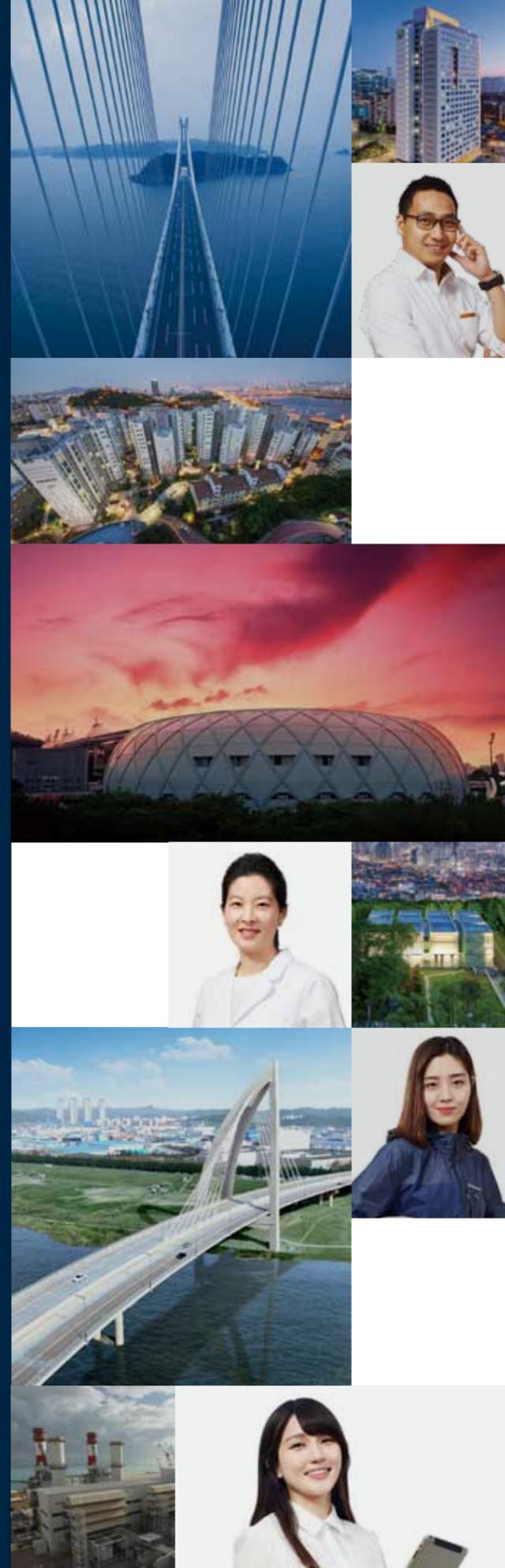


# 2016 DAEWOO E&C SUSTAINABILITY REPORT



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# INTRODUCTION

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# CEO Message



**Dear respected stakeholders of Daewoo E&C,  
I am Chang-min Park, CEO of Daewoo  
Engineering & Construction.**

In 2015, despite the intense competition domestically within the construction market in Korea and the decline of overseas construction markets due to low oil prices, Daewoo E&C achieved considerably satisfactory performance compared to our industry peers thanks to the rapid reorganization of our business portfolio in advance. By winning the S-Oil RUC and Kuwait Al-Zour Refinery construction, we were able to line up a system of all business types with engineering and construction. Also, the Compliance Program was implemented to enable all employees to have law-abiding consciousness in performing their work, and these efforts were acknowledged internally and externally by being the only Korean construction company ranked at 19th place within the '2015 Asia Sustainability Ranking' that announced the sustainability performance of companies in the Asian Region.

Through continuous sales growth and efforts to reduce the overall cost in the first half of 2016, Daewoo E&C was able to improve its financial structure. However, the uncertain internal and external business environment is expected to be unfavorable regardless of the business area or type. Along with the unstable macroeconomics, such as Brexit and the possibility of the US raising the interest rate, the continuous low oil price is expected to result in the decrease in the order from oil-producing countries in the Middle East and Africa, restructuring of construction companies by the government, and decrease in the housing business to continue the phase of low-growth.

The unfavorable domestic and foreign environment mentioned above are requiring tough challenges, but Daewoo E&C, which is aiming for the people & better tomorrow, will pursue the 'Global Infra & Energy Developer' by 2025 based on our DNA of successfully overcoming the past crisis and challenges, and the experience of being Korea's No. 1 construction company.

To fulfill this goal, Daewoo E&C will improve its financial stability by reinforcing business profitability, strengthening the efficiency and productivity of the organizational operation, establishing trust based on ethics, and practicing true talent management.

First is the improvement of the financial stability by reinforcing business profitability. Rather than the practice of simple construction, we will focus on improving the profitability by creating the high value-added

growth engine. Daewoo E&C will focus on implementing substantial management for stabilizing financial stability through innovative cost reduction, profit-oriented order review, cash flow-based target management, and reinforcement of risk management systems.

Second is strengthening the efficiency and productivity of the organizational operation. This means eliminating the inefficiencies accumulated within the company to improve the productivity through organizational innovation and efficiency in manpower operation. By aggressively rearranging similar businesses and overlapping divisions, the portion of overlapping management tasks will be reduced, and efficiency and speediness in decision making will be strengthened to become a slim and healthy organization.

Third is establishing trust based on ethics. The fundamentals of a company must be based on truthfulness. Daewoo E&C will secure transparency in all fields, and operate under the principles of the law and morals to enable sustainable growth and development.

Fourth is practicing true talent management. Talents are always included as the key success factor of great companies. We will introduce new recruitment system for training and developing excellent talents without the prejudice of major, school relations nor regionalism, and we will continue our efforts to build better and fresh future for our company.

Dear respected stakeholders of Daewoo E&C,  
Thank you for your warm support for Daewoo E&C, and we ask cordially for your continuous interest and support.

Thank you.

September 2016  
Daewoo E&C Co., Ltd.

CEO **Chang-min Park**

# CFO Message



**Dear beloved stakeholders of Daewoo E&C,  
This is Kyungtaek Lim, Chief Financial  
Officer of Daewoo E&C. It is a great pleasure  
and honor to meet you through the 2016  
sustainability report.**

2015 was not the greatest year for the construction market with the plummet of international oil prices within the prolonged low growth economy since the global financial crises.

Daewoo E&C, however, managed to secure KRW 13 trillion in new orders, KRW 9.9 trillion in sales revenue and KRW 3.3 billion in operating profit as a result of outstanding housing supply performances, diversification of overseas markets and our differentiation strategies. Such achievement was only possible thanks to the efforts of all our employees and the faith our stakeholders placed in us throughout the whole adventure.

The global construction market is opening up and the competition is becoming fiercer by the minute.

We cannot entrust the profitability of our company through conventional construction and EPC projects alone, and this is why Daewoo E&C has established 'Global Infra & Energy Developer' as our mid- and long-term strategic goal. In line with the goal, we are focused on strengthening core capacities, expanding business to incorporate investment, development and management, globalization, settling a corporate culture of creativity and managing our human resources ever more efficiently.

In addition, we have created a division primarily and solely in charge of efficient risk management and are now running an Integrated Project Management System that manages a project from kick-off to close-out in six stages. We also reinforced monitoring on the estimated costs at all our domestic and overseas sites in order to ensure accounting transparency for our investors.

2016 will be a year for Daewoo E&C to regain the trust of the market. Throughout all our business divisions whether it be civil, building works, plant or others, Daewoo E&C will selectively pursue profitable new orders and control site costs efficiently. This shall enable us to not only accomplish KRW 12.2 trillion in new orders but also break through KRW 10 trillion in sales revenue. Such performance shall become the foundation of our goal to achieve KRW 25 trillion in sales revenue and KRW 2 trillion in operating profit by 2025.

2016 holds both risks and opportunities for Daewoo E&C and will be a significant year for our new growth. We pledge to put our best and collective efforts forward to achieve our 2016 goal and 2025 vision.

Looking into the future, we anticipate your continuous support for Daewoo E&C.

Thank you.

September 2016  
Daewoo E&C Co., Ltd.

CFO **Kyung-taek Lim**



# Re-viewing DAEWOO E&C

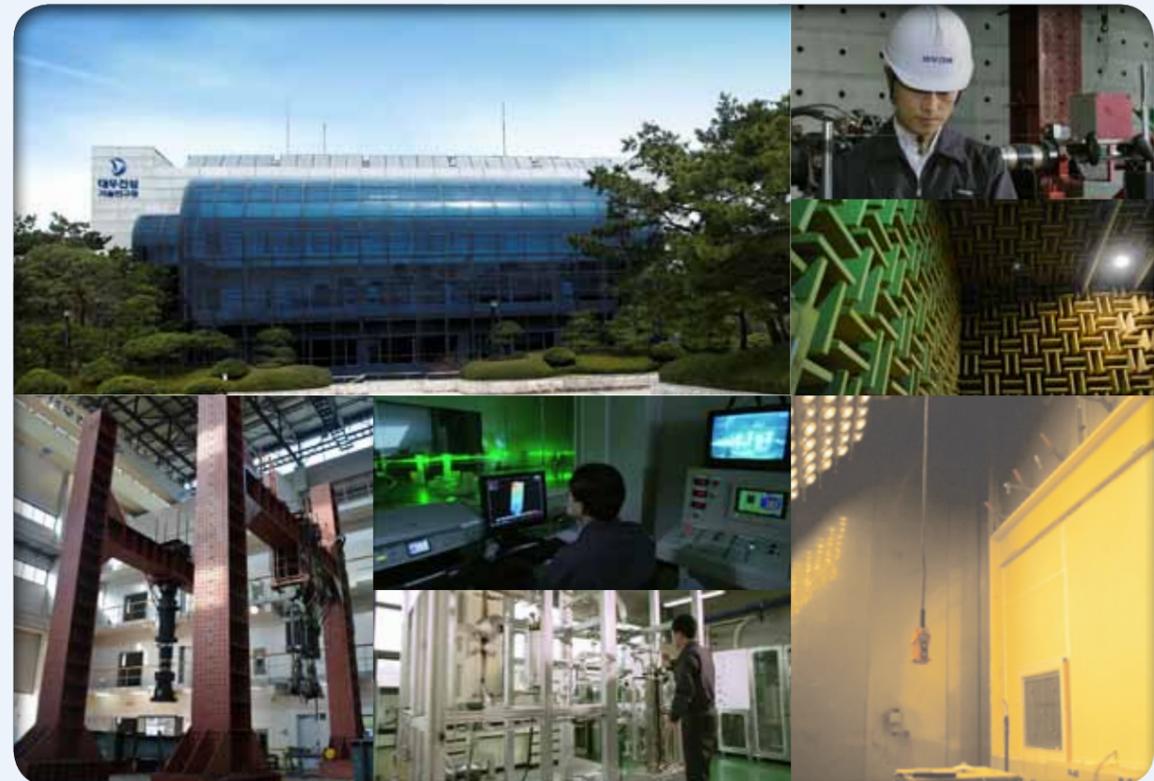
How well would you say you know about Daewoo E&C? Daewoo E&C has been achieving steady but meaningful growth while undertaking strenuous efforts to lead the development of sustainable business practice in the industry. In this report, we would like to shed light on some of the major achievements and strengths of Daewoo E&C by 'Re-viewing Daewoo E&C.'



## Daewoo E&C has an R&D center that leads technological innovation

In 1983, Daewoo E&C opened Daewoo E&C Institute of Construction Technology (DICT), which is the first in the industry to align research and experiments. Since then, we have devoted constant efforts to the innovation of construction technology. As a recognition for such endeavors, the Order of Science and Technology Merit, the Presidential Award on Construction Technology's Day, and the President's Award for the Best Corporate Research Institute were granted among others. Our portfolio differentiates itself from that of other R&D centers, which focus only on technology development and technological support. Being the first in the industry to establish a division for technology business, we not only profit through our technology but also prepare for new businesses by anticipating future engineering and construction trends.

Through the establishment of a package system for technological support, the DICT provides systematic technological support that covers the entire construction process and this has contributed in improving our management indicators to KRW 62.7 billion in 2014 and KRW 68.8 billion in 2015. With such performance being recognized both internally and externally, we received the IR52 Jang Youngshil Award (The Minister of Science, ICT and Future Planning Award) and the Entrepreneur for Construction Technology R&D Award (The Chairman of the National Assembly Award) in 2015. The DICT aims to make fruitful contributions for a brighter construction industry via three key businesses: 1) saving project costs through our technology; 2) supporting bidding processes by applying specialized technologies to raise the price competitiveness; and 3) creating future income sources through future forecasting and technology sensing.



## Daewoo E&C has outstanding risk management skills

In a period of global low-growth and increasing economic uncertainties, more deliberate and preemptive risk management is required to prevent significant loss while selecting and undertaking projects. In July 2015, Daewoo E&C developed and newly established an Integrated Project Management System in order to monitor and keep track of step-by-step project risks while integrally monitoring project information scattered in different systems. In 2016, based on the shared information of the risk management, we plan to strengthen our risk management system through RM (Risk Management) 2.0, a new risk managing paradigm supporting substantial management through preemptive communication and collaboration among divisions.

Moreover, on October 15, 2015, Daewoo E&C upgraded our risk management by obtaining the ISO 22301 certification for the first time in the domestic construction industry. ISO 22301 is an international standard to ensure the continuity of companies' key businesses by helping companies recover back to normal from crises such as disasters, terrorism and conflicts as quickly as possible, utilizing the available resources in full. By acquiring the certification, we expect to not only enhance our credibility from clients and government organizations in the stage of bidding and construction, but also secure global competitiveness by strengthening risk management skills.

## RM 2.0 Strategy

'By sharing information on risk management, we are building a new paradigm that supports substantial management through preemptive communication and collaboration between business and supporting divisions'





## Daewoo E&C recognizes the value of the environment, technology, and design

In October 2015, Korea Electric Power Corporation (KPECO)'s new company building construction site by Daewoo E&C's Building Works Division was awarded the grand prize in the '2015 Korea Green Building Competition' organized held by Presidential Commission on Architecture Policy (PCAP). This accomplishment was followed by acquiring LEED (Leadership in Energy and Environmental Design) Platinum certification from US Green Building Council (USGBC) in July and winning the Minister Award in the '2015 Korea Public Building Prize' from the Ministry of Land, Infrastructure and Transport (MOLIT) in September. Recognizing the value of the environment, Daewoo E&C has become the leading company in the eco-friendly construction in the market.

In November 2015, the Gwanggyo Complex construction site by our Building Works Division has also won the grand prize (The Minister of Land, Infrastructure and Transport Award) in the '11th Korea Civil and Building Technology Competition'. The Gwanggyo Complex was highly praised of its outstanding design, planning for the line of flow and connectivity among internal communities. The line of flow of residents and commercial area visitors could have overlapped around the clock tower but the critics' evaluation was that it was adequately separated. Furthermore, its fine exterior and landscape were assessed to be harmonious with the Gwanggyo Mountain nearby. Moreover, also in November, the construction site for Seoul National University's Kwanjeong Library received the grand prize in the public sector of the '2015 Korea Construction Culture Competition'. The library not only proved its fine interior and exterior, but also verified Daewoo E&C's excellent technologies through the application of a special construction technology called 'Nonsupporting Steel Mega-Truss Lifting & Sliding'.

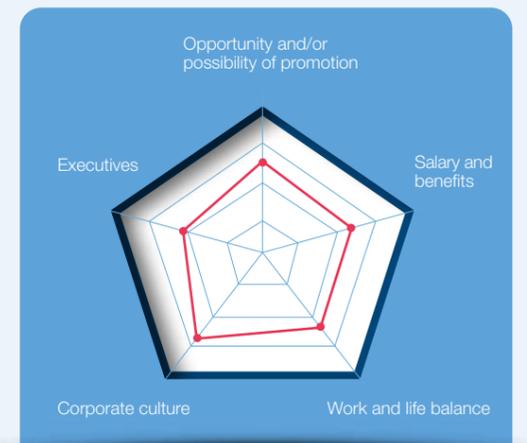


## Daewoo E&C is the cradle of future construction leaders

Daewoo E&C is regarded as the place of opportunity for new employees to rise through the ranks to eventually become CEO. According to the analysis of Jobplanet, a social media known for company evaluations, Daewoo E&C received the highest score on most of the criteria based on the assessment of 20,000 reviews from the employees regarding opportunity and/or possibility of promotion, salary and benefits, corporate culture, work-life balance and executives, especially on promotion opportunities and possibility and corporate culture. Daewoo E&C won 4<sup>th</sup> place in the ranking of the '25 Best Korean Conglomerates to Work For', jointly selected by Fortune Korea and Jobplanet. We believe that this is the fruit of our efforts to focus on human resources and foster future construction leaders by pursuing our core values, 'Challenge and Passion' and 'Autonomy and Accountability'.

### Overall Score of Daewoo E&C in the 'Best Korean Company to Work For'

Score by Criteria	Score
Opportunity and/or possibility of promotion	3.6
Salary and benefits	3.8
Work-life balance	3.3
Corporate culture	3.9
Executives	3.1



Company with the opportunity to become CEO starting as an ordinary employee

Overall score

4<sup>th</sup>



## Daewoo E&C is a great place to work for women

Considering the difficulties in construction industry for women, Daewoo E&C has made strenuous efforts to create a better work environment for women. We proactively promote family-friendly management, implementing supporting systems for childbirth, childcare, education, etc. In 2013, we obtained—and are still maintaining—family-friendly certification given by the Ministry of Gender Equality and Family (MOGEF) and became the first in the industry to be chosen as the ‘Excellent Family-Friendly Company.’ Furthermore, on October 30, 2015, Daewoo E&C won the grand prize in the Apartment section of the ‘18<sup>th</sup> Best Company Award Chosen by Female Consumers’ sponsored by MOGEF and Korean Women Entrepreneurs Association. This prize is granted for not only the quality of company’s products and services, but also the level of female-friendly management, ethical management and social contribution, evaluated on women’s perspective. Winning this award means that our endeavors in gender equality has gained recognition from the female consumers.

## Daewoo E&C is recognized around the world for its sustainable management

On December 1, 2015, at the UNESCO meeting in Paris, ‘Business and Climate – a positive revolution for companies’, Daewoo E&C’s climate change risks and opportunities, greenhouse gas inventory management and carbon disclosure were introduced as one of the best practices. Co-hosted by Positive Economy Forum and KPMG, this meeting was held during the period of the United Nations 21<sup>st</sup> Conference of the Parties (COP21) with the Minister of Foreign Affairs of France, UNESCO Secretary General, around 200 CEOs and sustainability experts, gathered to discuss business and climate change.

