

# **2018 DAEWOO E&C SUSTAINABILITY REPORT**

# ABOUT THIS REPORT

Since 2012, we have published a yearly sustainability report to disclose the financial, social and environmental progress we made over the year. As our seventh sustainability report, we use it as a channel to communicate our major sustainability policies, activities and performance with our stakeholders. This report is available to download from our website at [www.daewooenc.com](http://www.daewooenc.com).

### Reporting Standard

This Sustainability Report is prepared in accordance with the GRI (Global Reporting Initiative) Standards Guidelines(satisfies the “In Accordance – Core” option of disclosure) and Construction & Real-Estate Sector Supplement. The financial performance is based on the K-IFRS Consolidation Standards.

### Reporting Period

This Report covers key sustainability activities and achievements from January to December 2017 (Some important qualitative performance data covers up to June 2018). In terms of quantitative performance, data for the past three years is presented for time series analysis.

### Reporting Boundaries

The information provided in this report covers all sites and buildings undergoing actual business operation (Quantitative performance data for the environmental aspects are limited to, consolidated and disclosed on 284 work sites and 4 buildings in Korea).

### Major Changes

As of 2017, the Housing Division and Building Division were merged into the Housing & Building Division. Other major changes are annotated on each page.

### Questions about the report

**Address** 75, Saemunan-ro, Jongno-gu, Seoul Republic of Korea  
**Team** Compliance Team  
**E-mail.** [dwenc\\_sr@daewooenc.com](mailto:dwenc_sr@daewooenc.com)  
**Tel.** 02)2288-3739  
**Fax.** 02)2288-4284

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# Global Infra & Energy Developer

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# CEO Message

Dear respected  
stakeholders,

We ask for  
your continued  
encouragement  
and support for  
our business.



All of us at  
Daewoo E&C will  
pull together and  
stand by your side as  
we move toward a  
brighter tomorrow.

Thank you for your continued encouragement and support for our business.

For the past 45 years since its establishment in 1973, Daewoo E&C has led the Korean construction industry with its unrivaled technological prowess and highest quality services. In 2017, despite rapid changes in the domestic and global business environments and losses in some of our overseas construction sites, we achieved KRW 11.8 trillion in sales and KRW 429 billion in operating income on a consolidated basis. Without stopping there, we will focus our efforts on the following areas to continue creating sustainable values for the future:

**First, we will continue to enhance our corporate value by securing financial soundness based on improved profitability.**

Daewoo E&C has undertaken organizational restructuring to promote efficiency and create synergy by integrating organizations that perform similar work functions. We have also reorganized our business portfolios focusing on business areas with high profitability and growth potential, while strengthening risk management capabilities and improving our purchasing and execution ability. All this is done in order to secure stable sources of income in the midst of uncertainties in internal and external business environments. At the same time, we will reach beyond engaging in simple construction projects and actively explore opportunities in planning/proposal-type investment projects such as the Vietnam New Town Development Project, while developing new project platforms in cooperation with other industries.

**Second, we will establish a flexible and efficient management system based on our unique corporate culture.**

In pursuit of our core values of pioneering spirit, passion, autonomy and responsibility, Daewoo E&C works relentlessly to become a leading global company by accepting any challenge and seeking perfection in our work. Furthermore, we will realign and further develop our own corporate culture of “Daewoo Family”, in which leaders drive change and older associates guide their younger colleagues by exerting their positive influence, enabling us to grow into a creative company that responds flexibly to new business environments in the 4th Industrial Revolution era.

**Third, we will establish a globally competitive anti-corruption management system (ISO 37001).**

In 2013, Daewoo E&C declared the “Daewoo New-Way” realigning its ethics policies and relevant organizations. This was followed by introducing the Compliance Program in 2015 as an effort to establish its compliance system and enhance corporate accountability at home and abroad. In 2018, we plan to adopt the ISO 37001 Anti-bribery Management System, taking another step toward in becoming a transparent global company with exemplary performance in integrity management.

**Fourth, we will faithfully fulfill our corporate social responsibility.**

In return for the support of our domestic and global customers as well as our business partners, we have founded Daewoo E&C volunteer corps and carried out various social contribution activities under the slogan “The More We Share, the More Love We Have”. We will continue to consider and assume the roles we can play in areas that require corporate responsibility and investment, such as developing local communities, pursuing shared growth with business partners and reducing the environmental impact of our business.

Valued stakeholders,  
At Daewoo E&C, we will pull together to fulfill our roles and responsibilities as an accountable corporate citizen. As we move toward another half-century of progress, we ask for your unwavering support for, and confidence in, our business.

Thank you.

June 2018  
Daewoo E&C Co., Ltd.  
CEO **Hyung Kim** *Hyung Kim*



Company Overview

You make it possible

Since its establishment in 1973, Daewoo E&C has taken on challenges with the vision of adding new values to our lives. As a company pursuing a better future for all, we will expand our businesses bringing changes to more regions throughout the world.

Key Businesses



Civil Project  
Roads, Bridges, Harbors, Reclamation, Territorial Development, High-speed Railways, etc.



Housing & Building  
Commercial Complexes, Office Buildings, Factory Buildings, Construction and Sale of Apartments, etc.



Plant  
Oil & Gas, Refineries, LNG, Thermal Power Plants, Nuclear Power Plants, IPP, and Other Plant-related Construction

Global Subsidiaries



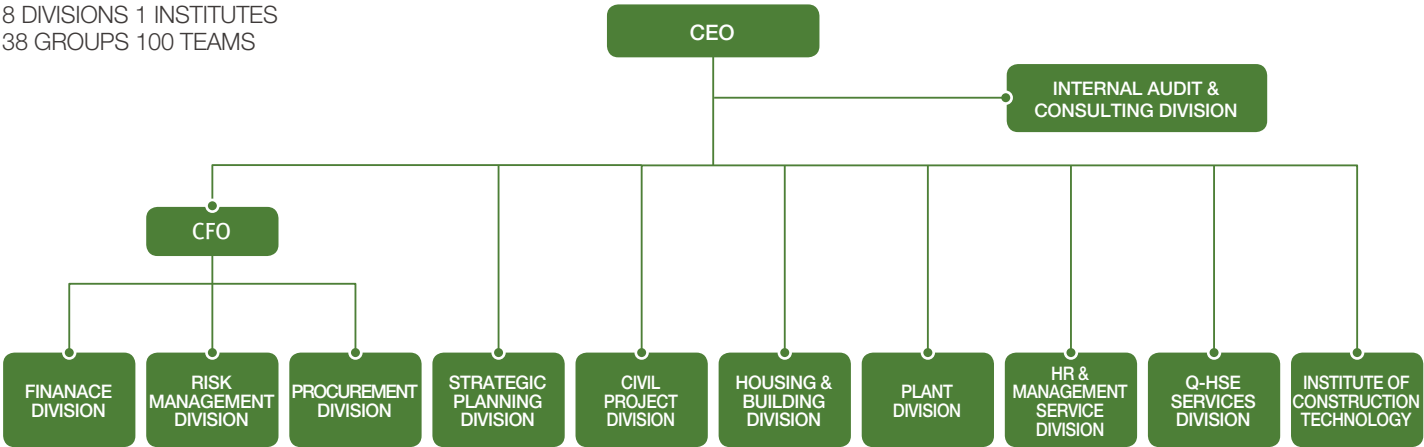
Company Profile

Company Name	DAEWOO Engineering & Construction Co., Ltd.	Branches and Affiliates	1 domestic branch, 6 overseas branches, 7 domestic subsidiaries*, and 6 overseas subsidiaries
Date of Establishment	November 1st, 1973	Major Shareholder	Korea Development Bank (KDB Value 6 Ltd.)
Address	75, Saemunan-ro, Jongno-gu, Seoul, Republic of Korea	Number of Employees	5,846
CEO	Hyung Kim	Website	Korean) www.daewooenc.com English) www.daewooenc.com/eng

\* Excluding special purpose company (SPC) subsidiaries established for the purpose of liquidating account receivable, but over which Daewoo E&C has de facto control

Organizational Structure

8 DIVISIONS 1 INSTITUTES  
38 GROUPS 100 TEAMS



History



1977  
Daewoo Building at Seoul station



1982  
Daewoo Co.,Ltd. established



1983  
Established R&D Center for the first time in the industry



1992  
Longest expressway construction project in Pakistan



2003  
"PRUGIO" launched



2006  
Ranked 1<sup>st</sup> in construction capability



2010  
Opened the world's longest immersed tunnel for automobiles "Geoga Bridge"



2010  
Signed acquisition agreement with Korea Development Bank(KDB)



2012  
Published Sustainability Report

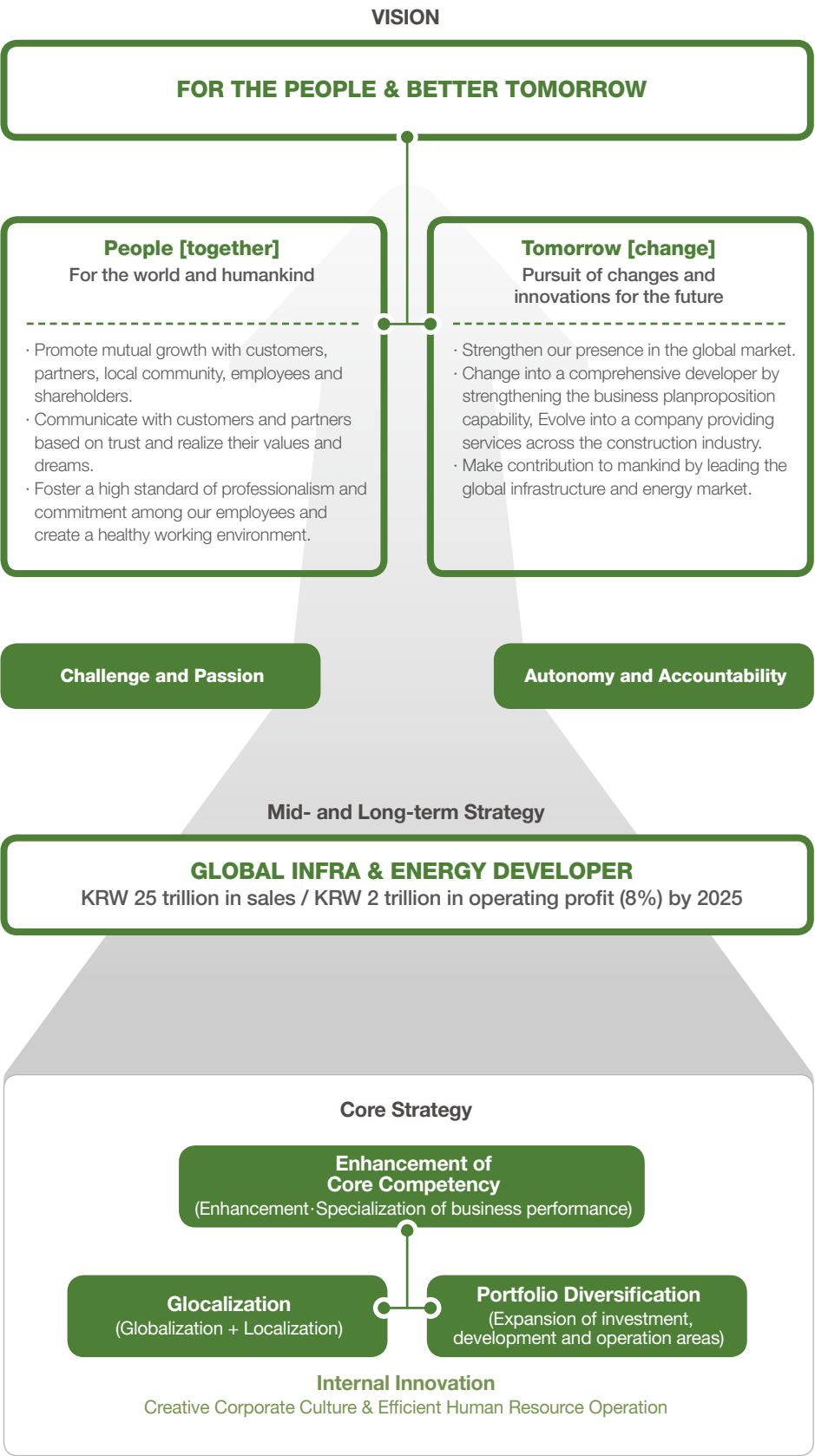


2017  
Won the Presidential Award for the Best Apartment

## Vision 2025 · Core Value

With our vision  
“For the People & Better Tomorrow”,  
At Daewoo E&C, we manage our  
business aimed at internally stable  
management with a focus on  
profitability, recognizing that the  
economy of scale through simply  
expanding business as  
previous phase.

With the core values of  
“Challenge and Passion” and  
“Autonomy and Accountability”,  
we will move beyond  
'Global Infra & Energy Developer'  
to become a company that  
aims for a better future  
with humanity.



## Business Value-up Strategy

At Daewoo E&C, we manage our  
business aimed at internally stable  
management with a focus on  
profitability, recognizing that the  
economy of scale through simply  
expanding business as previous  
phase.  
To achieve sustainable growth in  
this competitive environment,  
We set and implement innovative  
business goals.

We are going to solidify our  
business model to maintain a  
sound, sustainable  
revenue stream despite the  
uncertain business environment.

### Key Management Performance in 2017

Despite adverse domestic and overseas business environments in 2017, Daewoo E&C achieved KRW 10,015.1 billion in construction contracts, KRW 11,766.8 billion in sales and KRW 429 billion in operating income on a consolidated basis.

Along with the Shinbanpo Reconstruction(Phase 15) which will be a landmark in Gangnam, we provided a total of 19,583 houses in Gwacheon, Busan, Pohang, and Uiwang, strengthening our position in the domestic market. In addition to residential development, we undertook the Dongtan New Town Knowledge Industry Center and proposed development projects based on demands as part of our efforts to diversify our business model. In the global market, we signed the Oman Duqm Refinery Project, further strengthening our reputation as a global powerhouse.

Meanwhile, we undertook various initiatives to improve our corporate value and business practice through business consulting firms. Based on this, we will continue to innovate our procurement process and performance improvement as part of our value enhancement activities in order to increase our competitive advantages and profitability.

### Management Goals and Strategies for 2018

1. Reorganize our business portfolio with a focus on profitability and growth momentum.
2. Expand our business into more synergistic and profitable areas.
3. Secure competitive advantages by construction type through enhancement of procurement process, performance and risk management.
4. Reorganize to maximize organizational effeciency through integration of similar construction type and to create a synergistic effect.

#### Case. Improve Work Efficiency through Reorganization

To adjust and coordinate between teams, and to improve work efficiency through integration.

In particular, we focused on the quality of our products and services as well as transparency in our business practices through Q-HSE Division and Audit Division while improving coordination between business divisions through organic operation based on corporate-wide strategic directions. Meanwhile, we merged our Building Division and Housing Division to improve its organizational efficiency and undertook new projects to further enhance business efficiency and flexibility in our HR management. In addition, by establishing a risk-management organization, we are able to manage our costs from the pre-bidding phase and integrate project risk and profitability management organizations while strengthening our audit process for compliance with ethical practice.





# Business Division

Civil Project Division	14
Housing & Building Division	20
Plant Division	26



# CIVIL

Building Roads, Railroads and Harbors  
with the Highest Standards in  
Technological Expertise and Quality

### About Civil Project

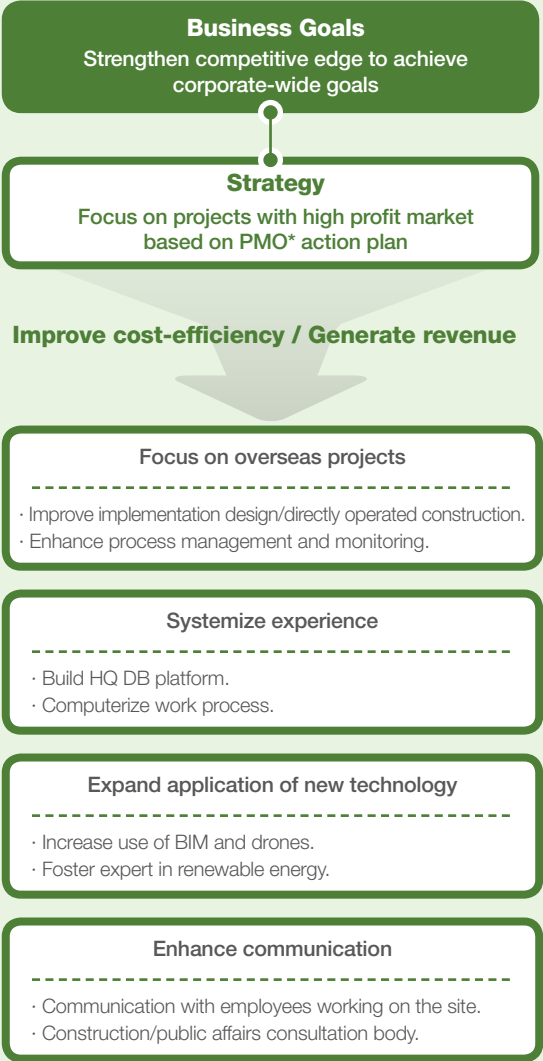
The civil industry serves as a basis for the nation's economic growth and supports other industries through the development of lands and infrastructure, including roads, railways, ports, and waterworks.

At Daewoo E&C, we built major infrastructure in the 1970s and contributed to the "Miracle of the Han River". We successfully completed the Inje Tunnel, the longest road tunnel in Korea, and Geogadae-ro Road which has the world's largest water depth and length, as the first Immersed tunnel in Korea. We also reduced construction time for the Bohyeon-san Dam, the first arch concrete gravity dam in Korea, leading the domestic market with our advanced technology.

We are diversifying our business portfolio based on proven technology and quality in overseas markets, and actively exploring new markets with great potential for growth such as the Middle East, Asia and South America.

Despite the sluggish market conditions due to Middle East project delays caused by low oil prices and the new government's shrinking infrastructural investment, we are focusing on projects with high profit margins and increasing sales and securing liquidity to maximize our operating profits.

### 2018 Business Strategy



\*Program Management Office



### Global Business



13 sites in 10 countries

### 2017 Business Highlight

KRW 5,751.5 Billion  
Orders on hand

KRW 1,881.9 Billion  
Sales

Aphae-Amtae Section 1



Civil  
Key Performance



①	②
③	④

- 1. Guri-Pocheon Expressway**
- The first North-South road in Northern Gyeonggi which reduced traffic congestion and boosted local economic development.
- 2. E-Ring Road in Qatar**
- As part of the Doha Expressway Program, developing a road network of more than 800km in length building transportation infrastructure connecting Doha and the southern part of the suburbs for the 2020 World Cup.
  - Expanding the existing roads in Doha (4.5km) and building new roads (4.0km).

- 3. Kazungula Bridge in Botswana**
- Built bridges and entry roads across the Zambezi River, the border between Botswana and Zambia, in the Kazungula region of Southern Africa.
  - Improving traffic flow between the two countries and to develop logistic infrastructure.
- 4. Singapore Subway 216**
- The Thomson-East Coast Line is expected to improve traffic conditions as it connects the Eastern coastal area of Singapore with the North-South transportation network.

- 5. Sosa-Wonsi Double Track Railroad**
- Improving the harsh traffic conditions of the South-western part of the metropolitan area.
  - By connecting Daegok-Sosa Line to secure vertical transportation in Gyeonggi province.
- 6. Redevelopment of Gohyeon Port in Geoje**
- Built a premium marine tourist destination, renovating outdated facilities.
  - Developing green zone parks and cultural facilities.
- 7. Patind Hydropower Plant in Pakistan**
- It is expected to boost local economy and industrial development by improving power supplies in MUZA-FARABAD.

- 8. Nambu Water Ecology Park (Yeokgok Sewage Treatment Plant)**
- Sewage treatment facilities with a capacity of 50,000tons/day and theme park built using DNR process
- 9. El Harrach River Restoration Project Site in Algeria**
- After the completion of the project, Daewoo E&C expects enhanced water quality and flood prevention effect.
  - Built leisure facilities for local residents.

⑤	⑥	⑦
⑧	⑨	



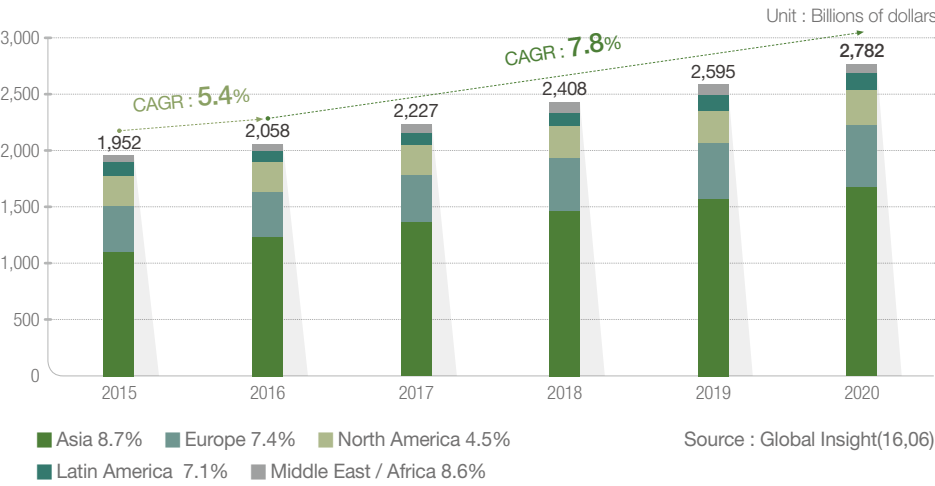
Global Market  
Forecast

\*MDB (Multilateral Development Bank) :  
An institution provides financing and professional  
advising for economic development, in which  
beneficiary or developing countries and financing or  
developed countries participate without restriction  
(e.g. World Bank, Asia Development Bank)

\*ODA (Official Development Assistance) :  
Aid for economic and social development and  
welfare in developing countries.

Business  
Performance

\* The Immersed tubing tunnel method :  
A special method used for construction of  
undersater tunnels crossing the channel and rivers.



The overseas infrastructure construction market is expected to grow by an average of USD 2.8 trillion per year by 2020. While percentage of the North American market declines, emerging markets such as India and Asia (8.7%), the Middle East and Africa (8.6%) and Latin America (7.1%) are expected to grow. As the OPEC oil cut deal extends, new orders in the Middle East are expected to increase while there will be more business opportunities created by expanding overseas infrastructure investment plans for MDB \* and ODA \*.

On the other hand, the need for a strategy to hedge against risks is growing as competition intensifies due to domestic market contraction, potential contraction of investment development business and unstable financial market conditions and US protectionism.

Expressway

Since the Busan-Masan Expressway No. 3 construction project in 1978, we have carried out more than 30 expressway construction projects including Cheonan-Nonsan and Daegu-Busan Expressways (privately funded) as well as Jungbu Expressway, Daegu-Pohang Expressway and Second Seohaean Expressway while reducing logistics costs and boosting the local economies. For the Inje Tunnel in particular, which is the longest domestic tunnel in Dongheungcheon-Yangyang Expressway, we have succeeded in linking the metropolitan area with the East Coast at the shortest distance while minimizing the environmental impact. In addition, we have successfully completed the world's largest expressway as a single project in Pakistan and built a reputation as a leading expressway construction company.

Road & Bridge

Since the first railway bridge in 1984, we have built the Dongjak Bridge and 8-lane Gwangan Bridge across the shores of the Gwangalli Beach in Busan. The Geogadae-ro Road connecting Busan and Geoje Island, in particular, which started in 2004 and was completed in 2010, was built using the immersed tunnel process for the first time in the world. In addition, we showcased our superior technological expertise with such projects as Dadaehang Road, Songdo Coastal Road, and Gimhae Detour Road.

Railroad & Subway

We are the leading construction company that carried out the maximum number of high-speed railroad projects. Revolutionizing public transportation in the 21st century, we joined the subway construction business with Seoul Subway Line No. 2, and have built subways in Seoul, Incheon, Daegu, Busan and Gwangju. For the Bundang Line, we completed the tunnel that passed under the Han River using the SHIELD process with the maximum diameter showcasing our superior technological expertise.

Harbor & Water Resources

When it comes to building harbor facilities such as shore, dock and breakwater, we boast the highest level of expertise and experience in Korea. We helped to transform Busan harbor into the top logistics hub of East Asia. Following the completion of Oman and Qatar Repair Shipyards, we became the first company to expand business into Algeria with the river restoration project.

Environment

We have the most experience in building water treatment facilities, sewage treatment facilities and sewer pipes. We have developed eco-friendly designs and DNR (Daewoo Nutrient Removal) sewer treatment technologies for building complete underground facilities and developing the upper part as a park and public facilities. We also have new technologies and business expertise in such fields as biogas power generation. In particular, the world's largest biogas plant, Daegu Daewoo Biogas System (DBS), is developed based on our patented construction technology which produces energy using organic waste such as food waste.

Leisure

Since our first leisure facility construction, the Suyeongman Yachting Center in Busan in 1986, we are leading the construction of golf courses In addition to Adonis Country Club in Pocheon leading the high-class golf course, we have opened up a new concept of leisure culture through Reyford C.C. in Yeongcheon, Paganica C.C. in Chuncheon, and Gangwon Land C.C. built 1,150m above sea level. The golf course and resort facilities in Lao Lao Bay in Saipan which is known to provide one of the best tourist experiences and scenic views.

Renewable Energy

With a focus on solar and wind power energy sectors, we are reinforcing our ability to develop new business opportunities and create new business models through our own development projects. Starting with Jeju Solar Power Plant Project, we plan to launch a floating solar farm project in Daehoho and eco-wind power project in Yeongwol.

Plans & Goals

In response to a new paradigm in the domestic construction market increasing demand for maintenance for outdated facilities, decline and qualitative changes in new building projects, growing O&M market and increasing synergy with the construction sectors, we established mid- and long-term master plans throughout the industry's life cycle. With overseas civil engineering projects as our growth engine to sustain our competitive advantages in the market, we plan to strengthen our capacity to localize and increase strategic cooperation with domestic and overseas companies while optimizing our business portfolio and strategies.



# HOUSING BUILDING

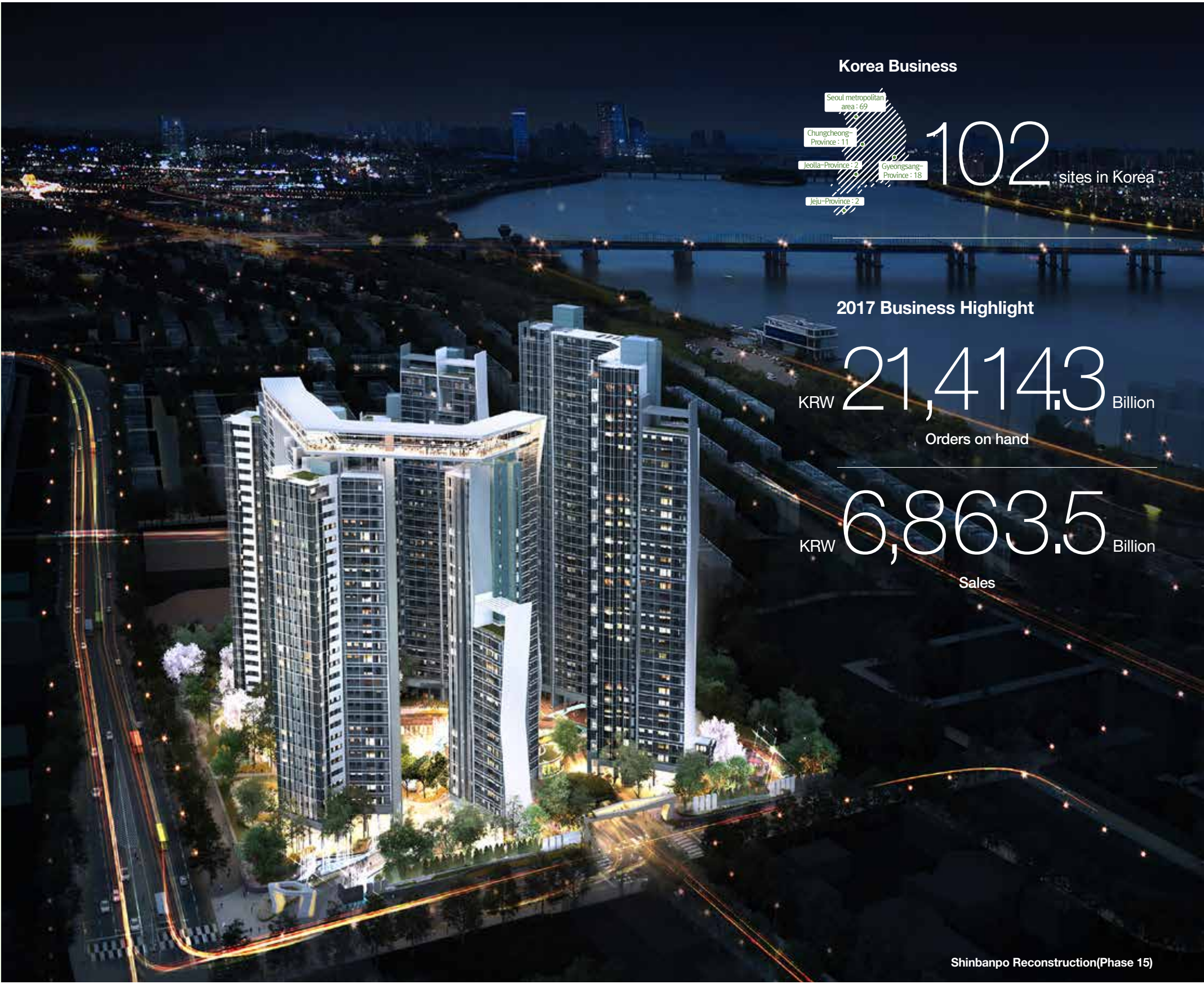
Paving the Way for 21<sup>st</sup> Century Housing with Unparalleled Technological Expertise and Know-how

## About Housing & Building Business

At Daewoo E&C, we are setting a new trend in the industry as we lead the construction of skyscrapers and intelligent buildings. Our Housing Division is committed to creating high-quality residential space through "PRUGIO" and premium housing brand "PRUGIO Summit". Based on in-depth demand analysis and advanced marketing strategies as well as strong competitive advantages in the market, we led the market and exceeded our target in early 2017. Despite the real estate finance policies such as loan regulation, interest rates, household debt, and increase in supply, as well as competitive market environment, we managed to strengthen our business foundation through efficient organization operation and risk management while improving our brand values and increasing the basis for orders to further increase our market share and gain a competitive edge.

When it comes to our Building Division, we carried out residential development projects such as residential and commercial complexes, studio apartments, and accommodation facilities while undertaking various projects for office buildings, hotels, cultural and sports facilities and increasing our business opportunities by proposing demand-based development projects for privately owned lands. We have diversified our business models to solidify our leadership position in the market. In overseas markets, we are building trust and maintaining a great relationship with project owners in Vietnam, Singapore, Malaysia in order to strengthen our presence in the global market.

## 2018 Business Strategy





# Housing & Building

## Key Performance

①	②
	③
④	
⑤	

1. Kyobo Seochu Tower

- A landmark hotel-style office in Gangnam.
- Designed by the renowned Swedish architect, Mario Botta.

2. Daegu Baseball Stadium

- Open baseball ground with 2 basement floors, 5 floors above ground, capacity of 29,000 people
- First eight-ball baseball field in Korea

3. Seochu PRUGIO Summit

- 7 premium apartment buildings with as many as 35 floors and 844 units in total.
- Received the Presidential Award for the 21<sup>st</sup> Maeil Economic Daily Best Apartment Contest.

4. Gyeongbuk Provincial Government Office

- The office building of Gyeongbuk Province is designed with international elegance.
- Eco-friend-liness in mind, certified with the highest level of green building thanks to 30% of renewable energy ratio.

5. Songdo I-Tower (G-Tower)

- Total floor area of 86,165㎡, 146m high with 33 floors.
- UN Green Climate Fund (GCF) is located in the tower.



⑥	⑦
⑧	
⑨	⑩
⑪	
⑫	⑬

6. New Office Buildings for KEPCO

- With a total floor area of 98,629㎡ with 31 floors above the ground, the building is built with a variety of eco-friendly technologies.
- Won the Grand Prize at the 2015 Green Building Award.

7. Gwangjeong Library of Seoul National University

- Built on a total floor area of 27,320㎡ with 7 floors and 1 underground floor.
- Won the Grand Prize in the Social Public category of 2015 Korean Architecture Award and Gold Prize at the 2017 KIBSE's Outstanding Structure Award.

8. Some Sevit

- 3 artificial islands using the floating architecture technology.
- It includes convention hall, performance and exhibition space, restaurants and water leisure facilities.

9. IB Tower, Malaysia

- B4 ~ 58F, 274m, the third tallest building in Malaysia, with skyscrapers using state of the cutting edge technology

10. Scottish Tower, Singapore

- B2 ~ 31F, 231 households
- High-end condominium with a total floor area of 18,500㎡

11. Pasir Condo, Singapore

- Acquired the certificate of outstanding landscaping design in 2017 hosted by Singapore Parks Bureau (Nparks)
- 12 buildings, 912 households, located in the Pasir Ris district of Singapore

12. Lake Town PRUGIO in Cheonan

- Built on a total floor area of 153,511㎡ with 995 units.
- It received the Grand Prize in the landscape category at 2017 Ajou Economy Architecture Award.

