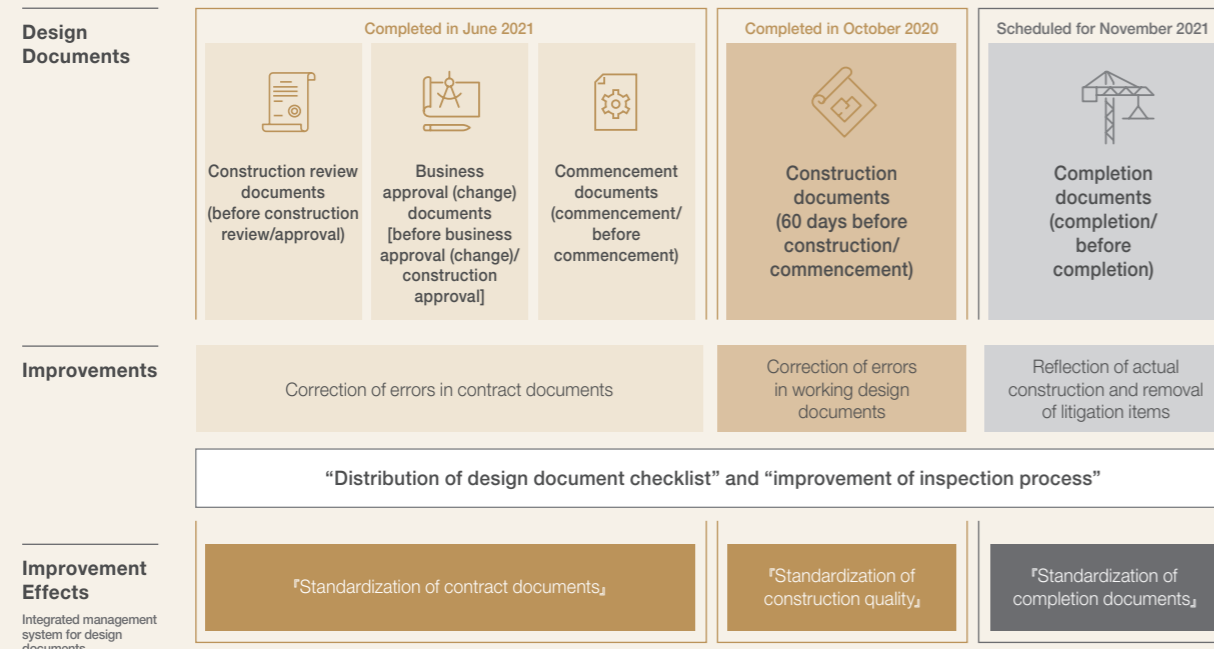
## Improving Design Document Inspection Process

We improved the design document improvement process for the integrated management and standardization of design documents. In October 2020, we distributed a checklist of working design documents and held a working design workshop for the BS Part to standardize construction quality. We finished standardizing contract documents in June 2021. In addition, we plan to distribute a checklist of standardized completion documents in November 2021.

## Quality Inspection Results in 2020

Category	Detailed Work	Results
Quality Inspection	M/H inspection (6 sites)	69 cases suggested for improvement
	Preliminary inspection (6 sites)	55 cases suggested for improvement
	Planned inspections on framework/dew condensation/finishing (2 sites)	31 cases suggested for improvement
	Inspections on framework/waterproof/dew condensation/thermal insulation (10 sites)	84 cases suggested for improvement
	Final finishing inspection (6 sites)	48 cases suggested for improvement
Quality Improvement	Spreading of information on defect cases (spread to all sites)	Preparation of information on defect cases and response measures at managed sites
Landscape Management	Landscape maintenance work (completed apartment sites)	29 sites (pruning, watering, pest control, weeding/mowing)
Other	Special education	Quality and defect case education

## Process Improvement Status in Each Stage



## Improving the Inspection Process During Construction

LOTTE E&C fills out a pre-inspection checklist during construction and conducts inspections based on the checklist to further improve on-site quality and prevent litigation risks.

## Building System to Share Defect and Technology Information

We are building and operating a system to share defect and technology information for each construction type using our company-wide integrated document management system (ECM), and we have updated information about 737 technologies thus far. We will continue our efforts to prevent the recurrence of defects.

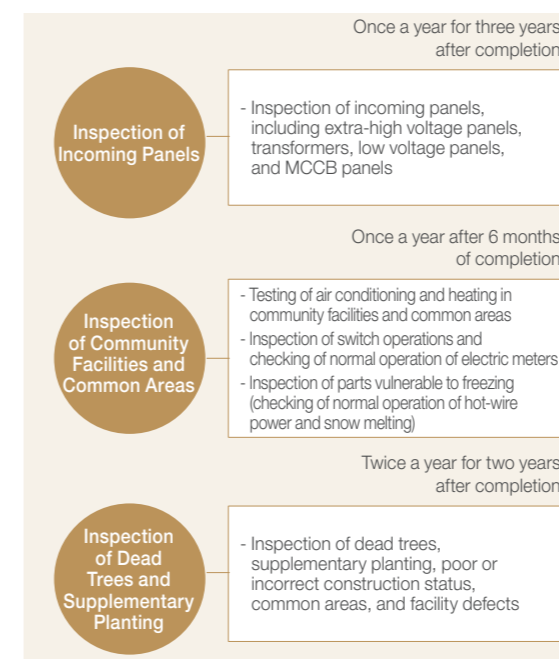
## Quality Innovation Education

We run an education program for engineering employees called the Quality Innovation Academy. In 2020, the Quality Innovation Academy was not operated, as face-to-face collective education became difficult because of COVID-19. In 2021, we increased the expertise of relevant employees by completing 15 sessions using Zoom.

## Inspections After Completion of Construction

Even after the completion and opening of new residences, LOTTE E&C sends out teams of workers to inspect the equipment, interior and wallpaper conditions. For three months after completion, we operate an emergency maintenance team composed of multi-skilled workers who focus on maintenance to ensure prompt repair. In addition, to boost the credibility of our quality management, we conduct special inspections of community facilities, common areas, dead trees, and supplementary planting.

## System for Inspections After Completion of Construction



## Visiting My House Day Event

We host the Visiting My House Day event for prospective residents scheduled to move in. We gather opinions from customers through personal counseling and take quick action to address complaints, through preliminary inspections focused on residents. In addition, we performed preliminary inspections for prospective residents during the Visiting My House Day event using the drive-thru method as a part of COVID-19 services.

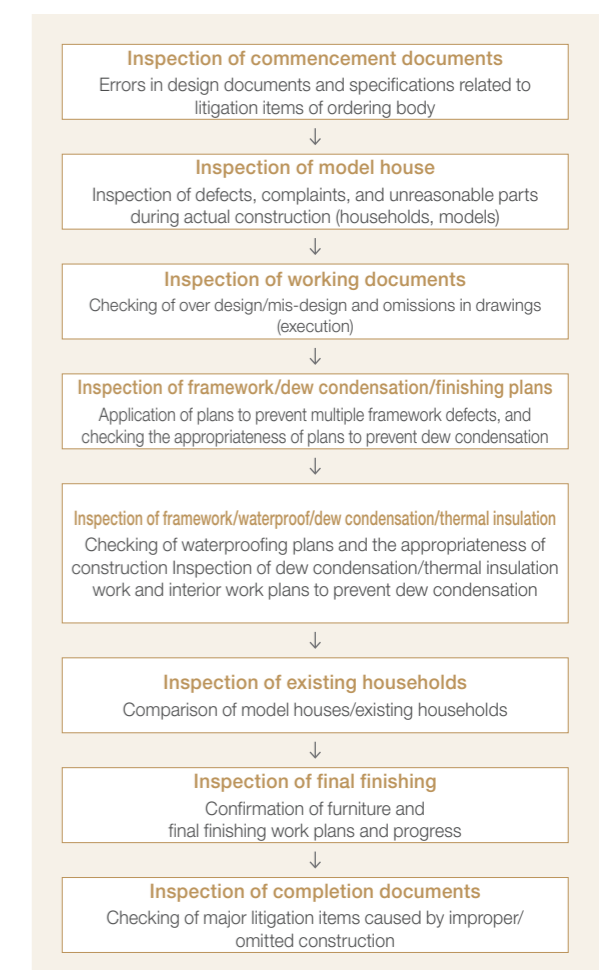


Drive-Thru Confirm/Return Place

## Enhanced Quality Inspections

We are strengthening our quality inspection procedures in each stage to address major defects at construction sites. We have expanded our quality inspections to prevent defects, and established fundamental improvement measures to eradicate chronic and repetitive defects at construction sites.

## Housing Construction Site Quality Inspection Process



# Customer Satisfaction

## Improvement of Customer Satisfaction

### Castle Mobile CS App

Castle Mobile CS is a contact-free mobile app to receive CS requests. This app was developed to increase the convenience of residents regarding customer services. It can be used to request CS, check defect handling status, and find guidelines and announcements. Also, the app allows the user to attach photos to identify defects clearly without providing detailed explanations.

### Specialization of LOTTE Castle CS App

#### Defect Status at Each Site



#### Defect Handling Status at Each Site

- Management of defect handling progress at each site
- Preferential assignment to sites that have delays in defect handling
- Establishment of efficient defect handling plans

#### Defect Handling Status



#### Identification of Defect Handling Status

- Each building/line
- Each place
- Each construction types

#### Work Category

- Wall/floor
- Art wall/bathroom/kitchen/EV
- Joint/reconstruction

#### Work Preparation and Execution

- Assignment of workers according to type

## Customer Communication

We gather the opinions of our customers using various methods, such as visiting interviews, online collection, quantitative survey, and Focus Group Interviews (FGI). We continue to improve our brand value by reflecting customer feedback on our products and services. In addition, we establish management plans by analyzing issues based on customer contact and provide various services considering customer characteristics.

### Strengthening CS Education

We invite professional instructors to strengthen company-wide CS capabilities with service education and foster internal instructors. We also run regular education programs on technologies and the customer service mindset for all CS employees and partner companies.

### Outer Wall Painting Enhancements

We perform crack repairs and repainting of old outer walls at buildings that are 5~10 years old by negotiating with managing bodies and residents. Although defects can be repaired by repainting using the previous color patterns, we enhance the painting patterns within the scope of LOTTE Castle's design identity to improve customer satisfaction.

### Enhancement Process and Results

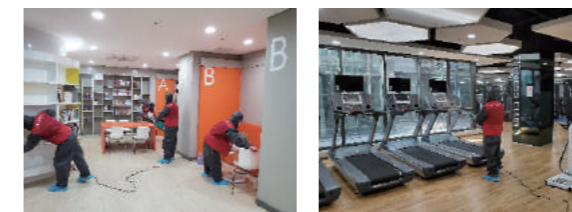


## Smart Home Mobile Application

The Castle Smart Home application provides digital home services to residents of LOTTE Castle, and is a substantial upgrade of the previous apartment household control application. Based on information and communication technologies like home IoT, we offer living convenience by sharing information within the apartment complex, checking lighting, gas, water, air conditioning, and heating of individual households, controlling facilities, checking delivery vehicles, providing facial-recognition-based security services, and offering services of LOTTE Group affiliates.