In addition, Daewoo E&C ranked 19<sup>th</sup> among 100 companies in the ‘2015 Channel News Asia Sustainability Ranking,’ jointly conducted by Sustainalytics, Channel News Asia and CSR Asia from July to October. We were the only Korean construction company listed on the ranking. This serves as a momentum to let the world know about our arduous efforts such as introducing Compliance Program (CP), implementing consistent CSR activities and announcing mid- and long-term strategy, Vision 2025. Daewoo E&C aspires not to merely rest on our accomplishments, but to become a companion of our country and society.

### Family-Friendly Management Target

### Differentiated Aspects



All employees including both permanent and temporary position

#### Support of leisure time with family



Holds events for employee’s family members, provides vacation, vacation bonus and leisure facilities, supports in-company leisure clubs, etc.

#### Support of family healthcare



Provides medical check-ups for employee’s spouse, medical expenses of family and of disabled family member, healthcare education, leave of absence (ex. family nursing, etc.)

#### Support of marriage encouragement & family events



Provides expenditure for congratulations and condolences, funeral services, etc.



### Content of the Book ‘Inspire Change’



- **Climate Change Risks and Opportunities**
  - Annually monitors risks and opportunities according to changes in regulations, physicality, brand reputation, and customer behavior, and examines response measures
- **Greenhouse Gas (GHG) Management System**
  - Establish and operate GHG inventory system within ‘BAROCON’, an integrated construction management system since 2012.

### Sustainalytics/Channel News Asia Evaluation Framework



Environmental

Operation Site  
Supply Chain  
Products & Services



Social

Employee  
Supply Chain  
Customer  
Community & Philanthropy



Governance

Business Ethics  
Corporate Governance  
Public Policy



# Company Overview

## About Daewoo E&C

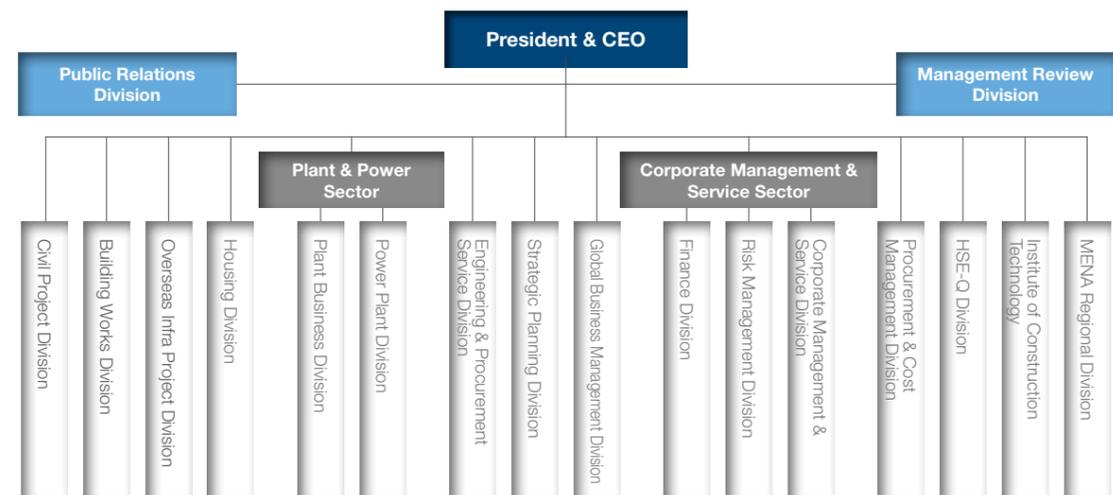
Since the establishment in 1973, Daewoo E&C has relentlessly pursued change and innovation, adding new values to our lives. Having created a wide variety of business opportunities by working closely with financial institutions such as Korea Development Bank (KDB) and a recently established Asia Infrastructure Investment Bank (AIIB), we are expanding our stage to the world to gain a solid foothold in the global construction market. Based on the belief in the 'power of construction to change the world,' we will open up a new and better future as the market-leading construction convergence innovator.

### Overview (As of December 31, 2015)

1) Excludes offices  
2) Excludes contract workers and overseas site workers

<b>Company Name</b>	DAEWOO Engineering & Construction Co., Ltd.
<b>Date of Establishment</b>	November 1, 1973
<b>Address</b>	75, Saemunan-ro (Sinnmunno 1-ga), Jongno-gu, Seoul, Korea
<b>CEO</b>	Youngsik Park
<b>Branches and Affiliates</b>	2 Domestic Branch, 22 Overseas Branches <sup>1)</sup> , and 10 Overseas Subsidiaries
<b>Major Shareholder</b>	Korea Development Bank (KDB Value 6 Ltd.)
<b>Number of Employees</b>	6,174 <sup>2)</sup>
<b>Website</b>	Korean) www.daewooenc.com / English) www.daewooenc.com/eng

### Organizational Structure (As of March 9, 2016)



## Domestic & Overseas Subsidiaries

(As of March 9, 2016)

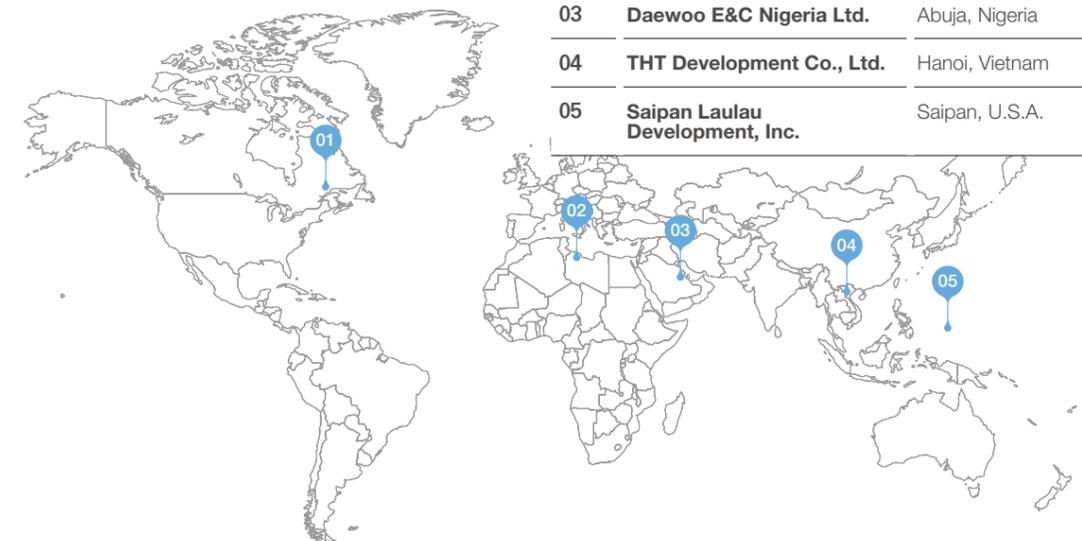


### Domestic (8)

No	Title	Location
01	Daewoo Songdo Hotel Co., Ltd.	Incheon
02	Foodream Co., Ltd.	
03	PRUGIO Service Co., Ltd.	Seoul
04	Kangdong Project Financing Vehicle Co., Ltd.	
05	Daewoo Power Co., Ltd.	Pocheon
06	Daewoo ST Co., Ltd.	Jincheon
07	Korea Infra Management Co., Ltd.	Busan
08	Busan High Tech Industrial Complex Co., Ltd.	

### Overseas (5)

No	Title	Location
01	DW America Development, Inc.	New York, U.S.A.
02	Daewoo Tripoli Investment & Development Co., Ltd.	Tripoli, Libya
03	Daewoo E&C Nigeria Ltd.	Abuja, Nigeria
04	THT Development Co., Ltd.	Hanoi, Vietnam
05	Saipan Lulau Development, Inc.	Saipan, U.S.A.



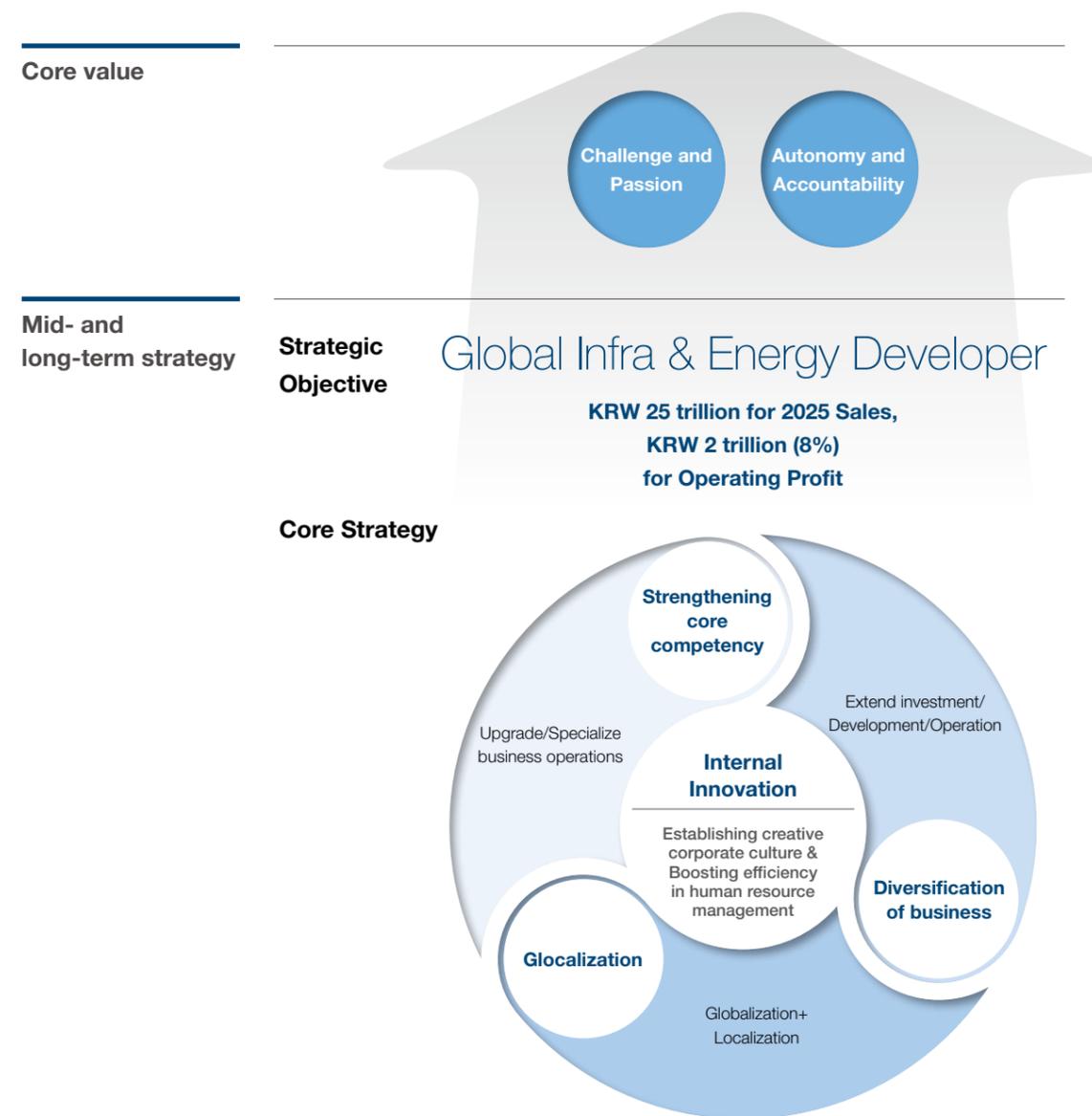
### Vision 2025

With a firm belief in change and innovation for our better future, Daewoo E&C announced the new vision 'For the People & Better Tomorrow' in order to prepare for the paradigm shift in the construction industry and establish differentiated strategy in response to the stagnant construction market in Korea and the excessive competition in overseas markets. This new vision will serve as a new motive for us to become the 'Global Infra & Energy Developer,' our 2025 mid- and long-term strategic objective.



### Core Value

Daewoo E&C has declared its core value, 'Challenge and Passion' and 'Autonomy and Accountability' at the 42th anniversary of its founding. This stipulates the value inherent in our employees through 42 years of history, which has empowered Daewoo E&C to lead the construction market in Korea and around the world, despite being a latecomer. Since 2015, we have launched a course called, 'History of DAEWOO,' for newcomers and included it in their core value performance.



### Topic of the Year 2015, 'PRO-Performer'

The topic of the year 2015, 'PRO-Performer,' is composed of three pillars: (1) Profit Maximization, (2) Revenue Growth and (3) Order Increase. In terms of profit maximization, Daewoo E&C aimed at innovating production cost and accomplishing a no-fault in Engineering and construction. In order to achieve revenue growth, we made an effort to maximize productivity and strengthen our operation supporting process. Lastly, for the order increase, we strived to increase success rates for winning an order and explore new growth engines. Daewoo E&C has created synergy through company-wide reformation to increase corporate value, a systematic response to the paradigm shift in the construction industry, and the internalization of our new corporate vision as well as our mid- and long-term strategies.



### Topic of the Year 2016, 'Ensuring Internal Stability'

The business environment, locally and abroad, is deteriorating due to the prolonged low oil prices, excessive supply in housing and increase in base interest rate. In 2016, despite these difficulties, Daewoo E&C promises to make progress by concentrating on internal growth. Therefore, the topic of the year 2016, 'Ensuring Internal Stability,' is composed of four pillars: Internal Development, Profitability Increase, Awareness Raising, and Expertise Increase.

<h4>Internal Development</h4> <p>Internal development through company-wide reformation such as efficiency in organization/process</p> <ul style="list-style-type: none"> <li>• Improve productivity and effectiveness through management innovation</li> <li>• Obtain stable business competence and enhance competitiveness through systematic cooperation between business divisions and supporting teams</li> <li>• Become a Developer through accumulation of profit and utilize it as a source of new business</li> </ul>	<h4>Profitability Increase</h4> <p>Prioritization of profitability at all phases including sales, order, engineering, construction and operation</p> <ul style="list-style-type: none"> <li>• Manage variability through enhanced risk analysis and management from the earlier stages of project</li> <li>• Increase profitability through V/O (Variation Order) and strengthening capacity in claiming</li> </ul>
<h4>Awareness Raising</h4> <p>Prevention of disaster/loss by reviewing and improving existing business practices</p> <ul style="list-style-type: none"> <li>• Implemented professional and sophisticated safety management through risk assessment</li> <li>• Occurrence of tangible and intangible loss due to continuous serious incidents and violations</li> <li>• Need to internalize employee safety and compliance program</li> </ul>	<h4>Expertise Increase</h4> <p>Increase expertise of all employees to become Global Infra &amp; Energy Developer</p> <ul style="list-style-type: none"> <li>• Develops new growth engines including investment/development business</li> <li>• Expect expansion of Asian Infra market due to the launch of AIIB (Asia Infrastructure Investment Bank) and increase our role as Developer</li> <li>• Increase expertise in EPC (Engineering Procurement Construction) and IPP (Independent Power Plant)</li> <li>• Need to improve language abilities and relevant specialties to develop global competitiveness in higher value-added areas such as planning, financing and operating</li> </ul>



# DAEWOO E&C

## CIVIL

### Business Portfolio

With proven technology, high quality service, and successful overseas experience, Daewoo E&C has contributed to Korea's economic development by building a series of major social infrastructures in the 1970s, including highways, railways, and harbors. Especially in 2015, despite global economic depression, we secured our operating profit by engaging in new projects based on profitability in private contractors and Social Overhead Capital (SOC) business in Korea. We are seeking to adopt diversification strategy to win overseas projects based on localization strategy and partnerships in Asia and South Africa region. In 2016, in response to the deteriorating business environment and excessive competition, we will select and concentrate on projects with high profitability and endeavor to accomplish substantial revenue growth followed by diversifying business areas, maximizing operating profit and securing liquidity.



## BUILDING

Despite the stagnant construction market in Korea and overseas markets, Daewoo E&C's Building Works is securely diversifying its business with high-rise buildings and intelligent buildings. The sophisticated, yet comfortable, and safe, yet pleasant designs and spaces provided by Daewoo E&C have now become the landmark of its own, all over the world. We lead the industry with our smart and eco-friendly technologies and our competencies in various fields such as houses, offices, hotels, medical facilities, cultural facilities and more. In 2015, with the steady recovery in the real estate market, the Building Works Division has efficiently managed and actively targeted housing and office building markets. In 2016, keeping in mind the topic of the year, 'Ensuring Internal Stability,' we will strive to lay a cornerstone of future growth of Building Works through restructuring our business portfolio based on profitability and stability.

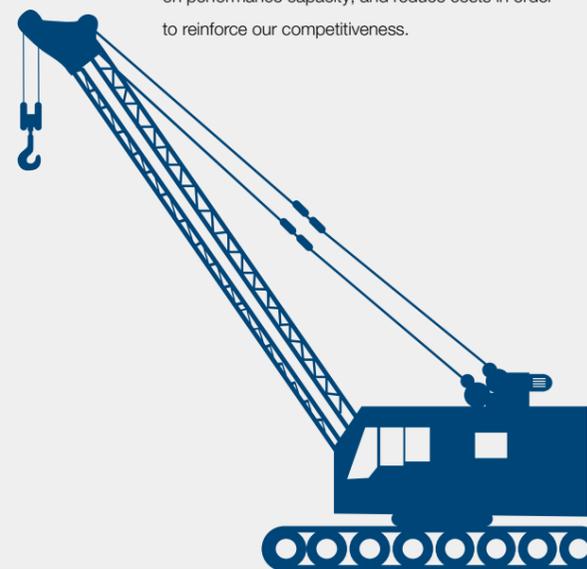


## HOUSING

For the past six years, Daewoo E&C has secured its position as a forerunner in the housing business. This is the result of the detailed market analysis, marketing strategies and outstanding product competitiveness in the housing market, where catering to smart consumers' needs is pivotal. Daewoo E&C is continuously creating productive changes that enrich the lives of its customers. In 2015, the Housing Division has strengthened its core competence and prepared for recovery in the housing market. Nevertheless, in 2016, expecting increase in uncertainties of financial regulations, concentration of housing supply, excessive competition in the industry, we shall strengthen our internal stability through efficient operation and risk management and increase housing market share through expansion into new business and strengthened core competencies based on differentiated competitiveness.

## PLANT

Despite market decline due to low oil prices, the amount of new orders secured by the Plant Division in 2015 increased substantially compared to the previous year. However, new investments from oil-producing countries will decrease along with the ever-declining oil prices and we expect the downfall to be the lowest in the recent six years. Daewoo E&C shall therefore focus on successfully managing and completing projects, especially our new large-scale projects; establish business strategies based on performance capacity; and reduce costs in order to reinforce our competitiveness.