13. PRUGIO Wirye Woonam Station

- Built on a total floor area of 119,777㎡ with 620 units.
- It received the 2017 e-Daily Construction Industrial Award.



Global Market  
Forecast

The economic downturn is expected to continue in 2018 following 2017 with continued low-growth environment, sluggish oil prices, uncertain interest rates and declining consumer confidence as well as political risk in Korea. In response to these conditions, at Daewoo E & C, we are focusing on strengthening our base market position and securing new growth engines. We are strengthening our position in the local market and working on building trust with project owners in Singapore and Malaysia. We plan to enhance our risk identification process and develop more profitable projects. At the same time, we are going to focus on negotiated contracts based on existing sales power in the base market, avoiding low-priced orders. In addition, we are working on our new growth engines in the global market by expanding the value chain and maximizing the synergy between the housing and construction sectors. Based on our own know-how and technological expertise, we continue to secure new growth drivers in the global market with the "Star Lake City" new development project in Hanoi which is the first project that integrates the entire processes from development planning to finance procurement, construction and sale.

Business  
Performance



Sustainable Housing Service Research

Building a Foundation for Total Real Estate Developer

By expanding the existing housing supply value chain of "Development-Sale-Construction" to include "Leasing-Trading-Distribution-Maintenance", we are taking our property development business to a next level to grow as a total property service provider. To this end, we acquired the preliminary certification for network-type total property service for the first time in the industry in 2016 and established our brand name and BI as a total property service provider in 2017. By expanding our business to the leasing service, we have established a lease management platform system to provide consumers with a one-stop service and prepared lease management / housing service manual while starting the trial operation of the Haengbok Maeul Lease Service Center in Dongtan. After acquiring preliminary certification for a housing service in the future and securing lease operation capabilities, we will provide one-stop service for financing, lease management, evaluation consultation, legal and accounting and build a foundation for growth into a total property service provider.

Strengthening Competence as a Property Developer

We are expanding our market reach and diversifying business portfolio by focusing on planning/proposal and public-offering projects rather than only development rights. Through Pre-con, we secure project orders at an early stage, build a project owners/affiliates database and strengthen our network management with property developers. Meanwhile, we select key locations with great potential and generate profit through investment based on the database we built on development locations. Based on our know-how and technological expertise, we are expanding our value chain to integrate our business processes from development planning to financing, construction and sales. It is our mid- and long-term goal to grow as a property developer. To this end, we have organized employee training programs on planning and implementation while operating a customized training system within our organization.

Completion of PRUGIO SUMMIT

"PRUGIO SUMMIT" is Daewoo E&C's premium residence brand, combining "PRUGIO", Korea's signature brand and "SUMMIT", meaning the best, the highest. Construction of Yong-san PRUGIO SUMMIT and Seocho PRUGIO SUMMIT were completed in 2017 and tenants have begun moving in. In October 2017, the company renovated its former housing culture hall "PRUGIO Valley" into "SUMMIT Gallery", an exclusive membership lounge for PRUGIO SUMMIT residents, potential customers and union members. Consisting of a virtual reality (VR) zone, café, premium theater, exhibition area, concierge and event hall, the SUMMIT Gallery offers an opportunity for its visitors to experience first-hand the luxury lifestyle PRUGIO SUMMIT proposes. PRUGIO SUMMIT also has its own website ([http:// www.prugiosummit.com](http://www.prugiosummit.com)) to extend the brand experience to the online environment, while offering a privileged luxurious lifestyle through various community programs including "The School of Life" established by the British author Alain de Botton and "ZUT", the official national children's art program in France.



Plans & Goals

The housing and construction industry is highly sensitive to economic fluctuations and demand for facilities investment by project owners as well as the government's financial policies and regulations. The property market is expected to be volatile, due to the property financial policies and macroeconomic trends. However, with the increase in outdated buildings, the redevelopment market is expected to grow along with the preference for new buildings while opportunities for creating demand are present according to social trends. In response to this, we will build a solid foundation by strengthening our risk management capabilities to deal with market changes, enhancing our brand value and product development process as well as a marketing campaign to increase our market share. In addition, we will expand our value chain in project planning, development proposal, financing operation management and build a foundation for sustainable growth in the future.



# PLANT

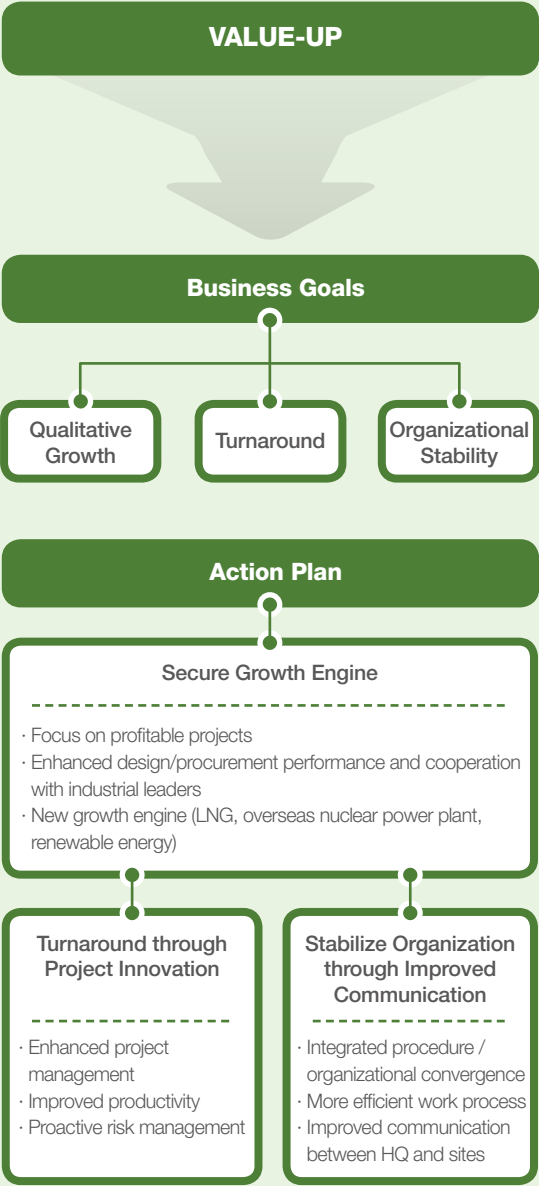
Technological Innovation at  
its Pinnacle

### About Plant Business

Starting with the turnkey project for Ulsan Thermal Power Plant in 1977, we have made significant contributions to our national economy and driven growth as we led the construction of oil & gas upstream and downstream as well as nuclear power plant, thermal power plant, cogeneration plant, tidal power plant and LNG storage facility. Based on our industry-leading performance and technological expertise, we are making substantial progress in the construction of high value-added plants in overseas markets.

Despite the challenging market conditions, we have received new orders for Oman Duqm Refinery Project and Wolsong spent nuclear fuel interim storage facility and achieved KRW 2,619.7 billion in sales. In the Middle East and North African regions which are considered the major overseas markets, we are working on the Kuwait Clean Fuel Project, Al-Zour Refinery Project, Morocco SAFI Coal-Fired Power Plant, Algeria Ras Dijinet Combined Cycle Power Plant and several projects in Nigeria as well as Ulsan S-OIL RUC, Wolsung Low & Intermediate Level Radioactive Waste Disposal Facility and replacement of steam generators for Hanbit Nuclear Power Plants #3 and #4. Meanwhile, we have worked 50 million hours without disaster (as of 2018) for Jazan Refinery PJ demonstrating our superior expertise in on-site management.

### 2018 Business Strategy





# Plant

## Key Performance

①	②
③	
④	⑤
⑥	

**1. Nigeria LNG Project**

- Train #1,2,3,5,6 (Nigeria, LNG)
- LNG PJ - Train #1,2 (2Unitx2.88MTPA)
- LNG Expansion PJ – Train#3 (1Unitx2.88MTPA)
- LNG Plus PJ – Train#5 (1Unitx2.88MTPA)
- LNG PJ – Train#6 (1Unitx4.8MTPA)

**2. PNG LNG Project  
(Papua New Guinea, LNG)**

- 2 LNG Trains (6.3 MTPA)

**3. Morocco ODI Fertilizer Plant  
(Morocco, Fertilizer)**

- 2 units of phosphate fertilizer manufacturing facilities with the annual production capacity being 1 million tons
- 2 units of 62MW electricity generation facilities that use waste heat from manufacturing processes

**4. Algeria-Oman Fertilizer Project  
(Algeria, Fertilizer)**

- 2 units of liquid ammonia plants (2,000 tons/day x 2 units)
- 2 units of urea melt plants (3,500 tons/day x 2 units)
- 2 units of granulated urea plants (3,500 tons/day x 2 units)
- Utility & off-site facility construction

**5. Gbaran-Ubie Integrated Oil&Gas Plant in Nigeria**

- Establishment of a gas processing/transfer plant
- Designing, purchasing, construction and test operation for the establishment of surrounding manifold

**6. Ras Laffan Refinery Project  
(Qatar, Refinery)**

- Gas condensate refining facility (Annual production 146,000bbl)
- 8 units of storage tanks



⑦
⑧
⑨
⑩
⑪

**7. Sur Independent Power Project  
(Oman, Combined Cycle Power Plant)**

- Construction of a 2,000MW-capacity combined cycle power plant (5 units of 250MW GT, 5 units of HRSG, 2 units of 300MW ST, 1 unit of 150MW)

**8. Jorf Lasfar Units 5&6  
(Morocco, Coal Fired Power Plant)**

- 700MW coal fired power (2 blocks : 2 dust coal boilers, 2 steam turbines)

**9. Pocheon Independent Power Plant  
(Korea, Combined Cycle Power Plant)**

- 940MW-capacity combined cycle power plant (2 units of GT, 2 units of HRSG, 1 unit of ST)
- IPP(Independent Power Plant) development project

**10. Shin-wolsong NPP  
(Korea, Nuclear Power Plant)**

- Facility capacity: 2 units of 1,000MW [Korean standard, modified light-water reactor type] Nuclear reactors, turbine generators, auxiliaries 22PKg in total

**11. S3 Independent Power Project  
(UAE, Combined Cycle Power Plant)**

- Establishment of a 1,600MW-capacity combined cycle power plant (4 units of 250MW GT, 4 units of HRSG, 2 units of 300MW ST)



Global Market  
Forecast

As the demand for crude oil rises and oil-producing countries cut their production, oil prices are expected to show a gradual uptrend and priority project orders will be placed with improved financial conditions in the Middle East. With the introduction of the new climate regime, demand for new nuclear power plants in Europe and MENA (Middle East and North Africa) and renewable energy and gas is expected to grow in response to increasing environmental concerns. In addition, competition in the construction industry is expected to intensify as countries such as China, India and Turkey try to gain competitive advantages by reducing their prices in the EPC market.

Meanwhile, domestic demand is expected to grow, boosting the petrochemical industry with the gradual recovery of the domestic economy. With the announcement of the Eighth Fundamental Plan for Long-Term Electricity Demand & Supply and Renewable Energy 3020 Implementation Plan, the renewable energy industry will grow while anti-nuclear and anti-coal policies are gaining momentum.

Plans & Goals

Renewable Energy

In addition to the eco-friendly trend in the global market, the use of renewable energy generation is expected to increase in the future as its unit price falls. In response to this trend, we are planning to secure revenue stream by selecting target projects based on our extensive experience and expertise in the field. We will also improve our earnings by acquiring preferential negotiating rights for new projects by taking advantage of our purchase power for Pocheon Combined Cycle Renewable Power.

LNG

With an increasing demand and supply of natural gas in North America and Asia, the demand for LNG is also expected to grow in the long run. We have extensive experience in both liquefaction and vaporization plant projects and maintain competitive advantages in LNG liquefaction plants. We are also capable of independently undertaking LNG vaporization plant EPC. Based on this, we will continue to expand our market share in Nigeria and Bangladesh while focusing on new EPC projects.

Overseas Nuclear Plant

In accordance with the Paris Climate Convention in 2015 to reduce greenhouse gas emissions, the foundation for the expansion of nuclear plant is expected to be maintained. As a result of the government's new policy on nuclear power plants, companies are focusing on overseas markets. We are working as a part of Team Korea for the UK Moorside Nuclear Power Plant Project, so we were selected as a priority negotiator in December. In addition, we are participating as a SPC shareholder of SMART\* project in Saudi Arabia while participating in LNPP projects.

Repowering / Retrofit of Outdated Power Plants

Dangjin Thermal Power Plant and Hadong Thermal Power Plant and many others which have been in operation for over 20 years are showing a gradual decline in efficiency while permission for new coal-powered plants is restricted due to the issue of fine dust. As a result, the need to renovate outdated power plants is growing. At Daewoo E&C, we have extensive experience in renovating environmental facilities for coal-powered plants such as Yeongheung Thermal Power Plant and we plan to improve our competitive advantages in this area.

\*SMART :  
System-integrated Modular Advanced Reactor

Key Business  
Performance

Oman Duqm Refinery Project (Package 1) Signing

On February 15, 2018, we signed a contract for the Duqm Refinery Project (EPC Package 1: Process Units) issued by Oman DRPIC (Duqm Refinery and Petrochemical Industries LLC).

We plan to carry out the construction of a refinery with a capacity of 230,000 barrels per day in the Dugm harbor area, about 450 km south of Muscat in Oman. The project is expected to last for 47 months and the total construction cost is USD 2,786.75 million.

50 Million Hours without Accident at Jazan Refinery Site in Saudi Arabia

Thanks to the BIF (Beyond Incident Free) Program designed to promote safety culture at the Jazan Refinery site, we reached 50 million hours without accident as of March 10, 2018.







# Future Innovation



# DEVELOPMENT OF INNOVATION TECHNOLOGIES

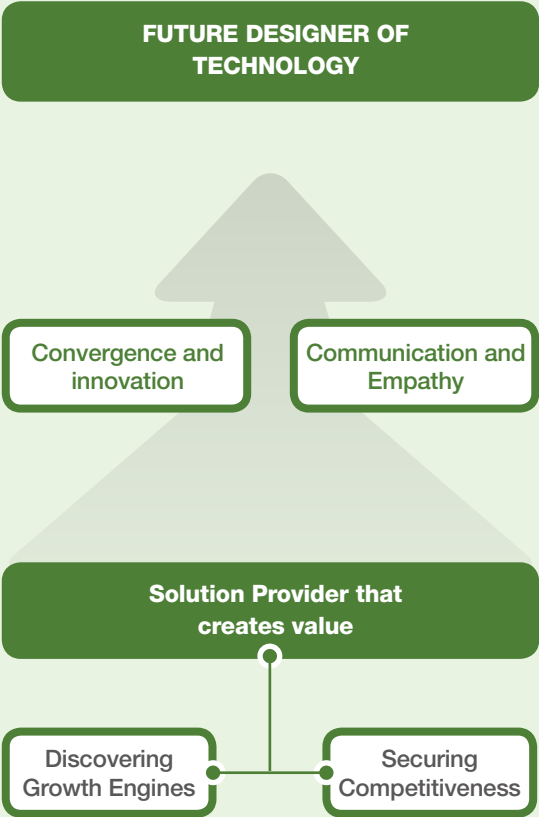
With new technologies of distinct value,  
we open a new chapter for the future beyond simple novelty

## The establishment of infrastructure for technological innovation

As we are marching into the era of the 4<sup>th</sup> Industrial Revolution characterized by the convergence of information and communications technologies, the construction industry is pushing to find new sources of future revenue. Daewoo E&C, a leading company in housing and building, civil projects and plants, is improving construction technology even further through innovative technology development.

## Daewoo E&C Institute of Construction Technology (DICT)

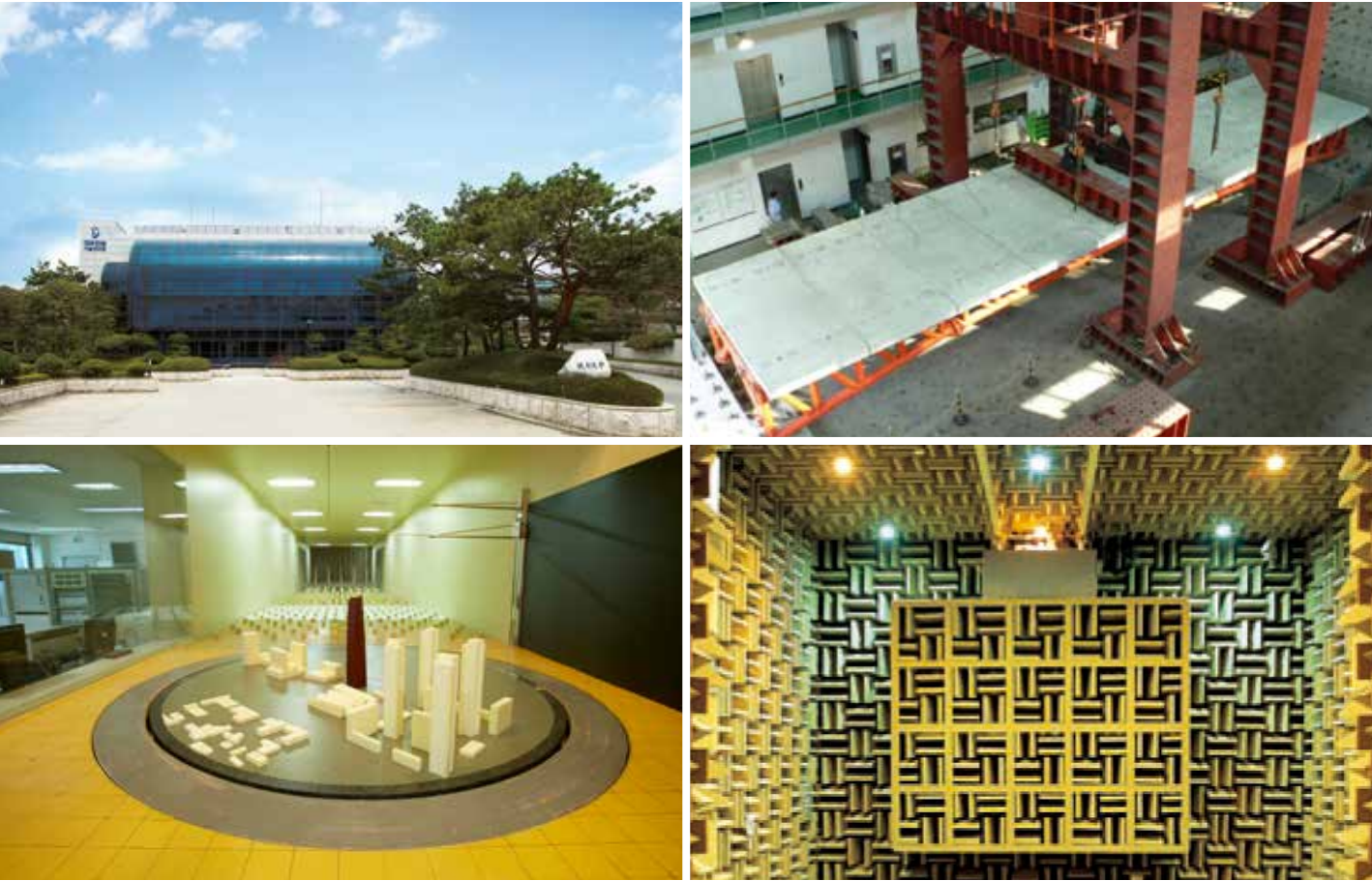
In 1983, Daewoo E&C established DICT, the first research institute in Korea's construction industry, to conduct both research and experiments. Since then, Daewoo E&C has improved the technical competitiveness of the industry. With the goal of developing innovative technology that could prompt future growth, DICT is currently focusing on researching 'Smart Construction', which will lead the convergence of ICT-IoT-AI technology and construction. Also, with strategies prepared to create new business models and secure new technologies through future market forecasting, the institute aims to achieve future-oriented technology innovation by strengthening technological competitiveness through R&D activities in various areas.



Daewoo E&C Institute of Construction Technology (DICT)



DICT Main Facilities



①	②
③	④

1. Research & Administration Building

This building is an ultra energy-saving green building, equipped with 71 types advanced technologies such as Double Skin, Cool Tube, etc.

2. Large-scale Structure Laboratory

The laboratory doing evaluation of structural safety and performance for real scale structures under the various external forces such as earthquakes, typhoons and soil pressure.

3. Wind Tunnel Laboratory

The laboratory designed to evaluate the influences and safety for structures by evaluation of wind-pressure, wind-forces, wind-vibration, and wind-environment acting on the structures such as bridges and high-rise buildings.

4. Acoustic Laboratory

The laboratory equipped with an anechoic chamber and three reverberation chambers. It is used to evaluate the quality of building materials in terms of sound absorption and insulation and also to test the acoustic characteristics of noise sources.



⑤	⑥
⑦	⑧

5. Geotechnical Experiment Laboratory

This laboratory uses the Centrifuge to conduct model tests of the geotechnical structures and physical/mechanical properties of the geo materials.

6. Mechanical & Electronical Laboratory

This laboratory conducts experiments on built environments and equipments to inside a artificial climate chamber.

7. Central Laboratory

A multi-purpose laboratory used to conduct basic construction-related tests on concrete, soil quality and environment.

8. Brain House

This building is a training facility that established to nurture human resources of the company. It has a lecture room and 94 rooms to accommodate employees, so we conduct training specifically tailored to staff here.

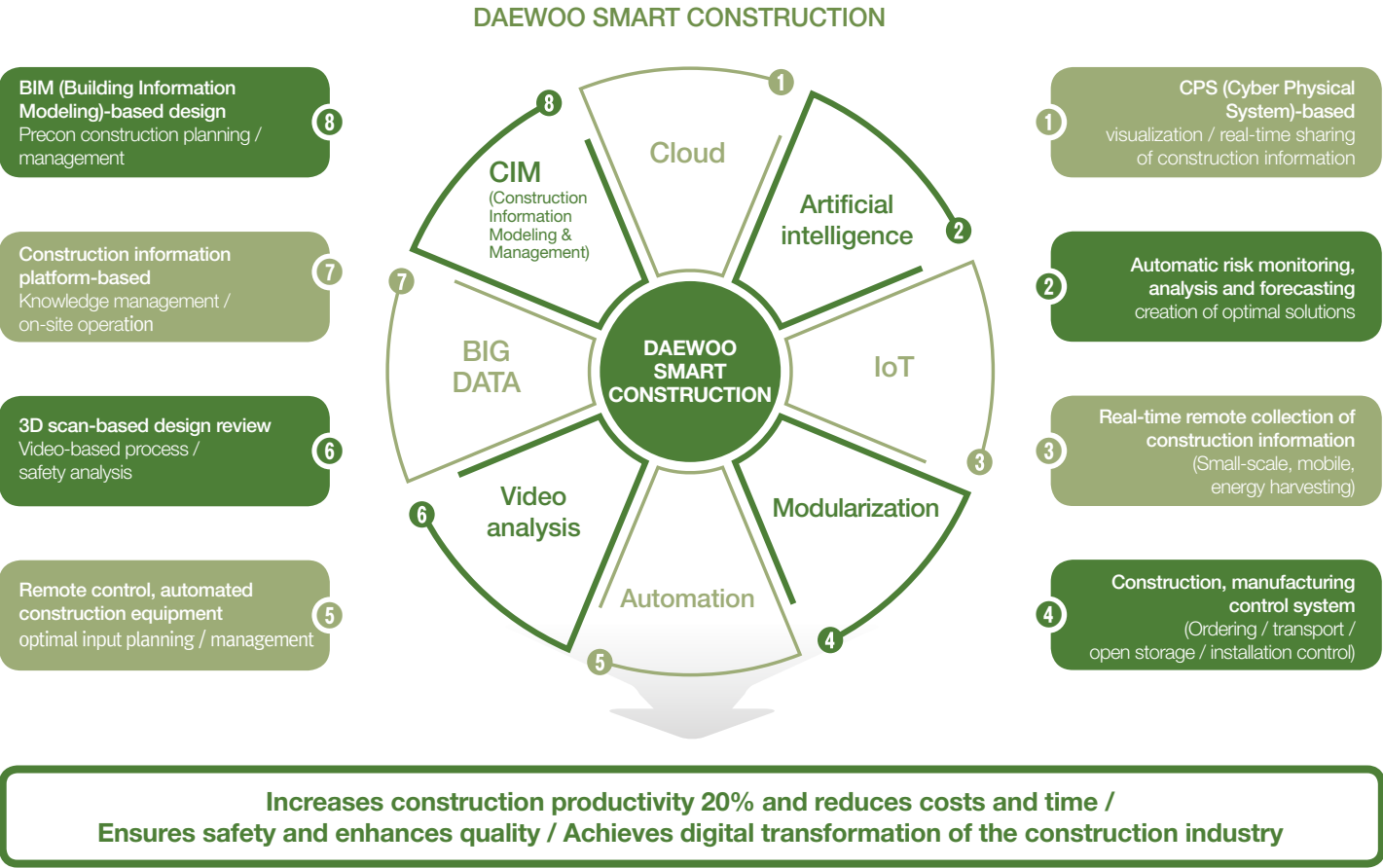


Pursuit of smart  
construction  
technology

The world is rapidly heading in the direction of an 'intelligent information society' often dubbed as 'the 4<sup>th</sup> Industrial Revolution', which is an inevitable process prompted by the advancement of digitalization and informatization. The 4<sup>th</sup> Industrial Revolution is rearranging our industrial map. The construction industry needs to proactively reinvent itself to keep up with these changes so it can improve productivity and secure competitiveness. The DICT is collecting both local/international trends and securing necessary technologies in a timely fashion as it aims to take the initiative in making the construction industry successful in the midst of the 4th Industrial Revolution. We intend to be proactive in the big changes of the of the construction society, so we have also created a new organizational unit in the DICT to set up and implement strategies to promote the digitalization of the construction industry. With this new unit dedicated to the function, we will create a culture of digital construction and lead the innovation of the construction industry.

Strategies for implementing smart construction technologies

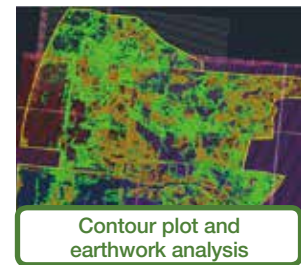
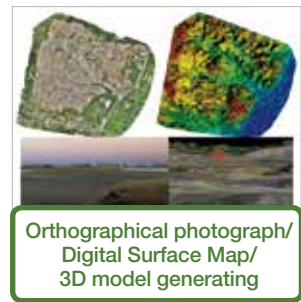
Starting with working on DSC (Daewoo Smart Construction) technology in 2016, the DICT is developing technologies in various fields, including construction IoT, automation of construction, BIM design, PreCon response, AI and deep learning-based design, measurement by drone and VR/MR convergence, to secure applicable core technologies. We will improve productivity and enhance our competitiveness in the construction industry based on these technologies. Smart construction with improved productivity can be realized through 'super-connection/super-intelligence/super-convergence' by using our key technologies, and this could contribute to maximize our profits in the construction process.



Smart construction is a 'construction platform' that comprehensively combines information of the materials, human resources, design, construction and operation sides of a construction site together through the convergence of construction and IT so site situations can be analyzed and risks can be promptly addressed at all times regardless of location. This platform brings the highest level of work efficiency through highly advanced analytical processes on the collected data with 3D models containing comprehensively detailed information of the design, construction and operation. Also, smart construction is a 'Cyber Physical System' which can immediately monitor all the situations of a construction site and forecast and take care of risks accordingly through the construction simulation, automated construction management and smart safety control. With a database that contains information by all the projects, Daewoo E&C will have bigdata and AI system that will help resolve difficult and challenging issues on the construction sites, and construction management will become unmanned and automated in the near future.



Daewoo E&C  
technology leading  
The 4<sup>th</sup> Industrial  
Revolution.



Drone Survey

As part of 'Daewoo Smart Construction' project, Daewoo E & C is developing a technology to utilize drone, one of the key icons of the 4th Industrial Revolution era, in the construction field. Daewoo E & C is concentrating on 'Construction Surveying', one of the various applications of drones in the field of construction, and is leading the development of drones surveying technologies such as displacement measurement methods using drones and patent applications for flat land creation methods.

Through the development of the Drones surveying technology, the institute of technology researchers has realized the advanced surveying results that far exceed the existing manpower surveying level by realizing the 3D modeling of the construction site. Based on these technological development and achievements, Daewoo E&C has been using drones for more than 40 construction sites and execution designs since 2016. In particular, we are actively applying drones surveys to large-scale industrial complexes, which are difficult to measure with existing manpower surveys.

The superiority of drones surveys is even more pronounced compared to conventional manpower surveys.

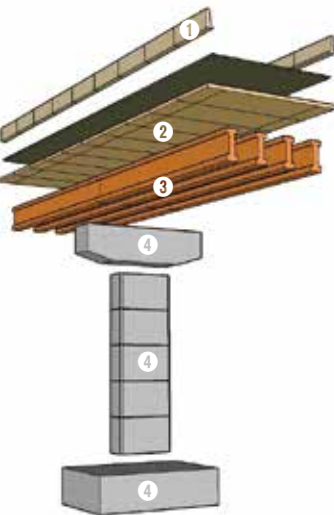
The first is 'Accuracy', which enables to calculate more accurate soil volume by applying the 3D integral method as well as the conventional method located on average sectional area.

The second is 'efficiency', which allows drone surveys to maximize the efficiency of field surveys with over 90% savings of time and cost over traditional manpower measurements. For example, you can quickly and accurately capture terrain data in less than two hours by completing a 10-kilometer work area survey that normally lasted more than five days.



In a future, Daewoo E & C's drone technology will be applied to all the areas of the construction industry including facility maintenance and process management in the long term through the continuous technological development

Technological  
development in  
civil projects  
Key performance



Fully Prefabricated Bridge

The fully prefabricated bridge is a new technology that minimizes construction process, time and cost by assembling pre-manufactured components, including bridge, girder, deck and barrier, at the construction site. With this new technology, you can build high-quality bridges quickly. We have developed Precast Concrete Deck (Construction New Technologies No. 405), PnP Girder(Construction New Technologies No. 542), prefabricated pier, barrier and concrete-filled member systems.



Industrial waste utilization for high-quality groundwork

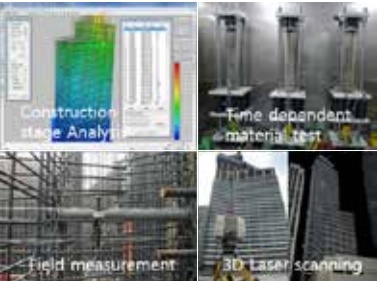
We have developed a technique for using industrial wastes containing fly ashes, calcium carbonate (CaCO<sub>3</sub>) and dumped soil. In particular, CaCO<sub>3</sub> obtained from the CO<sub>2</sub> capture process uses high quality materials for foundation work. Based on this technology, we solve the various uncertainties and problems in foundation work. And we can improve the construction stability and protect the environment by recycling industrial wastes which are social problems.



In addition to this, we have secured technologies for configuration management of cable stayed bridges, new type of offshore wind power structure, modular retaining walls and waterproofing for groundwork. These new technologies will ultimately contribute to the growth of the company by being utilized in our project in a prompt and timely manner.



Technology  
developments in housing  
and building projects  
Key Performance



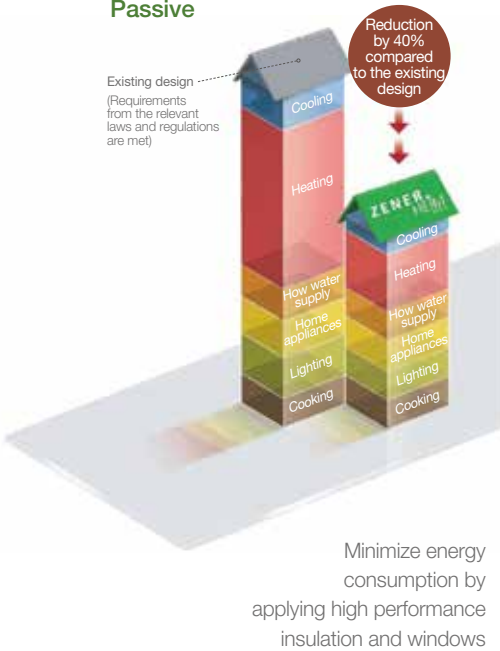
Building Movement Control

High-precision Building Movement Control for high-rise buildings

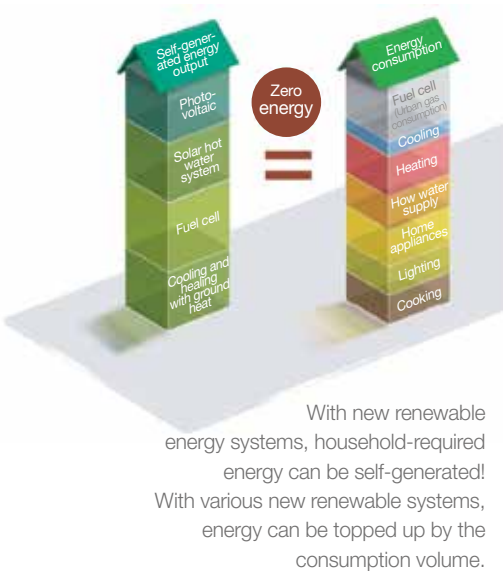
Building Movement Control is a high-precision engineering and construction technology used to build high-rise buildings. One of Daewoo E&C’s most renowned technologies, it has global competitiveness. With this state-of-the-art construction technique, we predict, monitor, assess and control building movements and meet the requirements for both safety during construction and serviceability after occupancy. We also utilize a BIM that maximizes the efficiency of construction based on three-dimensional building information models, construction noise management system insulation design method optimized to prevent dew condensation, dual vibration control system, and an earthquake and windproof technology. In addition, we intend to complete 'Zero Energy House Technology' by 2023. It will allow buildings to generate their required energy on their own without the help of fossil fuel by combining passive technology that minimizes energy consumption for air cooling, heating and ventilation with active technology that involve new, and renewable energy.