### Castle Plus Services

We provide the Castle Plus services as a free additional service to apartment residents. Castle Plus services include many practical and high-demand services like cleaning of kitchen, bathroom, bedding, and external windows. In addition, since 2020 we have been striving to diversify customer satisfaction by extending the scope of services to community facilities and common areas within the apartment complex. We will improve customer satisfaction and strengthen our brand power by continuously improving service configurations and items.

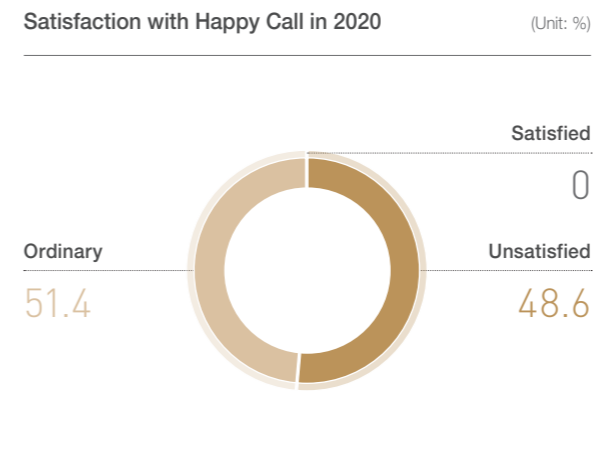


COVID-19 Disinfection and Sterilization Service in Common Areas

### Happy Call Service

We gather information on customer satisfaction and complaints to improve our products and services. We manage information using a database. We can monitor problem-solving plans, progress, and follow-up status using a mobile solution.

### Satisfaction with Happy Call in 2020



## Customer Information Protection

### Strengthening Management of Customer Information Protection

We protect our information assets against computer viruses and hacking, strengthening the information protection system to prevent damages from information leaks by managing personal information safely. The Information Protection Team, an organization reporting directly to the CEO that is dedicated to protecting information, prevents security breaches.

In 2017, we became the first in the industry to acquire information security management system (ISMS\*) certification for the LOTTE Castle Lotting System. In 2019, we expanded the scope of this certification to the rental house (Eyes) operation system, acquiring and maintaining the information security management system (ISMS-P\*\*) certification. In addition, we conduct annual education programs for all workers handling personal information. We educate and supervise the parties entrusted to distribute apartment housing so that they can handle personal information safely.

In addition, we operate our monthly Information Protection Day to boost the security awareness of employees, and hold voluntary inspections of each department. Once per quarter, we collaborate with departments involved in information protection to organize the Security TF, which periodically inspects company-wide efforts to protect information in the four domains of PC, documents, office environment, and personal information. We also strive to respond to malicious hacking emails that have recently been an emerging issue by conducting regular simulation training for all employees on handling emails with computer viruses attached.

In addition, we have introduced the information protection KPI evaluation system for each department to manage information protection outcomes. We are building the industry's top-level information protection system with an integrated information monitoring system to prevent information-related accidents, which are becoming more and more sophisticated in their approach.

\* ISMS : Information Security Management System

\*\* ISMS-P : Personal Information & Information Security Management System



Information Security Management System [ISMS] Certificate

# Customer Satisfaction

## Customer-Oriented Design

LOTTE E&C continues to develop residential products that reflect both current trends and the needs of customers. In 2020, it presented a new urban residential brand called LUMINI.

LUMINI is a practical and sensuous residential product that integrates the full expertise of LOTTE E&C, pursuing a minimalistic and stylish design while maintaining the premium 'castle' image. We will continue to develop new products that impress our customers.

## Mood Lighting System for Households

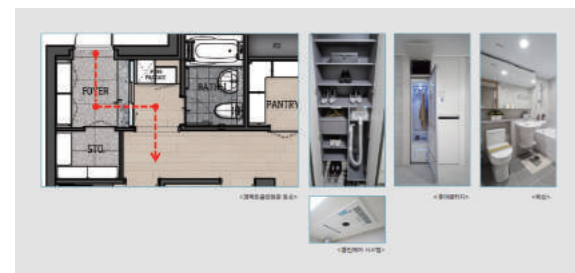
Considering that color temperature and illumination affect residents, we came up with a solution to optimize color and brightness of light sources between 2,700K (white bulb) and 6,500K (daylight). The intensity of light can be controlled using a jog dial and an application. Various user modes can be applied to create the desired mood, such as movie mode, rest mode, daily mode, and reading mode.



Mood Lighting System for Households

## Perfectly Clean Front Door

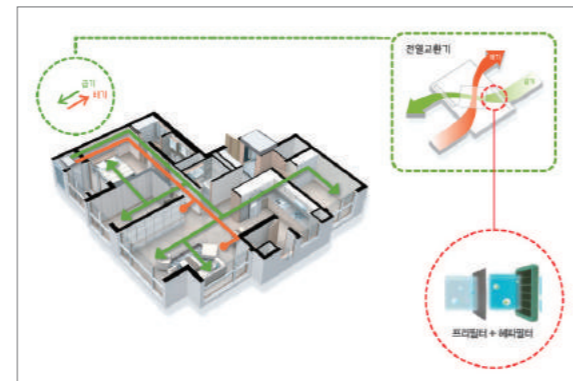
With the increasing need of customers to keep their residential spaces clean due to the spread of infectious diseases and the issue of fine dust pollution, we have developed options to maintain the cleanliness of front doors and corridors, such as the perfectly clean front door layout, front door air shower, and pure corridor package.



Perfectly Clean Front Door

## Air-Purifying Electrothermal Ventilation System

The air-purifying electrothermal ventilation system provides a clean indoor environment at all times by measuring environmental information (concentration of fine dust, carbon dioxide, and volatile organic compounds) in real time and running automatic ventilation. In addition, a HEPA filter (class 13) in the body of the ventilation system filters out 99% of fine dust in the air to maintain a clean air quality.



Air-Purifying Electrothermal Ventilation System

## Development of Child-Friendly Housing Complexes

Child-friendly housing complexes were developed in response to the increase in dual-income families and the high ratio of houses purchased by people in their 30s and 40s with children. We developed these residential complexes from a comprehensive perspective that considers community facilities, outdoor spaces, common spaces, and unit households by surveying individual needs according to children's age and child-rearing conditions.



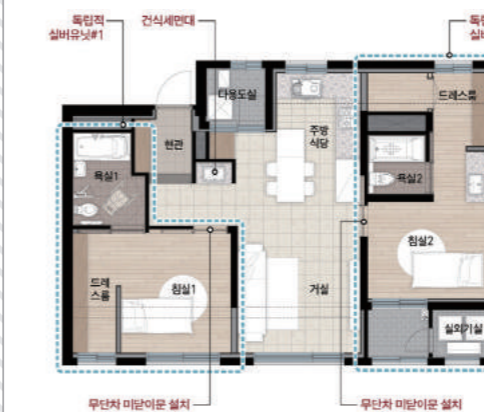
Development of Child-Friendly Housing Complexes

# APT Design for Silver Customers

This customized design of LOTTE E&C satisfies the needs of diverse customers.

## Silver Housing 59 Specialized Plan (One-Room, One-Bath Type)

This house provides a private space for active seniors who are highly independent. The traffic line between the bedroom and bathroom was minimized to reflect the changing needs of users given the physiological changes caused by aging.



Silver Housing 59 Specialized Plan

## Silver Housing 84 Specialized Plan (Social Living Room Type)

This house was divided into a public space that combines the functions of the living and dining room and a private space to invite friends.



Silver Housing 84 Specialized Plan

## Silver Housing 84 Specialized Plan (One-Room, One-Bath Type)

There is a common bathroom, so guests can use a separate toilet. A circulatory line was formed in the kitchen and utility room for the convenience of storage and housework. The master room has a separate space that can be used as a study or hobby room.



Silver Housing 84 Specialized Plan

## Silver Housing 120 Specialized Plan (Bespoke Balcony Type)

This plan is specialized around its balcony. There is a separate landscape space where residents can enjoy gardening, home training, and leisure activities with companion animals.



Silver Housing 120 Specialized Plan

# Win-Win with Partner Companies

## Shared Growth Promotion System

### Shared Growth Promotion Organization

LOTTE E&C operates the Shared Growth Promotion Office, which reports directly to the CEO, to pursue practical shared growth, selecting partner companies using fair criteria and procedures. We have identified five major tasks for shared growth, and are strengthening our ability to execute these by reflecting the results of shared growth agreements in the appraisal items for executives of the procurement department.

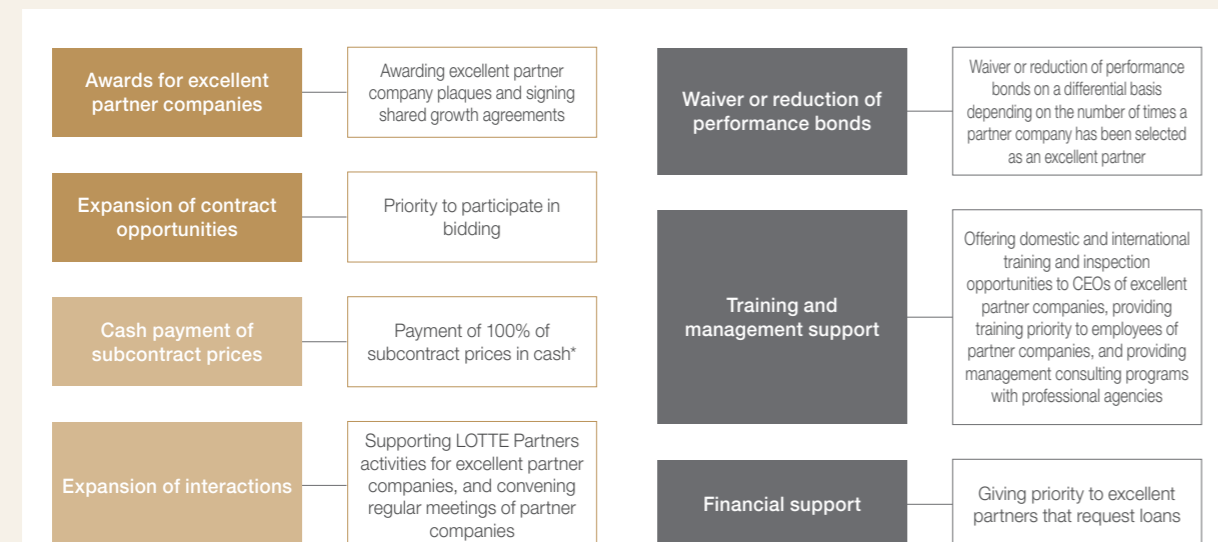
### Five Major Tasks for Shared Growth



## Signing of Agreement on Fair Trade and Shared Growth

We signed our first fair trade and shared growth agreement in 2011. Since then, we have been signing agreements with about 350 companies every year to pursue shared growth. Signatories receive benefits like higher cash payment limits, accelerated payment due dates, and educational opportunities. Through such efforts, we acquired the Excellence grade for our shared growth index in 2020.