## POWER PLANT

Power business for Daewoo E&C has been promoted strategically as its national export strategy, executing public and private projects domestically while proving its strong potential to grow in emerging markets such as Asia, Africa, and South America, where the demands for electricity is surging. In 2015, however, the overall business environment was rather tough regarding economic stagnation in domestic construction industry and has led to the decrease in the number of overseas projects due to the fall of oil prices. Going through such difficulties, we have continued to promote new Independent Power Plant (IPP) projects and overseas EPC (Engineering Procurement Construction) projects. In 2016, we hope to take a leap forward based upon last year's efforts.

## Corporate Governance

### Shareholders and Investors

Daewoo E&C preserves the right of shareholders to be informed by publicly disclosing management information, financial information, Investor Relations (IR) materials and stock information on the IR website (www.dwconstir.com). Material information, which Daewoo E&C is legally obliged to disclose, is available in Financial Supervisory Service (FSS) Data Analysis, Retrieval and Transfer System (DART) and Korea Investor's Network for Disclosure System (KIND) of Korea Exchange (KRX).

#### Major Shareholders

(As of December 31, 2015)

Shareholder	Percentage of shares (%)	Business relations
Korea Development Bank (KDB Value 6 Ltd.)	50.8	None
SEBT Investment Ltd.	12.3	None
Kumho Tires Co., Inc.	4.4	None
Kumho Petrochemical, Co., Ltd.	3.5	None
Asiana Airlines, Inc.	2.2	None

### BoD (Board of Directors) Organization and Operations

Daewoo E&C strives to establish a transparent corporate governance through effective monitoring and objective advice. The BoD consists of experts that discuss material issues with respect to business operations and ensure sustainable management and growth in their respective fields. In 2015, BoD meetings were held on 14 occasions, resolving 56 agenda with the attendance rate of 98%. As of 10 March 2016, 4 occasions were taken place in 2016.

#### BoD Organization

(As of December 31, 2015)

Category	Name	Date of Birth	Background	Rationale
Inside Director	Youngsik Park	1957.02	CEO of Daewoo E&C Former Head of Planning/Sales Division	CEO
Inside Director	Kyungtaek Lim	1956.02	Chief Vice President of Daewoo E&C Former Vice-Chairman of KDB	CFO
Outside Director	Sunjik Kwon	1950.03	Outside Director of NH FUTURES	Marketing expert
Outside Director	Suntae Jeong	1956.10	Lawyer in Kim Chang & Lee Law Firm	Legal expert
Outside Director	Khan Park	1949.04	Director of Haekwan Foundation	Financial expert
Outside Director	Hongkee Jee	1948.09	Former President of Korea Federation of Water Science and Engineering Societies	Technical expert
Non-Executive Director	Jinkyoo Oh	1962.07	Head of Private Equity Fund of KDB	Preservation of shareholder rights

### Annual BOD Operations

Category	Subcategory	Unit	2013	2014	2015
BoD	Occasions	times	18	17	14
	Agenda	number	66	48	56
	Attendance rate	%	97	92.9	98.1

### BoD Committees

Outside directors are transparently nominated by the Outside Director Nomination Committee. Meanwhile the Audit Committee is in charge of overseeing business and accounting within Daewoo E&C in order to obtain transparency of accounting, legality and fairness.

#### BoD Committee Operations

Category	Roles and Responsibilities	Members
Outside Director Nomination Committee	To recommend suitable candidates for non-executive positions to the general meeting	1 inside director, 3 outside directors, 1 non-executive director
Audit Committee	To oversee financial reporting and accounting	2 outside directors, 1 non-executive director

### BoD Evaluation and Remuneration

Remuneration for the constituents of BoD is decided upon financial performance, the amount of which may not exceed the limit decided upon the General Meeting. Information on total executive remuneration, average remuneration per person and individual remuneration figures (over KRW 500 million) is publicly disclosed in Daewoo E&C's Annual Report and the IR website for transparent information disclosure. Retirement pay for executives is provided according to the Rules of the General Meeting (with reference to Article 30, Articles of Incorporation).

#### Remuneration Status of BoD

(Unit: KRW million)

Title	Number of persons	Remuneration in total	Average remuneration per person
Inside Director	2	1,231	616
Outside Director	2	117	59
Member of the Audit Committee or Auditor	3	118	39

#### Remuneration Status of the Chairman of BoD

(Unit: KRW million)

Director	Title	Remuneration in total	Rationale
Youngsik Park	President & CEO	732	- Salaries: Divided payment of KRW 531 million during the disclosure period, according to the rule of treatment of board members - Bonus: Divided payment of 60% of salaries in Lunar New year and Chuseok, according to the rule of treatment of board members



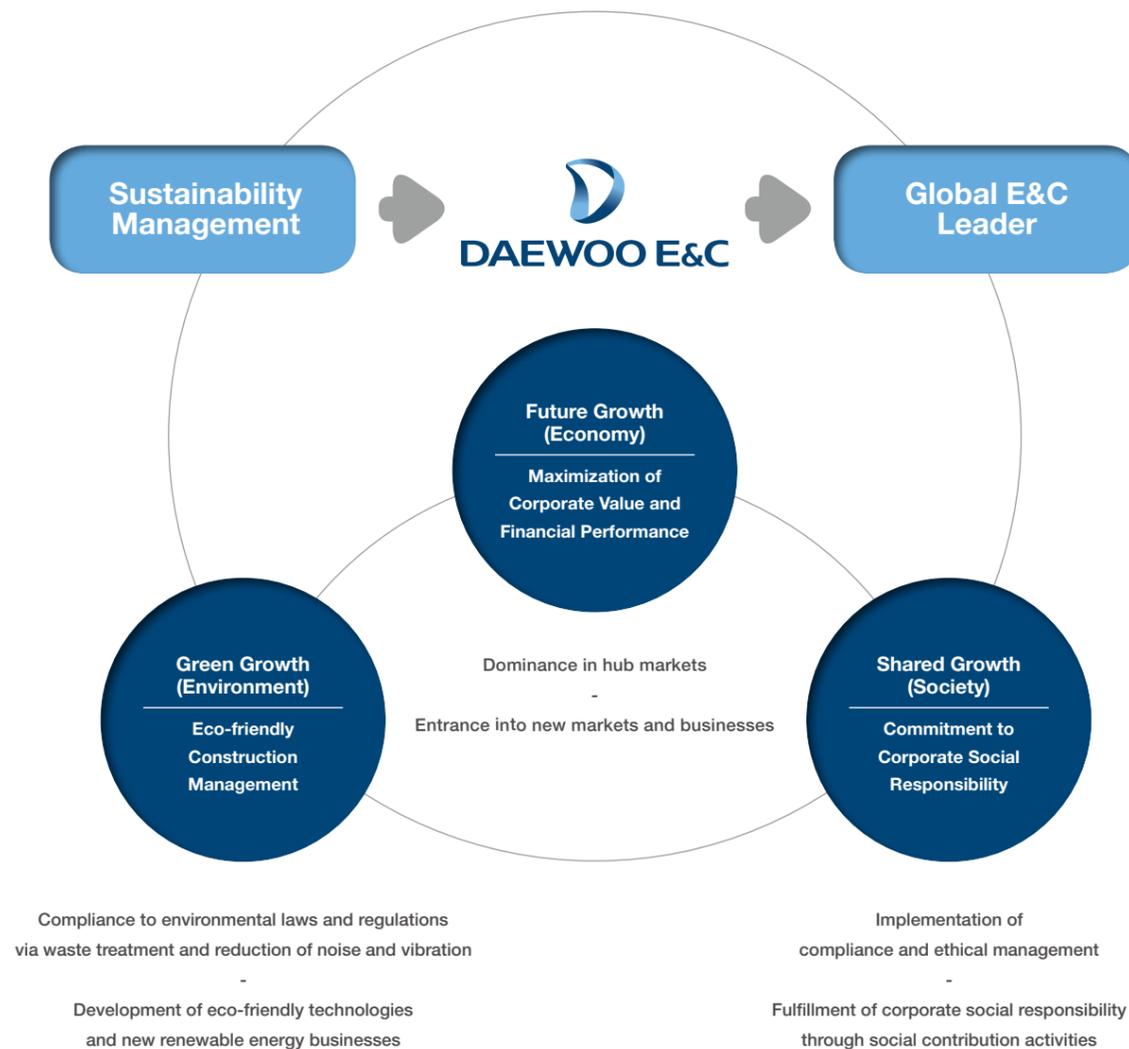
**MATERIALITY &  
STAKEHOLDER  
ENGAGEMENT**

## Sustainability Management

### Sustainability Management System

In order to become a leading company in sustainable management that takes into account the economy, environment and society in an integrated and balanced way, Daewoo E&C established a sustainability management system in 2012. Business activities are largely based on Daewoo E&C's core values, 'Challenge and Passion,' and 'Autonomy and Accountability' and vision, 'For the People & Better Tomorrow', in order to create stakeholder value and to fulfill our corporate social responsibility.

### Sustainability Management System



## Stakeholder Engagement

The purpose of Daewoo E&C's sustainability management is to achieve sustainable growth of the company by providing our stakeholders with differentiated values. Accordingly, we have defined the eight key stakeholders who have direct or indirect impact upon us and vice versa. We have various communication channels to listen to their opinions and thereby apply their expectations and interests into our overall business activities.

### 8 Key Stakeholders

	Definition	Responsibility	Communication
<b>Customer</b>	Part of the Daewoo E&C's family who creates a future together; foothold of the company's existence	To provide the best residential environment and construction product service for customer satisfaction	Integrated Contact Centers, the PRUGIO Website, Show Houses, Social Networking Services (SNS), etc.
<b>Shareholder &amp; Investor</b>	True owner of Daewoo E&C who provides financial capital	To disclose information in an accurate and timely manner via transparent management	General Meeting of Shareholders, Annual Reports, Analyst Meetings, Investor Relations (IR) Conferences, etc.
<b>Employee</b>	The most valuable human resources that compose Daewoo E&C; a partner for sustainable management	To improve employee satisfaction by strengthening their capabilities and enhancing the quality of life	Labor Unions, In-house Newspapers, Ethical management Help-Line, BARONET (Internal intranet), Monthly and Weekly Compliance trend reports, etc.
<b>Supplier</b>	Partner who supports our operation by supplying energy and resources	To provide technological and administrative support, establish a transparent, fair relationship for the supplier's growth	The Supplier Website (e-Cos), Partner Meetings, Co-Prosperity Workshops, etc.
<b>Local Community</b>	Residents of our site's surrounding communities and where our housing products are located; beneficiaries of sustainability activities	To actively pursue philanthropic activities and contribute to community development	Community Service Clubs, Ethical Management Website, Monthly Volunteer Activities, Whitepaper on Philanthropic Activities, etc.
<b>Academia/ Association/ Organization</b>	Organizations with expert knowledge of the construction industry; subject of continuous cooperation	To cooperate with academic community and pursue joint Research & Development (R&D) with various associations; remain active in associations	Conferences, Seminars, Association activities, etc.
<b>Government</b>	Provider of a stepping stone for further growth based on stable regulatory and social environment	To create jobs, pay taxes, and abide by laws and regulations; contribute to the sustainable development at the national level	Government Committees, Participation in Policy Research, Joint Partnership Programs, etc.
<b>Future Generation</b>	Leaders of tomorrow; all entities that should not be neglected from a long-term perspective	To contribute to economic growth and social stability & inclusion	Job Fairs, Websites, Student Ambassadors, SNS, etc.

## Materiality Assessment

### Assessment Process

Since 2012, when the first Sustainability Report was published, Daewoo E&C has been conducting annual Materiality Assessment Surveys to identify material issues. We have systematized and elaborated the materiality assessment surveys every year. The Material Assessment Survey in this report was conducted among a range of internal and external stakeholders, including customers, shareholders, suppliers, and 20 divisions at Daewoo E&C that are closely engaged in sustainable management.



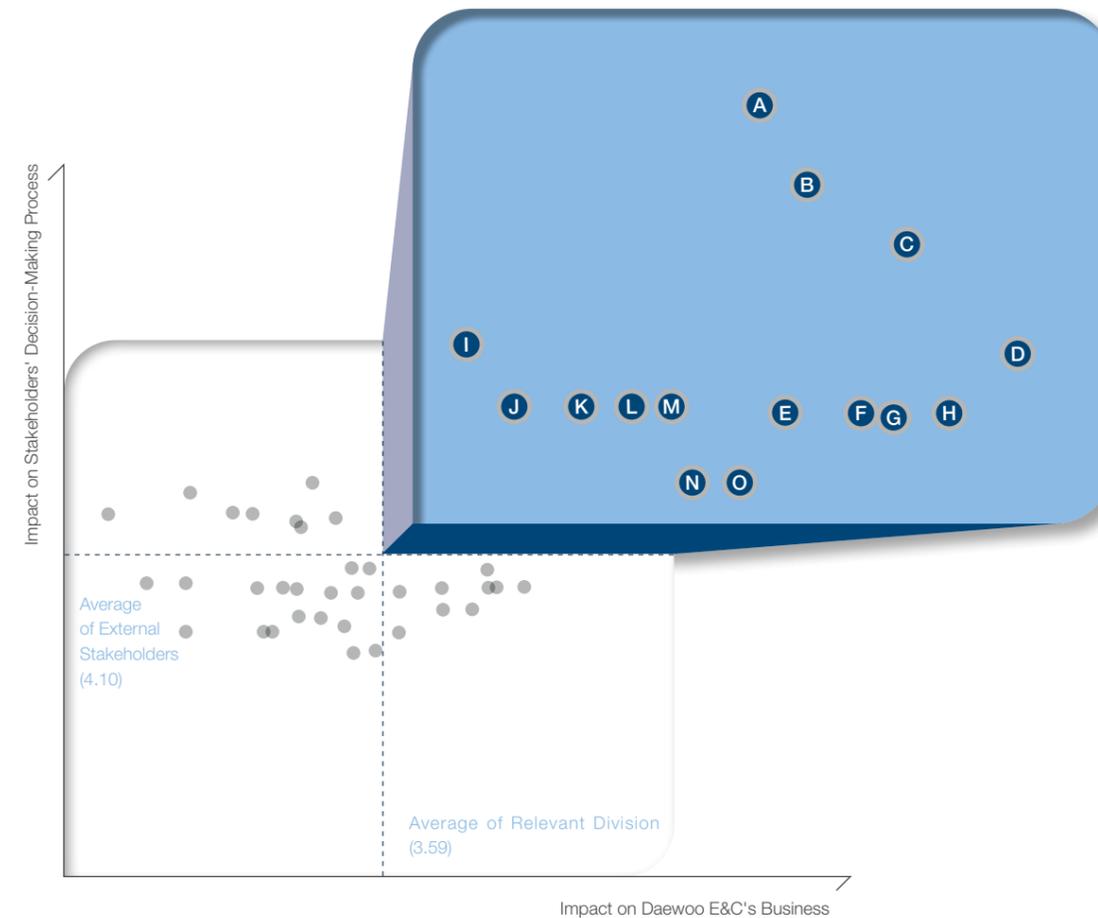
### Assessment Results

The materiality assessment survey revealed 15 issues out of 50 to be material to Daewoo E&C. All 15 issues were promptly incorporated into our sustainable management plans. In comparison with the 2015 materiality assessment results, 'Indirect Economic Effects' and 'Compliance with Environmental Regulations' emerged as new material issues for Daewoo E&C. We strive to improve our sustainability management to ensure continuity by reflecting these 15 material issues in the management's decision-making and relevant divisions' management plan.

Table of Contents Corresponding to Material Issues

Table of Contents	Material Issues	Relevant Stakeholders
<b>Global E&amp;C Leader</b>	Business Performance, New business, and Future Growth, Indirect Economic Effects	Customer, Shareholder and Investor, Employee, Government
<b>Compliance</b>	Legal Compliance, Anti-Corruption, and Fair Trade	Shareholder and Investor, Employee, Local Community
<b>Health and Safety</b>	Industrial Health and Safety	Customer, Shareholder and Investor, Employee
<b>Eco-Friendly Construction</b>	Waste Product and Wastewater Treatment, Climate Change/Air Pollution Mitigation, Product Labelling, Eco-Friendly Products/Services and Compliance with Environmental Regulations	Customer, Shareholder and Investor, Academia/Association/Organization
<b>Customer Satisfaction</b>	Customer Health and Safety, Compliance with Product Regulations	Customer, Shareholder and Investor, Local Community

### Materiality Assessment Results



<b>A</b> Consumer Health and Safety	<b>B</b> Business Performance	<b>C</b> New Business and Future Growth	<b>D</b> Industrial Health and Safety	<b>E</b> Compliance with Environmental Regulations
<b>F</b> Legal Compliance	<b>G</b> Fair Trade	<b>H</b> Anti-Corruption	<b>I</b> Compliance with Product Regulations	<b>J</b> Labor-Management Relations
<b>K</b> Product Labelling	<b>L</b> Eco-friendly Products/Services	<b>M</b> Waste Product and Wastewater Treatment	<b>N</b> Climate Change/Air Pollution Mitigation	<b>O</b> Indirect Economic Effects

● Material issues from 2014

● Material issues that newly emerged in 2015

# MANAGING SUSTAINABILITY ISSUES AT DAEWOO E&C

## 30 \_ Global E&C Leader

Business Performance

Enhancement of Global Business Operations

New Business and Future Growth

## 58 \_ Health and Safety

Health and Safety

## 82 \_ Customer Satisfaction

Quality Management

Customer Satisfaction

Information Protection

## 52 \_ Compliance and Ethical Management

Compliance

Ethical Management

## 68 \_ Eco-Friendly Construction

Environmental Management

Key Environmental Performances

Climate Change

Eco-Friendly Business



Vice President  
Keeyoung Lim

# GLOBAL E&C LEADER

## Global E&C leader

In 2015, despite the tough business environment due to the low-growth of world economy and volatile exchange rates and oil prices, Daewoo E&C has shown a solid growth in terms of new orders and sales. It is expected that many challenges from the world economic downturn and various management risks will continue. Nevertheless, Daewoo E&C has set the goal of KRW 25 trillion in sales and KRW 2 trillion in operating profit by 2025, and endeavors to achieve the mid- and long-term objective, 'Global Infra & Energy Developer' through the 1) Enhancement of global business operations and 2) Expansion into new businesses and emerging markets.