Zero Energy House Technology

Comparison between existing design and ZENERHEIM in terms of energy consumption  
**Passive**



Comparison between self-generated energy and energy consumption  
**Active**



Self-compacting concrete technology for high-rise buildings

The high-flowing, self-compacting concrete technology is essential for high-rise buildings construction. It maximizes the fluidity of concrete, thus making the compaction process unnecessary when placing concrete in congested members. It enhances the quality of construction, so it effectively prevents defects such as honeycomb. It also enables easy concrete transportation by pump to the top floor. This technology was used in constructing large-scale, high-rise buildings in both Korea and other countries, including Malaysia KLCC Tower, IB Tower, Songdo North-Eastern Asia Trade Tower and Telekom Malaysia.



Telekom Malaysia Office Building

Technological  
development in  
plant projects  
Key Performance



Anyang Sewage Treatment Plant



Daegu DBS (Daewoo Biogas System)

Carbon Capture and Utilization

‘Carbon Capture and Utilization’ is one of the most important future technologies in plant construction. We established a CO<sub>2</sub> capture plant in 2017 and have operated it since then (40 tons of CO<sub>2</sub> /day). We will utilize the gas as a building material in the future to deal with climate change and expand our greenhouse gas reduction scheme.



Carbon capture and construction material utilization process pilot plant completion ceremony

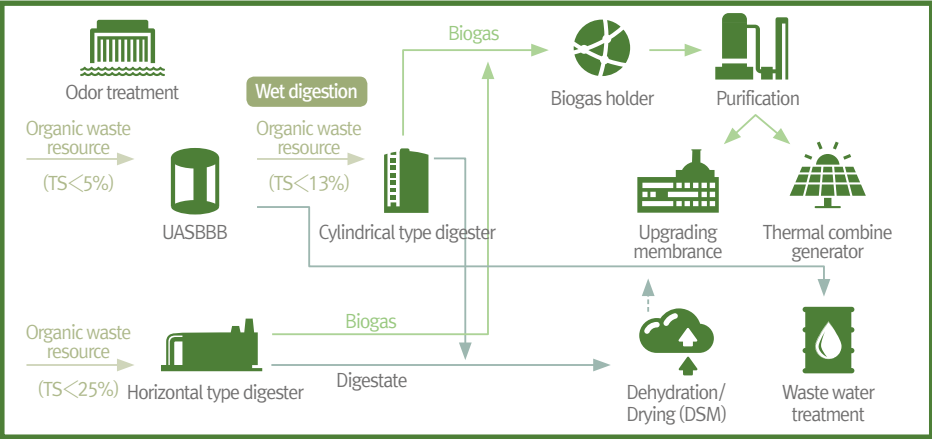
Advanced sewage treatment process

DNR (Daewoo Nutrient Removal) is one of the most important sewage treatment technologies in Korea. The technique, which holds the record in Korea in terms of frequency and scale of application, has been applied to 36 facilities, including Happy City Water Restoration Center. DMBR (Daewoo Membrane BioReactor) has been used by 12 sewage treatment plants, including Hyecheon Water Light Playground.

Daewoo Biogas System

Daewoo Biogas System, a technique used to produce biogas from organic wastes, generates methane gas from sewage sludge or food wastes. Being one of the most important technologies developed by the DICT, it creates bio-gas, a useful new renewable energy, from wastes. Biogas can be used like natural gas and this technology has been applied to the food recycling facility at Incheon Songdo Environment Center and the new renewable energy facility at Happy City Water Restoration Center.

Process of Daewoo Biogas System



In addition, we actively utilize our other techniques, including automated welding, and intend to participate in building seawater desalination facilities tailored to the Middle East by developing a technique for low energy, high-density seawater desalination.



# Sustainable Strategy

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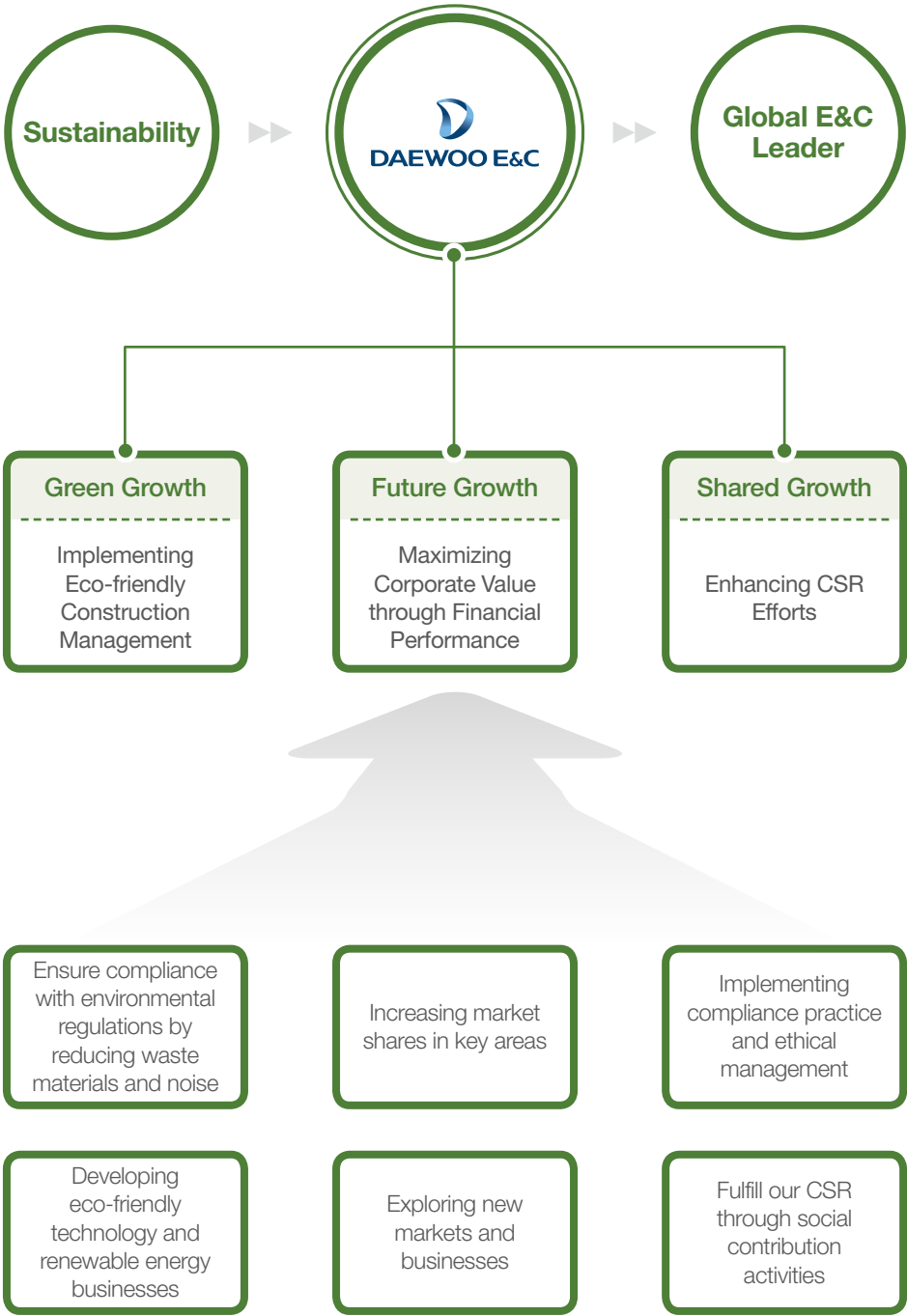


# Sustainability Management System

## Daewoo E&C Sustainable Management

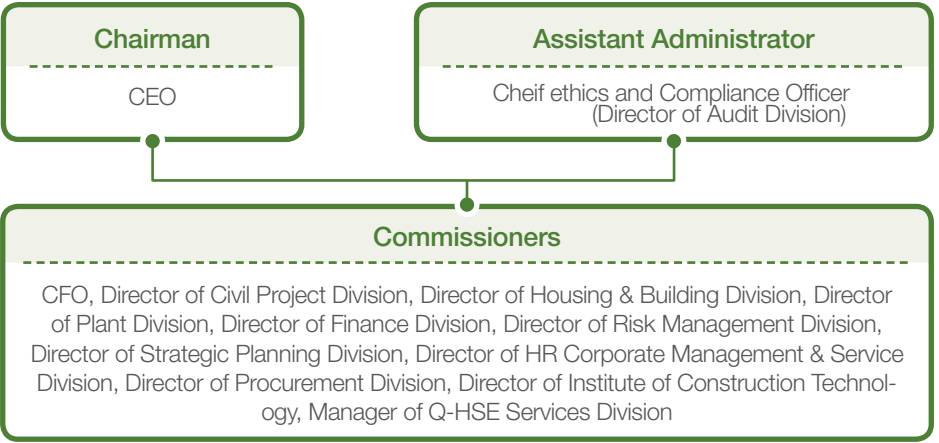
With our vision “For the People & Better Tomorrow” set in 2012, we have established and improved our sustainable practice based on our core values of “Challenge and Passion” and “Autonomy and Accountability”. Since then, we have conducted internal assessment of our financial performance, environmental soundness and social responsibility as part of our efforts to ensure sustainable growth. We will continue to pave the way for a better future through continuous changes and innovations in our social, environmental and financial performances.

### Sustainability Management System



### Sustainable Management Committee

Established in 2015, Sustainability Management Committee is responsible for reviewing and resolving important ESG issues. At Daewoo E&C, we hold annual committee meetings to discuss the ESG-related key policies including CP processes and ethical management, and the progress we made in CP includes anti-corruption practices and CP inspection. At the end of 2017, Sustainable Management Committee approved the compliance status and the plan for 2018 while discussing the employee award for compliance.



### Sustainability Assessment

As a global leader in the construction industry, we are recognized for our strong performances in various external sustainability assessments.

#### 2017 KCGS ESG Rating “A” (B+ in the previous year)

Established in 2002, Korea Corporate Governance Service (KCGS) has led the improvement of corporate governance and sustainable management of companies listed in the Korea stock exchange through ESG analysis and research. In 2017, we received A for the ESG Assessment, one rating higher than the previous year's B+. We will continue to improve through our management of non-financial risk factors such as corporate governance, employees, suppliers and environment.

#### 2017 Sustainalytics ESG Rating “Leader” (highest of the 5 ratings)

We are ranked second of 68 companies in the construction and engineering industries for the Sustainalytics ESG assessment conducted in 2017. We received the overall rating of “Leader” thanks to our strong performance in social and governance. As a result, we became the first Korean company to be ranked in the top 100 for the third consecutive year since 2015 and have been recognized for our unparalleled sustainability performance.

#### 2017 Sustainvest ESG Rating “BB” (B in the previous year)

Founded in 2006, Sustainvest is a specialist research institute for social responsibility investment, conducting consultation, research, sustainability assurance/analysis and ESC assessment. In 2017, we scored 80.4 in the ESG assessment and were ranked 28th out of 124 companies in the construction sector, which is 37 places higher than the previous year. Based on the result of this analysis, we will make improvements in the areas of our weaknesses such as corporate governance and further advance our sustainability.



# Sustainable Initiative (SDGs)

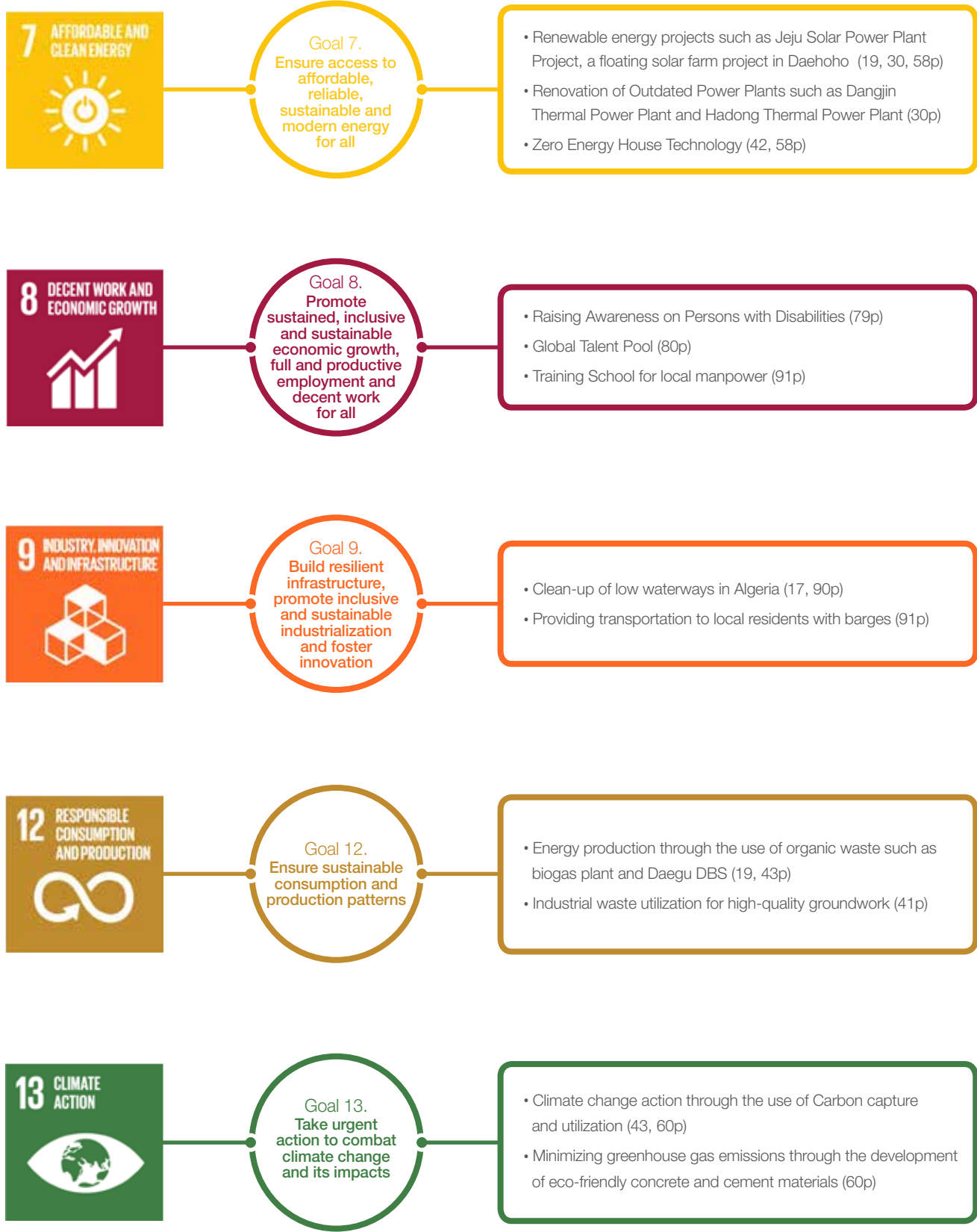
The UN General Assembly elected the Sustainable Development Goals (SDGs) in 2015 to promote the world's sustainable growth. The goals, which are to be followed by the international community, including both advanced countries and developing countries, from 2016 to 2030, contain 17 major goals and 169 subsidiary goals. They pursue a number of specific directions, including antipoverty, gender equality, environmental protection and economic growth in coexistence.

Daewoo E&C has actively discovered and operates projects that are in line with the Sustainable Development Goals, based on Vision 2025, which are Green Growth, Future growth and Shared Growth, as well as our sustainable management strategy systems. Fulfilling our social responsibility by developing eco-friendly techniques and new renewable energy projects and carrying out social contribution activities, we will continue to contribute to the Sustainable Development Goals as a corporate citizen.

### Linking Daewoo E & C and SDGs



Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote well-being for all at all ages
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5	Achieve gender equality and empower all women and girls
Goal 6	Ensure availability and sustainable management of water and sanitation for all
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10	Reduce inequality within and among countries
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12	Ensure sustainable consumption and production patterns
Goal 13	Take urgent action to combat climate change and its impacts
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development









# Stakeholder Engagement





## Enhancing Stakeholder Communication

At Daewoo E&C, we define our stakeholders as government and public offices, shareholders and investors, customers, academia, associations, and organizations, employees, local communities and suppliers. Communication with stakeholders is an essential part of maintaining our sustainability and fulfilling our corporate social responsibilities.

Key Stakeholders and Communication Channels

Stakeholder	Description	Roles	Communication Channels
 Government and public offices	Build regulatory and social foundation for corporate growth.	Contribute to the sustainable growth of our nation by creating jobs, paying taxes and complying with the laws.	<ul style="list-style-type: none"><li>• Government committee activities</li><li>• Research on policies</li><li>• Partnership programs, etc.</li></ul>
 Shareholders and Investors	Provide capital investment.	Ensure transparency in our business practice by disclosing accurate, prompt and relevant data.	<ul style="list-style-type: none"><li>• General meeting of shareholders</li><li>• Annual report</li><li>• Analyst meeting</li><li>• IR Conference</li><li>• Oversea NDR (Non-Deal Roadshow)</li></ul>
 Customers	Create a better future with Daewoo E&C serving as a basis for our families and enterprises.	Improve customer satisfaction by creating the best residential environment and providing superior products and services.	<ul style="list-style-type: none"><li>• Integrated call center</li><li>• PRUGIO website</li><li>• Show house</li><li>• SNS</li></ul>
 Academia, Associations and Institutes	Provide expertise in the field, need to form continuous partnerships.	Build a collaborative system for R&D innovation and industrial and academic cooperation.	<ul style="list-style-type: none"><li>• Conference</li><li>• Seminar</li><li>• Association activities</li></ul>

At Daewoo E&C, we listen to our stakeholders’ expectations, concerns and opinions through various communication channels. By engaging in active communication, we build trust and pursue mutual growth with our stakeholders.

Stakeholder	Description	Roles	Communication Channels
 Employees	Human resource of Daewoo E&C and partners for sustainable management	Improve the level of satisfaction and quality of lives and retain human resources.	<ul style="list-style-type: none"><li>• Labor union</li><li>• Baronet (intranet)</li><li>• Monthly compliance newsletter</li></ul>
 Local Community	Local community and its members who are affected by our business operation	Contribute to the growth of our community by fulfilling social responsibilities.	<ul style="list-style-type: none"><li>• Community service clubs</li><li>• Cyber auditor's office</li><li>• Monthly volunteer activities</li><li>• White paper on social contribution</li></ul>
 Suppliers	Partners who contribute to our business operation by providing energy and resources	Build a transparent and fair partnership for shared growth.	<ul style="list-style-type: none"><li>• e-Cos website</li><li>• Supplier Meetings</li><li>• Mutual growth workshop</li></ul>
 Future Society	Talents who will lead our future and any stakeholders who are important from a long-term perspective	Support and invest for economic growth and social stability and unity.	<ul style="list-style-type: none"><li>• Job fair</li><li>• Recruitment website</li><li>• College student brand ambassador</li><li>• SNS</li></ul>

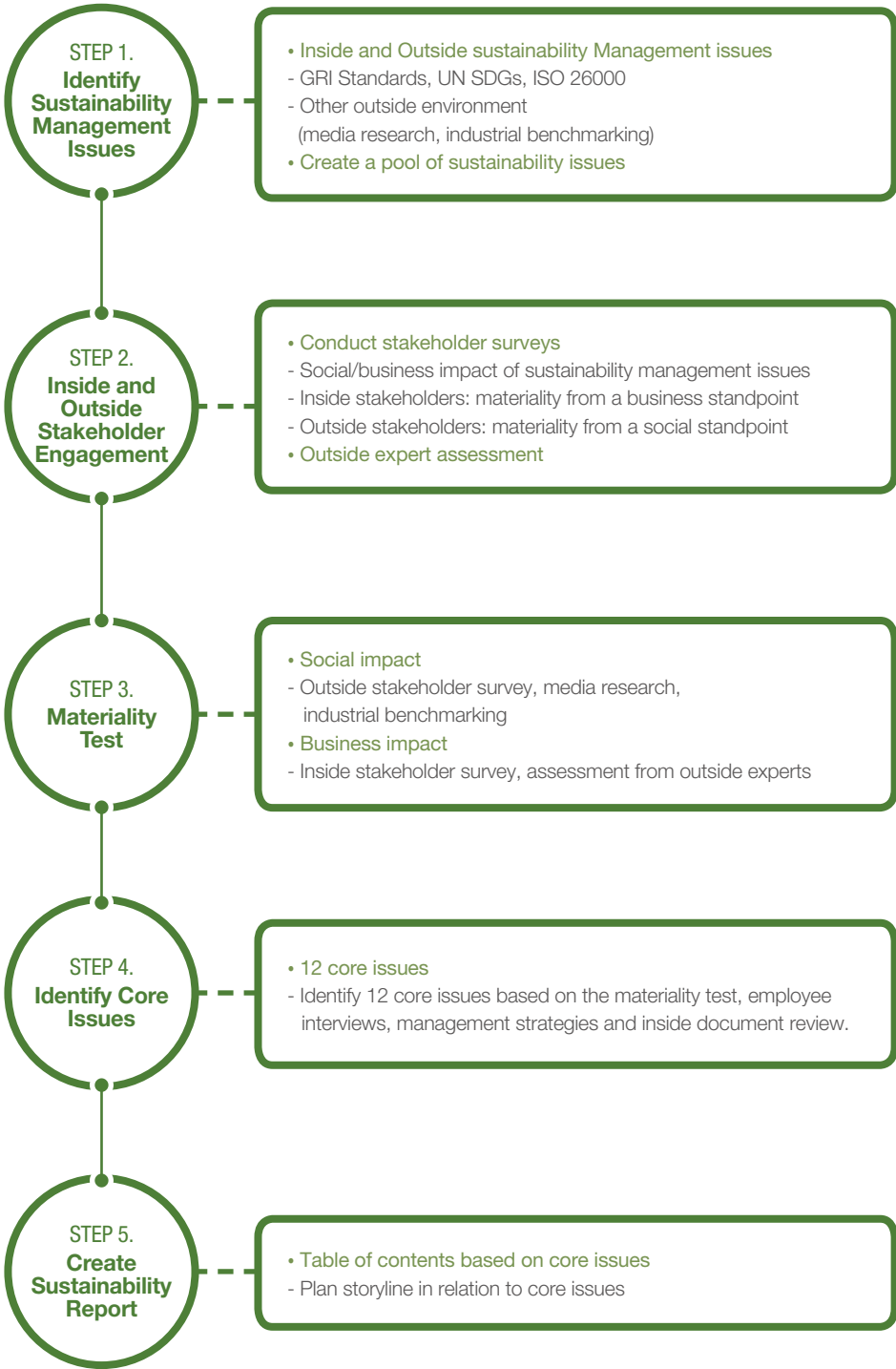


# Materiality Test

## Sustainability Management Core Issues

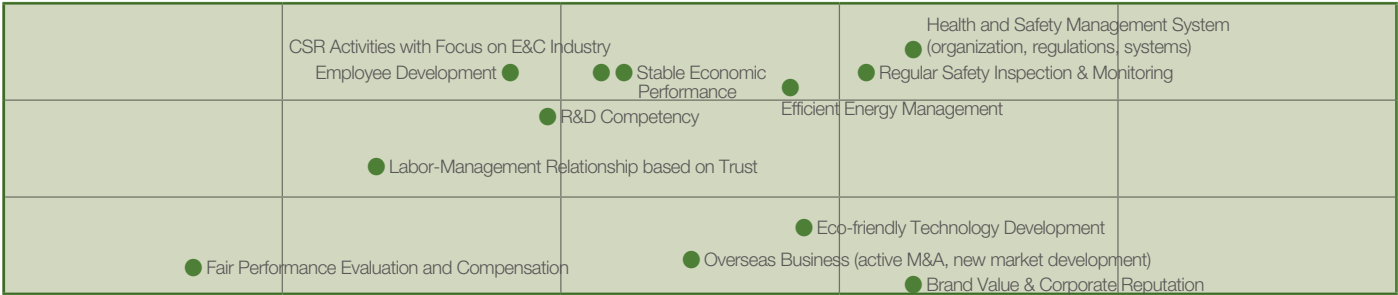
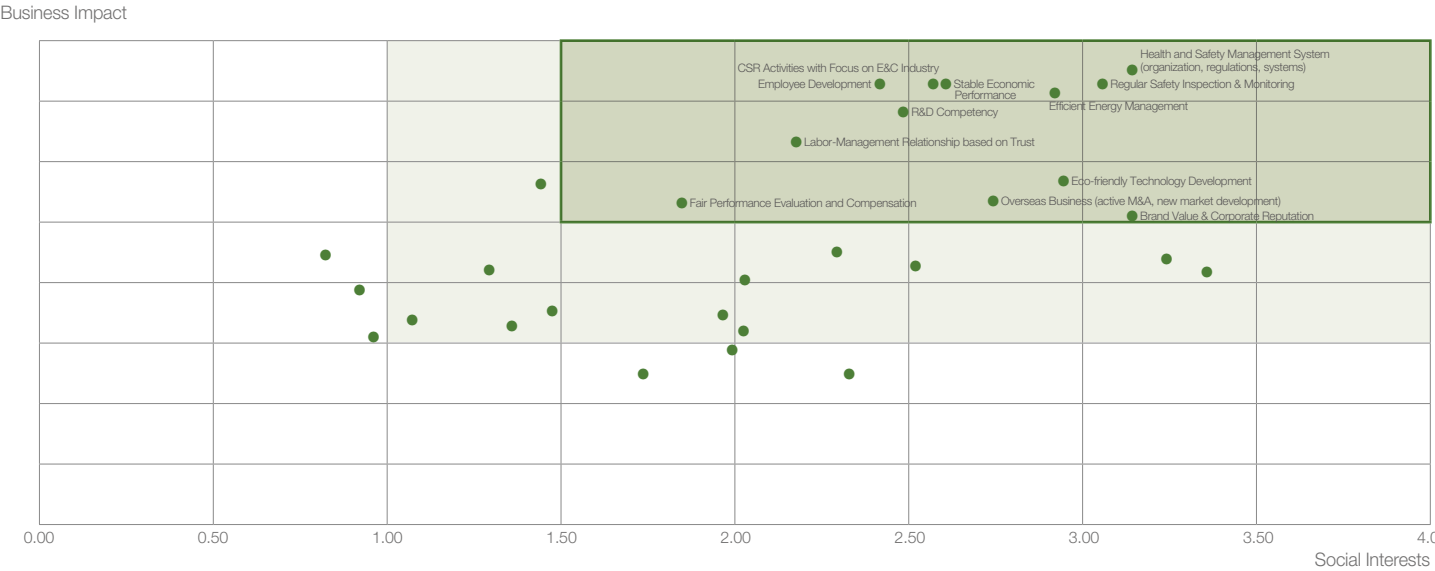
### Materiality Test Process

At Daewoo E&C, we conduct materiality assessment of our sustainable practice and identify core issues based on international standards, media and benchmarking. When it comes to stakeholder engagement, we collected opinions and feedback through surveys and experts in accordance with the international standard “AA1000SES” and selected 12 core issues that we need to focus on. These issues are reflected in this report.



### Result of Materiality Test

Based on the result of materiality test on our sustainability management issues and the areas of interest and impact on our business, we identified 12 core issues that are covered in this report. They are reflected in this report based on their materiality, inclusivity and responsiveness.



Core Issues	GRI Standards Core Topics	Page
R&D Competency	Economic Performance	34~43p
Stable Economic Performance	Economic Performance	14~31p
Overseas Business (active M&A, new market development)	Economic Performance	14~31p
Brand Value & Corporate Reputation	-	100~103p
Labor-Management Relationship based on Trust	Labor/Management Relations	83p
Fair Performance Evaluation and Compensation	Employment	80p
Employee Development	Training and Education	78~79p
CSR Activities with Focus on E&C Industry	Indirect Economic Impacts	84~91p
Eco-friendly Technology Development	Energy	58, 60p
Efficient Energy Management	Energy	62p
Health and Safety Management System (organization, regulations, systems)	Occupational Health and Safety	66~75p
Regular Safety Inspection & Monitoring	Occupational Health and Safety	66~75p





# Focusing Issues

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# ENVIRONMENTAL MANAGEMENT

## Sustainable Coexistence of People and Nature

### Background

In response to increasing social demand for environmental management and a new climate regime covering issues like fine dust pollution, many companies are not only reducing their impact on the environment but also taking a more proactive approach with their environmental policies by developing eco-friendly products and technologies. It is important to fulfill our social responsibilities and serve our role as a corporate citizen to create a better future for our environment.

### Result of Materiality Test

We identified Eco-friendly Technology Development and Efficient Energy Management as our core issues for this year.



### Impact on Stakeholders

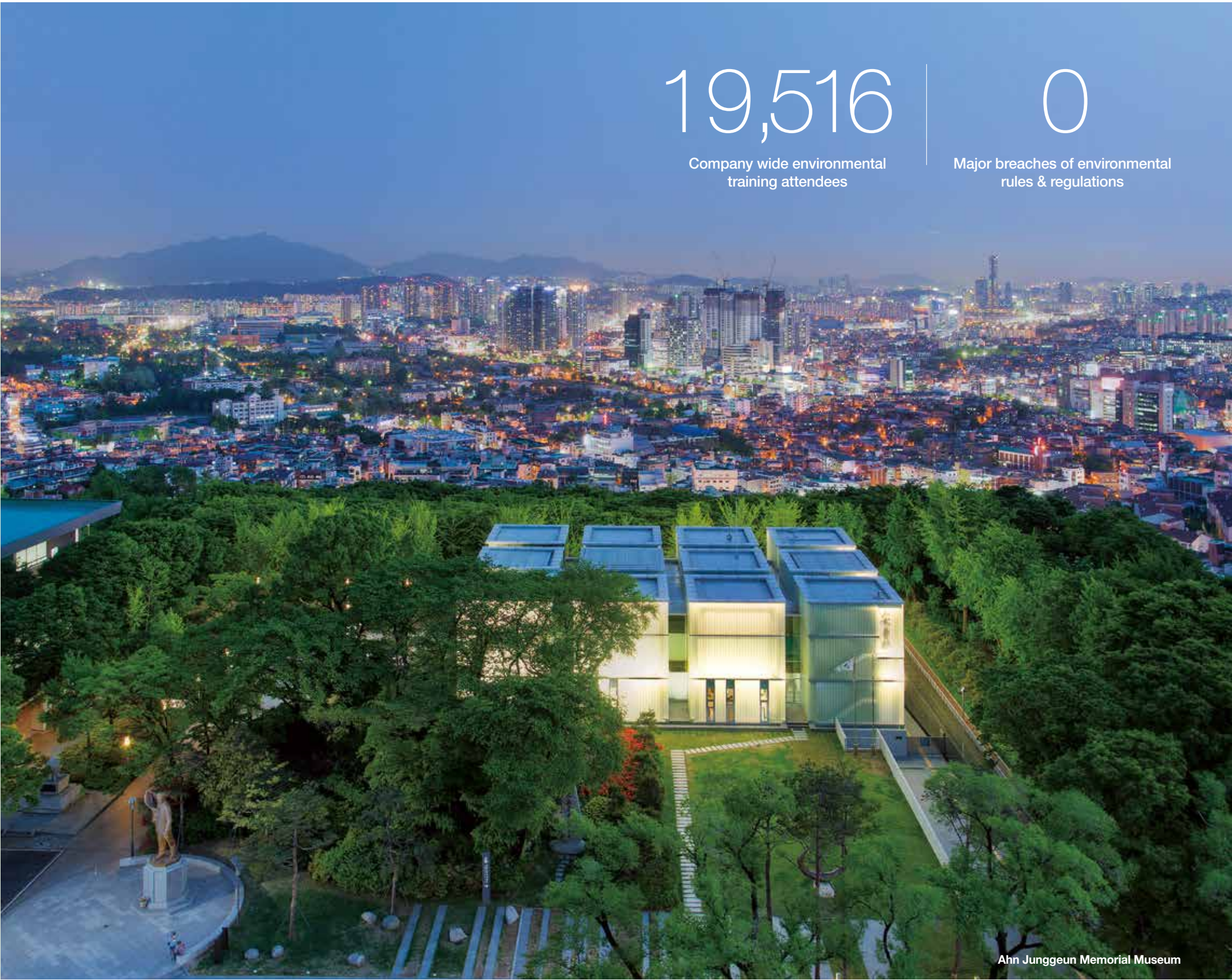
“Suppliers” and “Local Community” are considered the most important when it comes to environment management. We are engaged in various projects based on their input and opinions.