### Incentives for Excellent Partner Companies



\* Even if the contract stipulates cash payment (corporate purchase card), for excellent partner companies the payment is made in cash.

## Management of Sustainable Management (ESG) of Partner Companies

### Selection of Partner Companies

We have formed business relationships with 2,278 companies, including outsourcing partner companies that perform construction works and procurement partner companies that supply materials. We find new partners regularly every year. In addition, we disclose the criteria, procedures, and results of selecting partner companies on our partner portal website. We evaluate our partner companies fully based on an IT system to ensure fairness and transparency. Evaluation items include construction capability, results, sales volume, credit rating, and cash flow rating. We also have come up with a procedure for rejected companies to raise objections to the results, which we reevaluate when necessary.

### Evaluation of Partner Companies

We periodically evaluate the technical quality levels of partner companies, safety/environmental management, ethical management, and management performance to improve the competitiveness of our supply chain. After taking into account our trading history, transaction amounts, and regular evaluation results, we classify our partner companies as excellent (best), major, or general partners. We offer practical benefits to partner companies selected as excellent partners, such as priority bidding status, waiver or reduction of guaranteed securities for contract implementation, financial support, education, and expansion of human resources, management, technology, and exchanges.

## Council of Excellent Partner Companies

LOTTE Partners, a council of excellent partner companies, tries to maintain a sustainable win-win relationship between LOTTE E&C and its partner companies.

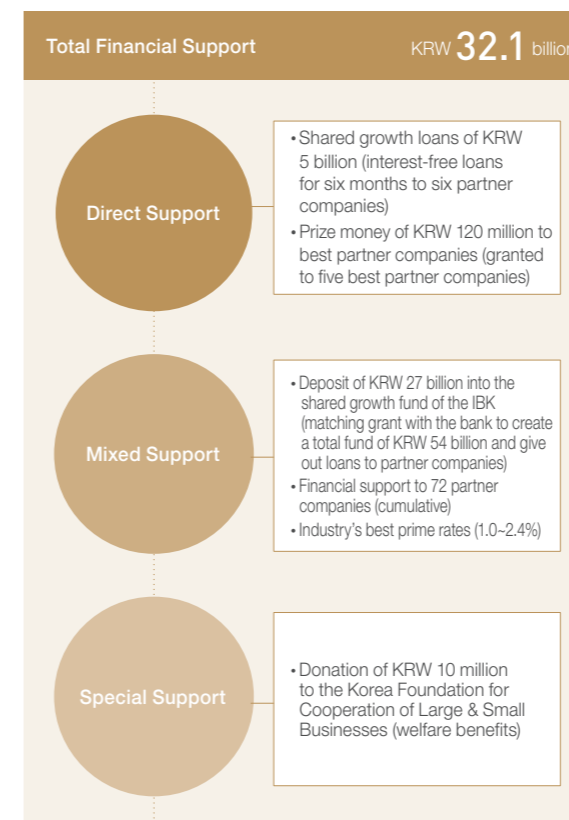
The council holds two regular meetings each year and operates sub-councils on technology, quality safety, transparent society, and win-win management. It maintains sustainable mutual cooperative relationships.

## Formation of Win-Win Partnerships

### Financial Support

We run various financial support programs for our partner companies. We directly give out short-term interest-free loans for six months to partner companies, and create funds with the Industrial Bank of Korea to finance partner companies. In addition, we provide indirect financial support by offering prime rate and increased loan limits in affiliation with the IBK. We also finance the Corporate Partnership Foundation every year. In 2021, we extended the periods of our existing loans by six months and added KRW 1.5 billion to the shared growth fund to help partner companies having financial difficulties due to COVID-19.

### 2020 Key Performances



## Support for Competency Buildup of Partner Companies

LOTTE E&C supports partner companies to help them improve their management competency through professional management consulting services. In 2020, we provided the management and financial consulting needed by 20 partner companies, such as financial diagnosis and tax consulting.

We also offer educational consulting to improve the expertise of employees of our partner companies. Employees of our partner companies can use online and offline tools to participate in practical education programs, such as practical construction, language, finance, and cost accounting.

## Support for Technology and Increasing Revenue

We support partner companies to strengthen their capabilities and increase revenues by jointly developing new construction technologies and products and applying them to our sites.

In addition, we participated in purchase counseling sessions supervised by the Small and Medium Business Administration and the Korea Foundation for Cooperation of Large & Small Businesses to explain related systems to partner companies and offer trading opportunities to competitive SMEs. In addition, we helped our SME partners to participate in construction-related exhibitions to increase their sales channels.

## Shared Growth Improvement Programs

### Operating Communication Channels for Partner Companies

We listen to the difficulties faced by partner companies by holding regular exchanges with them through diverse communication channels. In particular, the CEO visits construction sites to gather various opinions from employees of partner companies, and actively reflects such opinions to improve our work processes and systems.

We also operate CEO training programs for the management of excellent partner companies to discuss directions for shared growth.

### Activities to Improve Employees' Shared Growth Awareness

We conducted a campaign to pay respect to partner companies to improve our employees' shared growth awareness and form a bond of sympathy with partners. For this campaign, we upload four video clips each year and hold online lectures. In addition, we contribute to spreading an awareness of the importance of shared growth by posting details of the campaign on the in-house bulletin board, the portal website for partner companies, and the shared growth website.



# Social Contributions

## Social Contribution Promotion System

### Direction for Promoting Social Contribution

As ESG has recently become the biggest issue for the corporate management environment at home and abroad, the past corporate management approach that used to prioritize economic value has shifted to an approach that produces corporate value based on non-financial outcomes. In particular, with the increased attention of stakeholders to the fulfillment of corporate social responsibilities, there is a demand for genuine social contributions and value creation instead of one-time actions.

LOTTE E&C strategically promotes social contribution activities by setting clear goals and establishing detailed tasks from a mid-to-long-term perspective. Through the voluntary participation and efforts of employees, we will build a virtuous cycle system to promote the shared growth of our company and the community.

With the prolonged COVID-19 situation in 2020, many face-to-face social contribution programs were gradually changed to online or contact-free methods. LOTTE E&C also planned out new contact-free social contribution programs for its employees to participate in the COVID-19 era. We will continue to conduct various activities that create social value while focusing on our major social contribution activities.

### Basic Principle of Social Contribution

We strive to expand social contribution activities for the voluntary participation of employees by selecting the items needed by the community based on the business characteristics and expertise of employees.

### Social Contribution Performing Organization

We operate a Social Contribution Subcommittee within the Sustainable Management Committee as a control tower for social contribution activities to establish social contribution strategies, pioneer major social contribution activities, establish and execute plans, operate relevant funds, and run the Charlotte Voluntary Service Group at domestic and overseas sites.

## Key Social Contribution Activities

### Contact-Free Volunteer Activities of Employees

#### Campaign Providing Play Kits to Socially Disadvantaged Children

We collaborated with the Green Umbrella Child Fund to make and distribute play kits to 100 socially disadvantaged children from single-parent families in Seoul. In doing this, we attempted to fill the void left by the lack of outdoor and play activities for children due to COVID-19 and improve the play environment for children.

The play kits included school supplies, experiential learning tools, and play tools. We also supported the dreams of children with dream catchers made by 100 employees as a part of contact-free volunteer activities.

In addition, the LOTTE Partners attempted to accomplish shared growth in the field of social contribution by jointly donating play kits to 100 children.



Campaign to Provide Play Kits to Children

#### Pink Box Campaign for Socially Disadvantaged Female Youths

We donated a pink box containing feminine hygiene products, as well as eco pouches and message cards made by 100 employees to 100 female adolescents, to help the healthy growth of socially disadvantaged female adolescents.



Pink Box of Hope Campaign

### Contact-Free Walking Donation Campaign Using Application

We conducted a walking donation campaign using the Big Walk application as a part of our contact-free social contribution activities by employees. The application keeps track of the total number of steps walked by employees, and donations are sent to the predetermined recipients once our employees reach the target number of steps.

In 2020, 489 employees participated during one month (November 23 ~ December 22) and exceeded the target of 60 million steps by 26%. We sent our donations to Good People, an international NGO for relief and development, to provide food to socially disadvantaged groups.

In 2021, 668 employees participated in the campaign for one month (June 2 ~ July 2) and exceeded the target of 100 million steps by 18%. We donated the money to the Green Umbrella Child Fund to finance environmental education expenses and eco-friendly teaching materials for children at child welfare centers.

At the same time, we conducted the Plogging Challenge with our employees. The Plogging Challenge is a campaign in which employees wear Green uniforms made of recycled plastics, pick up garbage while jogging, and upload selfies to social media using an application. We encouraged our employees to participate in this campaign by giving away eco-friendly gifts (clothes made of sustainable materials, products made by leading ESG companies).



Plogging Challenge

### Love House of Dreams and Hopes

In 2012, we began carrying out facility (house) repair activities at residential facilities for underprivileged groups and social welfare facilities, which allowed us to leverage our strengths as a construction business. We have been renovating the interiors and exteriors of aged buildings, including local children's centers, centers for the disabled, and marginalized households, and donating home appliances. In 2020, we donated online education tools (laptops, tablet PCs, and other electronic devices) to improve the educational environment for children at child welfare facilities who have difficulty attending school due to COVID-19.

### Sharing Briquettes of Love

In 2011, our employees began to supply and deliver briquettes to underprivileged households in Seoul and Busan every winter. In 2020, we donated 30,000 briquettes to residents in 104 Village, Nowon-gu, Seoul and in Maechukji Village, Dong-gu, Busan, for a total of 60,000 briquettes. We have donated 450,000 briquettes to date (240,000 in Seoul, 210,000 in Busan). Though we gave donations instead of having the briquettes delivered by employees due to the social distancing policy amid COVID-19, 130 employees including the CEO had traditionally visited the households to hand over the briquettes until 2019.

### Operating Matching Grant Social Contribution Fund

In 2011, we adopted a matching grant system as a way of raising social contribution funds. The matching grant system is an activity in which we match the amount of monthly wages donated by employees to create a social contribution fund. In 2018, we expanded our share of funding by implementing a 1:3 matching grant system, in which we donate three times the amount donated by our employees. At present, 73% of employees are registered for the program.