### Sales

(Unit: KRW 10 billion)



### Goals

- **Enhancement of global business operations**
  - Provide an appropriate amount of human resources in a timely manner, enhance efficiency, develop competence of foreign employees, reinforce on-site management, upgrade mobile support system and increase support for sites
- **Expansion into new businesses and emerging markets**
  - Maintain and expand current market shares, search for new markets and diversify market base, and screen orders according to profitability

### Activities and Achievements

- **Enhancement of global business operations**
  - Strengthened global business operations by launching Overseas Infra Project Division and Overseas Mobilization Support team, diversified the nationality of employees improved recruiting rates of foreign employees at overseas site compared to the required, enhanced on-site management, developed on-site managers' competence, and evaluated labor management risks
- **Expansion into new businesses and emerging markets**
  - Ventured into new businesses such as new renewable energy, green environment business, overseas town development projects and company-led rental housing, sealed the deal with the biggest S-Oil RUC (Residue Upgrading Complex) project in the country, contracted with Al-Zour Refinery project in Kuwait, promoted PPP (Public Private Partnership) and O&M (Operation and Maintenance) businesses

### Plans for 2016

- **Enhancement of global business operations**
  - Strengthen and focus on winning competence in hub markets, diversify market base, upgrade efficiency of human resource management, positively redetermine labor terms and conditions, conduct guided inspections to support labor management at overseas sites, and improve relevant systems
- **Expansion into new businesses and emerging markets**
  - Promote eco-friendly business, develop competence in O&M businesses, search for PPP business opportunities, expand into emerging markets such as Sub-Sahara, India, Iran, Myanmar, etc.

# Business Performance

In 2015, Daewoo E&C showed a solid performance in spite of the global economic slowdown. Our order amount and sales recorded KRW 13 trillion and KRW 9.88 trillion respectively with an outstanding performance from the housing business. Such impressive performance led us to a steadiness in operating profit of KRW 335 billion, maintaining in the black. We secured our position as a forerunner in the housing business and diversified the market bases by construction type and region for establishing stable portfolio via making Algeria as the hub market and entering Botswana for the first time. With the 2016 orders targeted at KRW 12.2 trillion and sales target set at KRW 11.17 trillion, Daewoo E&C will put on constant efforts in meeting the sales target of 10 KRW trillion for the first time ever with our top-notch innovation. In order to achieve this, we specified a clear line of authority and responsibility by reorganizing a general system for

business divisions where all phases from winning an order to completing construction are undertaken. We created a new business division and supporting division to strengthen our competence in overseas business. This year we plan to obtain stable business competence and competitiveness by upgrading our risk analysis and management and securing a robust financial structure via efficiency in organization and process. In addition, we will maximize profitability by strategically selecting projects. Domestically, we plan to strengthen our competence in reviewing businesses and prioritize projects with high profitability by enhancing competitiveness in winning biddings regarding alternative project delivery. In overseas operations, we will make a strenuous effort to maximize profitability by mainly focusing on promising large-scale projects with high profitability.

## Financial Performance

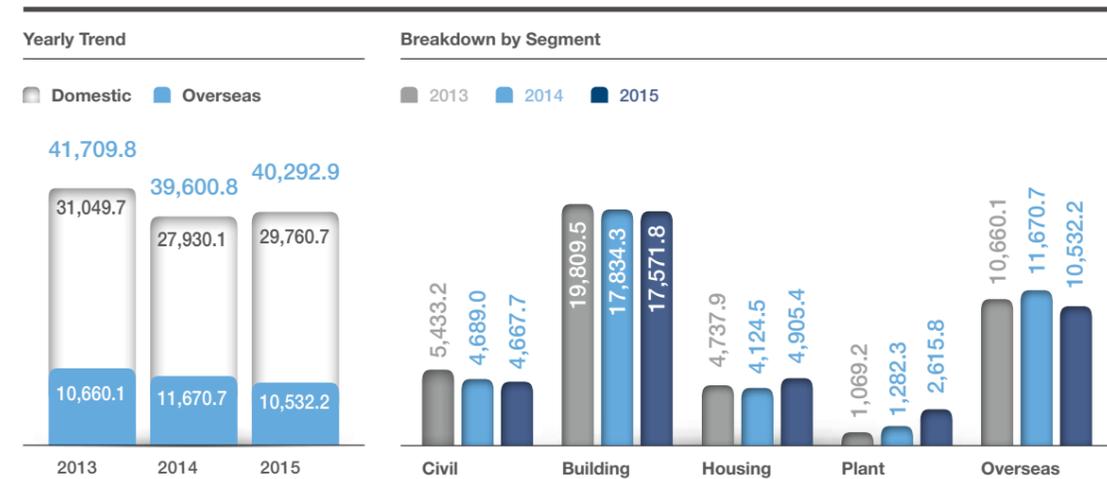
### New Orders

(Yearly Trend/Breakdown by Segment, Unit: KRW billion)



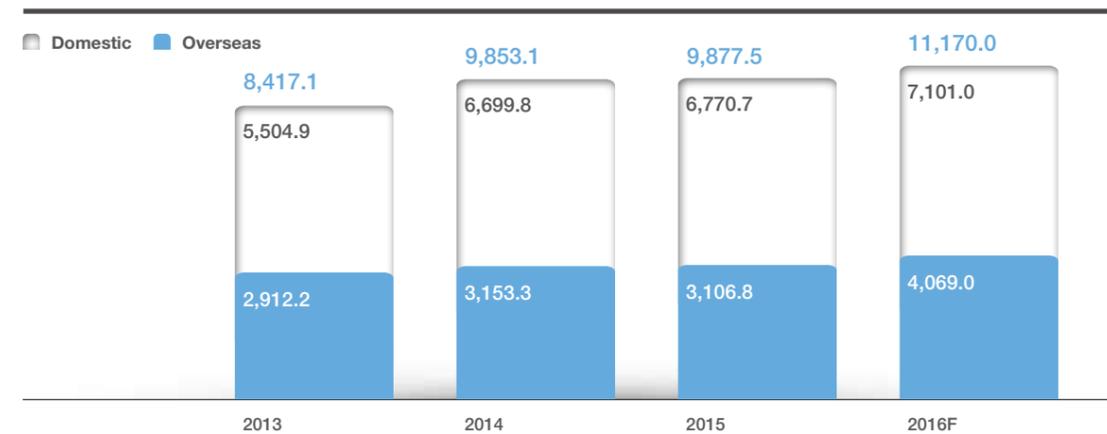
### Order Backlogs

(Yearly Trend/Breakdown by Segment, Unit: KRW billion)



### Sales Revenue and Sales Revenue Plan for 2016

(Yearly Trend, Unit: KRW billion)



### Cash and Cash Equivalents

(Unit: KRW billion)



### Credit Ratings by Evaluating Agency (Commercial Paper)

**A2**

### Credit Ratings by Evaluating Agency

Evaluating Agency	Ratings		Category
	Commercial Paper	Evaluation Date	
Korea Ratings	A2	Dec 17, 2015	Regular evaluation
NICE Investors Service	A2	Dec 10, 2015	Regular evaluation
Korea Investors Service	A2	Dec 4, 2015	Regular evaluation

## Major Achievements by Business Area

The construction market went through a challenging year in 2015 under the worldwide economic recession and low oil price. Among many difficulties, Daewoo E&C achieved major accomplishments in the increase in revenue and winning orders compared to those of last year and other companies in the same industry through the reorganization of business portfolios in advance and united efforts of the entire business divisions. The Civil Project Division achieved sales of KRW 1,193.2 billion by identifying profitable projects and cutting out in advance the factors that might affect cost increase by enhancing the risk management. With the solid turnaround in the domestic construction market around the real estate sector, the Building Works Division recorded sales of KRW 1,834.7 billion through the active market penetration around profitable business sites such as housing and office buildings while managing

### [Civil] Order of a USD 82 million Meki-Zeway highway project in Ethiopia

In February 2016, Daewoo E&C alone won a USD 82 million highway project in Ethiopia, located at the center of Eastern Africa. We are going to conduct engineering and construction of a 37km-long highway with four lanes connecting the two regions of Meki and Zeway in Oromia, a state in central Ethiopia. The duration of the construction is 40 months after the effective date on the contract. Once the Meki-Zeway highway is completed, a wide road network linking Ethiopia with Kenya as far as to Mombasa in the east coast, the biggest traffic hub in East Africa, will be created. It is likely to not only revive bilateral trade between the two East African countries, but also help the landlocked nation expand the marine logistical network and contribute to the growth of the regional economy. This makes Daewoo E&C the first Korean construction company that has won a contract in the African Continent this year. Besides our long history within North African regions such as Nigeria, Algeria, and Morocco, we have extended our business territory in South Africa (Botswana) and East Africa (Ethiopia), thereby recovering from our poor performance in overseas and proving Daewoo E&C's dominance in the market.

operation sites through efficient organizational operation. The Overseas Infra Project Division (overseas civil project and building works) recorded KRW 1,160.4 billion. The Housing Division showed a leap in its revenue, recording KRW 3,177.6 billion. This was due to the establishment of foundation for sustainable growth through a business diversification strategy where we mainly focused on general bidding form of business in response to the revitalization of the presale housing market, while expanding our business to public private projects, which the profitability is guaranteed. The Plant Division achieved KRW 1,382.1 billion even in the downsizing market due to the low oil price, and the Power Business Division focused on enhancing the stability according to the experiences in various project execution and accumulated technologies, recording a satisfying amount of KRW 1,109 billion by promoting business diversification through operation projects in overseas power plants and new renewable projects.

### [Civil] Bohyunsan Dam, the winner of the golden award for Civil Engineering Project of the Year 2015

On March 30, 2015, Daewoo E&C won the golden award for Civil Engineering Project of the Year, organized by Korean Society of Civil Engineers (KSCE), for its construction of Bohyunsan Dam. Daewoo E&C was responsible for the engineering and construction of Bohyunsan Dam, the first arch-shaped concrete gravity dam in the country, proving its competence in design and technique. The dam is expected to considerably contribute to the local community by securing 22 million tons of water.



Bohyunsan Dam



IB Tower

### [Building] First Export of High-Rise Building Construction Technology

In May 2015, Daewoo E&C successfully exported the high-rise building construction technology for the first time in the country. Building Movement Control (BMC), one of the technologies that Daewoo E&C independently developed, was applied to Vietin Bank Tower construction, the highest building in Vietnam, providing simulations for a precise construction and accurate sensor measurement and suggesting alternatives. We have proven the effect of this technology by applying it to Songdo North-Eastern Asia Trade Tower, Malaysia KLCC Tower and IB Tower. As a result, in April 2015, it was chosen as '2014 Best Industrial Technology in Korea,' standing shoulder-to-shoulder with other advanced technologies such as Kakao, a mobile platform, the world's first 20-nano D-RAM and UHD OLED TV. The prospects for additional export potential of the BMC technology is bright, regarding its high value-added qualities of enhancing the safety by forecasting any changes in height or slope during the construction while shortening the construction periods and reducing costs. Additionally, we are trying to export this technology to Mexico and Malaysia, which will help us strengthen the commercialization of our technology.



Vietin Bank Tower

### [Building] Construction of 'IB Tower' in Malaysia

In July 2015, Daewoo E&C successfully constructed IB Tower, known as the third tallest building in Malaysia. IB Tower is a 274m-high complex building with offices, service apartments, penthouses and residents' common space located in the center of the capital city of Malaysia, Kuala Lumpur. We applied our best technologies available to the construction of IB Tower. Based on our successful experience with IB Tower, we are planning to be actively engaged in construction of high-rise buildings in overseas market.

**[Housing] Preferential Provision of 'Dongtan Happy Town PRUGIO'**

Daewoo E&C opened a model house of 'Dongtan Happy Town PRUGIO,' new-stay company-led rental housing. Dongtan Happy Town PRUGIO will foster a differentiated apartment culture from other new-stay businesses by incorporating a new concept of village community based on the resident's talent donations and systematic support from the company. The village community business that Daewoo E&C is working on plans to provide a jubilant residential space and apartment without having to make people worry about where to live, based on the residential philosophy of premium residential culture space where people and nature can coexist. Through a detailed field survey about village community business, we strive to create an attractive apartment where residents can communicate and share their various talents with neighbors. If successfully built, it is expected to become a joyful residential area with a sense of community, spirit of sharing and improved quality of life, overcoming the drawbacks of individualism and social exclusiveness of an apartment.



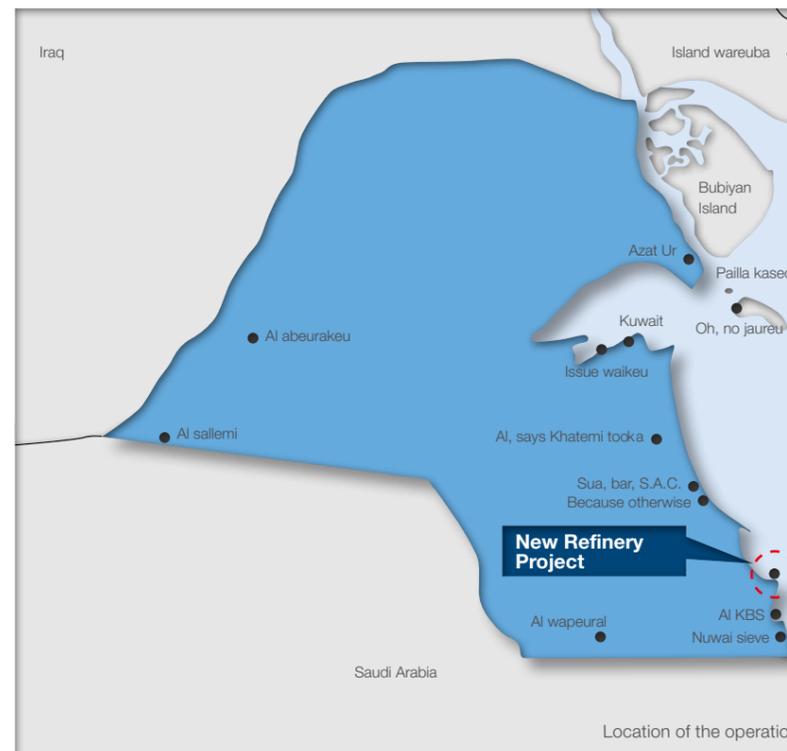
Opening of Dongtan Happy Town PRUGIO model house

**[Plant] Won 'Al-Zour Refinery Project' in Kuwait**

In July 2015, Daewoo E&C won the second and third package contracts of Al-Zour Refinery Project (AZRP), worth USD 5.76 billion. The AZRP, ordered by the Kuwait National Petroleum Company, is estimated to worth total

of USD 13 billion, which makes it the biggest among the overseas projects this year. The consortium includes Daewoo E&C, Fluor and Hyundai Heavy Industries and all three will be in charge of engineering, procurement and construction. Daewoo E&C holds 35% stake of the payment, approximately USD 2 billion (KRW 2.2 trillion). The AZRP is expected to be completed 41 to 45 months after the effective date. According to the contract, an incentive is also available for the reduction of the construction period, thereby making it possible for stable sales and profits expected in the future. The trust earned from the successful USD 3.4 billion Kuwait Clean Fuel Project last February helped Daewoo E&C win the project and take charge in the largest scale packages.

Particularly, we can benefit from the maximization of synergy effect by working with the same companies from before such as Fluor, the global engineering company. Upon undertaking the AZRP successfully, we will be able to make a leap forward to become the world-class company known for both upstream and downstream of petrochemical plant.



Signing the contract for the Al-Zour Refinery Project in Kuwait

**[Plant] Won 'S-Oil RUC Project'**

In May 2015, Daewoo E&C won the S-Oil RUC project to construct an upgraded facility for residue oil and a downstream facility for olefin in the Onsan Industrial Complex, Ulsan. In 37 months, we will build facilities that make high added-value products such as propylene or gasoline with residue oil left over from the refinement process. This is by far the largest single plan construction project in Korea with Aramco, the Saudi Arabia petroleum company, holding an additional stake in S-Oil. The total construction cost is estimated to be KRW 3.5 trillion.



S-Oil RUC PJ

**[Power Plant] Establishment of a power business subsidiary, 'Daewoo Power'**

In spite of the economic crisis, by putting constant efforts to create a new company and search for new growth engine in order to expand into a new business, Daewoo E&C established a subsidiary 'Daewoo Power' in July 2015. The establishment of 'Daewoo Power' specializing in plant O&M will help secure all-around portfolio spanning planning, construction and operation in the field of private power business.

**[Power Plant] Completion of Shin-Wolsong nuclear power plants Units 1 & 2**

In November 2015, the construction of Shin-Wolsong nuclear power plants Units 1 & 2 were successfully completed and began to operate in full. Shin-Wolsong nuclear power plants Units 1 & 2 are two units of OPR-1000 (1,000MW, PWR) 1,000MW with the application of new technologies and construction methods, improving safety, product quality and economic feasibility compared to the existing units. Upon this completion, Daewoo E&C further established itself in the industry as the only construction company that provides the total solutions for the overall areas of nuclear power.