Customers	Employees	Shareholders
Suppliers	Local Community	
●	●	

### Directions for the Future

At Daewoo E&C, we envision a future where people and nature form a sustainable relationship. To this end, we plan to undertake renewable energy projects and develop zero-energy houses based on “Green Premium” technology while engaging in various activities to minimize our environmental impact.

KPIs	Performance in 2017	Plan for 2018
Waste disposal cost	KRW 16.9 billion	0.2% of sales
On-site support	41 sites	Over 100 sites



Ahn Junggeun Memorial Museum



## Eco-friendly construction

Daewoo E&C conducts eco-friendly operations in all aspects of our business, including civil works, housing & building and plant projects, to minimize our impact on the environment and coexist the nature. We are committed to continuously improve our capacity and expand our experience so we can maximize energy efficiency and secure new, renewable energy technology.



Jeju Solar Power Development Project

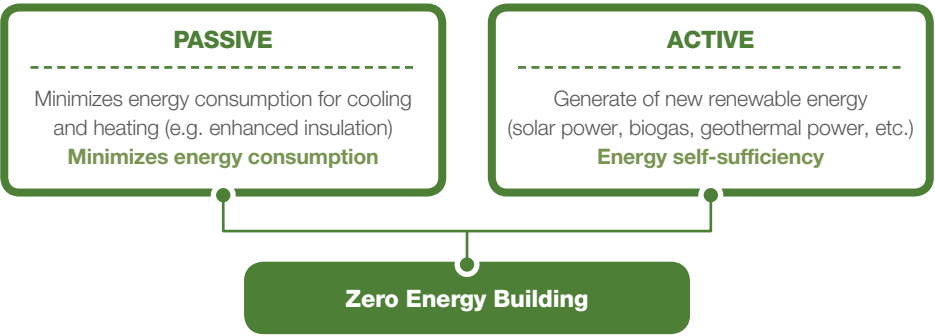
### Renewable Energy

In response to the Paris Climate Convention and the Ministry of Trade, Industry, and Energy's 'Renewable Energy 3020' plan, Daewoo E&C is pursuing various renewable energy projects in the field of solar, wind, and biogas sources. The photovoltaic field participating in Jeju Special Self-Governing Province's Project is to be constructed in April 2018 according to the contract signed in September 2017. Through this project, we expect to be replace In-land Energy to renewable energy and link to the income of Local Residents.

In addition, Daewoo E & C has entered into onshore and offshore wind power generation projects with its own development and joint development based on civil engineering and plant construction experience. In the field of onshore wind power, we obtained a license for the 'Haenam Wind Power' business for the first time in July 2015, and since then, we have been licensed for the construction of Yeongwol Wind Power and Uljin Wind Power. In the field of offshore wind power, we have developed a concrete suction type of foundation and secured design/construction technologies for Jack-type foundation. Based on these outputs, we have completed the installation of wind power in 2017. We are considering participation in the 2nd stage of offshore wind turbine in southwestern sea and offshore wind power project in Jeollanamdo.

### Zero Energy Housing

Our 'Green Premium' technology, which will become applicable from 2023 onwards, is a combination of passive and active technologies to minimize energy usage and ultimately attain 100% energy self-sufficiency for Zero-Energy Housing.



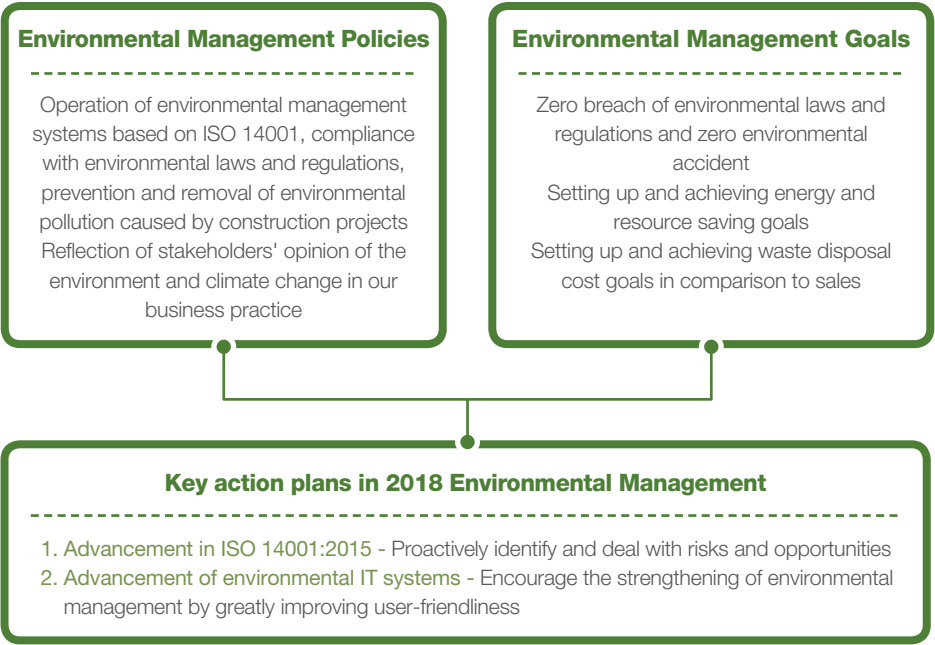
Apartments with the 'Green Premium' technology will come with a smart control panel from with real-time energy monitoring, through which residents can control gas, lighting, and also set security settings or call elevators from indoors. Residents can also gather and analyze real-time energy consumption data such as electricity, gas, water, and heating through a remote meter-reading system. Also, energy-saving devices, including toilets with extreme water efficiency and sensor-operated kitchen water tabs, contribute to creating an eco-friendly home culture.

Through such developments in our 'Green Premium' technology, we aim to achieve 100% energy self-sustainability in Zero Energy housing. In addition, we are developing biogas energy sources from food wastes, sewage sludge and other high-density organic wastes, which will be applied to local projects first, later to be expanded to overseas projects.

## Environmental Management System

We will pursue sustainable construction business as environment conservation and respect for life at the heart of our management. With environmental policies and goals followed by employees in the entire supply chain, we proactively participate in environmental management activities.

### FOCUSING ISSUES

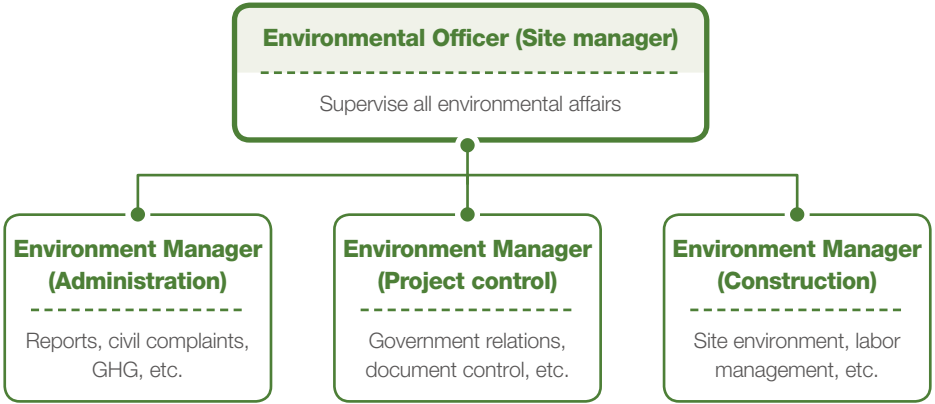


### Environmental Management Organizational Structure

With a domestic HSE team and an overseas HSES team within the Q-HSE division under direct control of the CEO, we comprehensively supervise and manage the implementation of environmental management systems within the company. As the number and scale of overseas projects continue to grow, the overseas HSES division manages and continuously strengthens the environmental management of overseas construction sites.

### Appointment of Environment Managers

Construction site managers are in charge of environmental activities so each site can proactively participate in managing environmental management systems. We also have three on-site environment managers , each involved in either site administration, project control, or construction works who responsible for reporting, dealing with public complaints and managing site environment. Environment managers have clearly defined roles and responsibilities as we aim to improve work efficiency and minimize environmental risks.



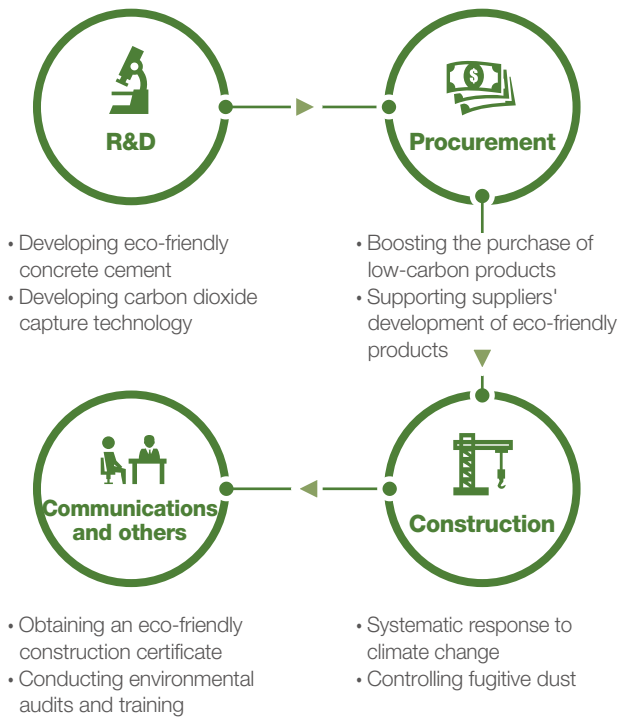


## Reduction of environmental impact in the whole process

Daewoo E&C reduces the environmental impact in the whole process, including R&D, design, procurement, construction and communications.

We are committed to finding ways to coexist with the environment by proactively taking the initiative in improving our eco-friendly construction capacity and expanding experience.

### Business process



## R&D

### Development of eco-friendly concrete/cement

We have been reducing resource consumption and minimizing greenhouse gas emission by developing an eco-friendly concrete cement material, a mixture of industrial residue, including fly ash and ground blast furnace slag. With this material, cement consumption, which normally generates large amount of carbon dioxide, is decreased by 40% or more and carbon dioxide emission is reduced by 79kg per 1m³ concrete. This technology is expected to help minimize cement usage.

### Utilization of carbon dioxide capture technology

We succeeded in developing DECO<sub>2</sub> (Daewoo Elimination of CO<sub>2</sub>), a technique for capturing carbon dioxide for construction purposes, for the first time in Korea in 2016, and we expect that we will be able to dramatically reduce greenhouse gas emissions. We established a CO<sub>2</sub> capture and utilization plant in 2017 and have operated the plant since then. (40 TKRWP CO<sub>2</sub> ton/day) We intend to use the captured gas as construction material in the future to deal with climate change and expand our greenhouse gas reduction scheme. We also aim to optimize plant operation to enable large-scale utilization of captured carbon dioxide and develop a technique for using the gas as a civil and construction project material by 2019.

## Procurement

### FOCUSING ISSUES

### Green(Eco-friendly) procurement

To encourage green(eco-friendly) purchasing, Daewoo E & C plans to establish a 'green procurement guideline' in order to expand eco-friendly procurement. In the case of eco-friendly suppliers, certificates or issuance performance will be awarded. In the first half of 2018, we will examine the green procurement policies and systems of the same industry and examine whether Daewoo E & C will be applied in the second half of the year.

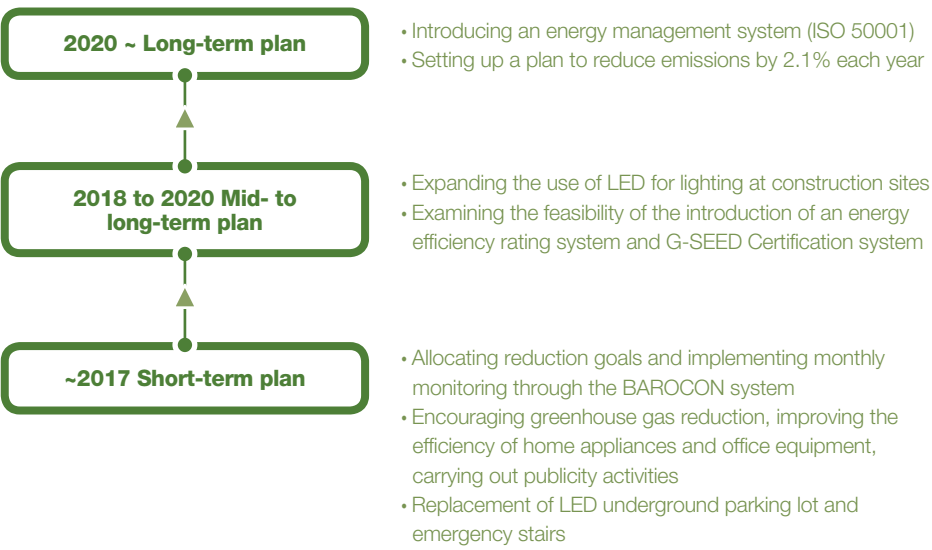
Procurement List of Eco-Friendly Material	
Geothermal system	Parking facilities
Lighting Fitting, Home Network System, AMR (Automatic Meter Reading), Solar PV System, Fuel Cell, EVC (Electric Vehicle Charging) System, BMS (Building Managements System), Transformer, Switchgear Panel Main switchboard LV Boards, Total Turn-off Switch, Temperature Controller, Fire Extinguisher, Water-saving sanitaryware / Water-saving plumbing fixture / Water-saving fixture, Ventilation System, Furniture, Kitchen Furniture, Finish of Toilet Ceiling, etc.	
FGD (Flue Gas Desulfurization), ESP (Electrostatic Precipitator), Amonia Supply System, WWT (Waste Water Treatment), etc.	

## Construction

### Dealing with climate change

Daewoo E&C has rearranged its action plan for greenhouse gas reduction to proactively deal with the new climate regime. Based on GHG emission reduction goals, we have strengthened real-time monitoring on business sites with large emission volumes and have expanded reduction activities by finding corporate-wide greenhouse gas reduction items.

### Greenhouse gas reduction roadmap







Greenhouse gas emission management system



Greenhouse gas emission management

We have been operating a greenhouse gas inventory system in connection with integrated management system called BAROCON since 2012. This system helps effectively manage greenhouse gas emissions and efficiently measure energy usage at all construction sites and buildings. Also, we have set reduction goals for each business division and automatically calculate the volume of greenhouse gas emissions in comparison to sales to decide monthly reduction goals. With these automated systems, we are maintaining a significantly advanced greenhouse gas management system.

Energy management

With the goal of systematically managing energy consumption, we monitor energy usage by energy source on a real-time basis at all construction sites. With some construction sites, we conduct tkrrp internal audits to evaluate the appropriateness of energy consumption data entered on the system and examine energy consumption reduction goals and records. We carried out audits for 21 major construction sites in 2017 and will expand the examination and support process to all sites in 2018.

Fugitive dust

The importance of fugitive dust control for air-quality improvement is increasingly acknowledged these days. Daewoo E&C is one of the companies participating in 'Voluntary Agreement between the Ministry of Environment and Construction Companies for Reducing Fugitive Dust'. In 2017, 66 construction sites actively participated in carrying out recommended as well as compulsory items, and we completed the development of a real-time site record monitoring system. In 2018, we will increase the number of construction sites participating in the agreement to resolve fine dust-related civil complaints and contribute to protecting public' health and improving air quality. We have also strengthened site-based, HSE audit procedures for fugitive dust, expanding the range of applications to include new construction sites and early-stage civil project sites. With this system in place, we monitor fugitive dust management on a real-time basis and have the data reported to the Corporate HSE team so necessary steps for improvement can be taken. In addition, we share outstanding performance examples with all construction sites to improve awareness.

Construction Waste

We sort wastes from construction sites based on types and processing methods and out-source the processing of the wastes by type. We have been running a nation-wide registration system since 2011 to select outstanding waste-processing companies and implement a prize and penalty system based on assessment. We share outstanding examples with all members of the company and encourage appropriate processing of wastes. We improved the registration system in 2017 to expand the outstanding waste processing company pool. The Act on Resource Circulation, which was brought in to reduce the generation of wastes that could cause environmental pollution when buried or burned, became effective in January 2018, so while recyclable construction wastes such as recycled aggregates are not applicable, we will strengthen our reduction of wastes.

Toxic chemicals

With internal procedures on toxic chemical management, we identify toxic chemicals, including bentonite liquid, paint, oil, epoxy and bond and store them in safe places in accordance with legal requirements. We also safely keep waste oil, waste lacquer and other designated wastes at separately established waste-storage facilities and companies specialized in processing these types of wastes dispose of them in a legal manner.

The establishment of on-site environment management standards

Construction sites are subject to various environment laws and regulations and they are required to have proper prevention facilities in place to control noise, vibration, fugitive dust, water quality, soil and various others. We aim to improve our compliance with the laws and regulations, and we have prepared standards for minimizing environmental impact, including wheel-washing facilities, soundproof facilities and dustproof facilities, and we assess the implementation of the standards as part of the HSE assessment procedures to monitor their actual execution.

Communications and others

Obtained eco-friendly building certificates

Daewoo E&C constructs eco-friendly buildings that offer a healthy and pleasant lifestyle for residents. With these efforts, we have obtained a number of eco-friendly building certificates, including a G-SEED Certification certificate and energy efficiency ratings.

Eco-friendly Building Certification Status in 2017

Chuncheon Central Tower PRUGIO	Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade' (Residential) Energy Efficiency Preliminary Certification '1+ Grade' (Non-residential) G-SEED Preliminary Certification 'Good (Green 2 <sup>nd</sup> Grade)'
Incheon Guwol G-Well City PRUGIO	Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade' (Residential) Energy Efficiency Preliminary Certification '1++ Grade' (Non-residential) G-SEED Preliminary Certification 'Good (Green 2 <sup>nd</sup> Grade)'
Samsung Wonheung Station PRUGIO City	G-SEED Preliminary Certification 'Good (Green 2 <sup>nd</sup> Grade)' / Energy Efficiency Preliminary Certification '1+ Grade'
Songdo Landmark PRUGIO City	Energy Efficiency Preliminary Certification 'Grade 2'
Oryong Edu Foret PRUGIO	G-SEED Preliminary Certification 'General (Green 4 <sup>th</sup> Grade)' / Energy Efficiency 1 <sup>st</sup> Grade
Incheon Nonhyeon PRUGIO	G-SEED Preliminary Certification 'General (Green 4 <sup>th</sup> Grade)' / Energy Efficiency 1 <sup>st</sup> Grade
Dongtan Lake Jayeon& PRUGIO	Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade' / G-SEED Preliminary Certification 'Excellent (Green 3 <sup>rd</sup> Grade)'
Godeok Central PRUGIO	G-SEED Preliminary Certification 'Best (Green 1 <sup>st</sup> Grade)' / Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade'
Gasam Central PRUGIO City	G-SEED Preliminary Certification 'Good (Green 2 <sup>nd</sup> Grade)' / Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade'
Hanam Gamil Four Well City	G-SEED Preliminary Certification 'General (Green 4 <sup>th</sup> Grade)' / Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade'
Gwacheon Knowledge Information Town S4, 5BL	G-SEED Preliminary Certification 'General' / Building Energy Efficiency Preliminary Certification '1 <sup>st</sup> Grade'
Guri Galmae PRUGIO	G-SEED Certification '3 <sup>rd</sup> Grade' / 'General (Green 4 <sup>th</sup> Grade)'
Dongtan Park PRUGIO (A5 Block)	G-SEED Certification 'General (Green 4 <sup>th</sup> Grade)' / Energy Efficiency '1 <sup>st</sup> Grade'
Dongtan Park PRUGIO (A6 Block)	G-SEED Certification 'General (Green 4 <sup>th</sup> Grade)' / Energy Efficiency '1+ Grade'
Wirye Unam City PRUGIO	G-SEED Certification 'Good' / Energy Efficiency '1 <sup>st</sup> Grade'



Environmental assessment

We conduct HSE audits annually to examine the environmental management status of construction sites and check our compliance to environmental laws and regulations. We identify aspects that need to be improved and subsequently take necessary steps. We share good and bad practices with all members of the company to communicate the results. Also, we have strengthened our compliance with environmental laws and regulations to achieve the goal of having zero penalty points, and we have no record of fines or penalty points in terms of environmental laws and regulations.

HSE assessment items

- Approval

• Document Control

• Greenhouse gas (fuel consumption, energy consumption)
- Site environment management (Fugitive dust, noise, vibration, waste, water quality, soil)

• ISO 14001 EMS

Implementation of environmental training

We regularly implement environmental training for Site Managers, site workers and supervisors from suppliers to improve our environmental management capacity and strengthen environmental management at construction sites. We conduct monthly self-managed training sessions at the construction sites based on monthly environmental training materials prepared and distributed by Corporate HSE team.



Introduction of an environmental management system

Initially obtained by Daewoo E&C in 1997, The ISO 14001 standard is an international standard for environmental management systems published by the ISO. Following its revision in 2015, we have revised our procedures and BAROCON system to satisfy the requirement set forth in the latest standard, and we have successfully completed ISO14001:2015 transition in 2017.

Operation of HSE One-Stop Service

With HSE One-Stop Service (Environment), we actively support our construction sites. With HSE-Starter, we provide training and ISO14001 system support to those from early-stage construction sites who could not attend regular training sessions. With HSE-Helper, we voluntarily conduct joint examinations of site environments and take proactive steps to identify risks to minimize our environmental impacts and better manage our sites.

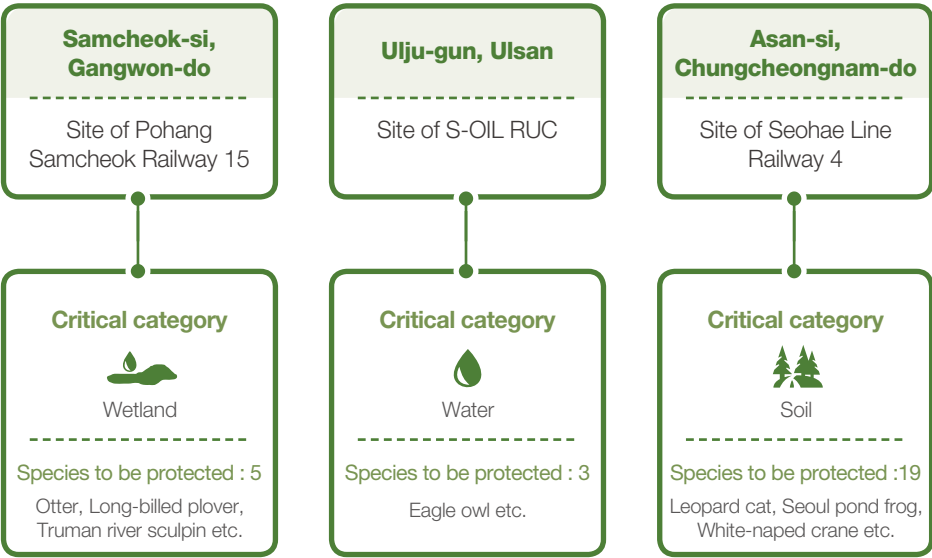


ISO 14001:2015

Biodiversity Protection

FOCUSING ISSUES

Daewoo E&C conducts environment impact assessment prior to construction to minimize damage caused to the ecosystem. With this procedure, we identify endangered animals and plants near the construction site and devise plans to deal with the situation. We also have action plans to protect wild animals and plants in accordance with wildlife protection laws and reflect them in our construction process.



Land & Aquatic Biotope

We have parks and green belts to preserve biodiversity and secure sufficient space for wild animals and plants within the project areas. In addition, we establish land and aquatic biotopes by using the outskirts of the project areas and the green belts inside the project areas to connect the green belts to the blue axis, to maintain the ecosystem.



Dae Yeon Prugio



# HEALTH AND SAFETY

Create a healthy and safe workplace.

### Background

Health and safety management is the basic principle of respect for human lives and is an essential part of creating values and boosting employee morale. At Dae-woo E&C, we are raising awareness at a corporate-wide level with the aim to “Pro- tect Human Lives through Changes and Innovation”. To this end, we are engaged in various awareness programs and en- hancing our infrastructure including on-site inspections and monitoring system.

### Result of Materiality Test

Health and Safety Management System and Regular Safety Inspection and Moni- toring are considered priorities according to the materiality test.



### Impact on Stakeholders

“Customers” and “Employees” are consid- ered the most important when it comes to this issue. We place a high priority on them and recognize the importance of maintaining close communications with them.

Customers	Employees	Shareholders
●	●	
Suppliers	Local Community	
●		

### Directions for the Future

Under our health and safety policies, we have established action strategies to enhance safety performance, implement HSE and raise awareness. Based on this, we will im- prove our system for the management of for- eign workers, and develop a leading indicator monitoring system as part of our proactive risk management strategy.

KPIs	Performance in 2017	Plan for 2018
Death rate in accidents	Death rate in accidents decreased by 63%	0.54
LTIR goal	100%	0.07
Deploy CLEAR across the company	Building CLEAR Infrastructure	Begin self-consultation



63 %  
Death rate in accidents decreased by

7  
operating sites  
CLEAR program applied to

0  
Security incidents at overseas sites

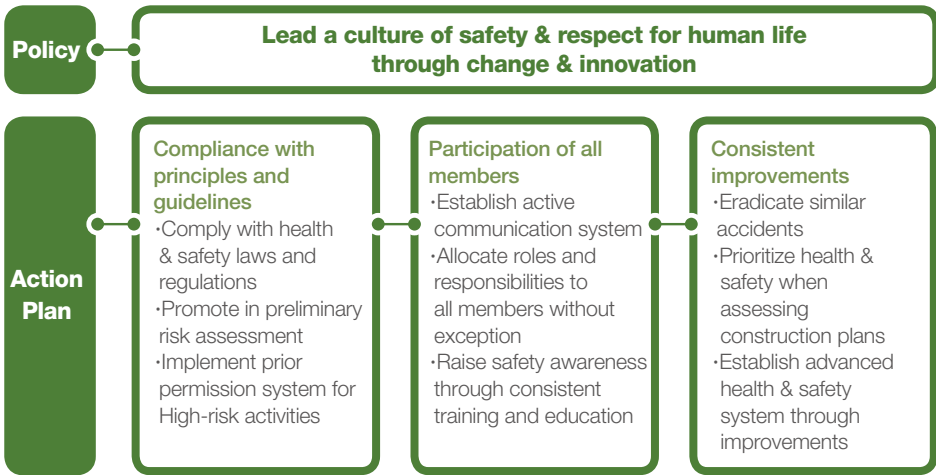
Site of Gimpo Metro



Health and Safety

Executives at Daewoo E&C take the initiative and promote the importance of safety to create a safe working environment. We encourage all our employees to participate in safety management activities to make it into a habit, thereby establishing Daewoo E&C's unique safety management culture. Also, we make sure that our employees and workers get enough time off to prevent accidents and increase on-site work efficiency.

Health and Safety Management Policy



Health and Safety Strategy in 2018

1) Death rate in accidents :  
Rate of deaths per year per 10,000 employees  
2) Converted accident rate :  
Converted rate of deaths and injuries per year per 100 employees  
(1 Death = 5 Injuries)  
3) LTIR (Lost Time Injury Rate) :  
Rate of lost time caused by incidents  
(Rate of incidents per 1 million hours)

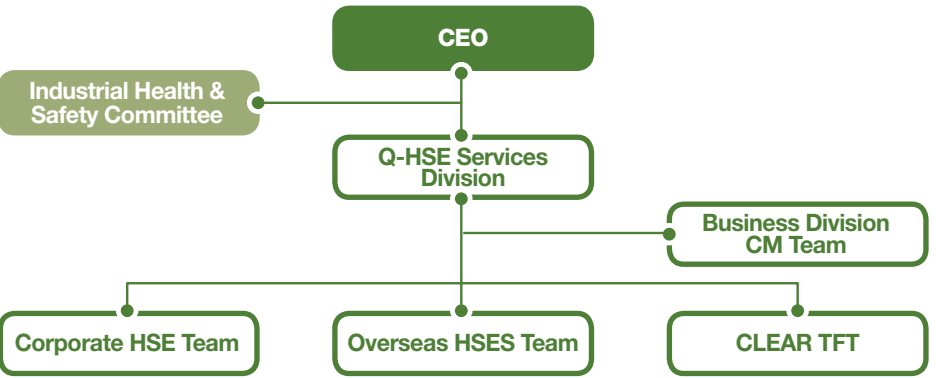
Goals	RISK CLEAR 2020 through communication, participation, and devotion			
	0.54 Death rate / 0.23 Converted accident rate / LTIR lower than 0.07			
	Category	2015	2016	2017
	Death rate in accidents <sup>1)</sup>	0.92	1.29	0.48*
	Converted accident rate <sup>2)</sup>	0.24	0.33	0.33*
	LTIR <sup>3)</sup>	0.17	0.02	0.07

\* 2017 data to be confirmed in June 2018



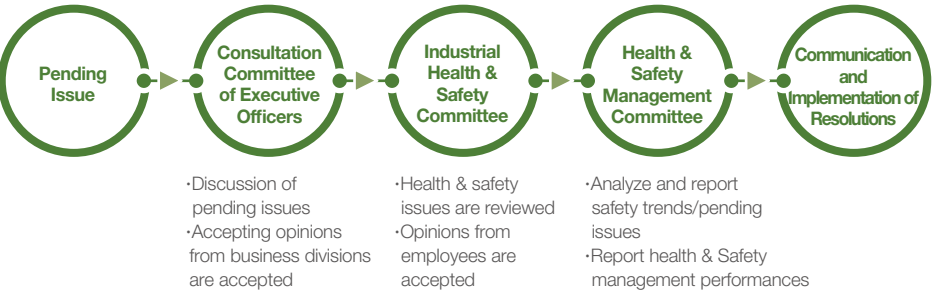
Health and Safety Organization

In 2016, Daewoo E&C restructured its Health & Safety Organization centered around the Q-HSE Services Division, which is where our company's HSE goals and policies are established. Through the Health & Safety Management Committee run by our CEO, we monitor the implementation of health & safety management policies across the company. The committee is also tasked with setting the direction of our safety policies such as establishing mid-to-long term roadmaps and establishing detailed plans to build an effective health & safety system.



Health and Safety Consultation System

Whenever an issue occurs, our Health & Safety Management Committee communicates and executes decisions discussed with related committees. By listening to the opinions of each business division and our employees, we are forging a foundation upon which we can foster a high-standard safety management system.



Category		Health & Safety Management Committee	Industry Health & Safety Committee	Consultation Committee of Executive Officers
Organization Member	Committee Chair	CEO	Head of Q-HSE Services Division	Head of Q-HSE Services Division
	Vice Chairman	Head of Q-HSE Services Division	-	-
	Commissioners	Division Heads Head of HR Corporate Management & Service Division Head of procurement management	Health & Safety Executive Officer Director of Health & Safety Health & Safety Manager of Employees Labor-Management Council	Health & Safety Executive Officer Head of Health & Safety
Frequency		Biannual	Quarterly	Bimonthly



1) OHSAS : Occupational Health & Safety Assessment Series  
2) KOSHA : Korea Occupational Safety & Health Agency

Health and Safety Management System Certification

Daewoo E&C was the first construction company in Korea to implement a proper health & safety management system. In November 2000, we became the first in the industry to attain OHSAS 18001 certification (British Standards Institution) to gain global trust. In June 2015, we acquired KOSHA 18001 (Korea Occupational Safety & Health Agency) in order to continuously implement and enhance our systems related to health & safety.

Category	OHSAS <sup>1)</sup> 18001	KOSHA <sup>2)</sup> 18001
Initial Certification	2000.11.30	2015.06.26
After-audit	once/year	once/year
Extension (renewal) evaluations	once/3 years	once/3 years
Certifying entity	BSI Korea	KOSHA



Enhancing Health and Safety Management

Based on our own health & safety management rules, Daewoo E&C is establishing policies and a management structure for our employees and suppliers to follow. To prevent incidents relating to our business operations from happening, we are establishing and enforcing guidelines for the execution of risk and safety assessments. Also, we are developing guidelines and adjusting our management structure to manage risk factors to not only comply with legal regulations, but also set our own goals regarding our safety management system.

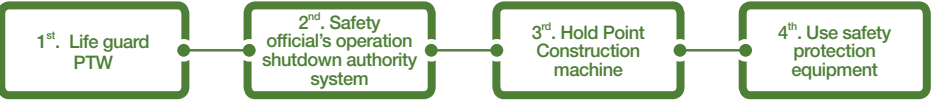
Focusing on Foreign Workers

The proportion of foreign workers is increasing in both domestic and overseas construction sites. For example, 90% of workers in domestic sites are from China. To properly manage health & safety of our foreign workers, Daewoo E&C has created localized training materials, employed foreign staff members for support, localized safety guidelines, and visited our workers on-site to provide training.

Habitual Compliance of principles and guidelines

Daewoo E&C operates numerous health & safety reviews such as ‘Summit Patrol’, which enhances on-site managers’ safety checks, and enhanced reviews on Thursdays, which our statistics show to be the weekday on which accidents are most prone to occur.