### Charlotte Volunteer Service Group

We operate the Charlotte Volunteer Service Group as a volunteer service organization at the head office and domestic and overseas sites. As of the end of 2020, 238 teams have registered for the group, among which 82 teams are active. Major activities of the Charlotte Volunteer Service Group include facility activities to improve the living environment of low-income households and the environment at welfare facilities, meals service programs at welfare facilities, environmental cleaning, cultural experiences like exhibitions and performances for low-income households, and environmental purification involving cleaning of rivers and parks. In addition, we added contact-free volunteer activities in 2020 to deliver side dishes and donate DIY goods made by employees while following the social distancing policy.

# ETHICAL GOVERNANCE

Ethical governance is an essential factor in corporate sustainability.

LOTTE E&C has laid the groundwork for the systematic and consistent practice of ethical management by establishing a compliance system to ensure compliance with social rules.

We will continue expanding ethical management infrastructures and practice healthy corporate ethics to build the trust of stakeholders.



- 083 Corporate Governance
- 084 Risk Management
- 085 Ethical Management
- 089 Compliance

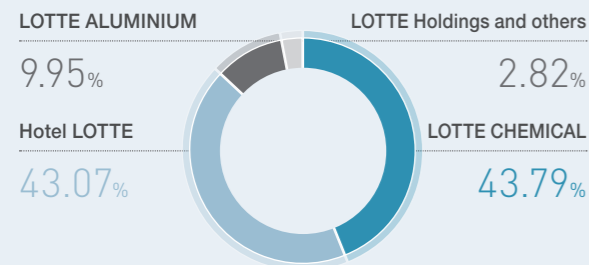


# Corporate Governance

## Shareholders

As of March 2021, LOTTE Chemical is the largest shareholder of LOTTE E&C, with a 43.79% stake. Including affiliated persons, shareholders own 99.59% of all shares.

Total shares of largest shareholder and affiliated persons 99.59%



## Operation and Composition of BOD

The Board of Directors (BOD) is the top decision-making body of LOTTE E&C, and consists of four inside directors and two outside directors as of June 2021. Directors are elected at the General Shareholders' Meeting in accordance with the criteria stipulated in the Articles of Association. Regular BOD meetings are held quarterly, and special BOD meetings are convened as needed. In 2020, a total of nine BOD meetings were held, and members voted on 24 agenda items.

### Composition of BOD and Auditor (As of June 2021)

Category	Name	Position
Inside Directors	Suk Joo Ha	CEO, Chairperson of BOD
	Hee Cheol Seok	Head of Construction Management Division
	Bu Yong Lee	Head of Housing Works Division
	Jae Hong Ahn	Head of Management Support Division
Outside Directors	Ho Won Kim	Collaboration Professor at Seoul National University
	Seong Soo Ko	Professor of Real Estate Studies at Konkuk University
Auditors	Ho Seok Jeong	Manager of Real Estate Value Add (REVA) Team, LOTTE Corporation
Other Non-Standing Director	Min Woo Kim	Director in charge of LOTTE Group Chemical BU

## BOD Evaluation and Reward

The financial and non-financial performances of the management are evaluated and annual salaries and incentives are determined accordingly. Remuneration is within the limit approved at the General Shareholders' Meeting. In 2020, the total compensation for directors (including non-registered executives) approved at the General Shareholders' Meeting was KRW 10 billion. KRW 23.06 million was paid to registered directors during the year, with KRW 2.56 million being the average compensation per individual.

## Committees of BOD

Consisting of three inside directors including the CEO, the Management Committee was set up in 2016 to deliberate and make decisions on issues entrusted to it by the BOD, as well as other general management-related matters. In addition, the Transparency Management Committee, made up of two outside directors and one inside director, reviews private contracts with specially affiliated persons and subsidiary companies when they exceed a certain amount. In 2020, 25 Management Committee meetings were held to decide on 124 issues related to signing loan agreements, subcontract agreements, etc., and four meetings of the Transparency Management Committee were convened to decide on four construction subcontracting agreements and one election of the chairperson of the Transparency Management Committee. In addition, in September 2019, the Compensation Committee, which is responsible for deliberating and deciding on executive compensation, was established under the BOD. In 2020, the Compensation Committee was convened four times to decide on six items, including the approval of performance pay and appointment of the chairperson.

### Status of Committees (As of June 2021)

<b>Management Committee</b>	<b>Three inside directors (including the CEO)</b> Deliberating and deciding on matters entrusted by the BOD and general management matters
<b>Transparency Management Committee</b>	<b>Two outside directors and one inside director</b> Deliberating and deciding on negotiated contracts of a certain scale or larger with affiliated persons and affiliates
<b>Compensation Committee</b>	<b>Two outside directors and one inside director</b> Deliberating and deciding on remuneration limits for executives and individual remuneration and performance-based pay for registered executives



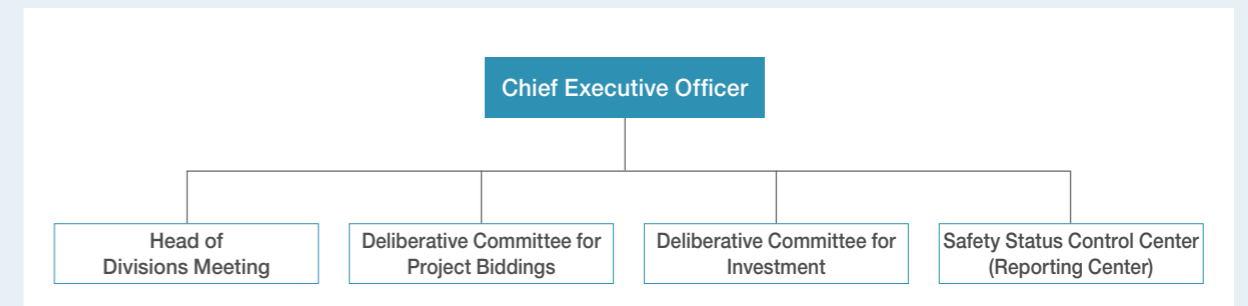
# Risk Management

## Company-Wide Risk Management System

In the construction industry, risks that may occur in project management can not only impact business performance directly but also tarnish the corporate reputation in the long run. To minimize risks, LOTTE E&C operates a decision-making system that includes an organization for responding to project risks, the Deliberation Committee for Project Biddings, and the Deliberation Committee for Investment. Through these decision-making processes, the company has put in place an advanced risk management system for managing business performance aspects like financing and progress status for each project. Moreover, to enhance the risk management of overseas projects, which always come with high risks, LOTTE E&C has been operating a rigorous project bid participation review program. In 2019, the company revamped its ERP system and supplemented its overseas project execution manual in preparation for expanding its overseas businesses over the long term.

In addition, for the operation of the construction sites, a process was set up to minimize risk factors such as safety accidents and environmental impacts. As well, regular/irregular site inspections have been enhanced, and the company is currently operating a reporting center and response system for emergencies.

### Risk Management Governance



## Risk Management in Each Area

LOTTE E&C runs an organization for response and a decision-making system for each division by categorizing risks in seven areas, including market, policies, competencies, partners, compliance, disasters, and projects, and conducts regular monitoring. In particular, under the supervision of the Chief Executive Officer, expected risks are analyzed, countermeasures are devised, and follow-up actions are taken by running a pre/post review process engaged by each business unit.

### Risk Management Plan for Seven Major Risks

Seven Major Risks	Description	Risk Management Plan
Market Risks	Possibility of changes to construction industry due to socioeconomic factors in both domestic and overseas markets	Periodic quantitative and qualitative market analysis, and reflecting these in corporate strategies
Policy Risks	Changes in domestic policies (Bidding, housing, electricity supply and demand) and foreign policies (Bidding, real estate development, investment, etc.)	Frequent analysis on policy/system trends to come up with own measures and recommendations to the government
Competence Risks	Generalization of design & build and EPC contracts among firms as well as a growing number of direct investments including financing arrangements and project financing	Competency enhancement throughout the value chain, such as design engineering, financing capability, etc.
Partner Risks	Delays in delivery and abandonment of construction work by partner companies, failure in financial structures / bankruptcy	Discovering excellent partners domestically and overseas and strengthening cooperative ties
Compliance Risks	Increasing demand for compliance in both domestic and overseas markets	Declaration of code of conduct to comply with anticorruption laws and global standards, as well as training of expatriate employees on compliance manuals
Disaster Risks	Increase in IT security threats such as virus attacks and hacking, as well as natural disasters including unexpected fire and earthquake, etc.	Achieving business continuity by operating the LOTTE group-wide disaster recovery system
Project Risks	Business risks (Including business feasibilities, financing measures, and business timelines in projects), safety accidents, environmental load, etc.	Strengthening of management soundness through strict feasibility review from management-level decision-making process

# Ethical Management

## Ethical Management Promotion System

### Direction for Promoting Ethical Management

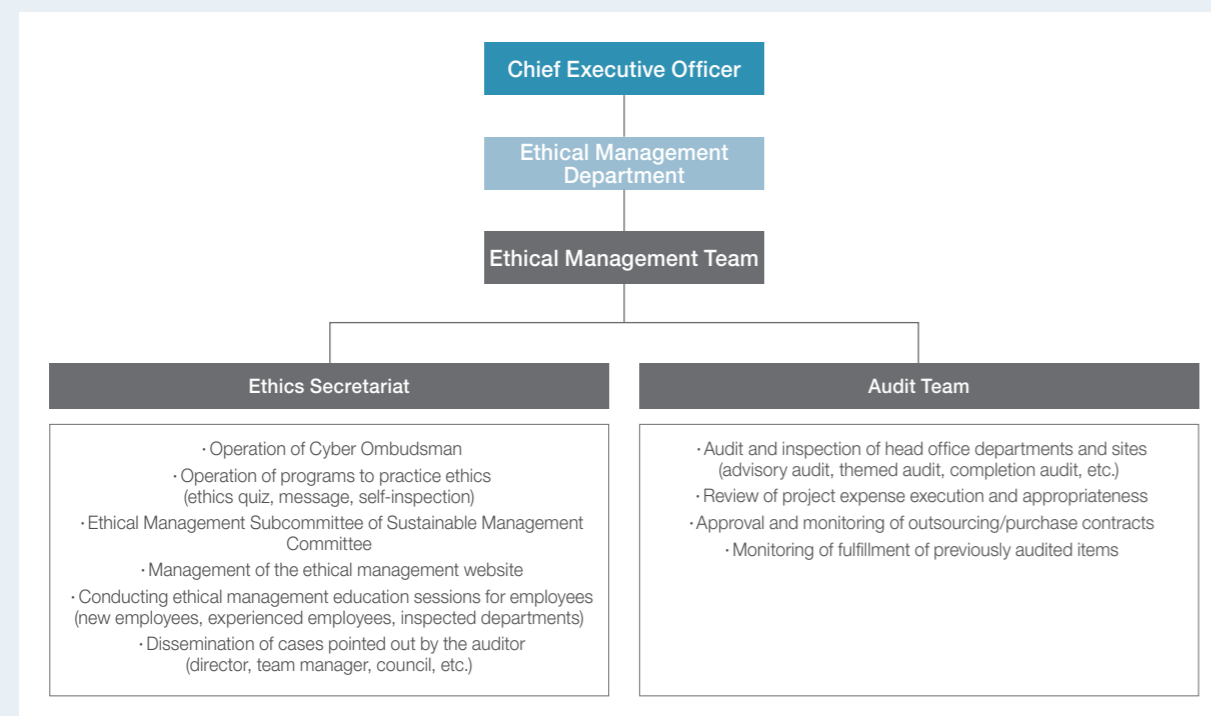
LOTTE E&C has set its strategic directions for ethical management and enhanced its ethical management system to establish an adequate strategy based on domestic laws and international ethical standards to manage risks. Aware of its responsibilities as a member of the community, LOTTE E&C helps internalize a sense of ethics in employees through ethical awareness education and communication channels intended to habituate ethical management.