### Indirect Economic Effects

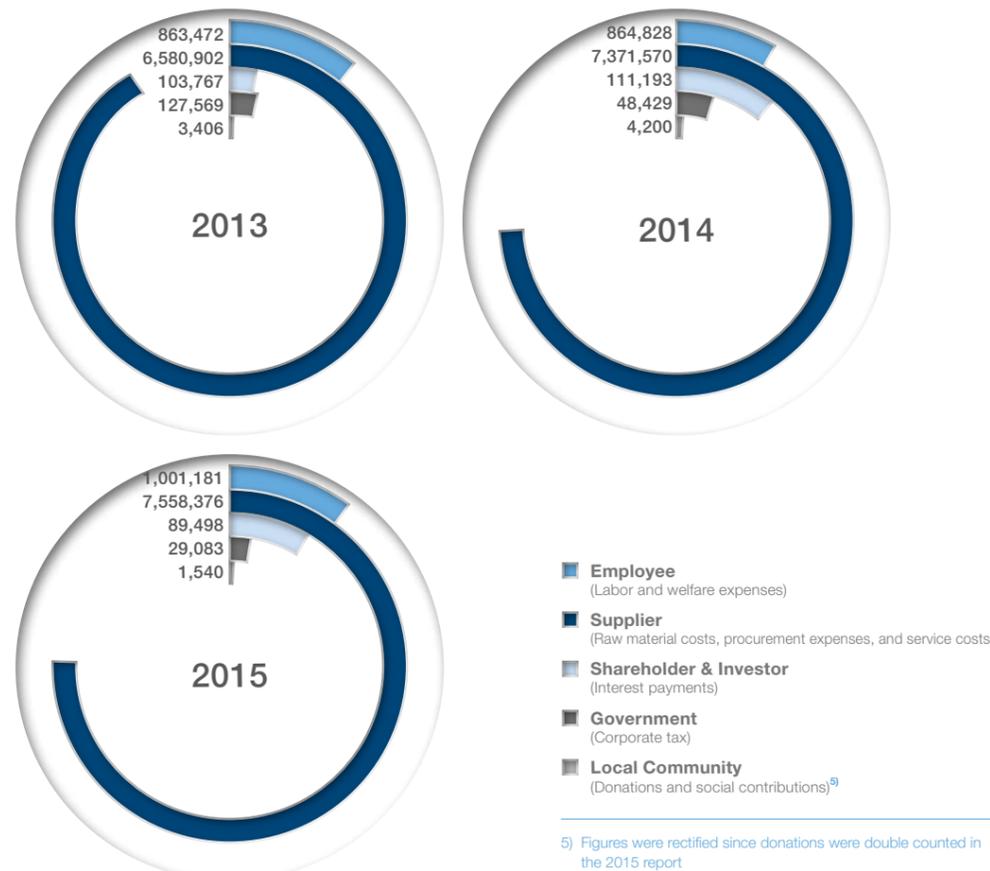
By creating job opportunities and placing procurements from local suppliers, Daewoo E&C actively engages in revitalizing local communities. Having achieved the largest sales record yet with KRW 9.88 trillion in total and KRW 6.77 trillion domestically, Daewoo E&C contributed significant indirect economic effects in 2015 in terms of job creation, production inducement, local hires at overseas operation sites, and value-add. Using the Bank of Korea's job creation coefficient, a total of 68,384 jobs were created in Korea through Daewoo E&C's business activities.



\* Production Inducement Effect: The level of directly and indirectly induced production per unit increase in company demand  
 \*\* Value-Added Inducement Effect: Measures directly and indirectly induced added-value to the industry  
 1) Domestic Sales (KRW 6.8 trillion) x employment inducement coefficient (10.1)  
 2) Foreign employees of the third world country nationals  
 3) Domestic Sales (KRW 6.8 trillion) x production inducement coefficient (2.244)  
 4) Domestic Sales (KRW 6.8 trillion) x value-added inducement coefficient (0.714)

### Distribution of Economic Values to Stakeholders

(Unit: KRW million)



## Enhancement of Global Business Operations

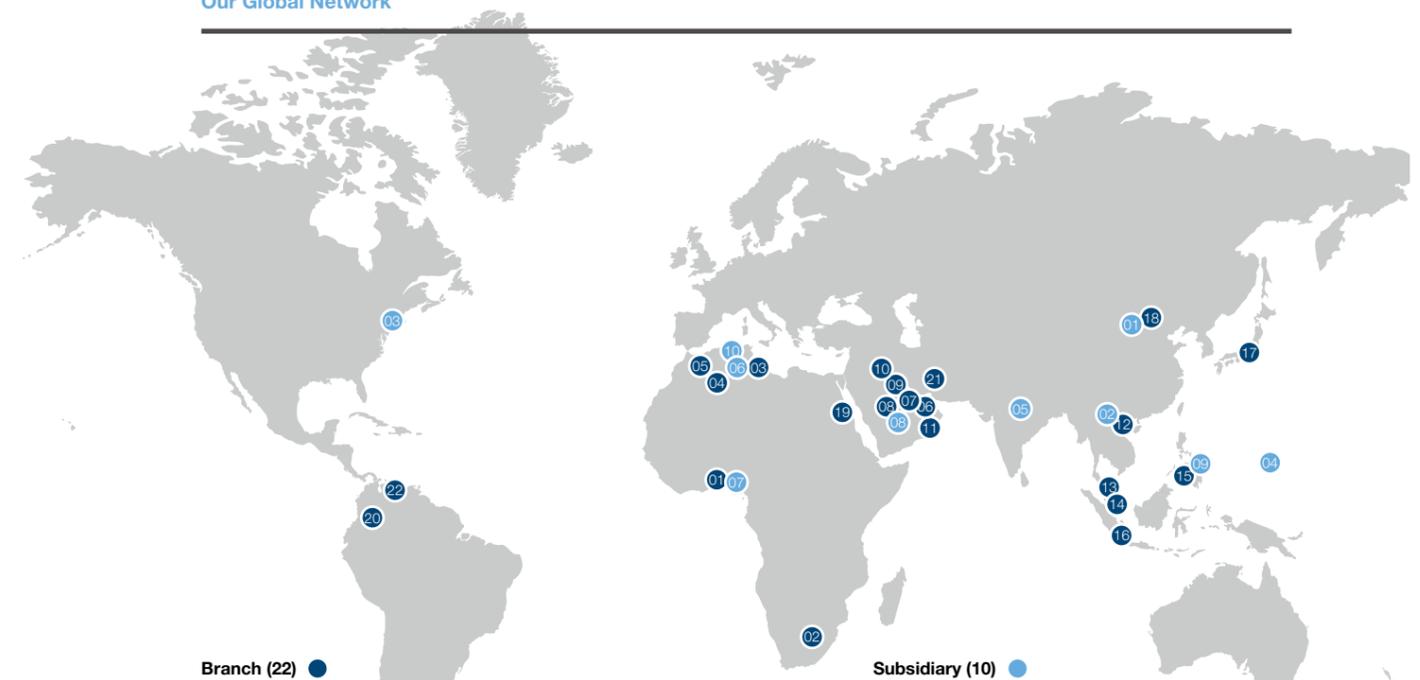
### Strategic Direction

In 2015, Daewoo E&C underwent challenges from decrease in orders due to the low oil prices and unstable political situation in the Middle East and decrease in sales due to projects with low profitability. Despite this, Daewoo E&C established the Overseas infra Project Division, which combined the Civil Project and Building Works divisions, to conduct every phase from winning an overseas order to completing construction, in order to become the 'Infra Frontier' based on increased dominance in hub markets and enhanced competitiveness in the global business operations. We put emphasis on communication and harmony for the amplification of global infrastructure synergy and seek for strengthened global competitiveness, diversified business portfolio and strengthened substantial management. Moreover, we strive to assure competitiveness in global

human resources via support for overseas on-site vacancy management and distribution of human resources.

- Amplification of global infrastructure synergy
  - Enhance Glocal (Global+Local) competitiveness: Strengthen global network, increase dominance in hub markets, establish country-specific localization strategy
  - Diversify business portfolio: Search for new growth engine and PPP business, expand into new markets, develop technology-intensive business
  - Develop substantial management: Order based on profitability, focus on on-site management, etc.
- Enhancement of competitiveness in global human resources
  - Distribute human resources appropriately according to supply and demand
  - Manage resource with low-cost and high-efficiency

### Our Global Network



#### Branch (22)

No.	Name	Location	No.	Name	Location
01	Port Harcourt Branch	Nigeria	12	Hanoi Branch	Vietnam
02	Johannesburg Branch	South Africa	13	Kuala Lumpur Branch	Malaysia
03	Tripoli Branch	Libya	14	Singapore Branch	Singapore
04	Algeria Branch	Algeria	15	Manila Branch	Philippines
05	Rabat Branch	Morocco	16	Jakarta Branch	Indonesia
06	Abu Dhabi Branch	UAE	17	Tokyo Branch	Japan
07	Doha Branch	Qatar	18	Beijing Branch	China
08	Al-Khoba Branch	Saudi Arabia	19	Cairo Branch	Egypt
09	Kuwait Branch	Kuwait	20	Bogota Branch	Colombia
10	Baghdad Branch	Iraq	21	Tehran Branch	Iran
11	Muscat Branch	Oman	22	Caracas Branch	Venezuela

#### Subsidiary (10)

No.	Name	Location
01	Beijing Lufthansa Center Co., Ltd.	China
02	Tay Ho Tay Development, Co., Ltd	Vietnam
03	Daewoo America Development Inc.	U.S.A.
04	Saipan Lulau Development, Inc.	U.S.A (Saipan)
05	Daewoo Power India Ltd.	India
06	Gulf company for Engineering, Construction and Contracting	Libya
07	Daewoo E&C Nigeria Limited (DECN)	Nigeria
08	Daewoo Arabia Ltd.	Saudi Arabia
09	Megaworld-Daewoo Corporation (MDC)	Philippines
10	Daewoo Tripoli Investment & Development Co., Ltd.	Libya

### Activities and Achievements

#### Strengthening the Global Management Structure

Daewoo E&C organized various divisions in pursuance of successful global business operations. As we deal with newly-entering and remote countries more than that of other companies in the industry, we have formed a company-wide TFT (Task Force Team) since 2014 to activate the overseas mobilization support in management, construction, and technology at the early stage of opening up a new operation site. In 2015, the Overseas Mobilization Support TFT organized and operated the Mobilization Support Council, in which each project team and related teams such as Labor Management, Logistics, Heavy Machinery Procurement and IT, participated. In 2016, we reorganized the 'Overseas Mobilization Support TFT' to newly establish 'Overseas

Mobilization Support Team' in order to form an integrated support system of our new overseas operation sites.

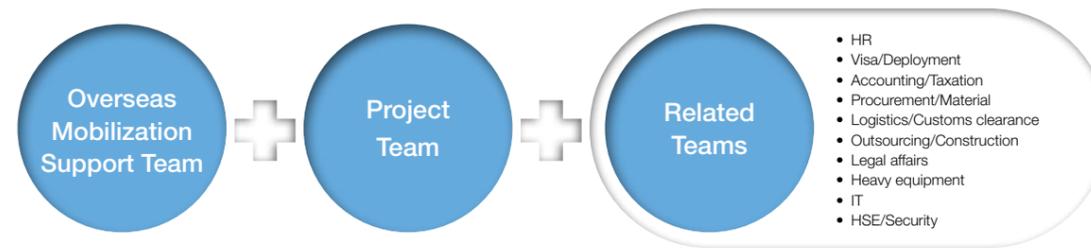
In 2016, we established the 'Overseas Infra Project Division' that combined overseas Civil Project and Building Works divisions, in order to become the 'Infra Frontier via strengthening Glocal competence.' The Overseas Infra Project Division aims to create synergy by strengthening Glocalization competitiveness integrating global comprehensiveness and local distinctiveness as well as enhancing combined competence in Civil Project and Building Works.

Furthermore, the Global HR Management Team, Global HSE Team, Global Security Team, Overseas Marketing Teams for each business division and the Contract Management Team are supporting overseas business operations to deliver successful performance abroad.

#### Mobilization Support Council Operations

**Period** From successful bid to the initiation of construction (for about 6 months)

#### Operating Organization



**Constitution**  
 • Supervision: Overseas Mobilization Support Team  
 • Attendance: Project Team and related teams

**Operation**  
 • Check 76 tasks in detail within the mobilization fields  
 • Monitor mobilization progress and provide feedback  
 • Consider support plan for main issues by field

#### Support for Overseas Business

Global HR Management Team	Global HSE Team	Global Security Team	Overseas Marketing Teams for each business division	Contract Management Team
- Preemptive labor management support: Review and analyze labor risks for newly entered markets - Mobile support for overseas sites: The Mobile Support TFT for new projects	- Systematic Health, Safety, and Environment (HSE) management: Coordinate overseas HSE system - Expand HSE support to overseas sites: Foster and deploy overseas HSE human resources	- Site support in high-risk countries: Inspect sites and dispatch safety officials - Reinforcement of the security management system: Build an IT-based management system	- Cross-division contracts (Civil Project/ Building Works/Plant/ Power Business) and performance management	- Complaints and contracts management throughout projects (from the conclusion of a contract to the completion of construction)

#### Global Talent Employment

As the demand for experienced and capable global talents grows, Daewoo E&C diversified the nationality of employees and hiring processes and improved HR management system. In 2015, we enhanced the efficiency of the employment management by allocating the workers of the third country nationals in the right place at the right time and succeeded in rehiring 390 outstanding employees using the resource

pool. We carried out 12 direct recruitment in operation sites of the Morocco SAFI and Qatar highway project. By adding two more countries for alternative citizenships, 96 employees in Vietnam and 80 employees in Sri Lanka were newly recruited. Additionally, we increased 19 agencies' competitiveness by improving performance assessment and incentivized foreign employees to work longer by improving residential environment and reward system.

#### Timely Recruitment by Region

(Unit: Persons)

■ Africa  
 ■ Middle East

2014



2015



**Overseas-Site Labor Management Support**

Successful labor management is the key to successful overseas operations, as a labor is a fundamental part of the construction business. In 2015, Daewoo E&C supported labor management at overseas sites by performing local guidance inspections, strengthening on-site managers' competence, assessing labor-management risks.

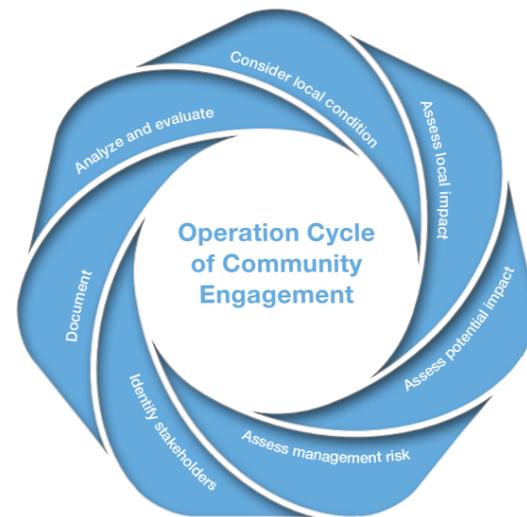
- Guidance checks at overseas operation sites
  - Performed guidance checks for overall labor management, including distribution of human resources, management of on-site employees, resource pool and operations

- First half year: Algeria CAFC (Central Area Field Complex) and RDPP (Ras Djinet Combined Cycle Power Plant)
- Second half year: Saudi Arabia JAZAN (Jazan Refinery) and Qatar Highway
- Enhancement of site managers' competence
  - Revised country-specific labor management manual
  - Registered 5 cases of success and failure for each site on BAROCON
  - Conducted 8 intensive training sessions for newly appointed
  - Converted returnee's management knowhow into a database
- Assessment of labor risk
  - Conducted 32 assessments

**Community Involvement**

Daewoo E&C values local community's engagement while conducting global operations. Every companies operating in oil fields such as Nigeria, Algeria and Iraq, which are our major overseas markets, must engage in community works during a construction. CE (Community Engagement) refers to a comprehensive and continuous procedure occurring between a company and stakeholders from the local community. It stems from the efforts to establish a strategic and mutual model, recognizing that company's growth comes with the local development. Based on three major areas – communication, transparency and fairness, response to changes in the business environment – CE supports effective decision-making for conducting business operations by creating a communication in pursuit of trust from company and community, respect and legality and preventing project delays by managing in advance, as well as creates a mutually beneficial future. In 2015, we successfully completed the construction by systematizing community

works according to each phase of the construction (before, during, and after) at Niger Delta site in Nigeria.



**Community Work at Operation Site in Nigeria**



**Visions and Objectives**

Daewoo E&C will continue to develop and diversify the market base in overseas markets in order to enhance the global business operations. We will focus on strengthening competence in winning contracts in hub markets and extend our business territory in Sub-Sahara, India, Iran, Myanmar, etc. Moreover, we will search for new growth engines, including global new town and O&M businesses to diversify our market base. We plan to explore more of the PPP business in waterpower generation and environmental projects and support ODA (Official Development Assistance) financing and MDB (Multilateral Development Bank). In order to secure competitiveness in global human resources, Daewoo E&C aims to increase resource efficiency, expand resource and its applicability, continue global talent development and improve guidance checks and system for supporting on-site labor management.

- Utilization of human resources
  - Upgrade operation efficiency: Manage vacancies vs filling by project, rehire employees with high performance, enhance labor management at overseas sites
  - Expand resource and its applicability: Design human resource portfolio by country, find alternative citizenships, expand the role of agency by exploring scarce resources and professionals
  - Global talent development: Actively rotate foreign employees between divisions and operation sites, redesign working conditions to promote continuous employment
- Overseas-site labor management support
  - Continuous site-oriented guidance checks on new/peak sites: Kuwait, Morocco, Algeria, Saudi Arabia, etc.
  - Strengthen practical competence in labor management: Constantly update labor management manual, establish measures to utilize local employees with high performance
  - Improve BAROCON, publish country-specific visa-related manual



# New Business and Future Growth

## Strategic Direction

In order to meet the goal of KRW 25 trillion in sales, KRW 2 trillion in operating profit by 2025 and achieve the mid- and long-term objective, 'Global Infra & Energy Developer' Daewoo E&C has chosen 1) glocalization; 2) strengthening core competencies; and 3) diversification of business portfolio as core strategies. We plan to increase our sales in the overseas markets up to 70% of the total sales by 2025, strengthen core competence based on profitability and market growth, and develop new growth engines such as IPP, PPP and O&M through market diversification expanding the fields of investment, development and operation.