Compliance Campaign of principles and guidelines



Summit Patrol

Category	Description
Goal	Enhance on-site managers’ (on-site decision makers) routine safety checks
Quality Inspection Team	On-site managers, construct managers, safety team leaders, and heads from suppliers
Time	Once/day
Checked factors	10 high-risk activities (subject to immediate termination of works) and industrial accident prevention

Executives’ Risk-Day Safety Check (Thursdays)

Category	PM	On-site manager	CEO/Executives from major suppliers
Time	Once/week	Twice/day	Monthly/month
Method	Concentrated management of incidents such as falling, being hit, and collisions.		

Health and Safety Risk Management

Daewoo E&C has developed a health & safety monitoring system for leading indicators to identify and react to safety risks. We are fostering a safety culture in which all employees take part, including domestic and overseas executive patrols (over 1,400 patrols in 2017). Along with establishing these systems, we are also applying and internalizing them to on-site environments.

Enhancing Safety Checks

In 2017, Daewoo E&C expanded its various safety checks such as construction equipment inspections. As a result, our health & safety management systems and our safety audit records have vastly improved since 2015.

Safety Inspection

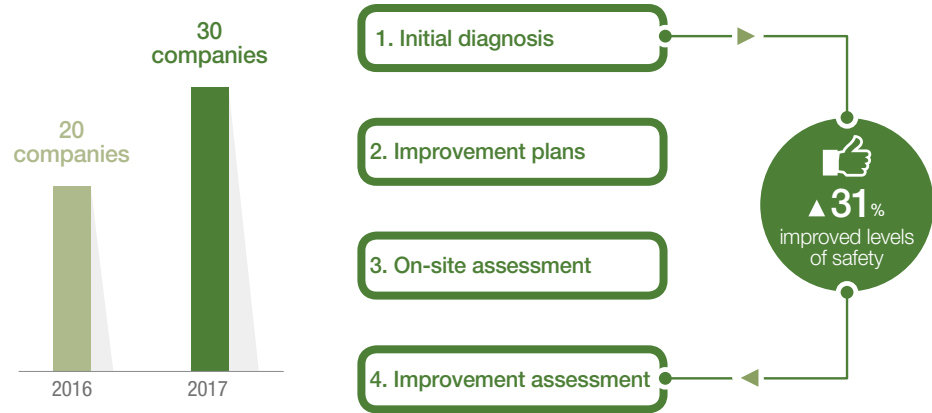
- Executive officers inspection : CEO Inspection, heads of divisions inspection, PM inspection
- HSE Inspection-support : regular field inspection, regular system inspection, HSE theme inspection, etc.
- Experts inspection : internal and external inspection for system check and technical safety.
- On-site support : HSE Helper, Starter, etc.
- non-regular inspection : safety inspection for thawing season.





Supplier Sustainability Program

To enhance our prevention activities, we encourage our suppliers to participate in improving their levels of safety. In 2016 we offered 20 suppliers with relatively high sales proportions to provide a 4-step program through which our suppliers can enhance their safety management systems. Since the initial diagnosis (step 1), their levels of safety have improved by 31%. In 2017, we have expanded the number of selected suppliers to 30. We plan to further expand the number to improve our accident prevention capabilities.



Health and Safety Training

Our health & safety training system encompasses not only our employees such as executives, on-site managers, heads of management, and safety managers, but also our suppliers. In addition, with the goal of promoting the importance of health & safety, we operate a ‘Safety Experience Zone’ to provide experience-centric training programs such as VR, cardio pulmonary resuscitation (CPR) training, safety belt training, and equipment collision experiences.

Safety manager	Health & Safety manager	Environment manager	Total
533	98	136	767

PM	On-site manager	Manager	Suppliers (CEO/Employees)	Total
14	224	898	330	1,466

Health and Safety Psychology Coaching Program

We operate a Health & Safety Psychology Coaching Program to heal our employees’ mental injuries, which help prevent health hazards and also cultivate a positive working environment. In 2017, we provided this program to 210 of our employees across 9 construction sites, and have further expanded the program to solve accumulated stress, post-traumatic stress disorder, and lowered work efficiency attributable to stress.

CLEAR



FOCUSING ISSUES

CLEAR program is Daewoo E&C’s own safety culture that changes our underlying behaviors through ‘Recognition’, and protects each other through expanded ‘Relationships’. CLEAR’s 5 core values that will ensure our safety are as follows.

- Commitment** : Executives leading by example on their commitment towards safety through actions and communications
- Listen & Speak** : Two-way communication that ensures that we listen to each other.
- Eliminate UA/UC** : Employees look out for each other to eliminate risks factors.
- Appreciate SA/SC** : Appreciation and encouragement of behaviors that comply with regulations.
- Relationship** : Improvement of relationships between all members.



CLEAR was established with our partnership with advanced consulting corporation, JMJ Associates, who have been successful in ensuring the safety of numerous global projects for the past 30 years. For the first time in Korea, JMJ's IIF program, was applied in our construction sites, and its effectiveness has since been clearly proven. CLEAR is Daewoo E&C adaptation of safety culture, our own unique safety culture that encompasses unique characteristics of domestic construction sites.



1. CLEAR operation guideline  
(copyright registered)

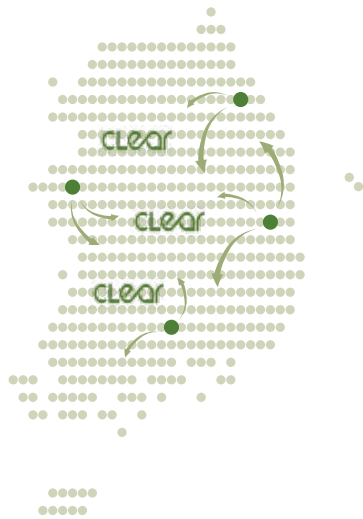


2. CLEAR emblem  
(design right registered)



3. Clear logo  
(trademark right registered)





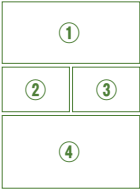
2015.11~	○	Banpo Central PRUGIO Summit
2016.07~	○	Choji Major Town Echo
2017.01~	○	Pyeongtaek Vision Lake PRUGIO
2017.08~	○	Daegok-Sosa Double-Track
2017.09~	○	Godeok Central PRUGIO
2018.03~	○	Oryong Edu Foret PRUGIO

Since 2015, CLEAR has been applied to more and more sites, establishing a safety culture for, and led by, our workers.



CLEAR Program is focused on building two-way relationships between leaders, managers, and workers to encourage all our employees to participate in safety activities. Since 2017, CLEAR has been expanding beyond test-operations to be deployed across the company. Centered on ‘In-house consultant training’, we have been deploying activities such as ‘Enhanced CLEAR Leadership’ and ‘Culture-centric High Performance’. On 17 January 2018, we held the ‘CLEAR Culture Agreement Ceremony’ to strengthen the trust and responsibilities of both Daewoo E&C and its suppliers.

## Organizational Health Management



1. 2. 3. Organizational Health Workshop  
4. Metabolic Syndrome Prevention Campaign

### Organizational Health Management Program

Our Organizational Health Management Program is composed of Mind-Care Counseling Center, Organizational Health Workshops, and Employee Health Management Program. To promote a healthy corporate culture and mental health of our employees, we hold organizational health workshops twice a year, and also operate training programs such as metabolic syndrome prevention campaigns, anti-smoking clinics, blood drives, and CPR training.





# HUMAN RESOURCE

Foster Talent and  
Grow Together

Background

Human resource is the most valuable asset for companies to achieve sustainable growth. Many companies are recruiting and fostering talented individuals with global competence. We are committed to building loyalty and satisfaction in our employees.

Result of Materiality Test

Labor-Management Relationship based on Trust, Fair Performance Evaluation and Compensation, and Employee Training are identified as important issues.



Impact on Stakeholders

“Employees” are the key stakeholders when it comes to our human resource management. At Daewoo E&C, we listen to their input and build a foundation for sustainable growth.

Customers	Employees	Shareholders
	●	
Suppliers	Local Community	

Directions for the Future

We are committed to fostering leadership, global competence and job skills in our employees and building a foundation for their growth and development. In addition, we help our employees maintain a healthy work-life balance by organizing such campaigns as Family Love Day.

KPIs	Performance in 2017	Plan for 2018
Employee information security education	801 hours	900 hours





Assurance on  
Human Rights and  
Labor Practices

Daewoo E&C fully complies with all international and domestic standards on human rights and labor practices. It endorses all global human rights standards including the Universal Declarations of Human Rights of the United Nations (UN) and the International Labor Organization (ILO) Conventions on Child Labor, and complies with the Labor Standards Act of Korea. The company is also committed to faithfully fulfilling its social responsibilities regarding human rights and labor by joining the UN Global Compact (UNGC).

Preventing Human Rights Issues

Daewoo E&C prevents discrimination or unfair treatment in all its human resource management processes based on nationality, gender, race, level of education or other personal characteristics. The company also integrated educational programs on sexual harassment prevention, human rights, CP and sustainability management (environment, society, governance) into its online compliance education, a mandatory program for all employees in Korea and overseas. The compliance education program was completed by 32,323 employees(6 times) in 2017. Furthermore, the company receives reports on human rights issues through Cyber Auditing room and Ethics Help-line.

Recruitment

Daewoo E&C values those individuals with challenging and passionate spirit, who fulfill their responsibilities with confidence. By providing fair and equal opportunities, the company hires outstanding talent and prevents unfair discrimination against socially vulnerable groups, including women, regional talent and the disabled. Ultimately, the company aims to help alleviate inequality in society by hiring from social groups across society. In August 2016, it introduced the wage peak system in order to strengthen its crisis management capacity by enhancing employment stability and proactively managing human resources.

Human Resource  
Development

Daewoo E&C offers various employee capacity-building programs, including promotional training for each job position, leadership training for team heads/on-site managers and job competency enhancement training. Through these efforts, the company seeks to cultivate talented individuals who fit its criteria of talent.



Enhancing Job Capacity and Expertise

In order to enhance its employees' job capacity, Daewoo E&C established a job capacity enhancement course in 2017 and offered courses on presentation, planning & proposal and negotiations. Other courses for enhancing expertise include project manager (PM) competency enhancement course, contract & claim management course and real estate developer course.

Course	Note
Job Capacity Enhancement Course	Negotiations, Planning & Proposal, Presentation Skills
PM Competency Enhancement Course	Long-term Training for EPC Project Managers (PM)
Contract & Claim Management Course	Divided into General and Advanced Courses
Real Estate Developer Course	Divided into Introductory, Intermediate and Advanced Courses

Raising Awareness on Persons with Disabilities

In 2018, Daewoo E&C will offer awareness-raising education to all employees on persons with disabilities. It will create a stable work environment for disabled employees through the e-learning system on its online training center.

Managing Employee Education and Training

Daewoo E&C introduced “Team Synergy Workshop”, an organizational development program for promoting team/on-site communication and organizational commitment of team members. The workshop, diagnosing team/on-site culture and offering solutions, was held 19 class in 2017.



New Employees Overseas Site OJT and Mentoring Program

Daewoo E&C helps its new employees become acclimated to their organization by taking them to overseas project sites for on-the-job training and offering mentoring programs, through which they expand their personal networks and benefit from informal learning.





Performance  
Evaluation and  
Compensation

Daewoo E&C ensures fair and transparent human resource evaluation by adopting the management by objective (MBO) approach and strictly prohibits discrimination based on gender, level of education, nationality and other personal characteristics. For all employees, evaluation reflects individual job performance and contribution to corporate performance, and determines individual performance ratings based on which the company differentiates salary increase rates. In 2017, evaluators were required to provide detailed coaching and feedback, while the evaluation authority of chief managers was adjusted. Furthermore, project profit was included in executive performance evaluation as an evaluation criteria, thereby enhancing project profitability. Daewoo E&C ensures gender equality in its compensation system.

Overseas Human  
Resource  
Management



Securing a Global Talent Pool

Daewoo E&C uses BAROCON, its integrated management system, to discover and secure experienced and skillful foreign talent, as well as to establish and manage a pool of talented employees in overseas sites and headquarters. Every year, the company undertakes performance evaluation of select outstanding employees recommended by overseas site managers, based on which the talent pool is consistently updated. In addition, information and records on the employees recommended via the global talent pool are managed in order to facilitate reemployment.

Overseas Labor Affairs Management Support

In order to support the management of labor affairs at our headquarters and overseas work sites, we publish work process manuals which cover the overall labor practice from labor supply to post-management. We also provide support and encourage on-site training on a quarterly basis in response to key labor issues and to prevent any problems. As part of this initiative, in January this year, we organized training programs on the importance of labor management and responsibilities/roles for managers of overseas sites to prevent resignation or dismissal of employees during their overseas assignment and minimize labor disputes while distributing manuals for practice.

Enhancing Overseas Mobile Support

When establishing the initial construction plan for overseas sites, we are establishing a reasonable initial construction plan that meets the site conditions through collaboration with the site. We are also contributing to profitability by shortening the construction period, increasing employee welfare and reducing costs. In addition, we dispatch personnel during construction and provide practical help, and we support and manage the initial site setting smoothly.

Through close cooperation with overseas construction sites in the initial site layout planning stage, Daewoo E&C establishes layout plans in consideration of the circumstances and conditions of the local sites. Through these efforts, the company can reduce the construction period, which in turn contributes to enhancing employee welfare and project profitability through cost reduction. The company also supports local project sites by seconding construction manpower and providing managerial support for establishing initial project site settings.

Activate  
organizational  
culture

FOCUSING ISSUES

Daewoo E&C promotes an Organizational Culture of communication and mutual respect through the “It’s Possible, Daewoo E&C” campaign. Recently, the company held various sustainability management campaigns using two-word slogans that begin with the sounds “Dae” and “Woo”. Other events using the corporate character “Jeong DaeWoo” were also met with overwhelming support and participation from the employees.

“It’s Possible,  
Daewoo E&C”  
Campaign



Employee Communication Channels

Daewoo E&C held its biannual Photo Contest, where employees submit photos of their families, colleagues or the company and winners are awarded based on in-house voting. As an online event, the contest enjoyed active participation by employees working overseas and provided an opportunity to understand the value of family and colleagues. The company also opened its sharing community “Baronaneum” and published its bimonthly DAEWOO E&C Magazine as channels of communication and information sharing for its employees. The Magazine was awarded the International Public Relations Association (IPRA) President’s Award at the 2017 Korea Business Communication Awards hosted by the Korea Business Communicators’ Association.

DAEWOO E&C Magazine





Organizational Culture Built on Core Values

Daewoo E&C introduced the Organizational Development Workshop to encourage communication in each organizational unit. In 2018, the company will further promote the workshop as a means of enhancing communication and to form a basis for a communicative organizational culture. Also, introductory and mentoring programs for new employees and overseas on-the-job training tour programs will be expanded as a way to help new employees become acclimated to a new work environment.

Lunch Date with the CEO

“Lunch Date with the CEO” is an event aimed at establishing a culture of communication throughout the company. In September 2017, ten staff and assistant manager-level employees from the Procurement Division, Q-HSE Services Division and R&D Center joined the CEO for lunch and freely discussed various issues and concerns.



Welfare and  
Benefits

Finding a Balance between Work and Life

Daewoo E&C offers various welfare and benefit programs so that its employees can find a healthy balance between work and life. All employees are eligible for the parental leave program, while the company is gradually expanding other child/family care programs such as reduced work hours, flex-time and family care leave. The company also offers various programs relating to pregnancy and childbirth, including reduced work hours for pregnant employees, pre- and post-natal leave and spousal leave. In 2016, Daewoo E&C opened the PRUGIO Day-care Center to provide childcare services for our employees, in addition to giving a baby care gift set to celebrate the child’s birth.



PRUGIO Day-care Center

Mind-Care Counseling Center

To promote emotional health among employees, Daewoo E&C runs the Mind-Care Counseling Center in association with the Workplace Mental Health Institute of Kangbuk Samsung Medical Center, offering psychology evaluation and counseling. In 2017, 95 employees visited the Center for emotional support. The company plans to expand its services and eligibility so that more employees can benefit from the Center.

Family Day and Family Vacation

Daewoo E&C has designated every last Wednesday of the month as “Family Day” and encourages employees to leave work on time to spend the evening with their families. The company also grants family vacations in addition to regular annual leave so that employees can enjoy time away from work with their families in various leisure facilities. In 2017, a total of 3,195 employees in Korea and overseas benefitted from the family vacation policy. The company plans to include golf clubs and other family entertainment facilities in 2018.

Emotional Management Events

Daewoo E&C boosts its employees’ morale and confidence through emotional management programs. One of the most popular programs is “More Precious Than Flowers”, an annual event where employees invite their parents and take them on a tour of headquarters, construction sites and the R&D Center. They were also invited to a banquet with the executives at the Sheraton Hotel Songdo built by Daewoo E&C. Other notable events include inviting employees’ children to headquarters and project sites during summer vacation, giving them an opportunity to learn about their parents’ jobs and build a sense of pride.



Enhancing the  
Labor-Management  
Relationship

Daewoo E&C protects all employees’ right to join and withdraw from a labor union and to collective bargaining. In this light, the company seeks to build a healthy labor-management culture and generate benefits for both parties by operating the Labor-Management Committee, where important business issues and solutions are deliberated. Major issues or changes regarding corporate management are promptly notified to employees through the labor union and the Labor-Management Committee.



# SOCIAL CONTRIBUTION

Creating A Better World

### Background

Today, there is an increasing number of long-term, sincere social contribution activities rather than one-off donations. As a corporate citizen, it is important for us to seek and develop opportunities to grow together with our local community.

### Result of Materiality Test

As a result of materiality test, we identified “CSR Activities with Focus on E&C Industry” as a core issue.



### Impact on Stakeholders

“Local Community” is a stakeholder group that we need to consider when approaching this issue. Based on close communication with our local community, we will continue to develop our own activities and programs as part of our commitment to social responsibility.

Customers	Employees	Shareholders
Suppliers	Local Community	
	●	

### Directions for the Future

By expanding the scope of our social contribution activities with a focus on employees, we will carry out various CSR activities with their family members. We will also join our efforts in “Building Houses with Hope” taking advantage of our expertise in the industry.

KPIs	Performance in 2017	Plan for 2018
Participants in social contribution activities	1,722 persons	1,300 persons
Annual donation amount	KRW 361 million	KRW 397 million
Daewoo E&C Volunteer Corps participation rate	24%	30%



1,722  
Annual participants in social contribution activities

406  
Participants in relay volunteering

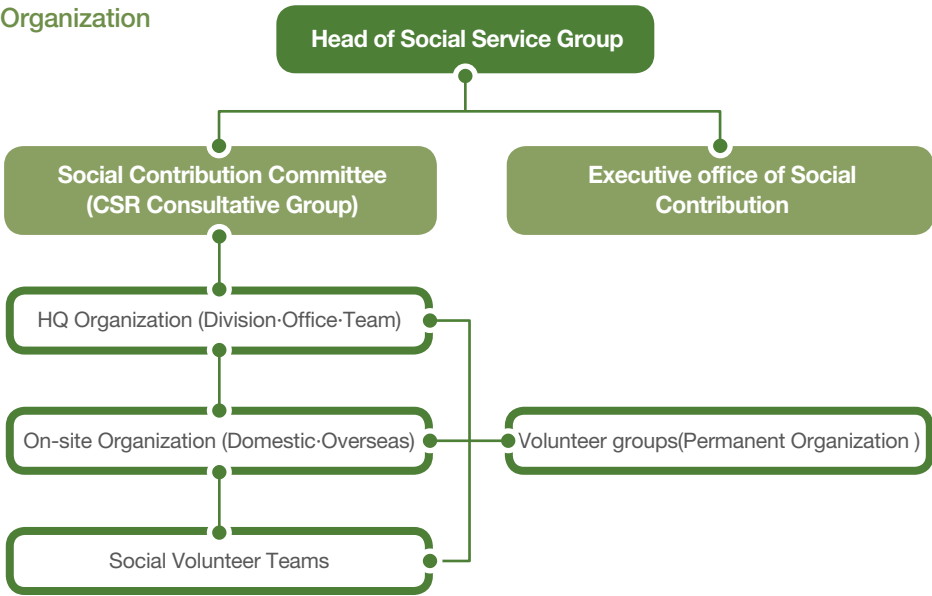
Briquette delivery



Social Contribution  
Activity System

With the vision of changing the world by taking actions and sharing love with society, Daewoo E&C carries out social contribution activities in various areas. “Daewoo E&C Social Service Group”, established in 2007 encompassing relevant organizations at headquarters, domestic and overseas project sites and volunteer teams, plays the central role in organizing various employee relay volunteer activities every year, including environmental improvement, talent donation and sharing with the socially vulnerable in the local community. Since 2016, the company has invited the participation of employees’ family members in various volunteer activities, while it plans to hold family participation activities in 2018 as a Family Day event and an end-of-the-year event.

Organization



Global Social  
contribution

Daewoo E&C undertakes various CSR activities both at home and abroad. From its domestic project sites in Seoul, Goyang and Songdo, the company has expanded its CSR activities to Morocco, Algeria and Qatar. Through on-going and long-term initiatives, Daewoo E&C will fulfill its role as a partner delivering genuine values.

Domestic and International CSR Activities

Region	Category	Major Activities	Note
Domestic	Talent Donation	AWOO doll-making for UNICEF	Family participation
	Environmental Improvement	Remodeling municipal facility “Home of Peace”	Municipal “Home of Peace”
	Sharing	Briquette delivery, Donation of Kimchi	Jeongneung-dong, Seongbuk-gu
	Others	1:1 picnic to World Cup Park with the disabled Pottery making at child welfare facility	Holt Ilsan Welfare Town Eunpyeong Home of Angels
Overseas	Medical Support	Free medical support for treatment of Vision Care	Morocco
	Living Environment Support	Clean-up of low waterways and shorelines near project sites Providing transportation to local residents with barges	Algeria, Qatar
	Technology Transfer	Training School for local manpower	Algeria
	Educational Support	Sponsoring Job Fair hosted by the Local Labor Office	Algeria



- 1. Briquette delivery by new employees
- 2. Remodeling municipal facility
- 3. Volunteer for “Home of Peace”
- 4. Donation of Kimchi





Talent Donation

UNICEF AWOO Doll Making

As part of its communication and culture program, the company hosted the 2017 Daewoo E&C Family Relay Volunteering in Songdo IBS Tower. With the participation of 140 family members of Daewoo E&C’s employees, the successful event provided an opportunity for families to share the meaning of love and make unforgettable memories. UNICEF Korea thanked all participants, noting how impressed they were with the eagerness and skillfulness shown by the children.



Charity Bazaar “A Beautiful Day with Jung Dae Woo”

In November, Daewoo E&C held a charity bazaar with the Korean non-profit organization “Beautiful Store”. A total of 3,470 donations from employees were sold and raised a record high KRW 12,364,132. The funds raised by the participation and warm hearts of Daewoo E&C’s employees will be donated to the project of their choice, helping youths discharged from children’s homes to gain independence and self-esteem.

Environmental Improvement

Remodeling “Home of Peace”

In autumn, 35 Daewoo E&C employees visited “Home of Peace”, a municipal facility located in Eunpyeong-gu and carried out repairing and remodeling activities to improve the facility environment and helped some of its residents take a walk in the park. Since 2009, Daewoo E&C has held various volunteer activities by visiting Home of Peace on a regular basis.

Volunteering with Families, Subsidiaries and Business Partners

From 2018, Daewoo E&C will expand the scope of its volunteer activities by inviting the participation of its subsidiaries and business partners. In association with Habitat Korea, it will hold the “Habitat for Humanity” event on a quarterly basis and brand it as the company’s signature social contribution event. By encouraging the voluntary participation of its employees’ family members and the employees of its subsidiaries and business partners, Daewoo E&C will demonstrate its commitment to fulfilling its social responsibility as a corporate citizen. Meanwhile, the company will continue its existing biannual family participation volunteer activities, namely, the baby shoe making and AWOO doll making projects.

Sharing

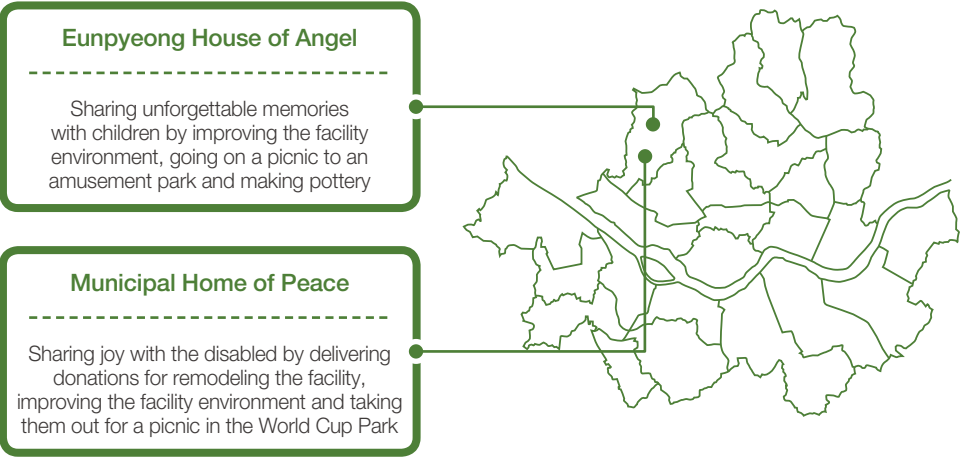
Briquette Delivery by New Employees

The company held the 1st Daewoo E&C Relay Social Contribution Activities in areas near Bomungukro 29-gil, Seongbuk-gu, Seoul. Approximately 70 newly hired employees of Daewoo E&C participated in delivering briquettes to low-income families, sharing love with neighbors and making valuable memories. The event was a success despite the cold weather, thanks to the warm hearts and dedication of the participants.

Social Contribution Performance by Business Divisions



Volunteering in Facilities



Civil Project Division



Clean-up of UI-line



Improving the facility environment and supporting activity at Eunpyeong House of Angel

Housing Division



Held a job fair at Nigeria University



Distributed free meals at Sujeong Senior Welfare Center

Plant Division



Supported free eye care and treatment activities by Vision Care - SAFI Plant Project Site in Morocco



Held welding and scaffolding education courses (2~4 weeks) - RDPP Project Site in Algeria



Medical Support

‘Restore Sight, Share Vision’  
“A Bright World for All of Us”

- Volunteered free medical support  
6 times over 4 years since 2012Approx.  
600 cataract and strabismus surgeries
- Outpatient treatment approx. 7,000 times
- Free eye exams and glasses
- Training for local ophthalmologists

Free Medical Support for Vision Care

With the sponsorship of the Morocco SAFI coal-burning plant project, Vision Care hosted the 8th, 9th and 10th Free Eye Camp in Taza (Northeast Morocco), SAFI (project site), and Tinghir (Central Morocco)on April 24-28, 2017, and on October 29-November 11 respectively in Safi (project site) (Vision Care: A private volunteer organization composed of Korean ophthalmolo- gists for blindness relief).

The Free Eye Camp is Daewoo E&C’s ongoing initiative in Morocco, first launched in 2012 under the slogan “Opening the Door to Morocco’s Bright Future”. From Tinghir where the 1st Free Eye Camp was held, the event has continued in El Jadida, Marrakesh, Ouarzazate and Safi. What first began as an annual event, the Free Eye Camp was held three times in 2017 with passionate support from local hospitals, civil organizations and volunteers.

During the events, with the support of city offices and local agencies, over 70 Korean medical personnel and volunteers from Korea and the United States performed 364 surgeries for cat- aract and strabismus and approximately 3,000 treatments for various eye diseases. The local site of the Morocco SAFI plant project provided the accommodation, meals, transportation and interpretation services during the events.



Living Environment  
Support

Clean-up of low waterways and shorelines near project sites

Daewoo E&C engages in clean-up activities near its construction sites to improve the living environment of local residents. Currently, it undertakes clean-up activities near its construction sites for the El Harrach River Restoration Project in Algeria, the river maintenance project in Constantine, Algeria, and the highway project in Qatar, in addition to other efforts to enhance the quality of life for local residents.



Providing transportation to local residents with barges

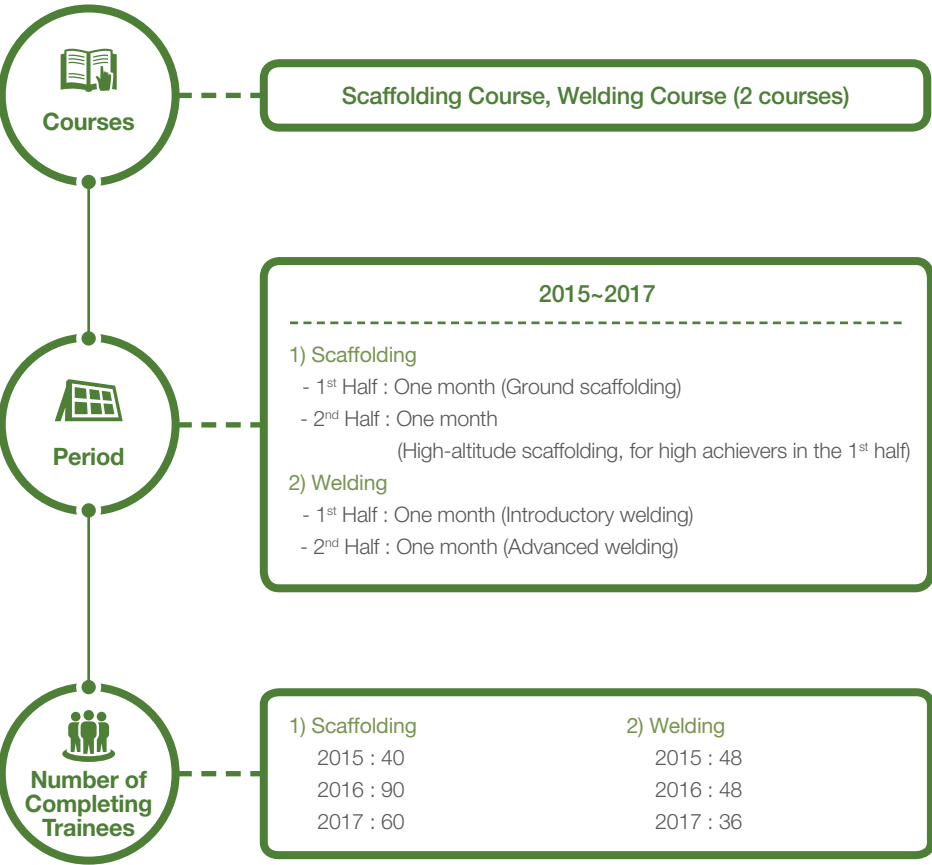
Daewoo E&C is currently undertaking the Kazungula Bridge project in Kazungula located in the Southern part of Zambia. Jointly funded by the governments of Botswana and Zambia, the project aims to build a bridge that will connect the two countries by crossing the Zambezi River flowing along the border.

For the convenience of local residents near the site, the company provides transportation using barges and promotes communication and cultural exchange by introducing a mentor-mentee system for local workers.

Technology  
Transfer

Training School for local manpower

Algeria is under considerable economic stress due to a severe labor shortage. Daewoo E&C maintains its local hiring rate at 70% in an effort to help alleviate local economic and social issues and comply with the laws and regulations in each country. As part of these efforts, the company operates the Training School to enhance the capacity of local manpower.



Through the Training School, Daewoo E&C provides educational opportunities to local manpower and contributes to alleviating the labor shortage problem, while enhancing its corporate image in Algeria.



# Long-term Management Issues

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# Corporate Governance

## Board of Directors

At Daewoo E&C, our Board of Directors serves as a decision-making body that reviews and makes important decisions on our business management.

We have established a sound and efficient governance structure by securing the expertise of our board members and promoting rational decision-making and successful business execution while strengthening our inside monitoring and monitoring functions.

### BoD (Board of Directors) Organization

Our BOD consists of two inside director and four outside directors as of June 2018. The CEO who has insight into our business operation serves as the chairman of the board. The board plays the role of a decision-making group based on their expertise and experience while maintaining a balance in authority and control.

BoD Organization <span>(As of June 2018)</span>					
Category	Name	Gender	Date of Birth (YYYY.MM)	Background	Rationale
Inside Directors	Hyung Kim	Male	1956.12	Former Director of the Civil Business Division of Samsung C&T Former Director of the Global Infra Division of Posco E&C	CEO
	Chang-Hwan Kim	Male	1961.11	Former the Director of RM of Daewoo E&C Former the Director of Hosing & Building of Daewoo E&C	CFO
Outside Directors	Joo-Ha Woo	Male	1956.11	Former CEO of KOSCOM	Policy expert
	Kwang-Lim Yoon	Male	1950.07	Former President of Jeju Bank	Financial expert
	Hyuk Lee	Male	1963.07	Present Partner of Law Firm Lee&Lee	Legal expert
	Kyu-Yoon Choi	Male	1954.04	Former Director of Financial Supervisory Service Disclosure Supervision Bureau	Financial expert

### BOD Committees

At Daewoo E&C, we have organized an Outside Director Nomination Committee and Audit Committee within our board to ensure a more efficient decision-making process. The Outside Director Nomination Committee was established to maintain transparency and independence in our nomination process and consists of four outside directors. The Audit Committee conducts pre- and post-audits on the entire decision-making and work process to prevent conflicts of interest and unethical practice.