We will continue our efforts to eradicate unethical behaviors, such as corruption, verbal abuse, abuses of power, and sexual harassment, by inspecting the ethical management status of the company. While diversifying ethical education programs to attract the attention of employees, we will contribute to creating an ethical culture throughout the supply chain by sending out letters encouraging the participation of partner companies.

### Organization Promoting Ethical Management

We have two units dedicated to ethical management, namely the Ethics Secretariat and the Audit Team, both of which report directly to the CEO. The Ethics Secretariat is responsible for disseminating the company's ethical management-related guidelines and organizing preventive activities including the relevant education for employees. The Audit Team verifies whether the relevant laws and regulations are being observed and carries out activities to improve ethical management-related matters. These teams are mostly composed of supervisor-level employees who have accumulated hands-on experience as specialists with diverse backgrounds.

### Ethical Management Units and Major Functions



## Spreading Ethics Practice Culture

### Education to Improve Ethical Awareness

We adopted the LOTTE Code of Ethics in 2000 and announced a revised LOTTE Code of Conduct in 2014. In 2016, we published the LOTTE Group's Ethical Management Q&A BOOK, which contains detailed guidelines on the Company's Code of Conduct. In 2020, we once again revised and distributed the LOTTE Code of Conduct.

In 2015, we began holding educational sessions for employees on the LOTTE Code of Conduct by linking it with LOTTE E&C's behavioral standards and regulations, which are the company's ethical regulations. For local employees recruited at work sites outside of Korea, relevant education is carried out under the supervision of the branch manager. In 2020, all 3,323 LOTTE E&C employees received training in ethical management. We continue to operate various ethical management training sessions that are specific to each job, position, and level.

## Five Main Themes of LOTTE's Code of Conduct

<p>Trust of Our Customers</p>	1. Provision of products and services of highest quality	Be the number one brand for our customers.
	2. Honest marketing	The easiest way to gain customer trust is to be honest.
	3. Customer information protection	Customer information is extremely important to us.
	4. Brand protection	You are the brand that represents LOTTE to our customers.
<p>Trust of Our Partners</p>	1. Compliance with the Fair Trade Act	Fairness and trust allow us to work together as a team with our partners.
	2. Respect for business partners	Partnerships grow stronger when they are rooted in mutual trust.
	3. Fair competition	Fair competition makes us stronger.
	4. Lawful collection of information	Information must be collected lawfully.
	5. Prohibition of corruption and illegal solicitation	Every favor comes with a price.
<p>Trust of Our Shareholders</p>	1. Increased shareholder value	We pursue long-term shareholder value.
	2. Prevention of conflicts of interest	We consider the benefits of stakeholders as a group.
	3. Transparency in accounting	Honest reporting highlights our efforts and passion.
	4. No insider trading	We do not allow unfair gains to be made using internal information.
<p>Trust of Employees</p>	1. Fair opportunities and fair treatment	Distinguish between public and private affairs and provide fair opportunities.
	2. Mutual respect among members	Everyone is a cherished family member to someone.
	3. Gender equality	LOTTE creates happy homes and fair jobs.
	4. Safe work environment	Everything begins with safety.
	5. Protection of assets	We need to protect our valuable intellectual properties.
	6. Protection of intellectual properties	The assets of the company belong to all LOTTE employees.
	7. Prevention of information leakage	Negligence can lead to information leakage.
<p>Trust of Society</p>	1. Environmental protection	The environment is not ours, but is borrowed from future generations.
	2. Social value creation and social contributions	It is our utmost pleasure to share our profits with society, from which we earned them.
	3. Respect for human rights	Love and respect for people are important LOTTE values.
	4. Respect for cultural diversity	Only when we respect others can we win their respect in return.
	5. Legal compliance in all countries	We respect the laws of each country in which we operate, and strive to prevent crimes.
	6. Separation of politics and the economy	Politics and business can fulfill their respective roles only if they are separated.

# Ethical Management

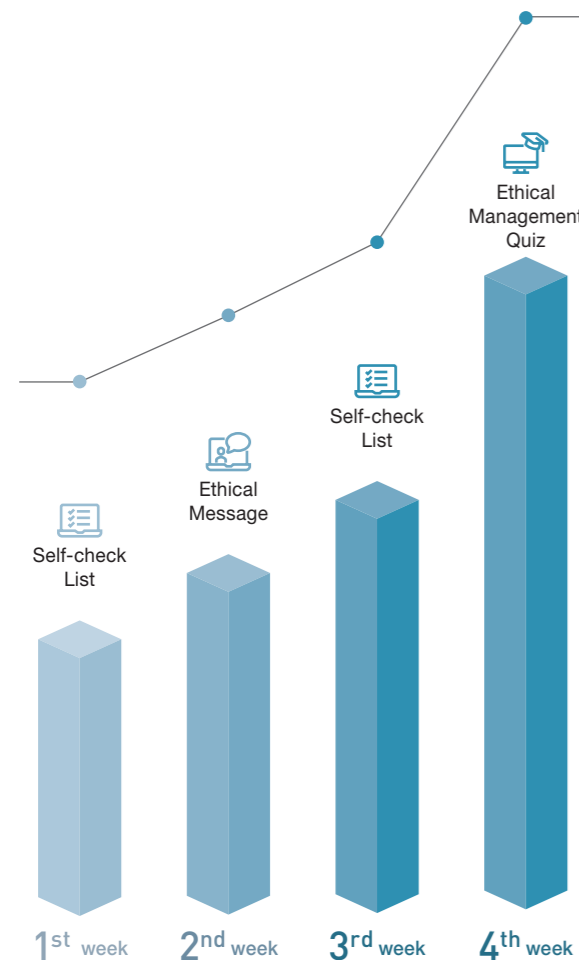
## Ethical Management Education for Different Levels of Employees



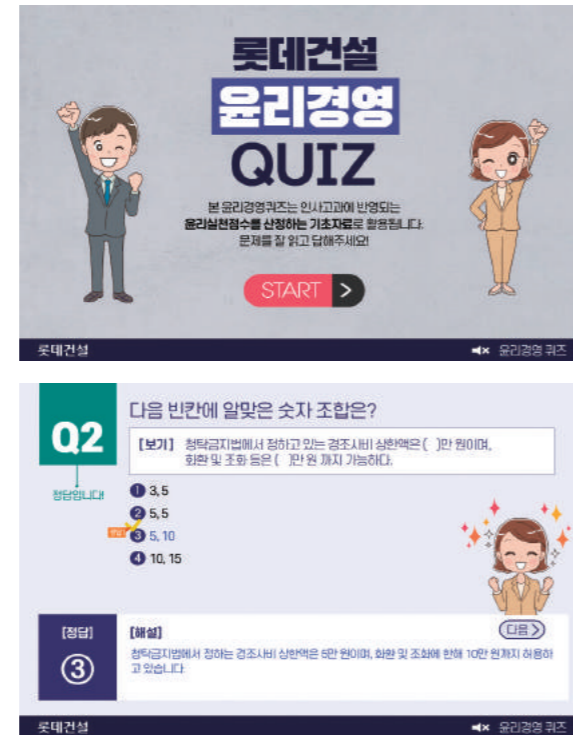
## Diagnosis of Ethical Management and Assessment of Practices

Based on the status of each of the five themes of LOTTE's Code of Conduct, the company assesses its ethical management level and works on the improvement measures that are identified. In 2020, LOTTE E&C received 90 points in its compliance diagnosis, which is similar to the average score of 89 points received by the LOTTE Group.

## Composition of Ethical Management Practice Program



## Examples of Ethical Management Quiz



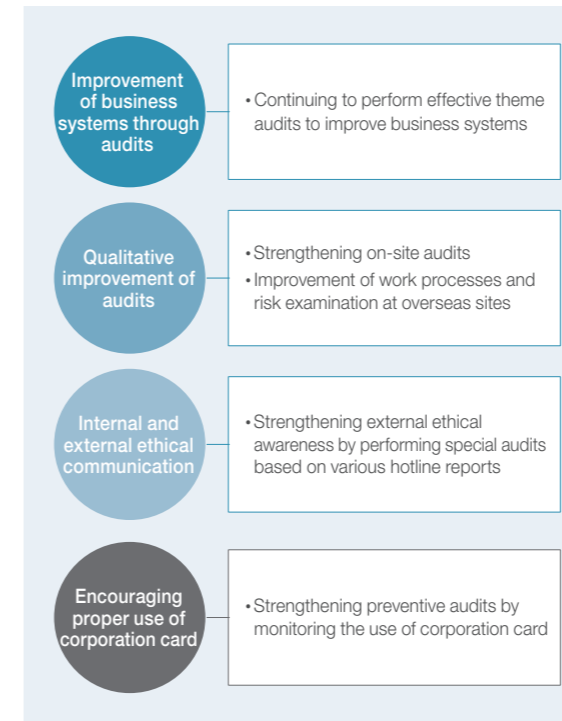
## Whistleblower Hotline

We encourage our external stakeholders to blow the whistle on unethical practices through our on/offline hotline. In principle, all reports received will be responded to within ten days, the whistleblower's anonymity will be guaranteed, and a fair investigation will prevent any groundless slander. We also print the website address of our cyber ombudsman on employees' business cards to encourage them to take part in the effort to prevent unethical acts and to report actual cases without hesitation.