- Glocalization
  - Increase sales in the overseas markets up to more than 70% of the total sales by 2025, localize hub markets, authorize decision-making power to the local entities, extend business territory

- Select and concentrate by region, select target market by business unit and amplify synergy
- Enhancement of core competence
  - Rationalize core business portfolio: Concentrate on projects with profitability and market growth potential
- New market development for market diversification
  - Grow as the Infrastructure Developer via expansion of value chain (IPP, PPP, O&M, development business, etc.)
  - Prepare for new business according to changes in the domestic construction market: Extend O&M, rental housing projects, development business
  - Promote an integrated business: Advance construction technology with cutting edge techniques, high value-added business based on technology

## Unit-Specific Strategies

<h3>Public Sector</h3>  <ul style="list-style-type: none"> <li>- Analyze feasibility and optimize business processes in order to maximize profitability</li> <li>- Specify bidding strategies from the early project planning stages and increase success rates for winning an order</li> </ul>	<h3>Private Investment Sector</h3>  <ul style="list-style-type: none"> <li>- Lead large-scale BTO (Build-Transfer-Operate)/BTL (Build-Transfer-Lease) business and increase business capacity such as a combination of BTO and BTL</li> <li>- Respond to market changes and secure new growth engines such as new renewable energy development business, wastewater and advanced water treatment</li> </ul>
<h3>Private Sector</h3>  <ul style="list-style-type: none"> <li>- Building Works: Proceed combined development business through analyzing feasibility thoroughly, increase the amount of project proposals in business activities, enhance synergy based on the collaboration of finance and construction</li> <li>- Housing: Select target market and seek out outstanding businesses on the basis of accurate market analysis, promote new businesses and diversify business, examine lease/operating lease businesses, renovations and others in light of the changing demographics and family structures in today's world</li> </ul>	<h3>Overseas Market</h3>  <ul style="list-style-type: none"> <li>- Explore new projects for diversifying markets and construction types</li> <li>- Increase order in oil &amp; gas in cooperation with professional engineering companies</li> <li>- Improve competence for large-scale EPC projects</li> <li>- Gradually expand new market base through focusing more on hub markets</li> <li>- Maximize business capacity in countries/sectors that we already have competitive advantage in</li> <li>- Expand into financing (IPP, PPP, etc.)</li> </ul>

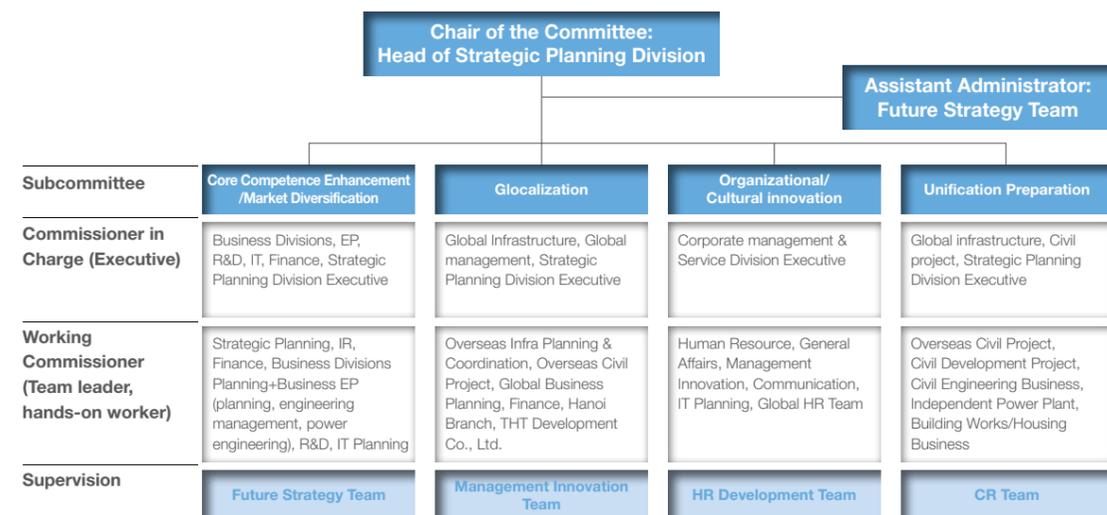
## Activities and Achievements

### Future Strategy Promotion Committee

In January 2016, Daewoo E&C launched Future Strategy Promotion Committee in order to lead substantive changes for sustainable growth of the company and secure new growth

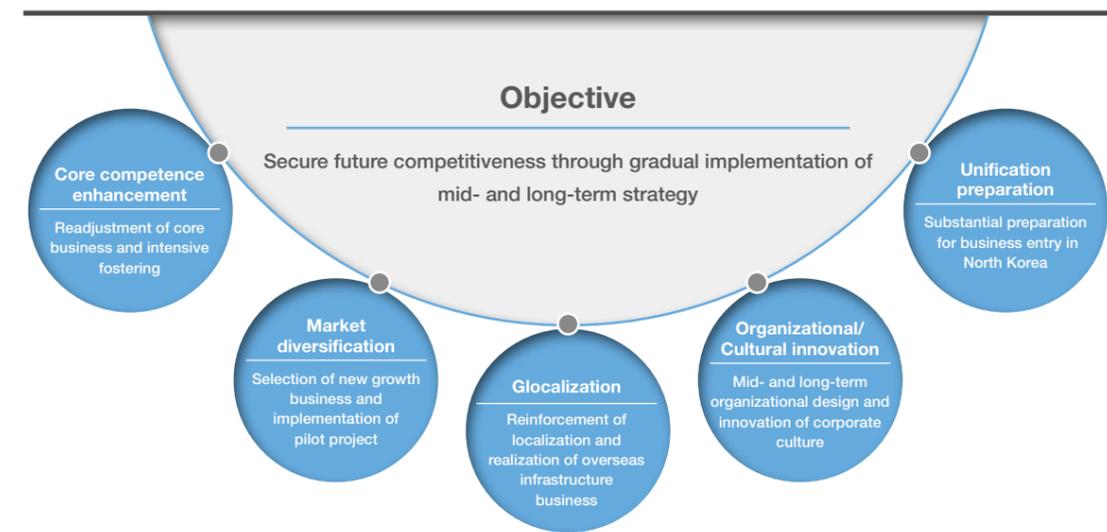
engines that reflects future trends. Future Strategy Promotion Committee plans to actualize a mid- and long-term strategic master plan, prioritize tasks by material strategic objective, examine ability to carry out action plan, organize bodies for market diversification and gradually implement feasible strategic items.

### Future Strategy Promotion Committee System



※ Possible to readjust Commissioner in Charge and Working Commissioner after consultation

### Objective and Tasks by Subcommittees



**Major New Businesses and Emerging Markets**

**Civil Project**

**Eco-Friendly Green Growth Business**



In order to quickly respond to the green growth movements from the government and civil society, and actively promote new growth engines, Daewoo E&C plans to strengthen eco-friendly green growth business, thus selecting wind power, solar power, tidal power and bioenergy as new renewable energy business. Furthermore, not only do we strenuously seek eco-friendly green growth business opportunities with an overseas environment improvement master plan as the

basis of our new renewable and eco-friendly technologies, but we also pursue PPP and O&M business by securing competence in the value chain.

- Eco-friendly business-related performance
  - Completed Sihwa Lake Tidal Power Station, the first tidal power plant in Korea with the world's largest capacity (254MW)
  - Constructed and now operating the food waste treatment facility in Daegu
  - Completed the Goyang biomass energy facility

**Building Works**

**Diversification of Business Portfolio**



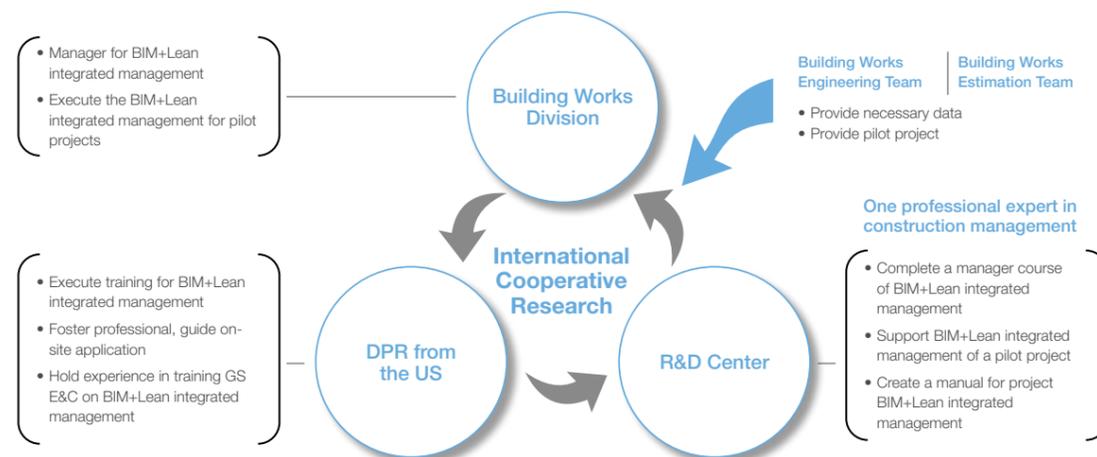
Despite low growth across the industries, the Building Works Division has secured a stable income source through outstanding business sites such as housing and office buildings. We also diversified our business portfolio by developing capacity in public and private projects while

increasing finance-inclusive contracted business and participation in public offering proposals. Moreover, we seek business opportunities by promptly responding to the influx of Chinese capital in Korea and diversifying ordering organizations through projects such as Jeju Healthcare Town Wellness Mall and Bucheon Logistics Park.

**Integrated Management based on Virtual Construction (Pre-con)**

Pre-con is a project management technique applied based on the virtual reality using BIM before the actual construction. It aims to create opportunities to obtain multiple orders by maximizing the productivity increase and cost reduction through improvement in design and construction quality, reduction in construction cost, shortening of construction period and enhancement in safety. In order to establish processes for

business, cooperation and management for the utilization of Pre-con, the Building Works Division executed a consulting service for the transfer of technique of DPR in the US while implementing two operation site tests in 2015. We not only seek to build a Pre-con system by forming a co-op system with the related divisions and establishing a Pre-con contract methods within project executions, but also aim to expand this to a business model that leads to winning repeated orders accompanied by the satisfaction of the ordering organizations.



**Overseas Infra Project (Civil Project & Building Works)**



**Overseas New Township Development**

Daewoo E&C is strengthening its capabilities as a Developer by conducting overseas new township development business. 'Starlake City' development project in Hanoi, Vietnam is a mega project worth USD 2.5 billion, which is Korea's first privately-led overseas new township development business. This has a great historical significance in that it is the first project combining all phases of new township development from engineering, financing and construction to distribution with our own knowhow and technology. We established 'THT development Co., Ltd' in Vietnam in order to carry out this project and currently we are preparing the first lotting-out

during the first half of 2016. Also, we plan on constructing the infrastructure and going through land clearance compensation and related approval.

**Status of Starlake City Development Business**

- 1996 : Proposed initial business (Applied phase 1 Bundang & Ilsan New Town business model)
- 2006 : Investment approved by Vietnam Ministry of Planning and Investment
- 2007 : Hanoi city master plan approved
- 2012 : Initiated phase 1 operation with groundbreaking ceremony
- 2014 : Commenced infrastructure construction

**Housing**



**Portfolio Expansion**

Daewoo E&C Housing Division secured stable profitability by strengthening its own business operations through constantly engaging with land purchases, extended orders through diversifying buyers, exploring public or new business items such as enterprise rental housing and public-private projects.

- In May 2016, planning on distributing 2,404 apartments in a consortium with Hyundai Engineering & Construction and GS Engineering & Construction in Yulha, Gimhae
- Extension of orders by diversifying buyers
- Mokgam in Siheung, Yeokbuk in Yongin and Segy in Osan
- Search for new business items
- Company-led rental housing 'Dongtan Happy Town PRUGIO'
- Public-private project 'Seochang Central PRUGIO'
- Public-private package project 'Dongtan A5, A6 block'

- Enhancement of own businesses by constant land purchases

- In October 2015, distributed around 2,000 small- and medium-sized apartments of Paju Unjeong Central PRUGIO

**Introduction of the Concept of Village Community, Company-Led Rental Housing by 'Dongtan Happy Town PRUGIO'**

In 2015, applying the concept of village community for the first time in Korea, Daewoo E&C introduced company-led rental housing 'Dongtan Happy Town PRUGIO' and led private New-Stay business. Based on the belief of 'premium residential culture space where people and nature can coexist,' we conducted a detailed field survey

for implementing village community business and strived to create an attractive apartment where residents can communicate and share their various talents with neighbors, not just a place to live. In addition, in order to successfully introduce the concept of village community, we plan to implement 'Let's Program' as follows.

**Operating Plan for Dongtan Happy Town PRUGIO Village Community 'Lets Program'**

Program	Contents
<b>Lets Study</b>	- Traditional culture lessons (go/calligraphy/Chinese character, etc.), language class, reading and discussion, playing musical instruments, etc. - Support community room, library, study room, traditional culture room inside the complex
<b>Lets Care</b>	- Attract national/public child care centers, operate infant care program I Love Mom café in Hwaseong - Support building play space, toy library and well-baby clinic
<b>Lets Cook</b>	- Arrange open kitchen where all can cook and eat together - Hold events for kimchi-making, sharing foods from vegetable garden
<b>Lets Garden</b>	- Organic farming in the joint vegetable garden inside the complex - Appoint landscaping-related talent donator and civil gardener among residents and encourage participation in landscaping the complex - Support vegetable gardening and landscaping programs and gardening school (flowerpots, vegetable garden, etc.)
<b>Lets Share</b>	- Apply the concept of sharing economy and support sharing center including camping gear, tool, toy, etc. - Install storage only for shared bicycles, parking area only for shared cars
<b>Lets Play</b>	- Build camping ground only for residents - Install multipurpose gym and family room and support exercise program run by talent donator and professional instructor

**Plant**



Daewoo E&C Plant Division concentrates on developing a new business model as well as winning projects, in which it has a competitive advantage. In 2015, with the advanced technology and know-how in oil & gas business accumulated through the years, Daewoo E&C extended its domestic business portfolio by newly contracting the biggest S-Oil RUC project in the country. We also reinforced our market share in Kuwait through Clean Fuel project in 2014

and the Al-Zour Refinery project in 2015, thereby expanding our business sector to new markets in the Middle East. Moreover, in order to respond to the increasing trend of module development and installations within projects due to geographic restrictions or environmental issues, we have agreed upon an MOU with overseas module developers. We intend on using the synergy in the timely completion of projects and quality enhancement.

**Power Business**



Daewoo E&C has completed construction in multiple sites and has been constructing combined cycle power plants, coal-fired power plants and nuclear power plants in the MENA region. Moreover, we are reinforcing our cooperative system with domestic and overseas developers not just for mere contracts, but for exploring and promoting domestic and overseas independent power plant projects. We shall

strengthen our competence as a developer by investing in overseas large-scale IPP and participating in O&M business in the mid- and long-term. Furthermore, we are contributing to the national green growth and greenhouse gas reduction policy and promoting to engage with world new renewable energy projects through developing new renewable energy business based on domestic solar and wind power businesses.

**Key Performance in the Power Sector**

<b>Power Plant Business</b>	Currently in the process of bidding multiple projects in Africa and Southeast Asia (beyond the Middle East market/ market diversification)
<b>Independent Power Plant (IPP) Business</b>	Daewoo Pocheon combined-cycle (Unit 1) plant business approval and engineering product supply contract  Daewoo Pocheon combined-cycle (Unit 1) plant business O&M and LTSA increased-value contract  Power business subsidiary - Daewoo Power (July 2015)  Promote overseas IPP business - Vietnam Long An: Submitted our investment proposal (August 2015) – Under review by Prime Minister - Participated in Botswana Morupule B Unit 5&6 bidding  Promote domestic and overseas new renewable energy business - Haenam wind power business: Obtained power business license (July 2015)
<b>Nuclear Power Business</b>	Participate in nuclear power cooperation roundtable for expected countries of nuclear power plant project - Participate in events held by government and promote business alliances by signing industrial MOUs

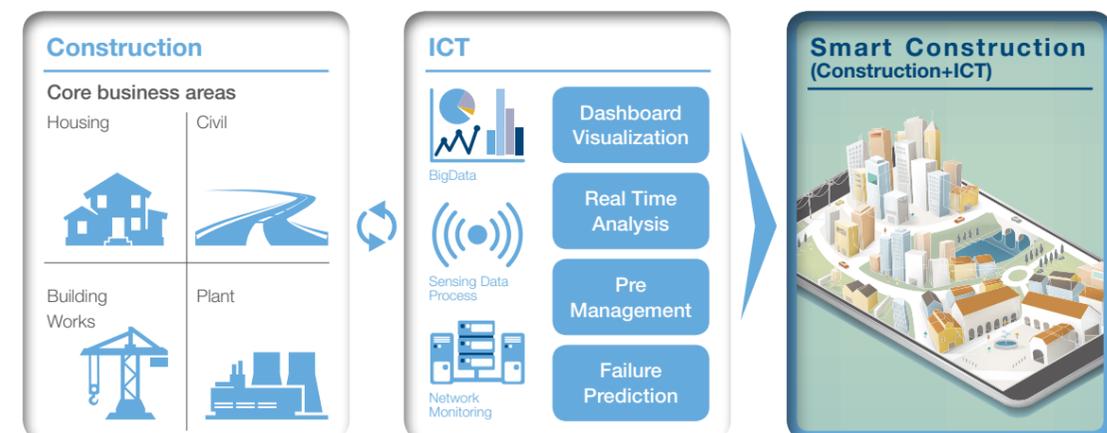
**ICT Convergence Business**



**Support of IoT Pilot Project and Construction IT Convergence Business**

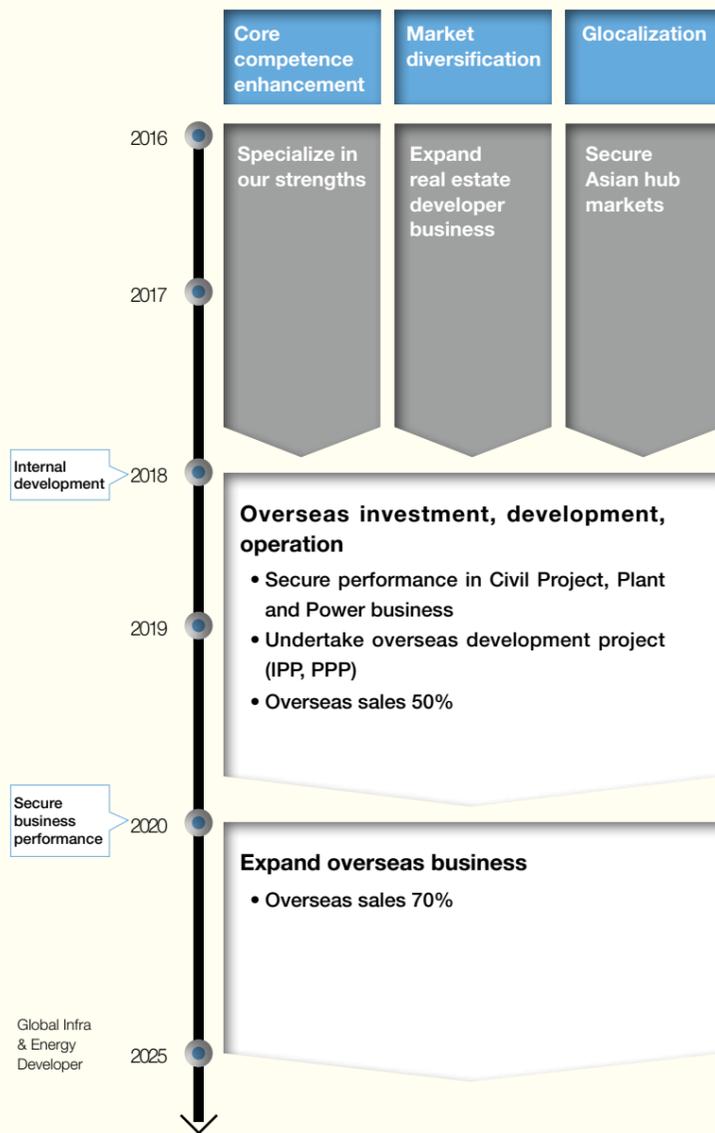
Considering that IT convergence services are already being commercialized for EPC facilities, housing, and building operations, Information Technology (IT) of the construction industry will become more advanced and systemized. A necessity of a scientific and objective integrated management is emerging due to factors such as enhancement of legal and systematic safety management based on the rise in accident rate and

decrease in productivity with delays in construction period. Therefore, Daewoo E&C has been active in innovating industry paradigm and securing new engine for growth that will provide added-value service by applying ICT technologies with Internet of Things (IoT). In 2015, we undertook IoT development project, conducting location-based employee management, operation management based on augmented reality and safety monitoring. We plan to continue on developing drones, 3D printing and service platform so as to enhance our IT convergence competitiveness.