### BOD Committees Organization

Name of Committee	Role and Responsibilities	Members
Outside Director Nomination Committee	Nomination of outside directors for General Meeting of Shareholders	1 Inside Director, 4 Outside Directors
Audit Committee	Oversees financial reporting and accounting	3 Outside Directors

### Independence and Expertise

Our directors are appointed from candidates nominated by the Board of Directors and Outside Director Nomination Committee based on the proposals submitted to the General Meeting of Shareholders. The committee is composed of a majority of total members including all four current outside directors. Outside directors monitor our business management and serve as an arbitrator between directors in accordance with the Commercial Law and other applicable laws. In order to ensure that the board maintains their expertise at a comprehensive level, individuals with expertise and knowledge in various fields are appointed as directors. As a result, outside directors now consist of two financial experts, one legal expert, and one policy expert and they contribute to maintaining a balance in authority and control.

## BOD Operation

### LONG-TERM MANAGEMENT ISSUES

### Board Activities

As a top decision-making body of Daewoo E&C, our Board of Directors resolves important business decisions and ensures efficient business operation to maximize our corporate value. In 2017, a board meeting was convened 15 times with 98.3% attendance rate and 49 resolutions were made in total.

### BOD Operation by Year

Category	Sub-category	Unit	2015	2016	2017
BOD Meeting	No. of Meetings	Time	14	16	15
	No. of Items	Item	56	65	49
	BOD Meeting Attendance Rate	%	98.1	94.8	98.3

### BoD Evaluation and Remuneration

The remuneration of the Board of Directors is determined based on the company's financial, social and environmental performance and individual performance evaluation. The total amount of remuneration, the average amount of remuneration per person and any individual compensation exceeding KRW 500 million are disclosed in our Business Report and IR website. Remuneration is paid on an annual basis within the total amount approved by the General Meeting of Shareholders, and the retirement pay for executives is also subject to the policies determined by the General Meeting of Shareholders in accordance with Article 30 of the Articles of Incorporation.

Remuneration for Directors and the Auditor <span>(As of march 2018 / KRW 1M)</span>			
Category	No. of Persons	Remuneration in Total	Avg. Amount per Person
Inside Director (excl. outside directors and members of Audit Committee)	1	826*	413
Outside directors (excl. members of Audit Committee)	1	59*	59
Members of Audit Committee or auditors	3	180	60
*Including remuneration of retired directors			

### Shareholding Structure

Daewoo E&C issued 415,622,638 shares in total as of December 2017 and the largest shareholder is KDB Value Private Equity Fund VI which holds 50.75% of the shares. Our business information including Business Report is disclosed through the Financial Supervisory Service and the Korea Exchange on a regular basis in accordance with regulatory requirements and shared with our shareholders and stakeholders in a transparent manner.

Major Shareholders <span>(as of December 2017)</span>		
KDB Value Private Equity Fund VI	210,931,209 shares	50.75%
SEBT Investment Co., Ltd.	20,042,007 shares	4.82%
National pension	16,385,939 shares	3.94%
Kumho Petrochemical, Co., Ltd.	13,949,586 shares	3.35%
Others	154,313,897 shares	37.13%



# Risk Management System

## Risk Management System

### Proactive Risk Management

Daewoo E&C proactively manages risks by associating its risk management activities with mid- to long-term business strategies in selecting and undertaking its domestic and overseas projects. By continuously improving its risk management system, the company seeks to establish a risk management culture and carry out its businesses in a stable manner.

In 2016, Daewoo E&C reinforced its RM system based on collaboration and sharing, enhanced management and support of overseas construction sites, and established a risk management system by introducing a new IT system. In 2017, it improved the Proposal and contract evaluation process for overseas projects and focused on a prompt response to risks by reinforcing risk-monitoring activities. In 2018, the company will follow up on these efforts by enhancing expertise and advancing evaluation processes in response to changing external business environments and fostering deliberation experts through training.

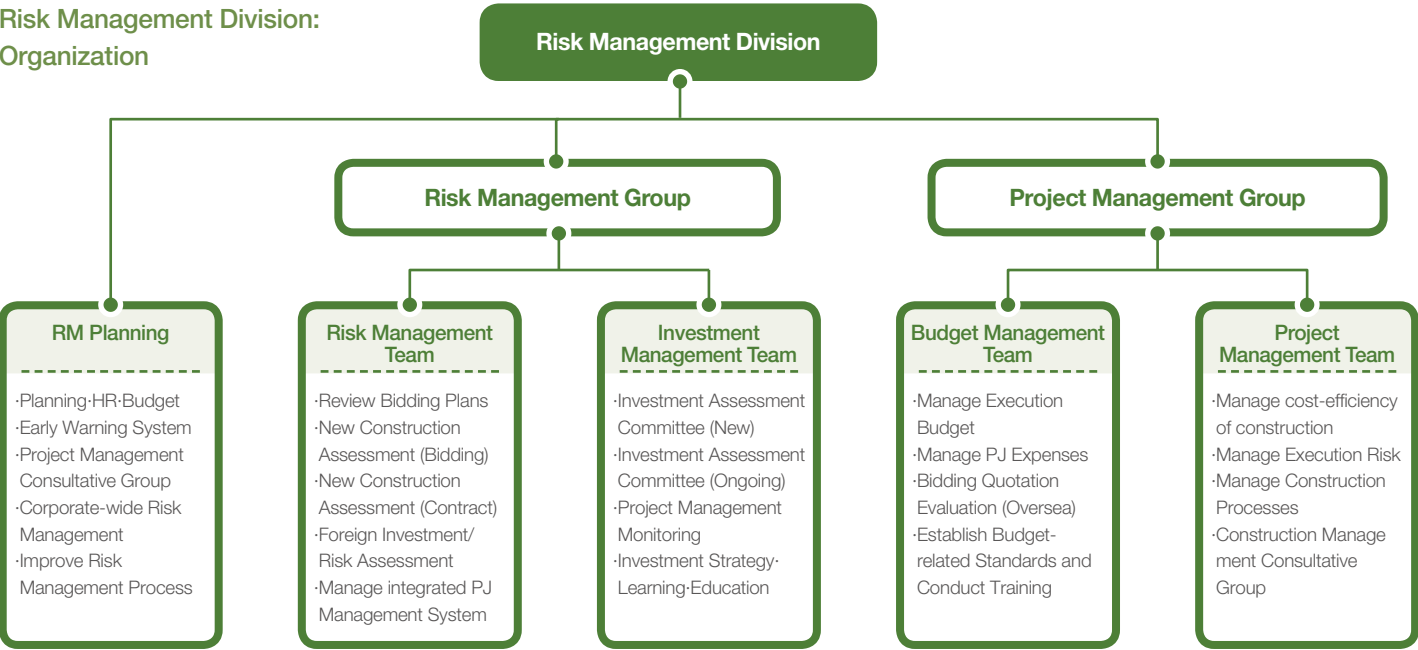
### Enterprise Risk Management (ERM)

Daewoo E&C has established Enterprise Risk Management measures to successfully operate its projects. It will enhance the effectiveness of the risk management system by continuously improving parts requiring revision and enhancing on-site risk management. Furthermore, the company will pursue efficient risk management by placing the right resources for risk management in the right place.

### Risk Management Organization

The Risk Management Division was established in 2017 to manage project risks at the company level and enhance proactive risk management. The Risk Management Group and the Project Management Group under the Division manager indexes for early identification of and proactive response to risks associated with domestic and overseas projects. Furthermore, the Stage Gate function has been enhanced to effectively support project management from gathering project information to completing project.

#### Risk Management Division: Organization



### Enhancing 2018 Risk Management Plans

Pursuant to the management policy of “efficient risk management by placing the right resources in the right place”, the Risk Management Division has established the 2018 Risk Management Plans based on the three pillars of “advanced evaluation and expertise”, “execution risk management” and “enhanced risk management efficiency”.



## Risk Management Activities

### Project Risk Management

Daewoo E&C’s proactive risk management system manages the risks relating to all overseas projects from proposal stage to post-award stage. Risk assessment at the bidding stage handles qualitative factors in parallel with the efforts quantifying risks thereof.



### Benchmarking & Case Studies

In order to detect and solve potential risks that may arise in the bidding or project execution stage, Daewoo E&C assesses risks for each phase/work type of a project by reviewing case studies. The company is also compiling risk management cases of foreign or same-industry companies to establish a risk management model applicable to Daewoo E&C. Furthermore, it exchanges feedback on a regular basis with other business divisions and other relevant departments regarding the measures drawn to proactively management project risks.

### Analysis of Poisonous Clauses & Establishment of a Country Risk Database

In order to prevent and respond to risks that may arise relating to overseas project contracts, Daewoo E&C is compiling cases and response measures regarding unfavorable/poisonous provisions into a comprehensive project management system. By expanding this database of information systematically classified by countries, work types and contracting parties, Daewoo E&C will be able to effectively handle contractual matters regarding overseas projects.

Furthermore, the company has established the Country Information Management System, a database of information on 70 areas including finance, tax, politics and culture of approximately 50 countries. Employees can access the system at any time via internal network, enabling them to identify and effectively respond to country-specific risks.



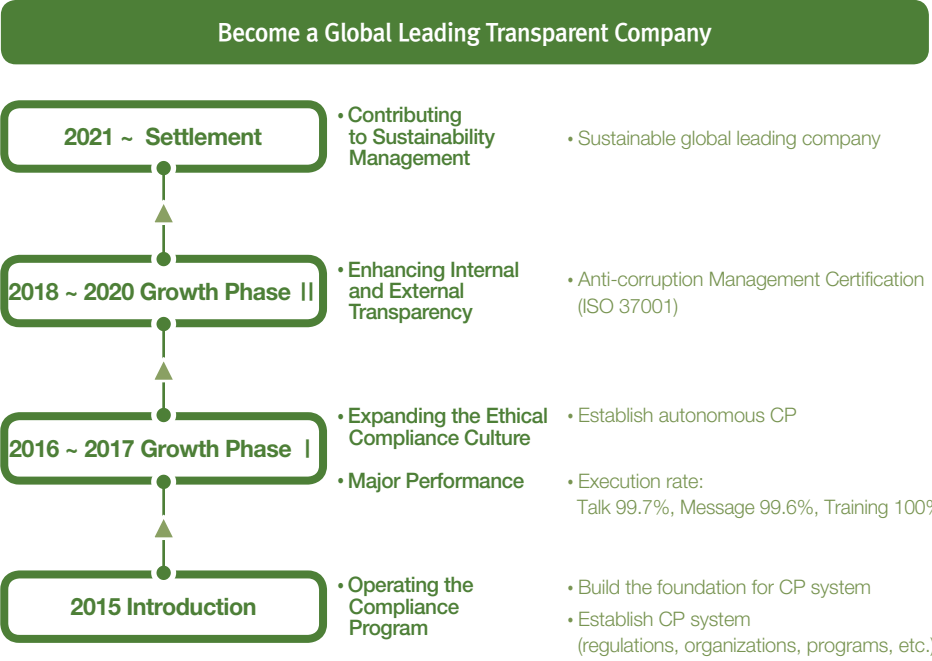
# Compliance

## Compliance System



Daewoo E&C encourages fair and transparent business conduct by setting forth the standards by which the company and its employees should act and judge right or wrong. Under the slogan “Better Tomorrow with Compliance”, Daewoo E&C is reinforcing its compliance program to firmly establish a compliance culture throughout the company.

### Main Tasks



### Compliance System

In March 2007, Daewoo E&C announced its Ethics Charter and the Code of Ethics, and established the Code of Conduct and other regulations, according to which all employees are required to sign a pledge of compliance. Following the enforcement of the Improper Solicitation and Graft Act in September 2016, the company prepared and distributed a compliance guidance, in addition to introducing an internal reporting and reward system to encourage the reporting of unethical conduct. Furthermore, the compliance system enables employees to actively participate in compliance activities and the company to effectively respond to compliance-related issues.

ETHICS CHARTER

1. We shall conduct all business affairs in a fair and transparent manner, and create an ethical organizational culture.

2. We shall respect our customers and make our best efforts to maximize customer satisfaction.

3. We shall be committed to respect for people and the protection of the rights and equality of the socially vulnerable.

4. We shall comply with all international agreements and national laws regarding human rights, environment, culture and economy.

5. We shall not engage in any misconduct by abusing our position toward stakeholders.

6. We shall contribute to the development of our local communities as a responsible member of society.

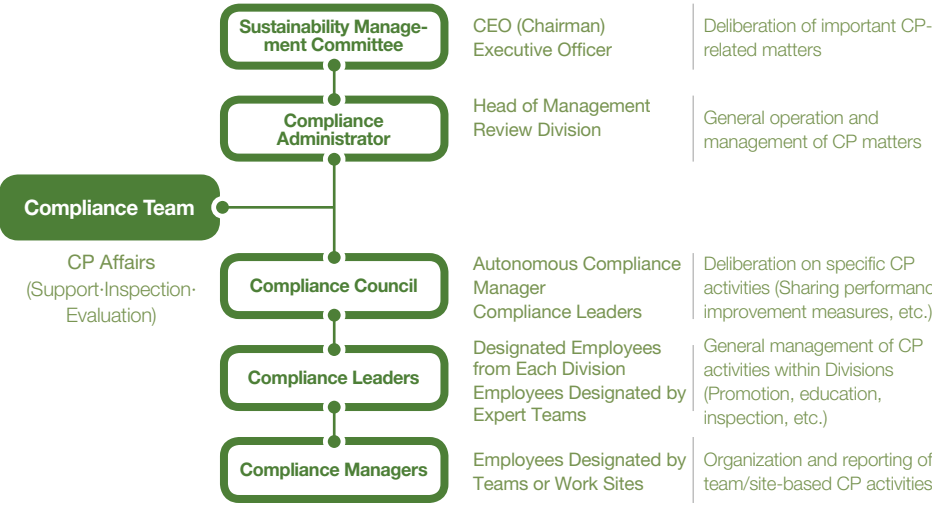
7. We shall cultivate and practice the core values of challenge, passion, autonomy and responsibility.



### LONG-TERM MANAGEMENT ISSUES

### Compliance Organization and role

Daewoo E&C operates the Sustainability Management Committee headed by the CEO in order to deliberate important compliance (CP) issues and appoints an Compliance Administrator as the general CP manager to administer CP-related matters. In addition, the Compliance Team and the Compliance Council oversee specific CP activities, while Compliance Leaders and Compliance Managers organize and execute various CP activities.



### Training and Promotion

Daewoo E&C provides offline compliance training to new employees, chief managers and employees of suppliers with outstanding performance, in addition to offering video educational materials online throughout the year to enable more employees to benefit from compliance training. In particular, the company conducts training for on-site managers regarding violations of the Subcontract Act as well as cases on bankruptcy and construction cancellation by suppliers. Other activities include publishing monthly newsletters “Compliance Together” and weekly reports of compliance violation cases, and posting compliance trends and policies on a daily or weekly basis to constantly call attention to the importance of compliance among employees. Furthermore, the company carries out multiple campaigns in order to build transparent relationships with suppliers and clients and prevent unethical conduct related to business affairs.

### Review and Evaluation

In order to diagnose compliance risks for each stakeholder group and raise compliance awareness among employees, Daewoo E&C conducts compliance inspections and evaluation for each Division, supporting organization and overseas construction site. Inspection and evaluation is an eight-month on-site process consisting of education on CP-related theories and cases, surveys, quizzes and interviews. Outstanding employees are rewarded based on evaluation in order to encourage employees to practice compliance and ethics in the workplace.

## Responding to Third Party Compliance Risks

Daewoo E&C expands CP-related efforts to its subsidiaries and suppliers by placing higher priority on compliance in subsidiary management evaluation and sending letters of request for cooperation in the name of suppliers’ CEOs in order to strengthen compliance capacity throughout the entire supply chain. Furthermore, the company has established the Anti-corruption Guideline for Overseas Business to prevent risks that may arise in the course of undertaking businesses overseas. Finally, it carries out various anti-corruption activities and inspects compliance status by visiting overseas project sites.



# Customer Satisfaction

## Quality Management



- 1. Seoul-Kyeongin (Civil project, Plant) (1.31)  
@ Daegok Sosa 4 site
- 2. Seoul (Building) (2.1)  
@ Human Resources Training Institute
- 3. Seo-Kyung (Housing) (2.2)  
@ Human Resources Training Institute
- 4. Kyeongin (Building) (2.9)  
@ Human Resources Training Institute
- 5. Chungcheong (1.26)  
@ Chungju Central Prugio site
- 6. Jeolla (2.2) @ Bujeong-Jang- chi site
- 7. Daegu-Gyeongbuk (1.24)  
@ Dooheo SK View Prugio Site
- 8. Pukyeong (1.19)  
@ Miryang-River Prugio site



At Daewoo E&C, we create unique value for our customers through quality innovation. By establishing a corporate-wide quality management system to secure competitive advantages in terms of planning, feasibility study, design, purchase, construction, supervision, trial operation, delivery and service, we build trust and strengthen our position in the market. We provide the highest level of quality and service through stringent quality control process implemented in cooperation with our Quality Management Team, Quality Inspection Team and each business division.

### Quality Management Organization

Our corporate-wide quality management organization consists of a Quality Management Team that oversees our quality management system, and a Quality Inspection Team that performs quality inspections of our equipment and specialized work process as well as a CM Team that manages quality issues of each business division.



### Fostering Core Quality Human Resources

At Daewoo E&C, we foster talented quality managers to provide high-quality service and keep our customers satisfied.

### On-site Quality Management Expertise

We provide legal training for our on-site quality managers to make sure that they are equipped with expertise in the field and offer training programs tailored to their individual needs. In addition, we are committed to improving performance as a quality specialist by conducting training to help them improve their job performance at our headquarters.

### Domestic-International Quality Manager Development Plan

At Daewoo E&C, we define the core competencies required from our quality managers in order to expand their Domestic-International expertise while establishing strategies and road-map as part of our global quality manager development system.

### Corporate Quality Group

The Corporate Quality Group is our communication channel between the headquarters and work sites conducted on a quarterly basis. At least one quality manager from each site attends the meeting and reviews the progress made through status data, quality control plans and external inspection data to identify areas of improvement and prevent quality issues.

### Quality Risk Management

At Daewoo E&C, we recognize internal and external issues, and the needs of our stakeholders based on which we identify risks, conduct a quantitative evaluation and establish ways to respond to these risks as part of our continuous quality risk management and improvement process.

### DPMS & Risk Management System

We continuously improve our process management system known as DPMS (Daewoo Process Mapping System) to manage our corporate-wide work processes in accordance with requirements defined by ISO 9001:2015 while operating the BAROCON risk management system as part of our corporate-wide risk management. The system allows us to effectively operate our processes and respond to risks.

### S-QPI Management

At Daewoo E&C, we implemented S-QPI (Site Quality Performance Indicator) to quantitatively assess the quality management of the site, raise awareness of quality requirements, identify areas of improvement and take necessary measures. There are 9 areas in quality management activities including construction management based on which we improve our quality issues.

### Quality System Certifications

We maintained and renewed our quality certifications including KEPIC (Korea Electric Power Industry Code), ASME (American Society of Mechanical Engineers) and ISO 9001:2015 Quality Management System in 2017 to make sure our quality standards are recognized.

### Certifications

<b>ISO 9001 : 2015</b> ·Received for the first time in the industry in 1993.	<b>KEPIC</b> ·Nuclear Power Construction : MN, SN, EN, MH Design: MN, SN	<b>ASME</b> ·Nuclear Power: NA, NPT ·Non-nuclear Power: S, U, U2, PP	<b>NBBI</b> ·Non-nuclear Power: R



## Customer Satisfaction

Daewoo E&C is dedicated to providing the highest-quality services to customers by identifying their needs through communication. It identifies areas of improvement by directly communicating with customers through the Integrated Call Center and PRUGIO Muse, as well as conducting annual customer satisfaction surveys. It will strengthen customer communication and service quality management with the aim of developing into a sustainable global construction company.

## Enhancing Customer Communication

## Launch of Comprehensive Real-Estate Service “D.Answer”

In February 2017, Daewoo E&C acquired the preliminary certification for comprehensive real-estate services for the first time in the construction industry, based on which it launched “D.Answer”, an open platform providing comprehensive real-estate services regarding development, sales, lease, management, brokerage and finance. In particular, D.Answer enables direct communication with customers and will expand its service areas to sharing vacancy information and managing lease applications by collaborating with real estate agents.

## Integrated Call Center

Daewoo E&C integrates its communication channels via the Integrated Call Center established in 2013 and responsible for customer management from sales, contract, moving-in and after-sales services. In 2017, the company received over 290,000 calls and recorded a 93.1% response rate, a testament to the efficiency of the customer management system. In 2014, the company integrated the Call Center and the Voice of Customer (VOC) to improve classification and management of customer complaints, handling more than 10,000 reports and recording an average of 5.3 days for handling customer complaints.

## PRUGIO Muse

Daewoo E&C has changed its online/offline prosumer group “Family Garden” in operation since 2006 into “PRUGIO Muse”, to promote consumer communication and improve the quality of its products and services. Through online surveys, show house monitoring and product development meetings, the company provides resident-friendly services and seeks to enhance customer satisfaction by holding PRUGIO Valley cultural events. The company also actively promotes PRUGIO Muse through surprise events and by expanding its pool of advisors.

## PRUGIO Summit

“PRUGIO Summit” is Daewoo E&C’s residence brand, combining “PRUGIO”, one of the most famous apartment brands in Korea, and “Summit”, meaning the best, the highest. To enhance customer satisfaction, the company offers an own website, call center, brand experience zone “Summit Gallery” and various brand experience programs in the residence complex.

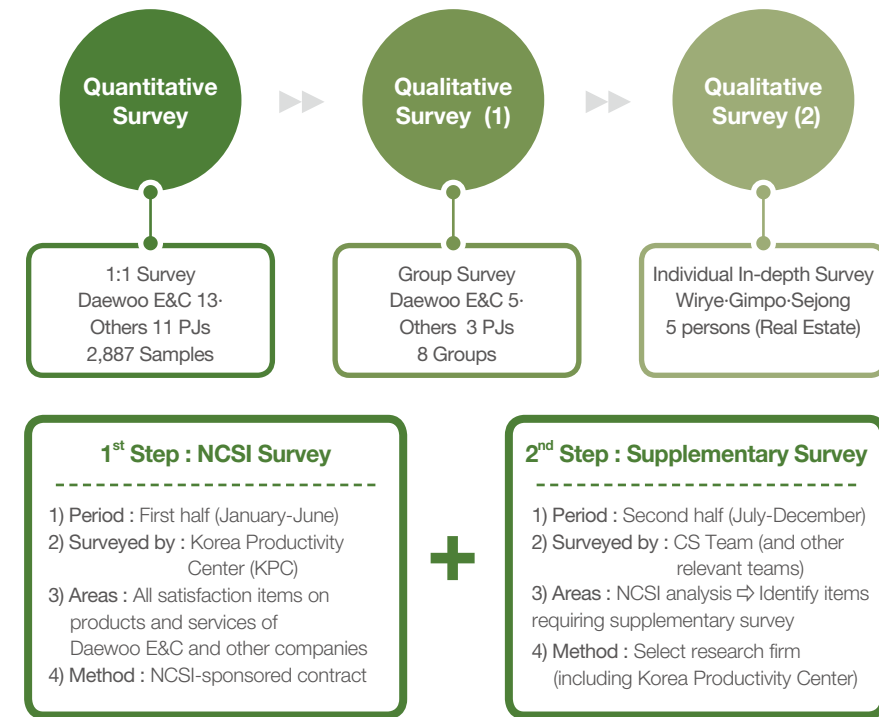
## SUMMIT Gallery

Opened in October 2017, SUMMIT Gallery is a space for PRUGIO SUMMIT residents, potential customers and union members to gain a preview into the brand. The Gallery has a VR zone, library zone, café and premium theater on the first floor, and an exhibition area, DIY class, concierge and event hall on the second floor to deliver first-hand experience of living in PRUGIO SUMMIT to its visitors.



## Customer Satisfaction Survey

Daewoo E&C conducts an annual customer satisfaction survey of the PRUGIO brand to identify the level of customer satisfaction and areas for improvement. It also manages the customer satisfaction index to handle customer complaints and provide products and services that meet the needs of individual customers.



## Customer Information Protection

## Enhancing Customer Information Protection System

Daewoo E&C operates a customer information security committee at headquarters level and receives expert consultation on a regular basis to ensure customer information protection and compliance with all privacy-related laws, regulations and internal standards. Moreover, the company conducts privacy protection education for all its employees including seconded personnel, commissioning companies and suppliers, in addition to annual training for privacy managers at its subsidiaries. The company also limits the authority to access its sales management system only to those employees who have completed the privacy protection education so as to minimize any risk of information leakage and has further strengthened technical security measures by installing image information processing devices in resident support centers. Finally, the company conducts regular biannual inspections of its subsidiaries and outfits, ensuring the stability and reliability of their security systems.

## Inspecting Personal Information Management

In recognition of the importance of privacy protection, Daewoo E&C conducts inspection of the managerial, physical and technical aspects of its security system. On a half-yearly basis, the company conducts regular or random inspections of compliance with the Personal Information Protection Act throughout the life cycle of handling personal information from collection to use, storage and disposal.

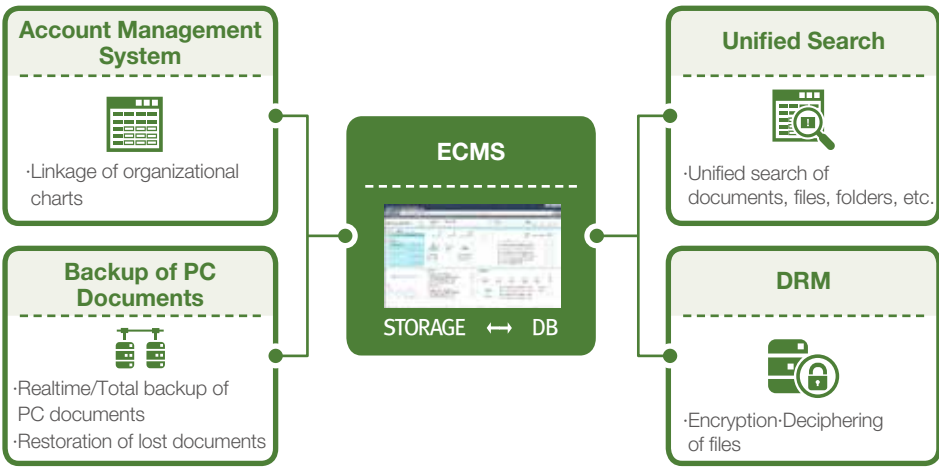


# Privacy and Information Protection

In order to prevent damage of corporate reputation and tangible/intangible loss due to leakage of customer information and confidential corporate information, Daewoo E&C is committed to establishing a proactive information protection system. Under the direction and supervision of the CEO, the chief privacy manager, the Chief Privacy Officer (CPO) works closely with customer service executives to ensure the security of personal information for all stakeholders.

## Integrated Document Management System

### Enterprise Contents Management System(ECMS)



In 2015, Daewoo E&C began constructing a Enterprise Contents Management System(ECMS) and completed its application at headquarters in December 2017. The system enables safe protection of documents from security threats such as ransomware and malignant codes, as well as integrated management of documents stores in individual PCs. Consequently, the system is expected to contribute to enhancing work efficiency by increasing the use of information.

## Enhancing Security Inspection System

### Enhancing IT Security Solutions

The Enterprise Contents Management System(ECMS) highlights the importance of document security, for which Daewoo E&C operates a consultative group at headquarters level and receives regular consultations to identify, analyze and improve the weaknesses of its document control system. In 2017, the company strengthened its Digital Rights Management (DRM) to prevent document leakage, while taking various measures such as adopting a Web-DRM system and Data Loss Prevention system(DLP) to further reinforce its information security system.

### Inspecting Mock Hacking

In order to identify the level of personal information exposure and security weaknesses of its online services and web system environment, Daewoo E&C stages a mock cyber attack every year on its official company website and other major websites. Using state-of-the-art hacking techniques, the mock cyber attack identifies the areas in which the websites are vulnerable, analyzes their security status and proposes technical countermeasures to security threats, ensuring the reliability of the company's major websites.

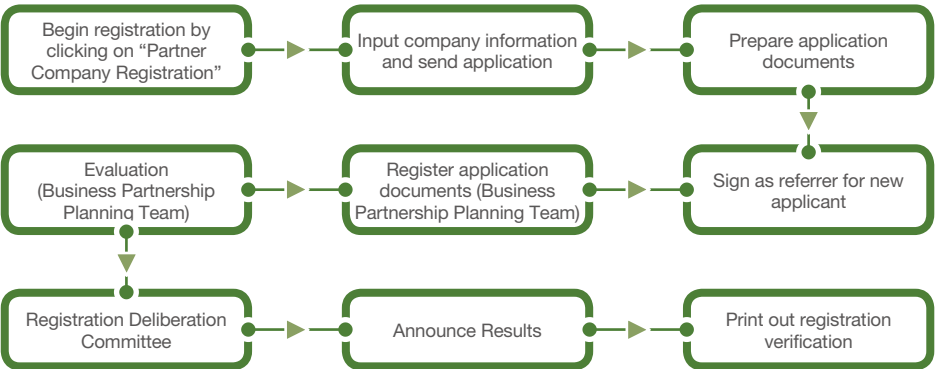
# Shared Growth

## Selection and Evaluation of Suppliers

### Selection of Suppliers

In accordance with its supplier registration process, Daewoo E&C selects competent suppliers to ensure construction quality. Each year, the company sends out a call for applications via the IT-based “e-Cos” website, following which the Registration Deliberation Committee, consisting of the Mutual Growth Team and the heads of Purchasing, Procurement and each Business Division, makes the final selection. The Committee reviews each applicant's construction and technological competency, financial stability, and credit evaluation, and grants additional points for sustainability management efforts such as safety environment, labor relations and ethical management. The company also fulfills its social and environmental responsibilities by giving priority to local partners and ISO 14001-certified companies.

### New Supplier Registration Process



### Overseas outsource bidding Process

By connecting the overseas outsource bidding process to Daewoo E&C's integrated management system, known as BAROCON, the company seeks to improve the efficiency and consistency of its selection process for overseas suppliers. In addition, it uses the “Global Contractor Registration (PQ Application)” system for integrated management of overseas partners.

### Global Contractor Registration (PQ Application) System



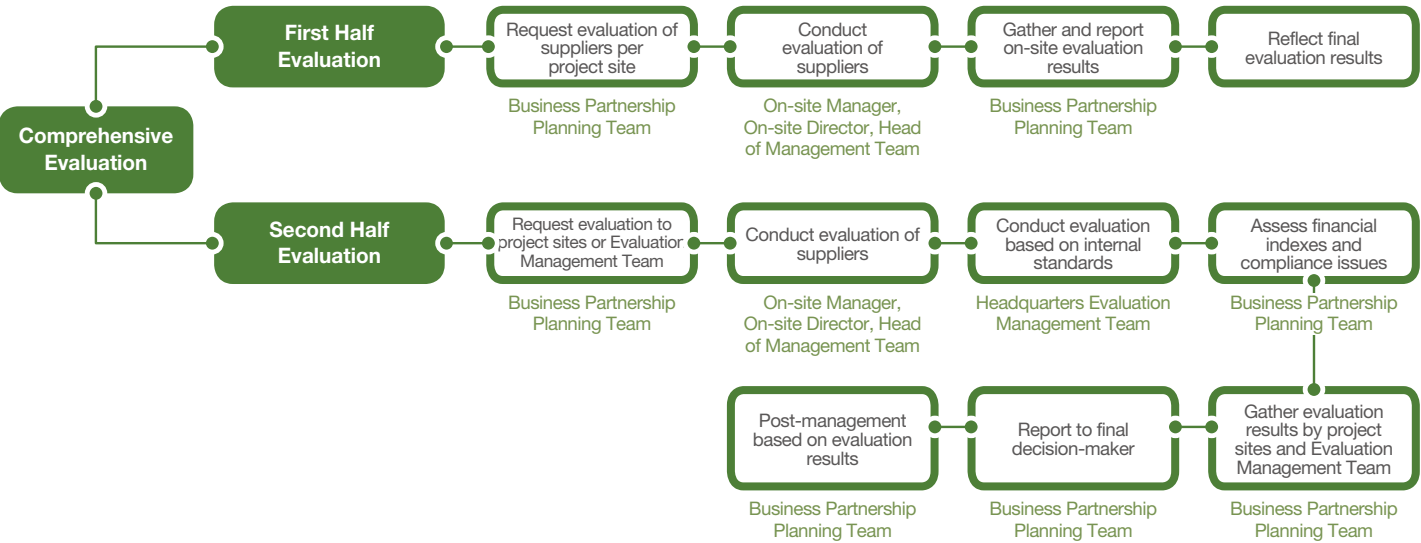


Evaluating and Monitoring Suppliers

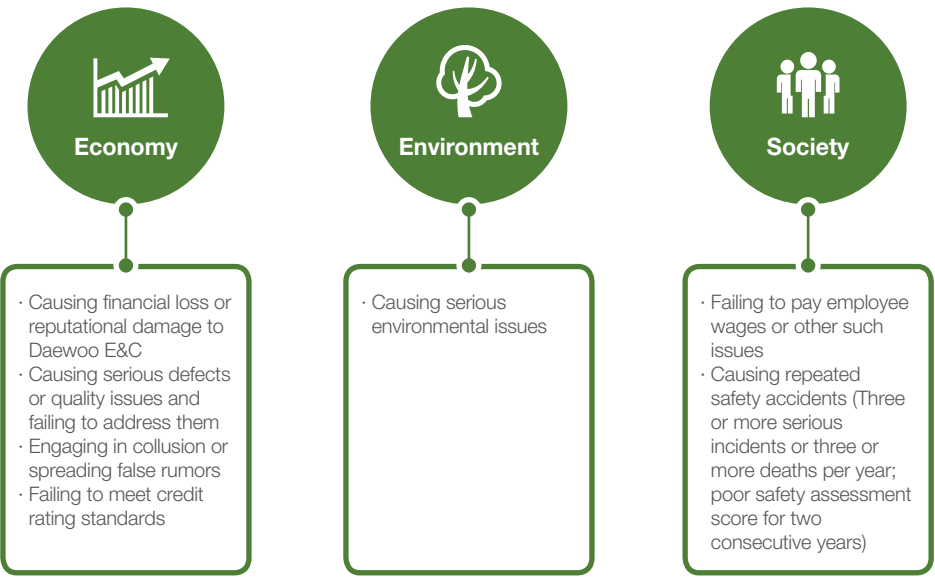
Daewoo E&C evaluates risks of suppliers with whom it has had business transactions for a certain period of time by undertaking annual headquarters evaluation and semiannual on-site evaluations. The on-site evaluations assess each supplier's construction capacity and on-site management competency, while headquarters evaluations comprehensively assess economic, social and environmental risks by inspecting its financial status, safety/environmental management and compliance.