## Strengthened Audit Activities

We reinforce audit activities such as regular audits and theme audits to monitor the fairness and ethics of our work. In addition, we monitor the use of corporate cards to create a proper corporate card using culture. Through these activities, we have improved the work system and the quality of our audit work and strengthened our employees' ethics.

## Major Audit Activities



## Strengthening Ethical Management of Supply Chain

### Ethics Pledge and Education for Partner Companies

As the supply chain is playing an increasing role in corporate management, we are implementing the ethics pledge program for partner companies to increase the ethics awareness among their employees. We have written an ethical management pledge of commitment to help our partners prevent unethical behavior and contribute to the creation of a healthy corporate ecosystem.

### Ethical Management Evaluation of Partner Companies

Since 2018, we have established ethical management indicators in our regular evaluation system to encourage ethical management by our partners. In the process of auditing partner companies, we are identifying unethical behavior and conducting an objective evaluation based on the results.



# Compliance

## Strengthening Compliance System

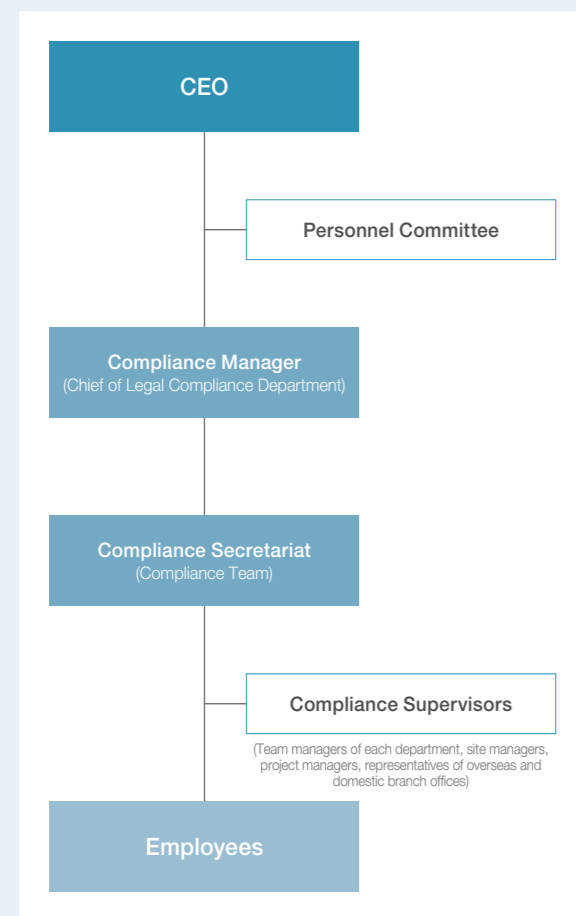
### Expanded Operation of Compliance Programs

Based on the compliance system for subcontracting and internal transactions established in 2019, LOTTE E&C formed a subcontract T&T and improved the computer system for subcontracting in 2020. In 2021, we will build a compliance system for personnel, labor affairs, and anti-corruption to expand the operation of our compliance programs.

### Appointment of Compliance Officer

The compliance officer is appointed with the approval of the BOD and assigned the role of general manager of the compliance office. The compliance officer has the actual authority and responsibility for the effective operation of the compliance program. The compliance officer reports legal violation monitoring plans and results to the CEO and BOD on a semi-annual basis. We have also appointed the site managers of all departments and general managers of all sites as compliance officers to manage the company's compliance programs.

### Compliance Organization and Major Tasks



## Establishing Legal Violation Restriction and Monitoring System

To enable the compliance office to monitor violations of the law on a regular basis and from time to time, we have established the basis for compliance regulations and a compliance reporting system that allows anonymous reporting, both from Korea and overseas. We have prepared regulations to take restrictive measures in the event of a violation of compliance-related laws and rules. We will operate a legal compliance reward system to increase the effectiveness of our system.

## Evaluation and Improvement of Compliance System

Evaluation and improvement are important steps in checking whether our voluntary compliance programs are operating effectively and making sure that the programs are carried out effectively. In 2020, we evaluated the system with all employees and reported the results and improvement measures to the BOD. The evaluation and improvement results will be reflected in the annual compliance plan for 2021, and we will engage in continuous improvement activities to create an environment that allows more employees to participate.

## Raising Compliance Awareness

### Compliance Training and Culture

LOTTE E&C prevents risks related to legal violations by conducting compliance training for each job type and position. In 2020, we published CP TIMES containing compliance training and quiz materials to train and reward employees every month. We also conducted online education on fair labeling and advertising systems and education on subcontract laws for site managers and public affairs officers. In addition, we further raised the compliance awareness of employees by having them sign the Compliance Charter. We designated the foundation day of our company as CP Day, conducting CP Golden Bell and poster-making activities. We plan to solidify our commitment to a legal compliance culture through more CP Day activities.

# APPENDIX

- 091 ESG Performance
- 097 GRI Standards Index
- 101 Third Party's Assurance Statement
- 103 Memberships in Associations / Awards

# ESG Performance

## Environmental Performance

### Material Consumption\*

Type		Unit	2018	2019	2020
Non-renewable raw materials	Ready-mix concrete	m <sup>3</sup>	3,025,285	2,905,589	2,633,760
	Cement	ton	27,312	41,630	36,876
	Aggregate	m <sup>3</sup>	80,013	70,873	93,942
	Asphalt concrete	ton	231,764	200,942	93,766
	Sand	m <sup>3</sup>	29,649	16,136	7,542
	Rebar	ton	457,461	375,279	416,620
	Plaster board	Board	3,210,556	3,282,054	1,181,965
Recyclable raw materials	Recycled aggregate	m <sup>3</sup>	1,328	6,358	3,601
Ratio of recycled materials as input**		%	1.6	8.2	3.7

\* Includes activities in overseas sites  
\*\* Based on aggregate usage

### Waste Generation\*

Type		Unit	2018	2019	2020
Waste Generation	Total	ton	545,788	479,700	466,371
Amount of waste by type	Waste concrete	ton	231,371	256,598	249,303
	Waste asphalt concrete	ton	23,348	18,502	6,171
	Wood wastes	ton	8,875	8,804	10,392
	Waste synthetic resins	ton	9,717	6,469	5,629
	Waste soil and stones	ton	97,943	67,542	49,390
	Construction sludge	ton	4,885	2,889	5,142
	Roof tile wastes	ton	0	0	0
	Tile / Ceramic waste	ton	102	11	13
	Waste bricks	ton	0	0	0
	Waste blocks	ton	0	0	0
	Textile wastes	ton	0	23	0
	Waste boards	ton	2,254	2,370	1,415
	Waste glass	ton	0	0	0
	Other wastes	ton	114	18	351
	Mixed construction waste	ton	167,179	116,474	138,565
Amount of waste by treatment method (General waste)	Reusable	ton	0	0	0
	Recyclable	ton	527,989	463,791	453,242
	Fertilization	ton	0	0	0
	Incineration	ton	1,604	1,748	1,154
	Landfill	ton	16,196	14,162	11,975
	On-site storage	ton	0	0	0
Others	ton	0	0	0	

\* Data from domestic worksites

### Water Consumption\*

Type		Unit	2018	2019	2020
Water Consumption	Total	ton	1,949,779	1,148,257	668,973
	Water and sewage consumption	ton	1,712,259	997,232	482,224
	Underground water consumption	ton	237,520	151,025	186,749
Water Reuse Rate		%	0	0	0

\* Data from domestic worksites

### Energy Consumption\*

Type		Unit	2018	2019	2020
Amount of energy purchased	Total	TJ(Terra Joule)	742.46	720.62	647.41
	Renewable energy	TJ	0	0	0
	Steam	TJ	0.46	2.07	6.25
	Electric power	TJ	742	718.55	641.16
Amount of fuel consumed	Total	TJ	175.91**	122.66**	153.10
	Brown coal***	TJ	61.08	42.38	0.00
	LNG	TJ	42.86	23.13	33.33
	LPG (Vehicles)	TJ	0.00	0.36	0.69
	LPG (Liquefied Petroleum Gas)	TJ	-	0.07**	0.13
	Gasoline	TJ	6.57**	6.91**	12.66
	Diesel	TJ	18.21	12.07	16.46
	Kerosene	TJ	47.19	37.74	89.83

\* Data from domestic worksites

\*\* Correction of errors in previous sustainability reports

\*\*\* By using kerosene instead of brown coal, the consumption of brown coal was greatly reduced.

### GHG Emissions\*

Type		Unit	2018	2019	2020
Scope 1+2		tCO <sub>2</sub> eq <sup>™</sup>	48,701	44,412	41,151
Scope 1(Direct emissions)		tCO <sub>2</sub> eq	12,577	9,371	9,791
Scope 2(Indirect emissions)		tCO <sub>2</sub> eq	36,124	35,041	31,360

\* Data from domestic worksites

™ tCO<sub>2</sub>eq: Ton CO<sub>2</sub> equivalent (Unit expressed by converting and integrating the total amount of greenhouse gases emitted into CO<sub>2</sub> emissions(ton))

### Reduction of GHG Emissions\*

Type		Unit	2018	2019	2020
Total Reduction of GHG Emissions		tCO <sub>2</sub> eq <sup>™</sup>	15,687	4,959	3,789

\* Data from domestic worksites

™ tCO<sub>2</sub>eq: Ton CO<sub>2</sub> equivalent (Unit expressed by converting and integrating the total amount of greenhouse gases emitted into CO<sub>2</sub> emissions(ton))

# ESG Performance

## Social Performance

### Current Status of Employees

Type	Unit	2018	2019	2020	
Total number of employees	persons	3,218	3,360	3,323	
Number of employees	Male	2,960	3,079	3,032	
	Female	258	281	291	
Number of regular employees	Total	2,360	2,506	2,501	
	Male	2,222	2,307	2,289	
	Female	138	199	212	
Ratio of regular employees	Total	73.3	74.6	75.3	
	Male	69	68.7	68.9	
	Female	4.3	5.9	6.4	
Number of contractual employees	Total	858	854	822	
	Male	738	772	743	
	Female	120	82	79	
Ratio of contractual employees	Total	26.7	25.4	24.7	
	Male	22.9	23.0	22.4	
	Female	3.7	2.4	2.4	
Number of employees by age group	Total	3,218	3,360	3,323	
	Below 30 years old	429	372	315	
	Between 30 and 50 years old	2,401	2,461	2,434	
	Over 50 years old	388	527	574	
	Total	3,089	3,222	3,199	
Number of employees by region	South Korea	Total	2,235	2,377	2,383
		Regular employees	854	845	816
		Contractual employees	38	36	41
	Indonesia	Total	37	32	37
		Regular employees	1	4	4
		Contractual employees	33	43	51
	Vietnam	Total	32	42	50
		Regular employees	1	1	1
		Contractual employees	2	1	1
	Japan	Total	2	1	1
		Regular employees	2	1	1
		Contractual employees	0	0	0
	China	Total	36	27	13
		Regular employees	36	27	13
		Contractual employees	0	0	0
	Pakistan	Total	3	5	2
		Regular employees	3	5	2
		Contractual employees	0	0	0
	Russia	Total	2	7	1
		Regular employees	2	7	1
		Contractual employees	0	0	0
	Malaysia	Total	5	6	4
		Regular employees	5	5	4
		Contractual employees	0	1	0
Cambodia	Total	9	11	9	
	Regular employees	7	9	9	
	Contractual employees	2	2	0	
Singapore	Total	0	2	2	
	Regular employees	0	1	1	
	Contractual employees	0	1	1	
Employee diversity	Current status of female employees	Ratio	8.0	8.4	8.8
	Female executives	Number of employees	39	48	52
Physically handicapped employees	Ratio	1.2	1.4	1.6	
	Number of employees	69	87	137	
Ratio	2.1	2.6	4.1		