### Visions and Objectives

Future Strategy Implementation Committee has set core competence enhancement, market diversification and glocalization as core tasks in order to systematically implement mid- and long-term strategies and to secure future competitiveness. The committee has established a master plan as follows to achieve 'Global Infrastructure & Energy Developer' by 2025.



### Visions by Business Unit

Category	2016	Next 3-year Plan
<b>Civil Project</b> 	<ul style="list-style-type: none"> <li>Promotion of eco-friendly businesses                             <ul style="list-style-type: none"> <li>Jeju Environmental Resource Circulation Center</li> <li>Gunsan Sewage Treatment Facility</li> <li>Hwaseong Food Waste Treatment Facility</li> </ul> </li> <li>Enhancement of competence in O&amp;M business                             <ul style="list-style-type: none"> <li>Strengthen business of Daewoo E&amp;C's subsidiary, Korea Infrastructure Management Co., Ltd</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Eco-friendly green growth business                             <ul style="list-style-type: none"> <li>Focus on domestic orders based on water treatment and biogas development technology and operation capability</li> </ul> </li> <li>Enhancement of O&amp;M business</li> </ul>
<b>Building Works</b> 	<ul style="list-style-type: none"> <li>Increase in public contracts                             <ul style="list-style-type: none"> <li>Increase projects from the Ministry of National Defense and Public Procurement Service</li> </ul> </li> <li>Increase in private contracts                             <ul style="list-style-type: none"> <li>Develop manpower specializing in contracts with financing</li> <li>Increase projects through proposals and contests</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Expansion of roles as a Developer                             <ul style="list-style-type: none"> <li>Large-scale complex development business, proposing projects, joint business with a holding company, etc.</li> <li>Assess division performance and establish detailed implementation strategy</li> </ul> </li> </ul>
<b>Overseas Infra Project</b> 	<ul style="list-style-type: none"> <li>Diversification of market base                             <ul style="list-style-type: none"> <li>Explore new growth engines (Vietnam, new towns in Saudi Arabia, O&amp;M business) and PPP business</li> <li>Expand into new markets such as Sub-Sahara, India, Iran, Myanmar, etc.</li> <li>Promote technology-intensive business</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Reorganization of core business portfolio                             <ul style="list-style-type: none"> <li>Continue contracted projects</li> <li>Focus on new markets</li> <li>Diversify new growth business</li> </ul> </li> </ul>
<b>Housing</b> 	<ul style="list-style-type: none"> <li>Rental business                             <ul style="list-style-type: none"> <li>Lead enterprise rental housing business and develop specialized expertise in engineering/product/service</li> </ul> </li> <li>Green remodeling business                             <ul style="list-style-type: none"> <li>Establish selection criteria for the responsible company</li> </ul> </li> <li>Renovation business                             <ul style="list-style-type: none"> <li>Set business promotion direction based on the performance from pilot project</li> <li>Extend renovation business from individual houses to entire complex</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Rental business                             <ul style="list-style-type: none"> <li>Lay groundwork for rental management business</li> </ul> </li> <li>Diversification of business types                             <ul style="list-style-type: none"> <li>Increase market share by examining and exploring new business type</li> </ul> </li> <li>Diversification of buyers                             <ul style="list-style-type: none"> <li>Win projects from Military Mutual Aid Association, provincial public corporation and large developer</li> </ul> </li> <li>Green remodeling business                             <ul style="list-style-type: none"> <li>Continue to expand through selection of the responsible company</li> </ul> </li> <li>Renovation business                             <ul style="list-style-type: none"> <li>Set business promotion direction in accordance with green remodeling</li> </ul> </li> </ul>
<b>Plant Business</b> 	<ul style="list-style-type: none"> <li>An escape from competition                             <ul style="list-style-type: none"> <li>Strengthen strategic partnership</li> <li>Focus on projects according to our strengths</li> </ul> </li> <li>Identification of measures to promote investment development project with financing</li> </ul>	<ul style="list-style-type: none"> <li>Concentrate on winning LNG project</li> <li>Diversify risk in new market                             <ul style="list-style-type: none"> <li>Strengthen partnership with advanced construction companies such as Fluor, JGC, etc.</li> <li>Enhance operation management competence</li> <li>Entering into modularization market</li> </ul> </li> </ul>
<b>Power Plant</b> 	<p><b>[Power]</b></p> <ul style="list-style-type: none"> <li>USC (Ultra Super Critical) coal-power EPC competence upgrade</li> <li>Securitization of hub markets in Africa and Southeast Asia</li> </ul> <p><b>[IPP]</b></p> <ul style="list-style-type: none"> <li>Preparation and examination of the 8<sup>th</sup> Basic Plan on Electricity Demand and Supply in Korea</li> <li>Increase in business opportunity in Overseas IPP (Vietnam, Indonesia, Malaysia, etc.)</li> <li>Development and participation in domestic and foreign new renewable energy business (Vietnam, Iran, etc.)</li> <li>Strengthening of technology competence of O&amp;M subsidiary (Daewoo Power) and diversification of market base</li> </ul> <p><b>[Nuclear Power]</b></p> <ul style="list-style-type: none"> <li>Constant identification on trends in target countries and enhancement in competitiveness</li> </ul>	<p><b>[Power]</b></p> <ul style="list-style-type: none"> <li>Exploration of new markets such as Iran and South America</li> <li>Enhancement of local partnership by region and collaboration with the third world countries</li> <li>Expansion of new renewable energy business</li> </ul> <p><b>[IPP]</b></p> <ul style="list-style-type: none"> <li>Securitization of the business right for the 8<sup>th</sup> Basic Plan on Electricity Demand and Supply in Korea</li> <li>Participation as overseas IPP business Developer and securitization of business performance</li> <li>Securitization of performance in domestic and foreign new renewable energy (solar power, wind power, biomass, etc.)</li> <li>Strengthening of technology competence of O&amp;M subsidiary (Daewoo Power) and securitization of domestic and foreign business performance</li> </ul> <p><b>[Nuclear Power]</b></p> <ul style="list-style-type: none"> <li>Promotion of participation in overseas commercial atomic power plant constructor</li> </ul>
<b>ICT Convergence</b> 	<ul style="list-style-type: none"> <li>Promotion of the application of on-site construction IoT (MOU with a telecom company)                             <ul style="list-style-type: none"> <li>Select and apply pilot site: (Civil) Seohaean Railway fourth zone, (Housing) Wiryu Unam Station Prugio Site, (Building) office sites</li> </ul> </li> <li>Exploration and development of construction IoT convergence technology                             <ul style="list-style-type: none"> <li>Develop service using new technologies such as drones, 3D printing, etc.</li> <li>Develop service platform, secure intellectual property right, participate in pilot project by public organization</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Development of on-site ICT convergence service model                             <ul style="list-style-type: none"> <li>Explore service request area, secure and upgrade ICT platform that is applicable to operation sites (2017)</li> <li>Develop additional service model in the fields of construction/material/logistics (2018)</li> </ul> </li> <li>Development of construction/safety IoT platform</li> </ul>



Manager  
Jiwoong Bae

# COMPLIANCE

## Compliance and Ethical Management

In today's business environment, compliance risks are increasingly integral and the ethical responsibilities of a company are now just as significant as fiduciary duties and responsibilities. Anti-corruption policies are globally proliferating with countries increasing and intensifying penalties on breach and the EU has passed a specific bill for mandatory disclosure of non-financial information in the annual reports. Likewise, the Korean government has been putting in various efforts to stand against anti-corruption, initiating projects such as the 'Four Vaccines to Prevent Anti-Corruption' in January. Compliance risk is a must-prevent factor as one mistake can tear down the reputation and brand of an entire company at a moment's notice. Therefore, Daewoo E&C has taken the lead in ethical management by settling an autonomous compliance atmosphere as our inherent corporate culture. Daewoo E&C introduced the Compliance Program (CP) in February 2015 and has been striving for stronger establishment and improvement of the program ever since.

Declaration and Disclosure of CP	CP System (Organization, Regulation, Message Board)
Tailored CP Courses and CP Promotion	CP Core Strategic Tasks

### Goals

- Secure transparency and fairness in management by strictly adhering to laws and regulations
- Prevent management loss by reviewing ongoing practices and continuously improving our working environment
- Internalize the Compliance Program for all employees

### Activities and Achievements

- **CP establishment**
  - Operated CP deliberation/discussion organization (Sustainability Management Committee, Compliance Council)
  - Developed and rolled out internal compliance guidelines regarding key stakeholders
  - Conducted compliance training for all employees
  - Appointed compliance leaders, analyzes and reports autonomous CP operation results on a monthly basis
  - Established evaluation standards for autonomous CP operation in each division
- Inspected CP status in 22 teams/sites
- Evaluated autonomous CP operation in each division and awarded outstanding compliance leaders
- **Consistent ethical management**
  - Conducted ethical management campaigns (Clean Holidays Campaign, Healthy 119 Drinking Culture, etc.)
  - Participated in the Association of Compliance Organizations for Korea Development Bank (KDB) subsidiaries
  - Fulfilled US Army Administrative Compliance Agreement (AA) which ended in October 2015

### Plans for 2016

- **Domestic and overseas compliance risk review**
  - Domestic: Consistently revise the compliance manual and guidelines
  - Overseas: Develop and apply compliance guidelines for each phase in overseas business
- **Promotion of awareness for compliance through training**
  - Promote awareness through a compliance training program
  - Provide customized training according to trainee work details
- Produce audio-visual contents for on-line compliance training on a monthly basis
- **Internalization autonomous compliance culture**
  - Create an environment of compliance by internalizing autonomous CP activities (talk, message, training) in each division
  - Have employees pledge to practice CP on an annual basis
  - Promote engagement in compliance activities through campaigns and create an internal consensus on compliance
- **Implementation of compliance in subsidiaries**
  - Support subsidiaries to establish a CP system (appoint compliance leaders for subsidiaries, support development of internal CP regulations, etc.)
  - Instruct subsidiaries on Daewoo E&C's CP training program and CP operation cases
- **Consistent ethical management**

# Compliance

## Strategic Direction

Daewoo E&C has paved our way to realize sustainability and internal growth by promoting autonomous compliance as well as fair and transparent business execution on every management activity. To instill employees' awareness on ethics and compliance, the current CP sets out with 'Compliance Together' as the slogan for 2016 and various efforts have been placed to establish an ethics and compliance culture while improving business practices.

- Prevent loss by reviewing existing customs and constantly improving the business environment
- Internalize the compliance program within all employees
- Create an ethics and compliance culture for all employees to empathize and participate in

## CP Organization and Roles

Name of Organization	Constituents	Roles
Sustainability Management Committee	CEO (Chairman), CFO, and Executive management	Make decisions on significant issues regarding CP, ESG, and ethical management
Chief Ethics and Compliance Officer	Head of Management Review Division (elected by the Board of Directors)	Oversee general CP operations
Compliance Team	Head of Compliance Team and team members	Support CP execution in charge of training, promotion, inspection, and assessment
Compliance Council	Compliance administrator, Head of Compliance Team, and Compliance Leaders	Discuss CP activities in detail (share performance, debate improvement points, etc.)
Compliance Leader (CL)	Employees in leading teams within divisions and employees in teams of relevant expertise (human resources, legal, overseas contract management, etc.)	Manage general CP activities within division (spread, educate, and check)
Compliance Manager	Employees in teams/sites	Oversee CP activities within teams/sites

### Sustainability Management Committee

First held in March 2015, the Sustainability Management Committee deliberates and decides on major issues regarding the operational standards, plans, and results of CP as well as the results of ethical management and ESG policies. The Committee takes place once or more times

## Activities and Achievements

### Formation and Operation of CP Organization

In order to raise awareness and encourage autonomous CP practice across the company, the Compliance Team, the Sustainability Management Committee in charge of deliberating main CP operational issues, and the Compliance Council which deals with specific compliance issues all work together to promote systematic discussions and activities regarding compliance at Daewoo E&C. Furthermore, Compliance Leaders and managers were appointed to promote autonomous CP activities.

each year with November 2016 marking the third event. All members including the CEO participate in the Committee to report and discuss on CP operation results and plans for the following year, which contributes to more effective CP.

## Sustainability Management Committee Organization



### CP System

Upon recognizing the need to clarify a certain criteria to systematically and consistently promote CP, Daewoo E&C has developed operational regulations, a manual, and guidelines for CP.

- CP operational regulations
  - Contents include CP organization and task allocation, as well as specific methods and procedures of training, inspection, and evaluation
- CP manual
  - Developed in six core CP areas including fair trade, domestic corruption prevention, foreign corruption prevention, mutual cooperation, labeling/advertisement, and IT/information security

### CP Community

- Established a web page solely for contents on compliance in the BARONET community
- Improved legibility and increased employees' interest by constantly monitoring and providing information on compliance standards, manual, trends, trainings, etc.
- Compliance guidelines
  - Prevented operational compliance risks according to stakeholder group

### CP Training and Communication (Promotion)

Daewoo E&C has increased training effectiveness by developing various on/offline training programs to promote employees' understanding and rapport. Moreover, by publishing and distributing trend reports and posters, the company supports the integration of compliance in employees' daily lives and encourages them to be fully informed of regulations by sharing cases of violation.

Furthermore, Daewoo E&C is working on improving accounting transparency by enhancing internal processes, conducting in-house training on finance, and reinforcing monitoring on main financial indicators.

We provide financial information in accordance with accounting standards.

### CP Training

Activity	Trainee/Detail	Number of Participants
Ethical compliance training by a professional outside lecturer	Team leader and above at HQ, on-site managers in Seoul-Incheon area	388
Compliance training for all employees		1,721
Online CP training on each core area	Created 12 types of training video, conducted online training	6,062

### Autonomous CP Activities

Daewoo E&C implements autonomous CP activities by team/site. Through employees' self-directed activities, we aim to internalize ethical compliance within our corporate

culture. The result of autonomous CP activities by divisions is analyzed and reported to the Chief Ethics and Compliance Officer. The reported results are then applied to the annual assessment of division performance.

Category	Supervisor	Implementation	Performance in 2015 (implementation/base)
Compliance Talk	Team leader/ Site manager	Monthly	Implemented 3,271 times/3,939 (Implementation rate 83%)
Compliance Message	Executive in charge	Quarterly	Implemented 189 times/168 (Implementation rate 112.5%)
Autonomous trainings by the Compliance Leader of each division	Compliance leader	Semiannually	Implemented 29 times/18 (Implementation rate 161.1%)

### CP Inspection and Evaluation

Daewoo E&C promotes the roll out and internalization of CP within the whole company and therefore inspects and evaluates employee awareness regarding the matter. Moreover, we quantify CP implementation results of each division, which is then incorporated into the annual performance review of the respected division. Through such efforts, Daewoo E&C is moving closer to a more spontaneous and proactive compliance culture.

- Inspect CP status in 22 teams/sites in 2015
- Evaluate autonomous CP operation in each division and award outstanding compliance leaders

### Visions and Objectives

In 2016, Daewoo E&C plans to realize internal growth by minimizing loss in midst of the demanding business environment. In order to achieve our objective, Daewoo E&C will review business practices and internalize employee compliance by enhancing the domestic and overseas compliance system, providing trainings on the internalization of autonomous compliance culture, and activating a monitoring program. In addition, being fully aware of the influence of supply chain compliance issues on Daewoo E&C, we will expand our management scope to subsidiaries and suppliers.

- CP system enhancement
  - Expand CP core areas (develop manuals for employment/labor and HSE-Q)
  - Vitalize whistle blowing system by actively operating the 'Ethics Help-Line,' reinforcing protection of whistle blowers, etc.

- Strengthen cooperation among professional compliance leaders on compliance overseas (International Legal Affairs Team), subcontract transaction (Business Partnership Planning Team), etc.
- Maximization of efficiency in CP education/promotion
  - Replace the two-week intensive online training with monthly five minute trainings
  - Utilize a variety of fun aspects such as audio-visual contents or cartoons
- Spread of CP to subsidiaries
  - Appoint Compliance Leaders for each subsidiary
  - Spread core elements and cases of Daewoo E&C's CP operation
  - Assist in developing autonomous compliance handbooks and establishing CP operational regulations
  - Share Daewoo E&C's compliance training program
  - Inspect subsidiaries' CP operation practices and evaluate results

## Ethical Management

### Strategic Direction

The importance of a company's ability to generate profit, which was once believed to be the ultimate value of its existence, has transformed along with the times and creating social value is no less important than generating revenue. Through compliance and ethical management, Daewoo E&C plans to right potentially wrongful practices and cost

structures within the company in accordance with ethical standards and principles, and eventually increase the corporate value. In line with such vision, we are constantly spreading ethical management under the lead of our Compliance Team in ways such as promoting campaigns so that employees can voluntarily participate in ethical management in all business activities with a high ethical standard.

### Activities and Achievements

To reinforce the practice of ethical management, Daewoo E&C focused on activities such as ethical management campaigns and the execution of the Ombudsperson system.

#### Ethical Management Campaign Activities

Category	Details
<b>Clean Holidays Campaign</b>	We strictly prohibit receiving gifts from stakeholders such as subcontractors and suppliers especially during national holidays to establish a clean corporate culture. Headquarters and site offices are constantly inspected in order to prevent bribery.
<b>Appropriate Notification of Family Events</b>	For fair business transactions, we prohibit all employees from notifying our suppliers of personal or family events such as weddings, as it may be construed as a request for gifts. In the case of immediate family members, announcements are to be made internally.
<b>Healthy '119' Drinking Culture</b>	We promote a healthy drinking culture through '119 campaign' which stands for 'drinking 1 type of alcohol, for 1 round only, to be back home by 9 PM.'

### Ethical Management Campaign

We have carried out various campaigns to improve awareness of ethics on the grounds that each employee's behavior becomes the entire corporate culture. We conducted a clean corporate culture campaign that prohibits employees from giving or receiving money or valuables between suppliers and employees '119 campaign' for healthy drinking culture within the company to encourage employees a healthy lifestyle.