Based on the results, Daewoo E&C selects suppliers with outstanding performance and provides benefits such as exemption of performance bonds, while those that fail to meet the standards are subject to sanctions such as revocation of the supplier status and restrictions on bidding. The company undertakes various measures to strengthen the capacity of its suppliers

Supplier Registration Process



Conditions for Revocation of Supplier Status



Support for Suppliers

As of the end of 2017, Daewoo E&C created a KRW 28 billion mutual growth fund and granted KRW 17.8 billion worth of loans. It also provided KRW 15.2 billion to 31 suppliers as operational funds, in addition to exempting suppliers with exceptional and outstanding performance from performance bonds to help relieve their financial burden.

Daewoo E&C supports its suppliers through raising awareness on sustainability management and resolving problems. For instance, it promoted ethical practices by holding the “Clean Holidays Campaign”.

The company also provides benefits to suppliers with outstanding performance in its sustainability programs, including reducing penalty up to 50% in the case of serious accidents. Moreover, it holds briefings of safety activities and meetings with on-site managers on Safety Inspection Day in an effort to raise safety awareness.



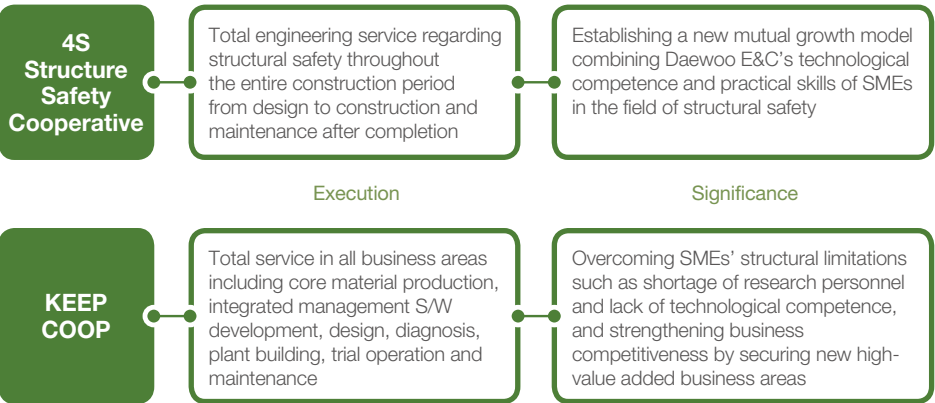
Daewoo E&C supported 173 employees of suppliers in completing five courses dealing with, for instance, construction-related affairs, the Subcontract Act and the Construction Industry Act, to help them increase their job competency. The company also conducts safety education for on-site managers of major/new partners and the CEOs of new partners. Furthermore, it offers monthly environmental education to management supervisors of suppliers.

Daewoo E&C invites employees of 100 major suppliers to the Mutual Growth Conference where the participants share information on mutual growth policies and programs. It also holds a conference with CEOs of 33 suppliers, providing an opportunity to share information.

The company also operates the unfair transaction reporting center, under the supplier communication channel “e-Cos”.

Shared Cooperative Association (Technological Support)

In order to build a culture of mutual growth in the industrial ecosystem by enhancing technological competitiveness and added values of small and medium-sized companies, Daewoo E&C established long-term mutual growth models “4S Structure Safety Cooperative Association” and “KEEP COOP(Key Environment Engineering Professional Cooperation)”.





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# Appendix



Market Trends and Management Performance

Market Trends and Strategies by Business Areas

Civil Projects  
Business

As the civil engineering industry faces a period of prolonged low growth, the volume of major civil projects – particularly social infrastructure projects – is expected to gradually decline. Accordingly, Daewoo E&C will secure its competitiveness by undertaking civil-housing complex development projects and private capital O&M (Operation & Maintenance) projects, in addition to its existing government projects. An increase in the demand for civil engineering projects in the Asian market will provide an opportunity for the company to make a breakthrough in the face of a sluggish domestic construction industry.

Daewoo E&C has proven its technological prowess by successfully opening Geoga-daero, the world's longest and South Korea's very first automobile-only underwater tunnel and Inje Tunnel, the longest expressway tunnel in Korea, while completing Bohyunsan Dam, Korea's first arch-shaped concrete gravity dam. The company is undertaking various projects overseas with a foothold in Algeria, including the Al Faw Breakwater project in Iraq and the expressway project in Qatar, expanding its business influence in the Middle East.

Housing & Building  
Business

The housing industry is closely related to economic fluctuations and is highly influenced by the construction and investment plans of requesting parties. Recently, we have witnessed a trend represented by fewer construction orders and reduced investments but this is understood to be a natural outcome of the domestic housing industry undergoing a transition from a growth phase to a maturity phase. Following these changes, Daewoo E&C will continue its existing businesses in the construction of large-scale residence complexes and new town development, while exploring new business areas in leasing services, remodeling old buildings and facility maintenance.

Daewoo E&C is also focusing on strengthening its housing business portfolio by, for instance, supplying “Dongtan Haengbok Maeul PRUGIO” in February 2018 as part of its new stay business and winning housing maintenance contracts. To secure its competitiveness, the company will seek a transition from the existing business structure based on facility maintenance subcontracts to planning/proposal development and rental housing business, building a foundation for profitable and stable new business areas.

Plant  
Business

The global plant market is expected to grow continuously centering on emerging countries, while undergoing transition from a subcontract-based to an investment and construction-based business structure. Demand for oil and gas is likely to grow in large emerging economies such as the Middle East, Africa, South-east Asia, China and India. Demand for natural gas, in particular, is expected to grow at an annual rate of 5% until 2020. Likewise, growth is anticipated in the power industry following a sharp increase in the demand for coal-fired, gas and nuclear power in emerging markets in Asia, Africa and South America, further supported by improvements in the financial market leading to a higher demand for private power projects.

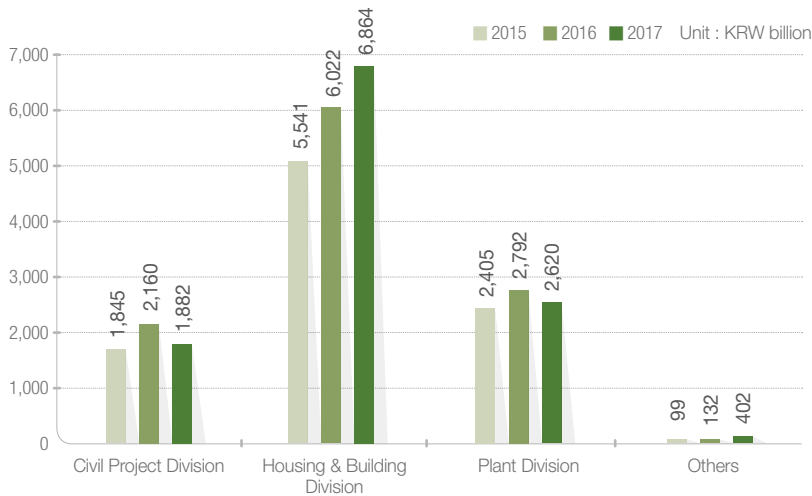
In 2017, Daewoo E&C won the Duqm Refinery project contract in Oman, further expanding its business areas in the petrochemical industry using its first-rate technologies and business know-how. In the power industry, the company is solidifying its position in the North African power market through the RDPP combined-cycle thermal power plant project in Algeria and the Safi coal-fired power plant in Morocco. In the mid- to long-term, Daewoo E&C will establish itself as a global energy developer through equity investments in large-scale IPP projects in Southeast Asian countries including Vietnam and Malaysia, participation in power plant operation and maintenance (O&M) projects and renewable energy project development.

Market Trends and Management Performance

Management Performance

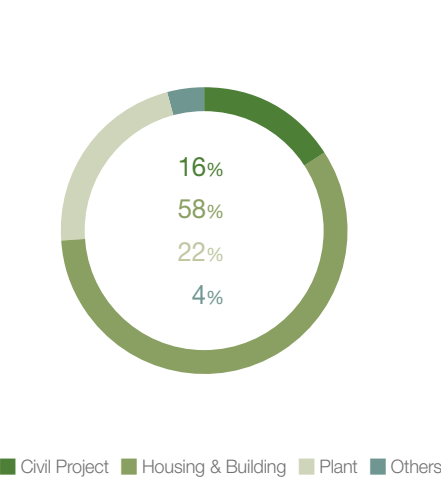
Sales

By Year



\* Power plant division and plant division integrated into plant division

By Business Area (2017)



Net Contract Increase

Category	Unit	2015	2016	2017
Civil Project	KRW billion	1,077	1,364	1,180
Housing & Building	KRW billion	5,403	4,222	6,534
Plant	KRW billion	4,576	16	-758

Orders: Order Backlog



Credit Ratings

As of December 2017

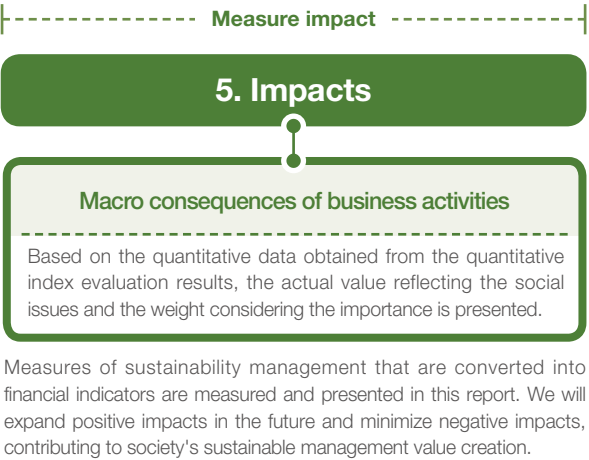
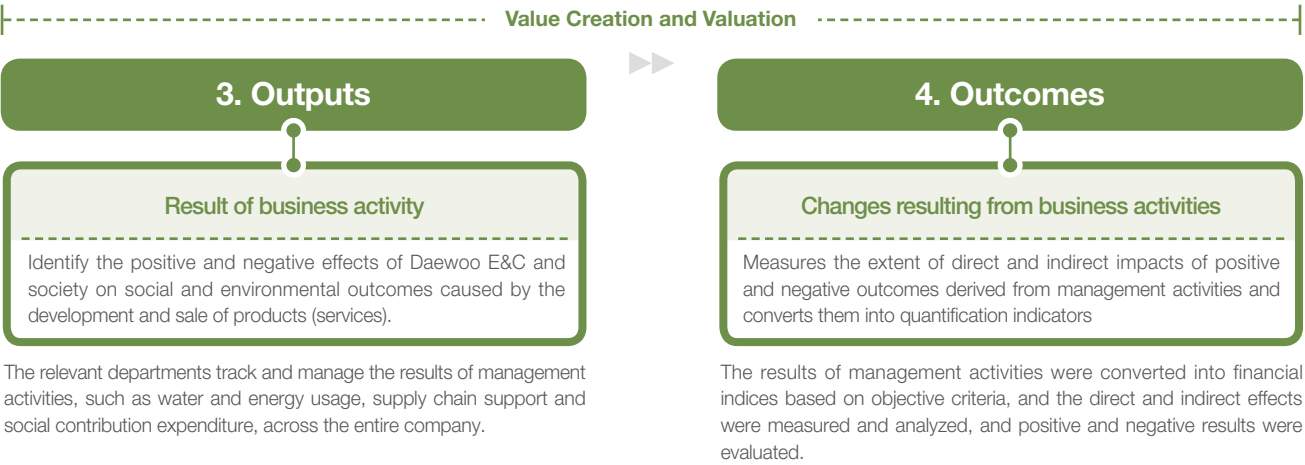
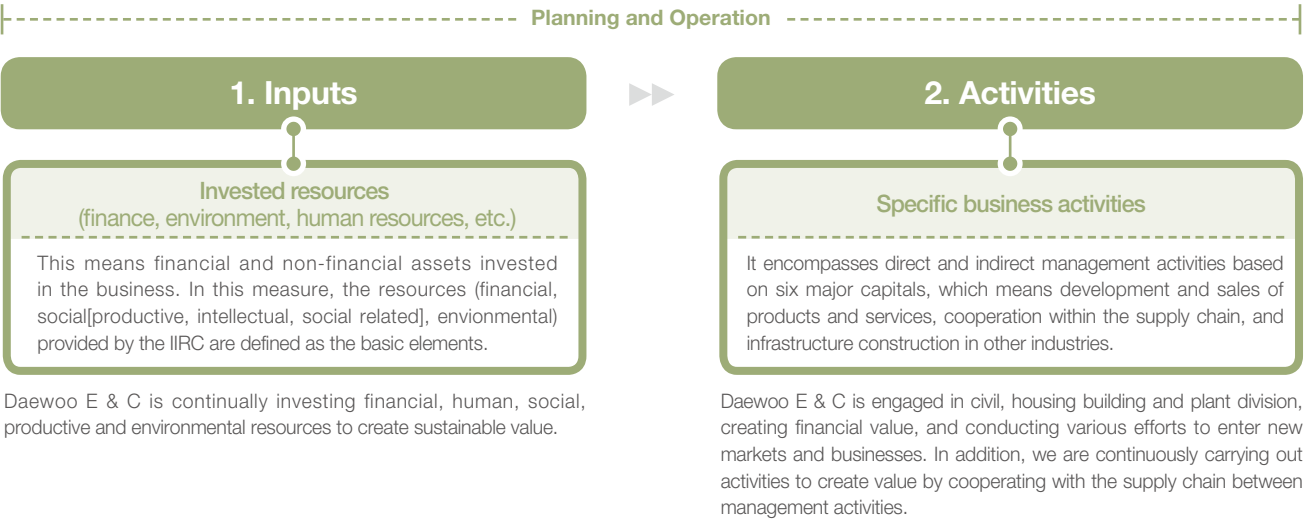
Evaluating Agency	Ratings	Category
	Commercial Paper	
Korea Ratings	A2-	Regular evaluation
NICE Investors Service	A2-	Regular evaluation
Korea Investors Service	A2-	Regular evaluation



Indirect Economic Effects

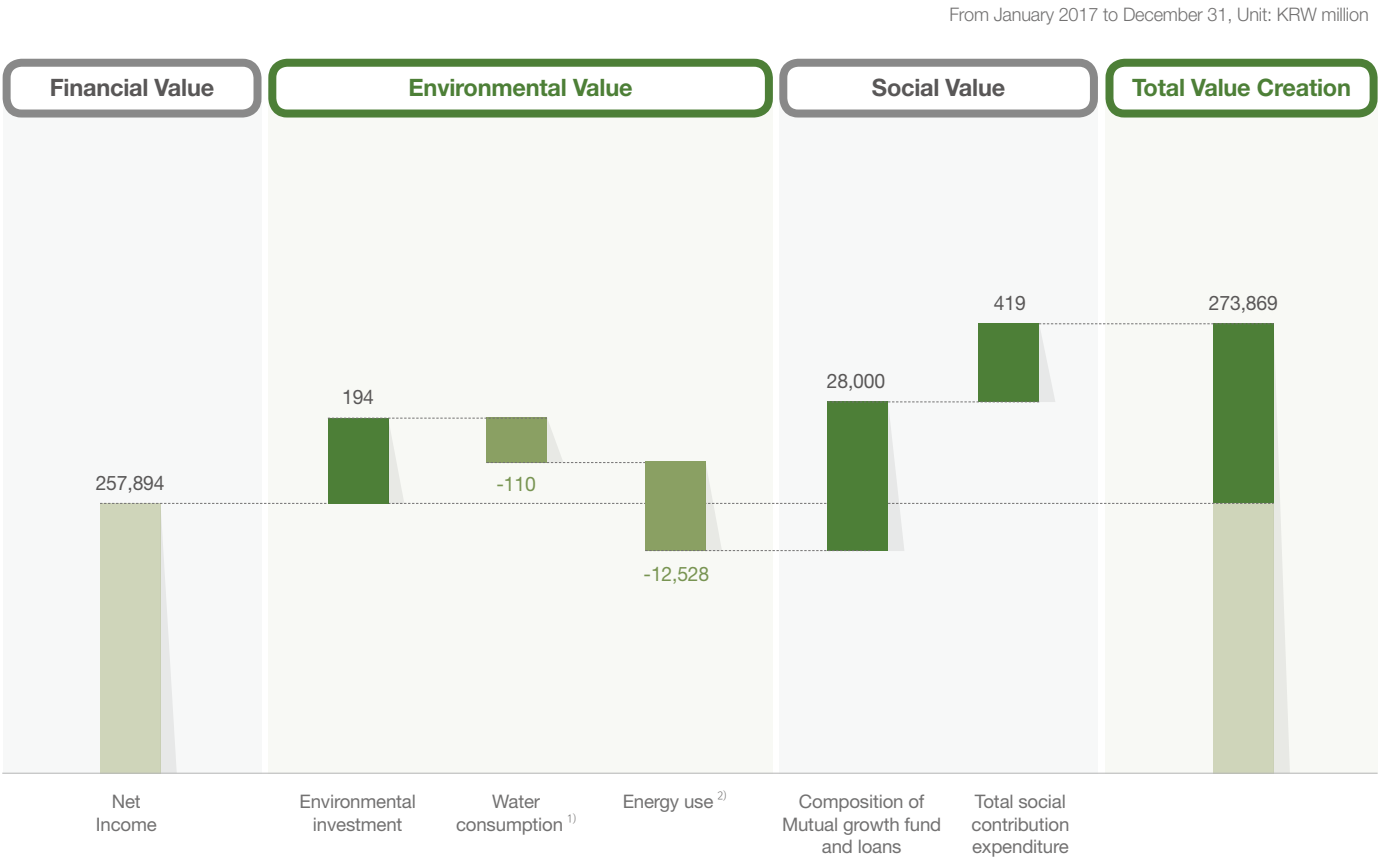
Impact Measurement Framework

Daewoo E & C is analyzing the value and impact of sustainable management by measuring the external effects on economic, social and environmental values created by management activities. The analysis is measured and converted using the KPC-IVM (Standard Evaluation System) of the Korea Productivity Center (KPC), a specialized agency for sustainability management. The results are disclosed in a transparent manner through the Sustainability Report.



Creating value for sustainability at Daewoo E & C

Daewoo E & C's net profit for 2017 is estimated at KRW 257,894 million based on consolidated IFRS, and its value based on sustainability management activities is estimated at KRW 273,869 million. The basis for converting environmental values into financial values is presented separately. Daewoo E & C intends to analyze and manage sustainability management values and impacts from various perspectives.



1) Water consumption : 2,088,275 tons (total water use per year) \* 52.7 (dam water cost, source: Korea Water Resources Corporation)  
2) Energy use : 1,369 TJ ⇨ 223,770.9 BOE \* \$ 52.3 (2017 average price per barrel of Dubai oil) \* 1,070.5 won (exchange rate as of 2017)



Major Sustainability Management Performance \_ Economic Performance

R&D Performance

Category	Sub-category	Unit	2015	2016	2017
Amount	Investment	KRW million	15,657	14,615	13,457
Manpower	No. of staff	Person	86	83	83
Result	Projects	Case	39	34	38
	Industrial property rights (Patent, new technology)		45	62	51
	Papers (Domestic, overseas)		60	59	44
	Awards		6	6	5

Research Project Performance

Unit : Case

Category	2017			2018	Remarks
	On-going	New	Subtotal	Ongoing	
Projects Requested by Business Divisions	8	16	24	11	Added in 2017
Government Projects	6	1	7	6	
Future Growth Projects	-	7	7	3	
Total	14	24	38	20	

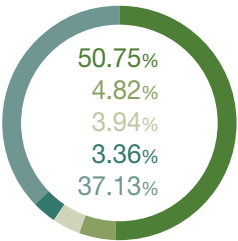
Industrial Property Rights Performance

Unit : Case

Category	Owned	2017		Registrated Total	Remarks
		Pending	Registered		
Patent	296	22	23	319	Green Tech (1), Utility Model (7), Design (63), SW(83)
New Technology	8	2	2	10	
Others	152	1	2	154	
Total	456	25	27	483	

Major Shareholders

As of December 2017



- KDB
- SEBT
- National Pension
- Kumho Petrochemical Co., Ltd.
- Others

KDB Value 6 Ltd.	210,931,209 shares
SEBT Investment Ltd.	20,042,007 shares
National Pension	16,385,939 shares
Kumho Petrochemical Co., Ltd.	13,949,586 shares
Others	154,313,897 shares

Remuneration for Directors and Auditor

As of march 2018 / Unit : person, KRW million

Category	No. of Persons	Remuneration in Total	Average Amount per Person
Internal Director (Excluding Audit Committee members and outside directors)	1	826*	413
Outside Director (Excluding Audit Committee members)	1	59*	59
Audit Committee Members	3	180	60

\*Including remuneration of retired directors

Operation of the BOD

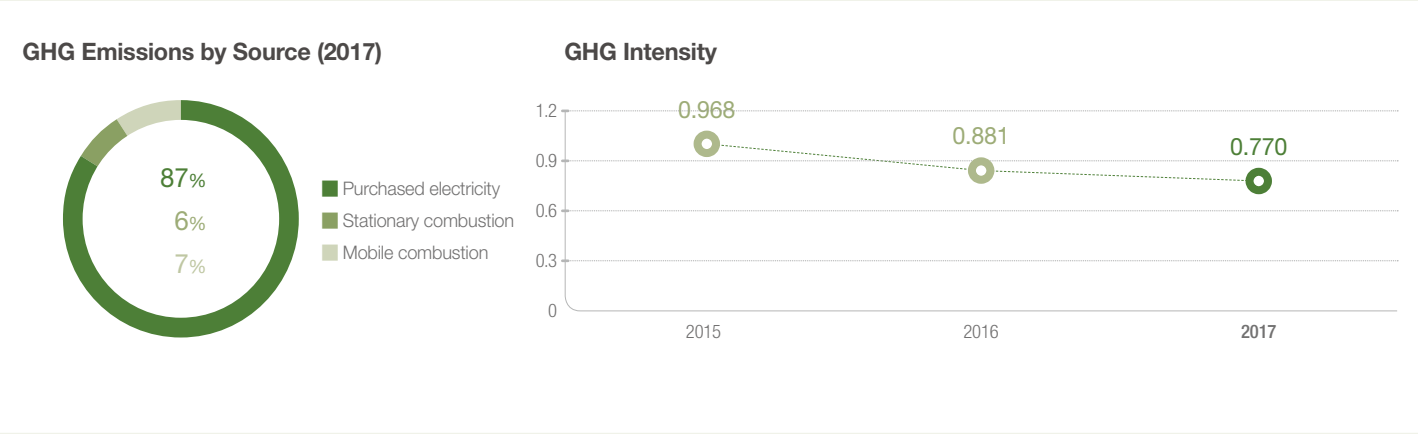
Category	Unit	2015	2016	2017
No. of Meetings	Times	14	16	15
No. of Items	Cases	56	65	49
Attendance Rate	%	98	95	98

Committees under the BOD

Category	Unit	2015	2016	2017
Audit Committee	Times	5	6	10
Outside Director Nomination Committee	Times	-	2	1



Major Sustainability Management Performance \_ Environmental Performance



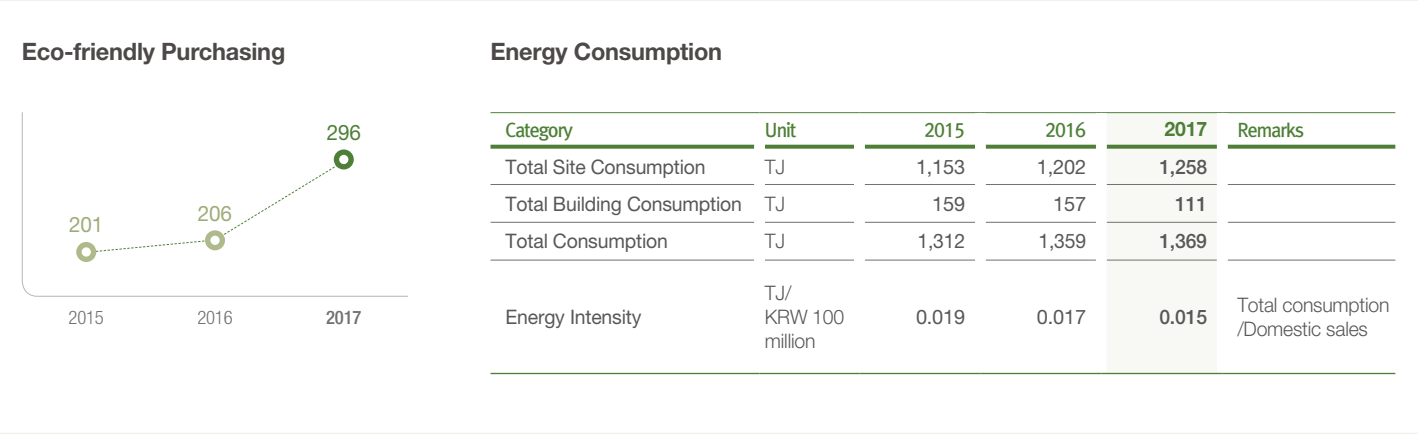
Greenhouse Gas Emissions					
Category	Unit	2015	2016	2017	Remarks
Total Site Emissions	tCO <sub>2</sub> eq	58,210	60,509	62,958	Scope 1+2
Total Building Emissions	tCO <sub>2</sub> eq	8,298	8,080	7,544	Scope 1+2
Total Emissions	tCO <sub>2</sub> eq	66,508	68,589	70,501	Scope 1+2
GHG Intensity	tCO <sub>2</sub> eq/KRW 100 million	0.968	0.881	0.770	(Scope 1+2) / Domestic sales
*Difference between the sum of GHG emissions by source and total emissions due to cut-off by site					
*Retroactive application of unit-level emissions according to sales change in 2015					

GHG Emissions by Source				
Category	Sub-category	Unit	2016	2017
Direct Emissions	Stationary combustion	tCO <sub>2</sub> eq	5,061	4,119
	Mobile combustion	tCO <sub>2</sub> eq	6,057	5,027
Indirect Emissions	Purchased electricity	tCO <sub>2</sub> eq	57,475	61,357

Water Consumption			
Category	2015	2016	2017
Ton	988,950	1,206,713	2,088,275

Waste

Sub-category	Unit	2015	2016	2017	Remarks
Volume Treated	Ton	422,498	597,000	592,790	Domestic sites
Treatment Cost	KRW 100 million	108	153	169	Domestic sites



Environmental Audit - HSE Audit					
As of 2017					
Category	Civil	Building	Housing	Plant	Total
HSE System Audit (Regular)	6	6	6	2	20
HSE System Audit (Special)	1	-	-	-	1
HSE System Audit (Fugitive Dust)	6	6	6	2	20
Total	13	12	12	4	41

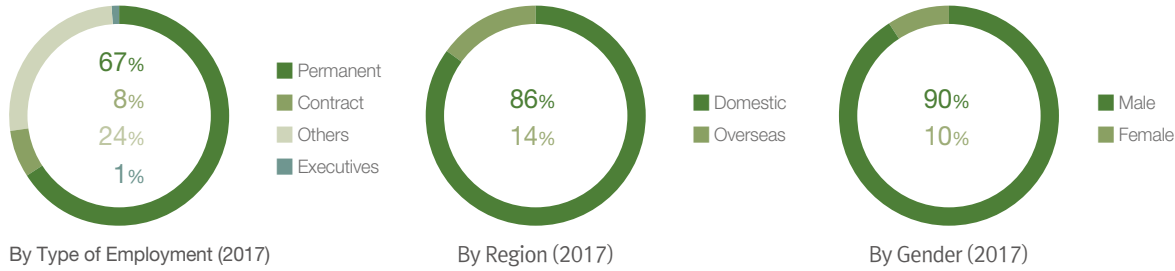
Environmental Protection Expenditure and Investment					
Category	Sub-category	Unit	2015	2016	2017
Environmental Protection Expenditure-Investment	Environmental Investment	KRW million	171	189	194
	Environmental Cost	KRW million	144	182	176
Environmental Education	Participants	Persons	21,192	31,720	19,516

Environmental Education Performance			
Category	Course Name	Period	Participants
Host	Job Competency Education for Environmental Managers (Level 1)	1 <sup>st</sup> Session: 4.5 2 <sup>nd</sup> Session: 5.18 3 <sup>rd</sup> Session: 11.3	102
Support	Environmental Education for New Managers	4.19	2
Monthly Environmental Education (On-site)	On-site Environmental Education (Civil Projects Division)		3,268
	On-site Environmental Education (Housing Division)	1.1~12.31	15,229
	On-site Environmental Education (Plant Division)		915
Total			19,516



Major Sustainability Management Performance \_ Social Performance

Employees



Category	Sub-category	Unit	2015	2016	2017	Remarks
Total Employees		Persons	6,174	6,128	5,846	
Type of Employment	Executives	Persons	39	56	42	Including outside directors
	Permanent	Persons	4,053	4,043	3,943	Including specialized executives
	Contract	Persons	412	442	448	Including contract-based executives
	Others	Persons	1,670	1,587	1,413	
Employment by Region	Domestic	Persons	4,950	5,198	5,052	
	Overseas	Persons	1,224	930	794	Excluding local employees at overseas sites
Employee Diversity	Male	Persons	5,600	5,573	5,287	
	Female	Persons	574	555	559	
	Seniors	Persons	424	366	323	Over 55 years of age
	Foreigners	Persons	70	27	17	Not included in total head count
	Disabled	Persons	65	65	60	

New Hires and Retirement-Resignation

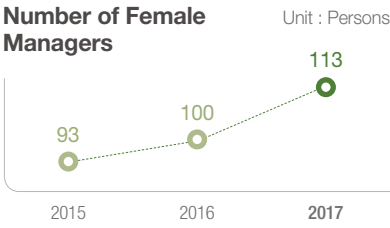
\*Permanent Employees Only

Category	Sub-category	Unit	2015	2016	2017
New Hires	Male	Persons	90	83	73
	Female	Persons	20	12	8
Retirement-Resignation	Male	Persons	135	145	130
	Female	Persons	13	17	11

Total Number of Managers

Category	Unit	2015	2016	2017
Total No. of Persons in Managerial Positions (Manager or Higher)	Persons	3,186	3,297	3,148
Total No. of Executives	Persons	66	210	160

\* 2015 not including the deputy director, 2016 including the deputy director



Education and Training Performance

Category	Unit	2015	2016	2017
Education Hours	KRW/Person	633,580	680,544	687,766
Education Hours per Person	Hour/Person	78	80	66

Information Security Education

Category	Unit	2016	2017
Information Security Education	Hours	357	801

Sexual Harassment Prevention and Human Rights Education

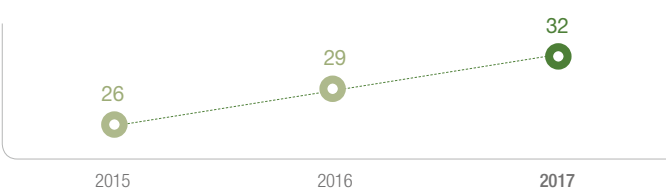
Category	Unit	2015	2016	2017
Education Hours	Persons	6,420	5,946	5,898
Education Hours per Person	Hour/Person	1	1	1

Performance Evaluation

Category	Unit	2015	2016	2017
Eligible Persons	Persons	5,097	5,305	5,225
Actual Evaluation Rate	%	100	100	100

Portion of Union Registrants

Unit: %



Status of Joint Labor-Management Committee

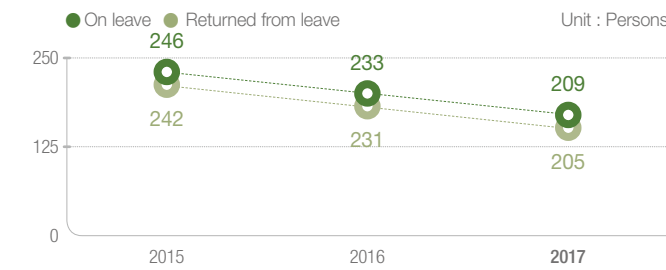
Category	Detail	Unit	2015	2016	2017
Labor-Management Committee Performance	No. of Meetings	Times	4	4	4
	No. of Issues Voted	Cases	6	6	5

Retirement Pension

Category	Sub-category	Unit	2015	2016	2017
Operating Funds		KRW million	231,055	234,892	243,796
No. of Insurants	DC	Persons	-	1	1
	DB	Persons	4,290	4,214	4,217

Childbirth Leave

\*Permanent and temporary employees

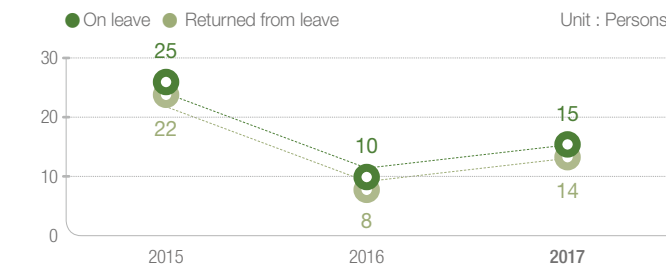


Category	Unit	2015	2016	2017
Male	Persons	227	211	185
Female	Persons	19	22	24

Return to work rate	2015	2016	2017
%	98	99	98

Parental Leave

\*Permanent employees only



Category	Unit	2015	2016	2017
Male	Persons	5	2	4
Female	Persons	20	8	11

Return to work rate	2015	2016	2017
%	88	80	93

Average No. of Days of Absence	2015	2016	2017
Days	253	339	302



Major Sustainability Management Performance \_ Social Performance

Domestic HSE Education Performance

CLEAR Program Pilot Operation Site	7 Sites
Mutual Safety Program at Business Partners	30 Companies
Mental Coaching Program (No. of Sites/No. of Participants)	9 / 210

Business Partners

Category	Unit	2015	2016	2017
Total No. of Business Partners	Companies	1,054	976	989
Purchasing Amount	KRW 100 million	24,487	35,608	34,545

Support for SMEs

Total Purchasing Amount	31,228 KRW 100 million
-------------------------	------------------------

Major Business Partners

Category	Sub-category	Unit	2015	2016	2017
Number of Major Business Partners		Companies	97	123	101
Purchasing from Major Business Partners Out of Total Purchasing Amount	Rate	%	10,533	14,890	16,904
	Total Amount	KRW 100 million	43.0	41.8	48.9

Category	Unit	2015	2016	2017
Mutual Growth Fund and Loans	KRW 100 million	240	272	280
Business Partner Capacity-Building Education	Persons	200	195	173
Invitation of Business Partners to Mutual Growth Conference	Companies	95	111	100

Fair Trade Violations

Category	Sub-Category	Unit	2015	2016	2017
Fair Trade Violations	No. of breaches	Case	6	1	0
	Penalties	KRW million	15,047	69,207	0

Online Compliance Education Completion Rate

Category	Unit	2015	2016	2017
Completion Rate	%	96	96	97

Offline Compliance Education

Category	Unit	2015	2016	2017
Offline Education Participants	Persons	2,333	3,036	1,754

\*Including CP Inspection Education, Winter Job Training, Manager Education, etc.