### Employment Status

Type	Unit	2018	2019	2020
Total employee turnover	Total	66	59	58
Turnover of employees	Male	59	55	49
	Female	7	4	9
Number of turnovers by age group	Total	66	59	58
	Below 30 years old	12	6	2
	Between 30 and 50 years old	48	41	34
	Over 50 years old	6	12	22
	Total	66	59	58
Number of turnovers by region	South Korea	66	59	58
	Indonesia	0	0	0
	Vietnam	0	0	0
	Japan	0	0	0
	China	0	0	0
	Pakistan	0	0	0
	Russia	0	0	0
	Malaysia	0	0	0
	Cambodia	0	0	0
	Singapore	0	0	0

### Parental Leave

Type	Unit	2018	2019	2020
Number of employees entitled to parental leave*	Total	1,038	1,015	1,034
	Male	1,009	980	994
	Female	29	35	40
Number of employees taking parental leave	Total	120**	112	117
	Male	106	98	98
	Female	14	14	19
Number of employees returning to work after parental leave	Total	119	110	116
	Male	106	97	98
	Female	13	13	18
Number of employees still on the payroll 12 months after returning from parental leave	Total	56	45	50
	Male	55	45	49
	Female	1	0	1
Ratio of employees who return from parental leave	%	99.2	98.2	99.1
Ratio of employees still on the payroll 12 months after returning from parental leave	%	47.1	40.9	43.1

\* The calculation standard has changed compared to the previous report  
 \*\* Correction of errors in previous sustainability reports

### Education and Training

Type	Unit	2018	2019	2020
Total number of trainees	Total	3,218	3,360	3,323
	Male	2,960	3,079	3,032
	Female	258	281	291
Training hours per individual	Total	113	115	117
	Male	113	115	117
	Female	110	111	113
Total training expenses	USD Million	3,451	3,610	2,480

### Status of Social Contribution Activities

Type	Unit	2018	2019	2020
Expenses for social contributions	USD Million	4,703	3,303	3,298
Number of participating employees	persons	1,801	1,480	988
Number of volunteering teams	teams	202	225	238
Employee participation rate through matching grant	%	77.0	75.1	73.2

### Partner Companies

Type	Unit	2018	2019	2020
Total number of partner companies	companies	2,447	2,550	2,278
Records of financial support to partner companies	USD Million	31,820	32,220	32,130

### Safety and Health of Employees

Type	Unit	2018	2019	2020	
Current mortality rate per 10,000 workers	0/000	0.65	1.39	0.41	
Number of cases involving a critical accident	cases	2	2	1	
Number of injuries or diseases occurring among workers who are under organizational control (employees excluded)	Total	108	118	127	
	Male	104	115	123	
	Female	4	3	4	
Number of occupational deaths among workers who are under organizational control (employees excluded)	Total	2	3	1	
	Male	0	3	1	
	Female	2	0	0	
On-site safety inspections	Number of on-site inspections	cases	6	8	8
	Total number of inspections	cases	1,199	1,158	1,028
	Number of cases with safety problems	cases	8	1	0
Safety training	Number of safety training courses	courses	12	12	7
	Number of safety training course completers*	persons	3,309	3,338	1,234
Securing of safety managers	Ratio of safety managers to regular employees	%	32.0	36.4	33.3

\* Employees of partner companies included



# ESG Performance

## Economic Performance (Based on separate financial statements)

### Creation of Direct Economic Values

Type	Unit	2018	2019	2020	
Orders	Total orders	KRW Million	7,291,400	8,887,800	9,937,800
	Domestic	KRW Million	6,649,600	7,762,400	8,935,500
	Overseas	KRW Million	641,800	1,125,400	1,002,300
Revenue	KRW Million	5,842,508	5,306,828	5,093,292	
Gross profit	KRW Million	728,505	584,386	653,007	
Operating income	KRW Million	482,306	306,625	359,494	
Profit before income tax	KRW Million	239,864	321,655	290,741	
Net income	KRW Million	170,125	222,876	193,817	
Total assets	KRW Million	5,009,379	4,926,966	5,103,919	
Liabilities	KRW Million	2,929,645	2,708,644	2,752,226	
Capital	KRW Million	2,079,734	2,218,322	2,351,693	
R&D investment	Total	KRW Million	24,190	24,938	25,724
	Technology development service expenses	KRW Million	19,220	19,620	20,549
	Exclusive technology development expenses	KRW Million	4,970	5,318	5,175
Number of patent registrations	cases	18	9*	17	
Crisis due to climate change and cost of managing opportunity factors**	KRW Million	13	15	3	

\* Correction of errors in previous sustainability reports

\*\* Enterprise-wide environmental management cost: ISO 14001 inspection cost

### Distribution of Economic Performance

Type	Unit	2018	2019	2020
Shareholders (Dividends)	KRW Million	38,613	54,702	41,831
Government (Corporate tax)	KRW Million	69,740	98,778	96,924
Employees (Salaries and benefits)	KRW Million	306,851	303,990	326,113
Outsourcing partners (Outsourcing expenses)	KRW Million	3,271,940	2,978,600	2,454,557
Local Communities (Donations, charity expenses, investment)	KRW Million	4,703	3,303	3,298
Material suppliers (Material costs)	KRW Million	1,010,014	950,700	1,325,908
Creditors (Interest)	KRW Million	43,974	39,521	32,930
Total Amount of Economic Performance Distributed	KRW Million	4,745,835	4,429,594	4,281,561
Portion of Economic Values Held	KRW Million	1,096,673	877,234	811,731

### Retirement Pension

Type	Unit	2018	2019	2020	
Pension Fund (Amount of assets accumulated)	KRW Million	176,440	210,244	232,185	
Number of subscribers by type	DB	persons	3,105	3,270	3,111
	DC	persons	49	71	93
	Total (DB+DC)	persons	3,154	3,341	3,204

### Evaluation of Corruption Risks at Workplaces

Type	Unit	2018	2019	2020
Number of workplaces	workplaces	185	260	266
Ratio of workplaces	%	100	100	100

### Identified Corruption Cases, Unfair Trade Acts, and Legal Actions Taken

Type	Unit	2018	2019	2020
Number of corruption cases	cases	1	3	8
Number of legal actions taken for unfair trade acts	cases	0	0	0

### Notification and Training on Anti-Corruption Policies and Procedure

Type	Unit	2018	2019	2020	
Number of governance body members who were trained	persons	8	8	7	
Ratio of governance body members who were trained	%	100	100	100	
Number of employees who were trained (employees by type)	Total	persons	3,218	3,360	3,323
	Regular employees	persons	2,360	2,506	2,501
	Contractual employees	persons	858	854	822
Ratio of employees who were trained (employees by type)	Regular employees	%	100	100	100
	Contractual employees	%	100	100	100
Total number of employees who were trained (employees by country)	Total	persons	3,218	3,360	3,323
	South Korea	persons	3,089	3,222	3,199
	Indonesia	persons	38	36	41
	Vietnam	persons	33	43	51
	Japan	persons	2	1	1
	China	persons	36	27	13
	Pakistan	persons	3	5	2
	Russia	persons	2	7	1
	Malaysia	persons	5	6	4
	Qatar	persons	1	0	0
	Cambodia	persons	9	11	9
Singapore	persons	0	2	2	
Number of partner companies that were notified (domestic)*	Total	companies	2,447	2,550	2,278
	Outsourcing partner companies	companies	1,568	1,580	1,238
	Raw material suppliers	companies	879	970	1,040

\* Impossible to separate the partner companies for each country

### Ethical Management

Type	Unit	2018	2019	2020	
Ethical management training	Number of participants	persons	3,218	3,360	3,323
Monitoring Status	Number of cases of unethical management practice	cases	13	8	9
	Number of cases reported through people (ombudsman)	cases	466	870	214
	Number of cases improvements and guidance provided after audits	cases	77	116	113
	Assessment of ethical levels	points	96	96	90

# GRI Standards Index

## GRI STANDARDS\_UNIVERSAL STANDARDS (GRI 100)

Type	No.	Title	Page	Note
GRI 102 : Organizational Profile	102-1	Report the name of the organization	5	
	102-2	Activities & primary brands, products & services	7-44	
	102-3	The location of the organization's head office	5	
	102-4	Regions of business	5	
	102-5	The nature of ownership and legal form	5	
	102-6	The markets served	5	
	102-7	Scale of the organization	5	
	102-8	Information on employees and workers	5	
	102-9	Supply chain of the organization	77-78	
	102-10	Critical changes in the organization and the supply chain		No critical change
	102-11	The precautionary principle and approach	84	
	102-12	External initiatives	51	
	101-13	Membership of associations	103	
GRI 102 : Strategy	102-14	Statement of the chief decision maker	3-4	
	102-15	Major impacts, crises and opportunities	52	
GRI 102 : Ethics and integrity	102-16	Values, principles, standards and a code of conduct	86	
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GRI 102 : Governance	102-18	Corporate governance	83	
	102-19	Transfer of the authority	83	
	102-20	Executives' responsibilities for economic, environmental and social topics	83	
	102-21	Consultation with stakeholders on economic, environmental and social topics	83	
	102-22	Composition of the top decision-making body and committees under it	83	
	102-23	Chairman of the top decision-making body	83	
	102-24	Recommendation and selection of the top decision-making body	83	
	102-25	Conflicts of interests	83	
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	102-30	Effectiveness of the risk management procedure	84	
	102-31	Review of economic, environmental and social topics	84	
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	102-33	Communication on key agenda	83	
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## GRI STANDARDS\_UNIVERSAL STANDARDS (GRI 100)