Enforcement Rate of Autonomous Compliance Program

Category	Sub-Category	Unit	2015	2016	2017
Talk	Time / Month	%	83	95	99
Message	Time / Per quarter	%	112	99	99
Self-education	Time / Per half year	%	161	100	100

Companywide Quality Monitoring

As of 2017

Category	Sub-category	Unit	Monitoring
Audit of steel manufacturer and inspection of steel processing plant	Audit	Times	9
	Inspection	Times	13
Quality assessment of machinery and materials suppliers	New	Times	57
	Reassessment	Times	75
Preventive activities on purchase quality		Times	315
Inspection by visiting plants		Times	4,025
Inspection by staying at plants		Times	19
Annual short-term contract with third party inspection companies		Contracts	10
Special audit of suppliers		Times	10

Customer Satisfaction Survey\* Results

\*NCSI Survey

Unit	2015	2016	2017
Place	4 <sup>th</sup>	6 <sup>th</sup>	4 <sup>th</sup>

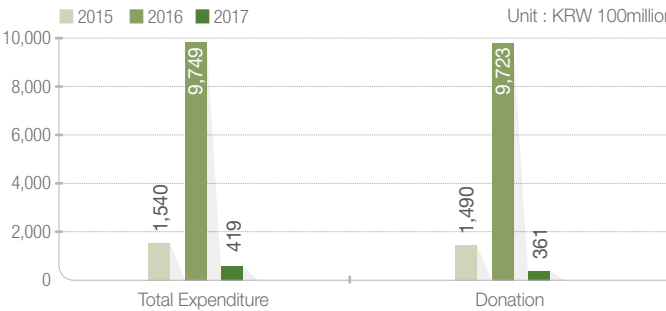
On-site Quality Management

Category	Unit	2016	2017
On-site quality performance index	Participation rate	89	95
HQ quality level assessment	Average score	86	86
On-site quality level assessment	Average score	85	85

Social Contribution Performance

Expenditure for Social Contribution Activities

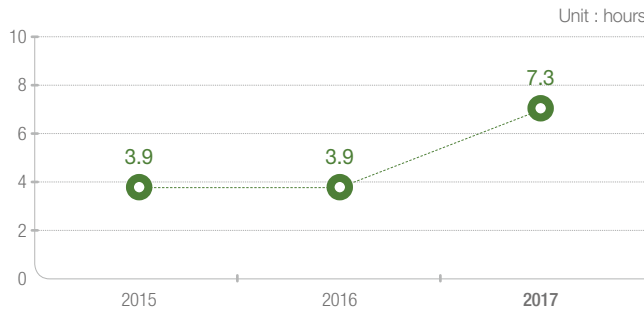
Unit : KRW 100million



Category	2015	2016	2017
Total Expenditure	1,540	9,749	419
Donation	1,490	9,723	361

Average Number of Hours per Person

Unit : hours



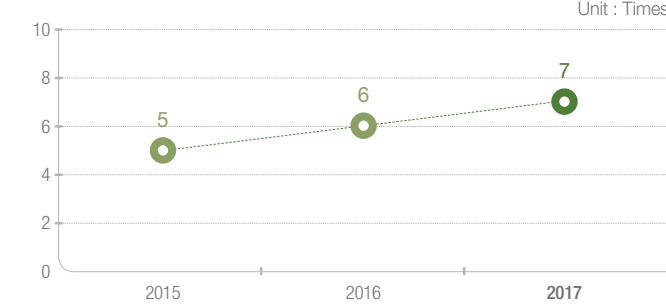
Year	Average Number of Hours per Person
2015	3.9
2016	3.9
2017	7.3

Sub-category	Unit	2015	2016	2017
Annual No. of Participants	Persons	5,645	957	1,722
Total Expenditure	KRW million	1,540	9,749	419
Operating Expense	KRW million	50	25	58
Donation (Culture, art, etc.)	KRW million	1,490	9,723	361
Average Service Hours/Person	Hour/Person	3.9	3.9	7.3

Relay Volunteering

Number of Times

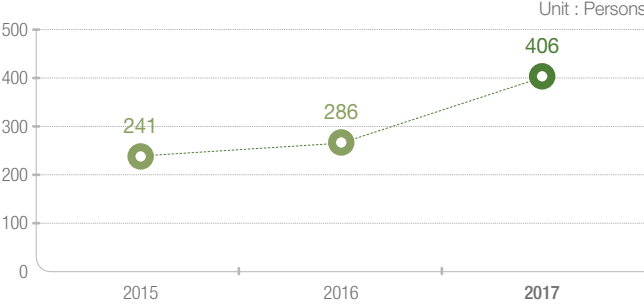
Unit : Times



Year	Number of Times
2015	5
2016	6
2017	7

Participants

Unit : Persons



Year	Participants
2015	241
2016	286
2017	406



GRI Content Index

Topic	Disclosure		Pages-References	Comments
	No.	Title		
GRI 102 : General disclosures 2016	102-1	Name of the organization	8~9	
	102-2	Activities, brands, products, and services	14~31	
	102-3	Location of headquarters	9	
	102-4	Location of operations	8	
	102-5	Ownership and legal form	9, 94~95	
	102-6	Markets served	8	
	102-7	Scale of the organization	9, 110~111	
	102-8	Information on employees and other workers	118	
	102-9	Supply chain	105~107	
	102-10	Significant changes to the organization and its supply chain	2, 11, 111	
	102-11	Precautionary Principle or approach	96~97	
	102-12	External initiatives	48~49	
	102-13	Membership of associations	129	
GRI 102 : Strategy 2016	102-14	Statement from senior decision-maker	6~7	
	102-15	Key impacts, risks, and opportunities	6~7, 96~97	
GRI 102 : Ethics and integrity 2016	102-16	Values, principles, standards, and norms of behavior	10, 98	
	102-17	Mechanisms for advice and concerns about ethics	98~99	
GRI 102 : Governance 2016	102-18	Governance structure	94~95	
GRI 102 : Stakeholder engagement 2016	102-40	List of stakeholder groups	50~51	
	102-41	Collective bargaining agreements	119	
	102-42	Identifying and selecting stakeholders	50~51	
	102-43	Approach to stakeholder engagement	50~51	
	102-44	Key topics and concerns raised	50~51	
GRI 102 : Reporting practice 2016	102-45	Entities included in the consolidated financial statements	8	
	102-46	Defining report content and topic Boundaries	52~53	
	102-47	List of material topics	52~53	
	102-48	Restatements of information	2, 9, 11, 111	
	102-49	Changes in reporting	2	
	102-50	Reporting period	2	
	102-51	Date of most recent report	2	
	102-52	Reporting cycle	2	
	102-53	Contact point for questions regarding the report	2	
	102-54	Claims of reporting in accordance with the GRI Standards	2	
	102-55	GRI content index	122~123	
	102-56	External assurance	126~127	
GRI 103 : Management Approach 2016	103-1	Explanation of the material topic and its Boundary	52~53	
	103-2	The management approach and its components	52~53	
	103-3	Evaluation of the management approach	52~53	
GRI 201 : Economic Performance 2016	103-2	The management approach and its components	11	
	201-2	Financial implications and other risks and opportunities due to climate change	58~62	
GRI 203 : Indirect Economic Impacts 2016	103-2	The management approach and its components	84	
	203-1	Infrastructure investments and services supported	86~91	
	203-2	Significant indirect economic impacts	86~91	

Topic	Disclosure		Pages-References	Comments
	No.	Title		
GRI 205: Anti Corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	98~99, 120	
GRI 302 : Energy 2016	103-2	The management approach and its components	56	
	302-1	Energy consumption within the organization	117	
	302-2	Energy consumption outside of the organization	117	
	302-3	Energy intensity	117	
	302-4	Reduction of energy consumption	58, 60~64	
	302-5	Reductions in energy requirements of products and services	58, 60	
GRI 303 : Water 2016	303-1	Water withdrawal by source	116	
GRI 304 : Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	65	
	304-3	Habitats protected or restored	65	
GRI 305 : Emissions 2016	305-1	Direct (Scope 1) GHG emissions	116	
	305-2	Energy indirect (Scope 2) GHG emissions	116	
	305-4	GHG emissions intensity	116	
	305-5	Reduction of GHG emissions	60, 62	
	CRE4	Greenhouse gas emissions intensity from new construction and redevelopment activity	116	
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	64	
GRI 308: Supplier Environmental Assessment 2016	308-2	Negative environmental impacts in the supply chain and actions taken	106	
GRI 401: Employment 2016	103-2	The management approach and its components	76	
	401-1	New employee hires and employee turnover	118	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	80	
	401-3	Parental leave	119	
GRI 402 : Labor Management Relations 2016	103-2	The management approach and its components	76	
	402-1	Minimum notice periods regarding operational changes	83	
GRI 403 : Occupational Health and Safety 2016	103-2	The management approach and its components	66	
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	68	
	403-4	Health and safety topics covered in formal agreements with trade unions	69	
	CRE6	Percentage of the organization operating in verified compliance with an internationally recognized health and safety management system	123	
GRI 404 : Training and Education 2016	103-2	The management approach and its components	76	
	404-1	Average hours of training per year per employee	118	
	404-2	Programs for upgrading employee skills and transition assistance programs	78~79	
GRI 412 : Human Rights Assessment 2016	412-2	Employee training on human rights policies or procedures	78~79	
GRI 471 : Marketing and Labeling 2016	CRE8	Type and numbe of sustainability certification, rating and labelling schemes for new construction, management, occupation and redevelopment	63	
GRI 418 : Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	103	

\*Daewoo E&C's projects and services



UNGC

The UN Global Compact (UNGC) is a voluntary corporate initiative calling for businesses to fulfill their social responsibilities. Since joining the UNGC in 2012, Daewoo E&C has made continued efforts to comply with its ten principles in the four areas of human rights, labor, environment, and anti-corruption. By participating in this global initiative, Daewoo E&C will carry out its sustainability management activities in a more systematic manner.

UN Global Compact 10 Principles & Related Activities

Areas	Principles	Activities	Pages
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights.	<ul style="list-style-type: none"><li>Supported global human rights protection standards such as Korean Labor Standards Act, UN Human Rights Declaration</li><li>Specifies in the Daewoo E&amp;C Ethics Charter ‘We uphold all international and national laws governing human rights, the environment, culture and the economy’</li><li>Sexual harassment prevention training for all employees (CP education)</li></ul>	78, 98, 119
	2. Businesses should make sure they are not complicit in human rights abuses.		
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	<ul style="list-style-type: none"><li>Respect for freedom of association and collective bargaining rights</li><li>Operated Labor Union and Joint Labor-Management Committee</li></ul>	83, 119
	4. Businesses should uphold the elimination of all forms of forced and compulsory labor.	<ul style="list-style-type: none"><li>Supported global human rights protection standards such as Korean Labor Standards Act, UN Human Rights Declaration</li><li>Joined UN Global Compact and declaring human rights protection</li></ul>	78, 83
	5. Businesses should uphold the effective abolition of child labor.		
	6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.	<ul style="list-style-type: none"><li>Employment by individual competence</li><li>Raising Awareness on Persons with Disabilities</li><li>Implements fair evaluation and compensation</li><li>Operated family-friendly welfare and benefits program</li></ul>	78~80
Environ-ment	7. Businesses should support a precautionary approach to environmental challenges.	<ul style="list-style-type: none"><li>Obtains and maintains environmental management system certification</li><li>Response to climate change through greenhouse gas emission management</li><li>Systematization of on-site environmental management standards, environmental audit and training</li></ul>	59
	8. Businesses should undertake initiatives to promote greater environmental responsibility.	<ul style="list-style-type: none"><li>Operates a Waste Management Company Registration System</li><li>Environment campaigns for each division, team and site</li></ul>	58~65
	9. Businesses should encourage the development and diffusion of environmentally friendly technologies.	<ul style="list-style-type: none"><li>Developed and applied Green premium</li><li>Developed Zero Energy House technology</li><li>Developed Industrial waste utilization technology</li><li>Obtained eco-friendly construction certification</li><li>Reducing the environmental impact of construction materials</li><li>Developed and applied CCS technology</li></ul>	41~43, 58, 60, 63
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	<ul style="list-style-type: none"><li>Systemized CP system</li><li>Voluntary CP Participation</li><li>Training and promotion of compliance</li><li>Conducted ethical management campaigns</li></ul>	98~99

ISO 26000

ISO 26000 is an ISO (International Organization for Standardization) international standard giving guidance on corporate social responsibility on seven core subjects: organizational governance, human rights, labor practices, the environment, fair operating practices, customer issues, and community involvement and development. Daewoo E&C will use ISO 26000 as a guiding principle to further strengthen sustainability management and fulfill its roles and responsibilities as a corporate citizen.

ISO 26000 Core Subject and Related Activities

Core Subject	Issues	Related Activities	Pages
Governance	Structure of decision making and process	Operated Audit Committee and Outside Director Recommendation Committee under the Board of Directors	94~95
	Due diligence	Operated CP Review by Unit, Implementation of internal report system	98~99
	Human rights risk situations	Conducted an ethical management campaign	98~99
Human Rights	Avoidance of complicity	Included sustainability factors in supplier assessment, penalized unqualified suppliers	106
	Resolving grievances	CP Management System including Prohibition of illegal employment and unfair treatment	98~99
	Discrimination and vulnerable groups	Fair evaluation and compensation	78, 80
	Civil and political rights	Complied with Korea Labor Standards Act, ILO standards	78
	Economic, social and cultural rights	Operated family-friendly programs, childbirth and parenting leave policy	82~83
	Fundamental principles and rights at works	Complied with Korea Labor Standards Act, ILO standards, conducted sexual harassment prevention training	78, 119
Labor Practices	Employment and employment relationships	Complied with Korea Labor Standards Act, ILO standards	78
	Conditions of work and social protection	Operated Emotional Management Event, Life & Work Balance Program	82~83
	Social dialogue	Operated Labor Union and Joint Labor-Management Committee	83
	Health and safety at work	Operated Health & Safety Committee, Organizational Health Management Program	68~75
	Human development and training in the workplace	Provided training and education based on talent development strategy	78~79
Environment	Prevention of pollution	Operated Air, Waste, Hazardous Chemical Management including Agreement on Fugitive Dust between Ministry of Environment and Construction Companies	60~62
	Sustainable resource use	Developed Eco-friendly Construction Materials	41, 43, 60
	Climate change mitigation and adaptation	Operated GHG Emission and Energy Control	61~62
	Protection of the environment, biodiversity and restoration of natural habitats	Protected biodiversity including land & aquatic biotope	65
Fair Operating Practices	Anti-Corruption	Internalized Ethical Management Culture, Operated CP	98~99
	Responsible political involvement	Signed in and participated in relevant associations and academic societies of business divisions	129
	Fair competition	Operated CP	98~99
	Promoting social responsibility in the value chain	Applied sustainability factors in supplier evaluation, penalized unqualified suppliers	105~106
	Respect for property rights	Operated Integrated Call Center & Customer Satisfaction Survey	102~103
Customer Issues	Fair marketing	Prohibited unethical display of advertisement and complied with advertising standards	102~103
	Protecting customers' health and safety	Acquired global quality certifications(ISO 9001, KEPIC, ASME, NBBI, etc.)	101
	Sustainable consumption	Developed and applied Green premium, Eco-friendly Construction Certification	58, 61, 63
	Customer service, support, and complaint and dispute resolution	Operated Integrated Call Center, PURGIO Muse	102
	Customer data protection and privacy	Enhancing Customer Information Protection System, Prevention of Information Leakage	103
	Access to essential services	Launch of Comprehensive Real-Estate Service “D.Answer”, Operated Integrated Call Center, PURGIO Muse	102
	Education and awareness	Launch of Comprehensive Real-Estate Service “D.Answer”, Operated Integrated Call Center, PURGIO Muse	102
Community Involvement and Development	Community involvement	Conducted company-wide community service relay and social contribution activities in overseas sites	84~91
	Education and culture	Operated Training School for local manpower	91
	Employment creation and skills development	Securing a Global Talent Pool, Operated Training School for local manpower	80, 91
	Technology development and access	Pursuit of Smart Construction Technology & Drone Survey Technology	38~43
	Wealth and income creation	Securing a Global Talent Pool, Operated Training School for local manpower	80, 91
	Health	Remodeling old facilities, Free Medical Support for Vision Care, Environmental Improvement CSR Activities	88, 90~91
	Social investment	Built national infrastructure such as roads and bridges	18~19



Independent Third-Party Assurance Statement

Introduction

DAEWOO Engineering & Construction Co., Ltd. (“DAEWOO E&C”) commissioned DNV GL Business Assurance Korea, Ltd. (“DNV GL”), part of DNV GL Group, to undertake independent assurance of 2018 DAEWOO E&C Sustainability Report (the “Report”). The directors of DAEWOO E&C have sole responsibility for the preparation of the Report. The responsibility of DNV GL in performing the assurance work is to the management of DAEWOO E&C in accordance with the terms of reference. DNV GL's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith.

Scope of assurance

The scope of assurance includes a review of non-financial data and sustainability activities and performance data over the reporting period from 1<sup>st</sup> January to 31<sup>st</sup> December 2017. This also includes :

- Evaluation of principles for defining sustainability report content and principles for defining sustainability report quality in accordance with the Global Reporting Initiative (GRI) Standards.
- Evaluation of the process for determining material topics for reporting and the management approach to material issues and the process for generating, gathering and managing the quantitative and qualitative data in the Report.

Basis of our opinion

We’ve performed our work using DNV GL's assurance methodology VeriSustain™<sup>1</sup>, which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000). We applied the limited level of assurance. The audit was carried out from March and till April 2018. The site visits were made to DAEWOO E&C's Headquarters in Seoul, Korea. We undertook the following activities as part of the assurance process:

- challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls;
- interviewed representatives from the various departments;
- conducted document reviews, data sampling and interrogation of supporting databases and associated reporting systems as they relate to selected content and performance data;
- reviewed the materiality assessment report.

Limitations

The engagement excludes the sustainability management, performance and reporting practices of DAEWOO E&C’ subsidiaries, associated companies, suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service(<http://dart.fss.or.kr>) as well as DAEWOO E&C's website ([www.daewooenc.com](http://www.daewooenc.com)). These documents, financial statements and the announcements are not included in this Assurance Engagement. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. The baseline data for Environmental and Social performance are not verified, while the aggregated data at the corporate level are used for the verification. DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Conclusion

On the basis of the work undertaken, nothing comes to our attention to suggest that the Report does not properly address the adherence to the Principles for defining report content in GRI Standards. Further opinions with regards to the adherence to the Principles are made below;

<sup>1</sup> The VeriSustain protocol is available upon request at DNV GL Website ([www.dnvgl.com/assurance/reporting/verification.html](http://www.dnvgl.com/assurance/reporting/verification.html))

Stakeholder Inclusiveness

DAEWOO E&C has identified internal and external stakeholder groups such as Future generation, Government and Related Organizations, Shareholders and Investors, Customers, Academia / Industry association / Research institute, Employees, Local community and Suppliers. DAEWOO E&C engages with the stakeholders at the company and business unit levels through various channels. The examples of approaches to engage with selected stakeholders and relevant organizations are described in the Report.

Sustainability Context

The Report addresses the core strategy and mid and long term implementation tactics to the corporate Vision 2025, so called ‘For the People & Better Tomorrow’ and core value. Various sustainability performances are also presented in the Report. In addition, DAEWOO E&C reports 12 material topics corresponding to relevant management areas which would help the stakeholder understand the management approaches toward the material topics.

Materiality

DAEWOO E&C has conducted the materiality assessment to prepare the Report. 34 issue pools were used on internal and external stakeholder survey to rate the material issues. 12 material topics are prioritized accordingly. DAEWOO E&C takes into account the consistent way of selecting material issues so that the decision made by the management and daily operation are fully aligned with strategic sustainability management. The audit team has reviewed the materiality assessment process and confirms relevant material topics prioritized from the process are addressed in the Report.

Completeness

The Report covers the impacts of material topics on stakeholders for the reporting period, key performance in 2017 and sustainability targets in 2018. The reporting boundary includes the operations over which DAEWOO E&C implements management control in 2017 however the quantified performance data for the environmental aspects are collected from 284 sites and 4 buildings operated by DAEWOO E&C in Korea. The audit team recommends reporting on material concerns identified through key stakeholder engagement activities for international projects that have significant implications for sustainability management.

Balance, Comparability, Accuracy, Timeliness, Clarity and Reliability

The audit team has sampled data and tested accuracy. Based on the test, the intentional error or misstatement is not noted from the data and information disclosed in the Report. Data owners were able to demonstrate the origin and interpretation of the data in a reliable manner. The data was identifiable and traceable.

Competence and Independence

DNV GL applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2011 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We have complied with the DNV GL Code of Conduct<sup>2</sup> during the assurance engagement and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV GL was not involved in the preparation of statements or data included in the Report except for this Assurance Statement. DNV GL maintains complete impartiality toward stakeholders interviewed during the assurance process. DNV GL have no other contract with DAEWOO E&C and did not provide any services to DAEWOO E&C in 2017 that could compromise the independence or impartiality of our work.

April 2018  
Seoul, Korea

In Kyoon Ahn



Country Representative  
DNV GL Business Assurance Korea, Ltd.

<sup>2</sup> DNV GL Code of Conduct is available from DNV GL website ([www.dnvgl.com](http://www.dnvgl.com))



Assurance Statement on Greenhouse Gas Emissions

KSA-18-GHG-54

KSA

GHG Verification Summary

Daewoo Engineering & Construction co., Ltd.

Verification Scope

Korean Standards Association has conducted reasonable GHG emissions verification based on GHG report provided by Daewoo Engineering & Construction co., Ltd. which includes Scope1 and Scope2.

Verification Standards and Guidelines

To conduct verification activities, verification team applied verification standards and guidelines. The standards and guidelines are as follows.

• GHG&Energy Target Scheme guideline(2016-255) provided by Ministry of Environment, Republic of Korea

• Verification guideline for management of GHG emissions trading scheme(2016-015) provided by Ministry of Strategy and Finance, Republic of Korea

• KS Q ISO 14064-1,2,3 : 2006

• IPCC Guideline.

Verification Conclusion

As a result of verification activities, verification team has found no significant errors. Therefore, Korean Standards Association confirms that following emissions data are adequately quantified.

GHG Emissions

(unit : tonCO<sub>2</sub>eq)

Year	Scope 1	Scope 2	Total
2017	9,146	61,358	70,501

※ There is a difference between the total quantity of GHG emission and the sum of each workplace's emission. (Decimal place is not considered when calculating the emission of each workplace.)

March 28, 2018

Back, Soo Hyun

KOREAN STANDARDS ASSOCIATION

Assurance Statement on Greenhouse Gas Emissions

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APPENDIX

Membership

Division	Associations and Institutes
INTERNAL AUDIT & CONSULTING DIVISION	UN Global Compact, Fair Competition Federation
HR & MANAGEMENT SERVICE DIVISION	Korea Emergency Plan, SeriCEO, Construction Industry Human Resource Manager Council, Korea Emergency Plan, National Commander's Council, Jongno Intergrated Defense Council, National Association of Reservist Battalion Commander, Korean Human Resource Development Association, Korea Construction Engineers Association, Korea Employers Federation, Korea International Trade Association, Korea Fire Facility Association, Korea Personnel Improvement Association
INSTITUTE OF CONSTRUCTION TECHNOLOGY	Korea Carbon Capture and Storage Association, International Federation for Structure Concrete, American Concrete Institute, Council on Tall Buildings and Urban Habitat, Architectural Institute of Japan, Korea Construction Transport New-Technology Association, Korea Industrial Technology Association
FINANACE DIVISION	Korea Association for CFO, Korea Listed Companies Association, Listed Companies CFO Forum
STRATEGIC PLANNING DIVISION	Korea Chamber of Commerce & Industry, Professional Infrastructure Developers Association, Federation of Korean Industries, Korea-Vietnam Friendship Association, Korea Federation of Construction Contractors, Korea Software Technology Association, International Contractors Association
Q-HSE SERVICES DIVISION	KEPIC WEEK Sponsorship (Korea Electric Association), Kosha 18001 Conference, Association of Construction Safety Manager, Construction Safety Officers' Council, Construction Safety Manager Committee, Korea Safety Manangement & Science, MaeKyung Safety & Environment Institute, Korean Society for Construction Quality, Korea Construction Quality Association, Korea Environment Construction Association
CIVIL PROJECT DIVISION	Construction Association of Korea, Korea Facilities Maintenance Association, Korea Specialty Constactors Association, Korean Society of Civil Engineers, Road Engineering Association of Asia & Australasia, CM Association of Korea, Korean Society of Steel Construction, Korea Institute of Construction Engineering and Management, Construction Economy Reserch Institute of Ko, Korea Road Association, Korea Information Comm. Contractors Association, Korea Railway Association, Korea Railway Association(International Cooperation Committee), Korean National Committee on Irrigation and Drainage, Korea Road Forum, Korean National Committee on Large Dams, Korea Society of Road Engineers, Korean Society of Hazard Mitigation, Korea Water and Wastewater Works Association, Korea Water Resources Association, Korean Society of Coastal Disaster Prevention, Korean Geotechnical Society, Korea Railway Association, Korean Society for Railway, Korean Tunneling and Underground Space Association, Korea Association of Waste to Energy Technology, Korea Ports & Harbors Association, Korean Society of Coastal and Ocean Engineers, Korea Environmental Industry Association, Korean Geosynthetics Society
HOUSING & BUILDING DIVISION	Construction&Residence Study Group, Korean Institute of BIM, Korea Remodeling Association, Korea Housing Service Society, IBS Korea, KMU Industry-Academic Cooperation Foundation, Korea Green Building Council, Architectural Institute of Korea, Korea Institute of Construction Engineering & Management, Korea Green Roof & Infrastructure Association, Korean Institute of Traditional Landscape Architecture, Korea Institute of Information & Telecommunication Facilities Engineering, Korean Institute of Landscape Architecture, Korea Housing Association, Korea Society of Environmental Restoration Technology, Society of Air-conditioning and Refrigerating Engineers of Korea, Korean Institute of Electrical Engineers, Korea Institute of Building Construction, Korean Institute of Architectural Sustainable Environment and Building Systems, Korea Military Supplies Cooperative, Korea Developer Association, Korea Institute of Ecological Architecture and Environment, Korean Society of Living Environment System, Korean Association of Air Conditioning Refrigerating and Sanitary Engineers, Koran Institute of Electrical and Electronic Material Engineers, Korean Institute of Illuminating and Electrical Installation Engineers, Korea Facility Management Association
PLANT DIVISION	Korea Electric Association, Korea Coating Experts Society, Engineering Guarantee Insurance, Korea Plant Industries Association, The Korea Gas Union, Korean Radioactive Waste Society, Korea Engineering & Consulting Association, Korea Atomic Industrial Forum, Korea Nuclear Society, Korea Nuclear Association for International Cooperation, Korea Electric Engineers Association, Korea Plant Industries Association(PEA Club), Korea Institute of Plant Engineering & Construction

Membership

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Awards

Awards for Civil Project Division	
Awards	Remarks
Grand Prize for Civil for Guri-Pocheon Expressway Private Investment Business and Inje Tunnel (Korea's longest tunnel)	Recognized for contribution to social infrastructure development
Grand Prize in Civil category in IFAWPCA (International Federation of Asian and Western Pacific Contractors' Associations) held in Seoul	Contributed to global E&C technology development through Busan-Geoje road performance indicator(PI)
Asan-Cheonan Expressway 1, selected as the best construction site	Recognized for work in shared growth through technical support for suppliers and fair trade, in the evaluation of shared growth achievement in the expressway construction sites
Seohae Line Railway 4, selected for Best Railroad Construction Case	Daewoo Smart Construction System applied

Awards for Housing & Building Division	
Awards	Remarks
Commendation of Seongnam Mayor Award for creating job oppertunities and revitalizing local communities with Seongnam Sujin Studio apartment Site.	
Presidential Award for the Best Apartment for Seocho PRUGIO Summit	
"The 12 <sup>th</sup> Korea Meteorological Industry Award" Korea Meteorological Administrator's Prize (Silver Prize)	Developed air quality improvement programs for apartments by Housing & Building Works Mechanical Team for the first time in the industry
Grand Prize for Busan Good Company Certification Award	
Commendation of Seoul Gangdong District Office Award for Godeok Gracium Site	Reduced the inconvenience for local residents and improved the environment in and outside of the construction site
Korea Occupational Safety & Health Agency Award for Contribution to Prevention of Industrial Disasters for Ansan Park PRUGIO	

Awards for Plant Division	
Awards	Remarks
Won 2017 Overseas Construction Award in the Plant Category	Organized by Money Today, sponsored by Ministry of Land, Infrastructure and Transport, International Contractors' Association of Korea, Construction Association of Korea, and Construction Guarantee Daewoo E&C won the best prize in the plant category at the 2017 International Construction Award (Jordan Research and Training Reactor PJ) on March 29, 2017.

Awards for DICT	
Awards	Remarks
Commendation of Minister of Land, Infrastructure and Transport for Day of New Construction Technology	Korea Construction Transport New-Technology Association, recognized for contribution to technological innovation
Commendation of Minister of Land, Infrastructure and Transport for Construction Technology Research Case Study Presentation	Korea Federation of Construction Contractors, excellent construction technology research
Commendation of Korea Intellectual Property Office Award for 2017 Korea Invention Patent Competition	Korea Intellectual Property Office, Korea Invention Promotion Association, invention of excellent technologies



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