Type	No.	Title	Page	Note
GRI 102 : Stakeholder Engagement	102-40	List of stakeholders related to the organization	49-50	
	102-41	Collective agreement		No labor union
	102-42	Identification and selection of stakeholders	49-50	
	102-43	Ways of stakeholder engagement	49-50	
	102-44	Core topics and interests derived from stakeholder engagement	49-50	
	GRI 102 : Reporting practice	102-45	Affiliate and JV list included in the organization's consolidated financial statements	
102-46		Content to be reported and definition of the boundaries of topics	1, 49-50	
102-47		List of material topics	50	
102-48		Re-explanation of information	1	
102-49		Changes in reporting	1	
102-50		Reporting period	1	
102-51		The latest reporting date		Website*
102-52		Reporting cycle	1	
102-53		Contact point for inquires on the report	1	
102-54		Reporting method as per GRI Standards	1	
102-55		GRI Index	97-100	
102-56	External assurance	101-102		
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundary, The management approach and its components, Evaluation of the management approach	49-50	
	103-2			
	103-3			

\* <http://www.lottecon.co.kr/sustainability/sustainability>

# GRI Standards Index

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Type	No.	Title	Page	Note
GRI 201 : Economic Performance	201-1	Creation and distribution of direct economic values	95	
	201-3	Coverage of the organization's defined benefit plan obligations	96	
GRI 205: Anti-corruption	205-1	Evaluation of corruption risks on sites	96	
	205-2	Notification and training on anti-corruption policies and procedure	96	
	205-3	Cases of identified corruption cases and actions taken	96	
GRI 206 : Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	96	

## GRI STANDARDS\_UNIVERSAL STANDARDS (GRI 300)

Type	No.	Title	Page	Note
GRI : 301 Materials	301-3	Weight and volume of raw materials used	91	
	301-2	Input of regenerative raw materials among the raw materials used	91	
GRI : 302 Energy	302-1	Energy consumption within the organization	92	
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GRI : 303 Water and Effluents	303-5	Water consumption	92	
GRI : 305 Emissions	305-1	Direct greenhouse gas (GHG) emissions (Scope 1)	92	
		Indirect greenhouse gas (GHG) emissions (Scope 2)	92	
GRI : 306 Effluents and Waste	306-2	Waste by type and treatment method	91	

## GRI STANDARDS\_UNIVERSAL STANDARDS (GRI 400)

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	401-3	Parental leave	94	
GRI 403 : Occupational Health and Safety	403-1	Occupational health and safety management system	63-65	
	403-2	Hazard identification, risk assessment, and incident investigation	63-65	
	403-3	Occupational health services	63-65	
	403-4	Worker participation, consultation, and communication on occupational health and safety	63-65	
	403-5	Worker training on occupational health and safety	63-65	
	403-6	Promotion of worker health	69	
	403-9	Work-related injuries	94	
GRI 404: Training and Education	403-10	Work-related diseases	94	
	404-1	Average training hours per employee	94	
	404-2	Programs for competency buildup and conversion for employees	66-69	
GRI 405: Diversity and Equal Opportunity	404-3	Percentage of employees having been reviewed on periodic performance and career development	66-69	
	405-1	Diversity of governance bodies and employees	67	
GRI 406 : Non-Discrimination	406-1	Incidents of discrimination and corrective actions taken	70	
GRI 413 : Local Communities	413-1	Management rate of community engagement, impact assessment and development programs	79-80	
	413-2	Sites with critical negative impact on community		No site negatively making a critical impact on community
GRI 416: Customer Health and Safety	416-1	Safety and health impact assessment in product and service categories	63-65	
	416-2	Cases of violating regulations on the safety and health impact of products and services		No case of violation
GRI 417: Marketing and Labeling	417-1	Product and service information and labeling	75-76	
	417-2	Incidents of non-compliance concerning product and service information and labeling		No case of violation
	417-3	Incidents of non-compliance concerning marketing communications		No case of violation
GRI 418: Customer Privacy	418-1	Number of cases of complaints with validated violation of the protection of customers' personal information and loss of customer information	74	
GRI 419: Socioeconomic Compliance	419-1	Violation of laws and regulations on the social and economic domains		No case of violation

# Third Party's Assurance Statement

To the Readers of 2021 LOTTE E&C Sustainability Report:

## Introduction

Korea Management Registrar (KMR) was commissioned by LOTTE E&C to conduct a third party's assurance of its Sustainability Report 2021 (the "Report"). The data and its presentation in the Report is the sole responsibility of the management of LOTTE E&C. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with LOTTE E&C and issue an assurance statement.

## Scope and Standards

LOTTE E&C described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 2, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of Inclusivity, Materiality, Responsiveness and Impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with the Core Options of the GRI standards was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process.

- GRI Sustainability Reporting Standards
- Universal Standards
- Topic Specific Standards
  - Management approach of Topic Specific Standards
  - GRI 206: Anti-Competitive Behavior
  - GRI 302: Energy
  - GRI 303: Water and Effluents
  - GRI 305: Emissions
  - GRI 306: Effluents and Waste
  - GRI 403: Occupational Health and Safety
  - GRI 404: Training and Education
  - GRI 413: Local Communities
  - GRI 414: Supplier Social Assessment
  - GRI 417: Marketing and Labeling

As for the reporting boundary, the engagement excludes the data and information of LOTTE E&C' partners, suppliers and any third parties.

## KMR's Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

## Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by LOTTE E&C to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

## Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with LOTTE E&C on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the Core Option of the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

### Inclusivity

LOTTE E&C has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

### Materiality

LOTTE E&C has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

### Responsiveness

LOTTE E&C prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of LOTTE E&C' actions.

### Impact

LOTTE E&C identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible. We recommend that it develop models for measuring social values considering its business characteristics to increase the effectiveness of CSR activities and continuously enhance the sustainability management system.

## Reliability of Specific Sustainability Performance Information

In addition to the adherence to AA1000AP (2018) principles, we have assessed the reliability of economic, environmental, and social performance data related to sustainability performance. We interviewed the in-charge persons and reviewed information on a sampling basis and supporting documents as well as external sources and public databases to confirm that the disclosed data is reliable. Any intentional error or misstatement is not noted from the data and information disclosed in the Report.

## Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021:2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with LOTTE E&C and did not provide any services to LOTTE E&C that could compromise the independence of our work.

October 2021 Seoul, Korea

CEO **Eun Ju Hwang**

*E. J. Hwang*

# Memberships in Associations / Awards

## Memberships Status

Name of Association			
Construction Safety Manager Committee	Construction Association of Korea	Architectural Institute of Korea	Korea Mech. Const. Contractors' Association
Korea Chamber of Commerce & Industry	Korean Society of Water & Wastewater	The Society of Air-conditioning and Refrigerating Engineers of Korea	The Korean Institute of Electrical Engineers
Korean Society of Civil Engineers	Maekyung Safety & Environment Institute	Korea Electrical Contractors' Association	Korea Information & Communication Contractors' Association
Korea Construction Transport New - Technology Association	The Korea Institute of Building Construction	Korea Federation of Construction Contractors	Korea Road Association
Korean Society on Water Environment	Korea Fire Facility Association	Korean Institute of Illuminating and Electrical Installation Engineers	Korea Housing Association
Korea Railway Construction Engineering Association	Korea Railway Association	Korea Concrete Institute	International Contractors' Association of Korea

## Awards & Prizes (2018 ~)

Date	Description	Awarding Organization
2018-01-12	Prize for contributing to the nation's industrial development with the completion of Incheon International Airport Terminal 2	President
2018-03-23	Prize on the "2018 Day of Construction Engineers"	Prime Minister
2018-04-26	Prize on the "16th Day of Construction Engineers" (For the most extensive use of new construction technologies)	Chairman of the Korea Construction Transport New Technology Association
2018-05-14	Contribution to entering and developing foreign markets (Indonesian branch office)	Minister of Land, Infrastructure, and Transport
2018-06-29	Grand Prize at the "2018 TEKLA ASIA BIM AWARDS" (LOTTE World Tower)	Trimble (USA)
2018-09-18	Prize in the Best Company in Work-Life Balance category at the "2018 Korea Employment-Friendly Management Awards"	Donga-Ilbo
2018-11-23	Prize at the "14th Contest on Best Cases in Construction Environment Management" (Jikdong Park Complex 2 Apartments in Uijeongbu)	Minister of Environment
2018-11-28	Gold Award at the "2018 Good Design Award" (For Model House Gallery L)	President of the Korea Institute of Design Promotion
2018-11-29	Award for contributions to creating jobs for socially disadvantaged persons (socioeconomic citizen hero award)	Mayor of Incheon
2018-12-12	Grand Prize at the "14th Korean Civil Engineering and Architectural Technology Contest" (Sandaldo Suspension Bridge)	Maeil Business News Korea
2018-12-14	Certificate of appreciation for actively participating in laying flowers at Seoul National Cemetery	Director of Seoul National Cemetery
2018-12-31	Recognition for implementing a pilot project on the digital real estate information system (First real estate transaction electronic contract system for the private sector)	Minister of Land, Infrastructure, and Transport
2019-05-30	Prize in the artist category at the "2019 Cheongju Gardening Festival" (Melody landscape garden)	Minister of the Korea Forest Service
2019-06-20	Prize on the "2019 Construction Day"	Minister of Land, Infrastructure, and Transport
2019-06-26	Grand Prize at the 2019 National Service Awards for the premium apartment category (Received the prize for the 2nd consecutive year)	Institute for Industrial Policy Studies
2019-07-05	Grand Prize at the 2019 Korea Service Grand Prix (Apartment housing category) (Received the prize for the 18th consecutive year)	Korea Standards Association
2020-03-12	Grand Prize at 2020 9th Chosun Ilbo Social Contribution Grand Prize in Social Welfare Sector (Received the prize for the 3rd consecutive year)	Digital Chosun Ilbo
2020-06-18	Prize on the "2020 Construction Day"	Minister of Land, Infrastructure, and Transport
2020-07-03	Grand Prize at the 2020 Korea Service Grand Prix (Apartment housing category) (Received the prize for the 19th consecutive year)	Korea Standards Association
2020-09-24	Grand Prize at 2020 Asia Construction Comprehensive Grand Prize in Architecture Category	Mayor of Seoul

## Information on participants in the Report

Type	Department	Participant
Housing	Housing works Planning Team, Housing works Division	Kwang Su Kim
Building	Building works Planning Team, Building works Division	Do Kyeong Bak
Plants	Plant works Planning Team, Plant works Division	Man Jae Lee
Infrastructure	Civil works Planning Team, Civil works Division	Shoi Don Park
Global Business	Overseas Planning Team, Overseas Business Division	Hee Suk Jung
Ethical Management	Ethical Management Department	Kil Ho Shin
Legal Compliance	Compliance Team, Legal and Compliance Department	Hyun Soo Park Jae Woo Han
HSE Management	Safety and Health Management Department	Seong Su Jeong Tae Gi Kim Kyoung Suk Lee
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