### Ombudsperson System

On October 26, 2010, Daewoo E&C completed a five-year Administrative Compliance Agreement (AA) with the US Army Suspension & Debarment Official (SDO). And having executed the Ombudsperson system for the last five years through the AA, we further enhanced the level of ethical management by operating ethics and compliance related trainings and a website to gather anonymous reports.

### Vision and Objectives

Daewoo E&C shall focus on stabilizing the ethics culture within the company and continue to carry out various activities to uphold our reputation. Through the current partnership with KDB and various ethical management campaigns, we strive to sincerely carry out ethical management.

- Constant implementation of ethical management
  - Run campaigns such as Clean Holidays, Appropriate Notification of Family Events, and Healthy '119' Drinking Culture
- Maintenance of continuous partnership with KDB
  - Participate in the Association of Compliance Officers for KDB subsidiaries
  - Exchange information on ethics and compliance related subjects and establish partnerships



Staff  
Suyeon Ryu

# HEALTH AND SAFETY

## Health and Safety

In the field of the construction industry, on-site health and safety management is one of the most critical elements of our management. A defect in the health and safety management may result in a serious injury or even death as well as employees' low morale and productivity. Daewoo E&C considers respect for life as a pivotal part of our operations and aims for zero accidents at all operation sites through creating a safe and sound workplace. We also announced Health and Safety Management Policy within and outside of the company at the CEO level. We strive to establish a health and safety management system and infrastructure to foster a culture of health and safety and increase expertise in the area on the basis of the three health and safety action plans 1) compliance with fundamental principles; 2) participation of all members; and 3) continuous improvements. We will continue to make progress as a company that leads the best safety management in the country with the aim of a zero accident rate.

### Goals

- Establishment of health and safety system**
  - Establish and operate global standard level Health, Safety, and Environment (HSE) system and real-time HSE management infrastructure
- Enhancement of health and safety culture**
  - Increase HSE education program
- Management of accident rates**
  - Domestic: Converted accident rates: 0.18 (▽38% decrease compared to the previous year)
  - Overseas: LTIR: 0.05 (▽30% decrease compared to the previous year)

### Plans for 2016

- Advancement in health and safety system and infrastructure**
  - Post-authorize KOSHA 18001, OHSAS 18001, ISO 14001 HSE management system
  - One Touch HSE-Q and BAROCON Update
  - Enhance accident prevention activities model
  - Identify and respond to risks factors through HSE system audit for every construction phases
- Increase in HSE awareness and implementation of new safety culture**
  - Implement Daewoo E&C's own safety culture 'Daewoo Clear Safety System'
  - Proceed on-site HSE Talk, implement Safe Act/Condition identification program
- Implementation of employee protection system for overseas sites**
  - Expand application of ISO 22301 system
- Systemize overseas sites community management**
  - Enhance competence in emergency response and network management
- Management of accident rates**
  - Domestic: Converted accident rate: 0.15 (▽32% in comparison to the previous year)
  - Overseas LTIR: 0.05 (▽71% in comparison to the previous year)

### Management of Accidents Rates



1) 2015 domestic converted accident rate will be disclosed in June (by Korea Occupational Safety & Health Agency)

### Activities and Achievements

- Establishment of health and safety system**
  - Acquired KOSHA 18001
  - Developed One Touch HSE-Q mobile application and carried out real-time health and safety activities for preventing accidents
- Enhancement of the Security System in overseas operation site**
  - Conducted regular security guidance checks, training simulation for safety and security accidents, close support of operation sites
  - Achieved Zero Security Incident for overseas operation sites
- Management of accident rates**
  - Domestic: Converted accident rates 0.22
  - Overseas LTIR: 0.17
- Enhancement of health and safety culture**
  - Launched a practical learning program via hands-on activities, raised the completion rate of instructor-led education by 63.8% compared to the previous year
  - UA (Unsafe Act), UC (Unsafe Condition) Observation participation rate increased by 18% compared to the previous year

# Strategic Direction

## Safety Management Promotion System

### Safety Management Promotion System

Daewoo E&C considers respect for life as a pivotal part of our business management and aims for zero accidents by creating a safe and sound workplace.

In fact, major safety-related businesses and trends are reported during our monthly business performance briefings. We endeavor to achieve zero accidents by pronouncing Health and Safety Management Policy within and outside of the company and implementing measures to prevent serious incidents, all of which demonstrate the strong will of the executives. Additionally, we strive to lead the culture of safety through engagement of all our members.

In 2015, we are complying with fundamental principles of safety and continuously improving safety activities, adhering to our safety motto handpicked by our employees, 'Daewoo E&C of change and innovation, the first step to the challenge is safety.'

### Health and Safety Management Policy

<b>Policy</b>	<b>Lead culture of safety with respect for human life through change and innovation</b>
<b>Action Plan</b>	<p><b>Compliance with fundamental principles</b></p> <ul style="list-style-type: none"> <li>• Comply with health and safety regulations</li> <li>• Promote in-advance risk assessments</li> <li>• Implement license system for major hazardous operations</li> </ul> <p><b>Participation of all members</b></p> <ul style="list-style-type: none"> <li>• Establish a good communication system</li> <li>• Allocate roles and responsibilities to all members without exception</li> <li>• Raise safety awareness through consistent education and training</li> </ul> <p><b>Consistent improvements</b></p> <ul style="list-style-type: none"> <li>• Eradicate similar and alike accidents</li> <li>• Prioritize health and safety when assessing construction plans</li> <li>• Establish advanced health and safety system through improvements</li> </ul>



### Health and Safety Organizational Structure

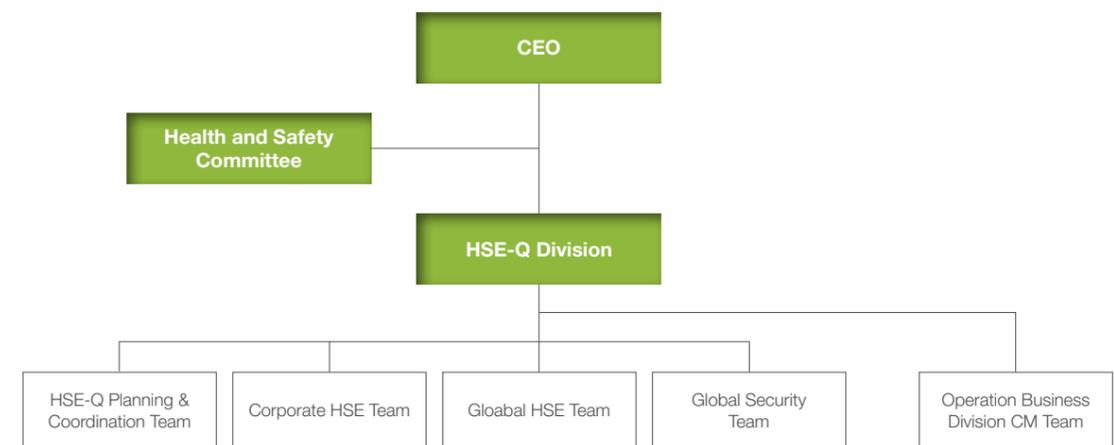
From a bird's eye's view, the HSE-Q Division acts as a control tower, directing HSE issues across the company. Under the HSE-Q Division, there are HSE-Q Planning and Coordination Team, Corporate HSE Team and Global HSE Team which are responsible for establishing and operating health and safety management system and supporting operation on sites. The Global Security Team protects employees while the Business Division CM Team supports and manages health and safety of each site of business divisions.

Through the Health and Safety Committee run by CEO, we monitor the implementation of health and safety management policies across the company and our performances, while reviewing current status of incidents and discussing possible improvements. At the Health and Safety Committee held in 2015, the CEO specifically asked our employees to keep in mind that safety is a must, not a choice and that prevention of accidents by investing and thoroughly managing safety is what helps us produce profits, while requesting to do our best to achieve zero accidents at operation sites.

### 2016 Health and Safety Promotion Direction



### Health and Safety Organizational Structure



## Activities and Achievements

### Health and Safety Management Certification

Daewoo E&C is the first construction company to implement Health and Safety Management System for the settlement of self-regulated safety management system. In November 2000, we also became the first in the industry to attain OHSAS 18001 certification from British Standards Institution (BSI). In July 2015, we acquired KOSHA 18001 in order to secure the public confidence of our health and safety management system and prevent serious incidents. KOSHA 18001 is developed by Korea Occupational Safety&Health Agency and being given to the companies that contribute to the prevention of incidents by establishing health and safety management systems and promoting voluntary health activities. We have worked on this government certification since 2012. Starting with the KOSHA 18001 certification, we expect to increase efficiency of safety management system through facilitating disaster prevention activities for avoiding accidents and implementing safety culture. Moreover, in 2015, Daewoo E&C obtained ISO 22301 certification for the first time in the construction industry and enhanced our risk response ability under security-threatening situations. ISO 22301 is an international standard for ensuring business continuity and recovering to normal operation by mobilizing every resource, as quickly as possible during times of crises such as disasters, terrorism, and conflicts. As a result, we expect to not only enhance our credibility from clients and government organizations in the stages of bidding and construction, but also secure our global competitiveness.

### Improvement of HSE Policy and Process

Daewoo E&C improved HSE-related policy and process for more effective health and safety management as follows:

- Reinforced disciplinary standards for accidents and HSE-Q reward standards
- Enhanced selection criteria for safety facilities and suppliers
- Verified safety monitoring personnel and reinforced operation standards
- Improved regular safety examination process (Construction and Technology Promotion Law)
- Implemented construction safety briefings policy

### Development of One Touch HSE-Q Mobile Application

Daewoo E&C developed the One Touch HSE-Q application in order to comprehensively manage health and safety and revitalize real-time information sharing and communication. Through the One Touch HSE-Q application, Daewoo E&C's employees can check real-time notifications of potential risks, near miss, and accidents at operation sites and look for references, including guidelines on safety, site management, and best practices. With this, our employees are building a culture of voluntary safety while leading by example in preventing health and safety accidents.

### Health and Safety Psychology Coaching Program

Daewoo E&C initiated the Health and Safety Psychology Coaching Program in order to enhance employees' stress management capabilities by diagnosing their stress level and analyzing causes of anxiety. Therefore we have been executing Self-Care and Mind Care programs. The programs has led us to minimize the loss of work time by solving various issues regarding employees' stress such as a decline in concentration and tardiness, while ultimately enhancing the safety level by helping employees recover from psychological trauma such as post-traumatic stress after serious accidents.

### Health and Safety Committee Meetings

In 2015, Daewoo E&C held four Health and Safety Committee Meetings with the CEO, discussing measures for health and safety management across the company, reviewing current status of incidents, and identifying improvement plan.

### Health and Safety Meeting Agenda of 2015

<p>Reviewed 2015 health and safety management plans</p> 	<p>Discussed methods to ensure stability of temporary work</p> 
<p>Managed safety of construction machinery</p> 	<p>Implemented CLEAR program</p> 

### Safety Checks

In 2015, Daewoo E&C conducted several safety checks conveying the executives' firm will on operation site safety. We put emphasis on the importance of safety management based on the ground rules and keep every on-site workers aware of safety issues.

### Types of Safety Checks

- CEO inspection: Safety check by CEO, Heads of divisions and PMs, 'Safety Check Day' event
- Expert inspection: Checks safety of internal/external systems and technology
- Site support: HSE Helper, Starter, etc.
- Special inspection: Thaw season safety checks



### Health and Safety Trainings

In February 2015, Daewoo E&C opened 'Safety Experience Center,' an actual and practice oriented training site inside the Daewoo E&C Institute of Construction Technology (DICT), and developed a differentiated training program. The program was comprised of several interesting simulation experiencing education programs, including practices of cardiopulmonary resuscitation (CPR), simulation on electricity safety, equipment collision, trap/roll, safety belt, fallen object and fire extinguisher. In 2015, 1,668 participants completed the training. In terms of overseas HSE professional education, 32 participants completed the advanced safety education, including 'NEBOSH ICC,' 'TapRooT' and 'OSHA 30 Hours Construction' in 2015.

- HSE education performance
  - Instructor-led education: 3,890 participants (increased by 63.8% compared to the previous year)
  - Experiencing education: 1,668 participants (launched in 2015)
  - Consciousness diagnosis education: 1,005 participants (launched in 2015)
- Overseas HSE education performance
  - US OSHA 30 Hours, UK NEBOSH ICC, US TapRooT, OHSAS 18001 (International OHSAS senior examinant course), etc.
  - 32 participants completed

**Health and Safety Campaign**

In Safety Cornerstone program, new on-site workers or common visitors receive trainings on attributes and emergency exit route of the operation site in order to familiarize the importance of safety. Other various activities, such as Safety Traffic Light 365 Campaign which emphasizes compliance with legal regulations and Life Safety Campaign which encourages wearing seat belts, are also provided.

**Overseas Health and Safety Support**

When bidding for projects, Daewoo E&C establishes countermeasures by specifically examining HSE risks in order to support overseas health and safety. In addition, we set up a joint safety check standard with on-site managers in 2015 while conducting education for improving executives' safety awareness, UA (Unsafe Act)/UC (Unsafe Condition) Observation program and Safe Work Campaign.

- HSE-focused examination in bidding process
  - Prepared 32 projects HSE risk evaluation sheet and established countermeasures
- Education of management's safety awareness improvement
  - 3 occasions, 75 participants completed
- UA/UC Observation
  - Participation rate increased by 18% compared to the previous year
- Facilitation of Safe Work Campaign
  - Achieved 100% participation rate
  - Selected 1 out of 10 topics, and conducted site-specific education and special inspection every month

**Enhancement of Security System in Dangerous Countries**

In 2015, Daewoo E&C achieved Zero Security Incident at overseas sites. In order to achieve this, the Security Team conducted a range of activities such as regular security guidance check, conducted training simulation for emergencies, distribution of security equipment, close support for overseas operation sites and security collaboration with government.

- Regular security guidance check
  - Checked 5 countries, 21 operation sites
  - Average score of guidance check increased by 20% compared to the previous year
- Enhancement of response ability for emergencies
  - Supported initial response training for emergencies at both headquarters and operation sites in DGS and Al Faw breakwater in Iraq
  - Supported initial response training for operation sites in Indorama, Nigeria and Jazan, Saudi Arabia
- Close support for operation sites
  - Secured 10% of allowance compared to the quota allowed for staying at the operation sites in Iraq
  - Distributed security equipment (satellite telephone, automatic vehicle location tracking system, etc.)
  - Distributed on-site security management manual in French and Arabic
- Security-related collaboration with governmental organizations
  - Operated counter-terrorism council (National Intelligence Service, Ministry of Foreign Affairs, Ministry of Land, Infrastructure and Transport, Office of National Security and International Contractors Association of Korea)
  - Presented our best practice for security management twice a year



**Establishment and Operation of Daewoo Security Strategic Plan (SSP)**

Daewoo E&C strives to organically manage Security Rule, Software, and Hardware in order to assure security of all workers when carrying out projects in dangerous countries including Iraq. Additionally, we aim to achieve Zero Security Incident at operation sites by establishing support system of the headquarters.

Daewoo E&C is reinforcing security management around operation sites with the recent increase in religious tension between Saudi Arabia and Iran, as well as IS terrorism. We

are operating 24-hour Hot-Line between the operation sites and the headquarters, and an initial response supporting channel with National Intelligence Service, Ministry of Foreign Affairs, and International Contractors Association of Korea. Furthermore, in order to identify security issues nearby operation sites and strengthen preventive measures, we reinforced limited access to the congested area, minimizing conflicts with the locals and strengthening the inspection of workers and vehicles accessing operation sites.

 <p><b>Rule</b></p> <ul style="list-style-type: none"> <li>- Procedure guideline for security of overseas operation site (initial response for emergencies, manual for response to conflict, etc.)</li> <li>- Prepare site-specific security plan</li> </ul>	 <p><b>Software</b></p> <ul style="list-style-type: none"> <li>- Diversify channels for collecting information and establish a system (internal and external network formation, response to government/public)</li> </ul>	 <p><b>Hardware</b></p> <ul style="list-style-type: none"> <li>- Strengthen protection ability for operation sites through setting up buildings</li> </ul>
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**Performance on Safety Technology Research**

**Technical Safety System**

Daewoo Technical Safety Network Service System is a system for preventing disaster of buildings at the construction sites that has been developed by DICT since January 2015. The system consists of a guidance check checklist for detecting qualitative risks, MEMS (Micro-electromechanical systems) for quantitative risks and a safety monitoring system based on IoT. This aims to make all workers become safety experts by strengthening technology competence based on IT.

- Safety checklist
  - Prepared a safety checklist specified by each construction type with approximately 360 items

**IoT Pilot Project**

In November 2015, Daewoo E&C established a virtual field with construction IoT inside DICT and conducted location-based worker management, augmented reality-based construction management, safety monitoring, and fire and gas leak detection monitoring.



### Management of Accident Rates

In 2015, the domestic converted accident rate was 0.22, which is a 29% decrease that of the previous year, whereas the overseas Lost Time Injury Rate (LTIR) recorded 0.17. However, the number of serious incidents at home and overseas increased by 33%, indicating a poor management

of accident rates in 2015. This is due to increased number of safety issues such as the collision of equipment at overseas operation sites and incidents concerning fire, fallen object, etc. We are putting every effort into not repeating the same incidents by analysis of the cause, follow-up management and recurrence prevention.

#### Performance on the Management of Accident Rates

	Category	Target	Performance	Remarks
<b>Domestic</b>	Converted accident rate <sup>2)</sup>	0.18	0.22	▽29% in comparison with previous year
<b>Overseas</b>	LTIR <sup>3)</sup>	0.05	0.17	

2) Converted accident rate: (number of converted victims / number of full-time workers) x 100

3) Lost Time Injury Rate (LTIR): (number of victims / total worked hours) x 1 million hours



### Visions and Objectives

Daewoo E&C aims to lead a culture of safety with respect for human life through change and innovation based on the Health and Safety Management Policy across the company and accomplish zero-disaster through creation of safe and sound operation sites. In 2016, we plan to have a take-off year of enhancing competitiveness in health and safety management while implementing the system for employee protection. To do so, we will set up the basis for the culture of safety, manage health and safety risks in advance and increase support for HSE infrastructure by raising HSE awareness. Additionally, we aim to achieve Zero Security Incident at overseas operation sites while increasing utilization of ISO 22301 system for employee protection, systemizing overseas sites community management and enhancing competence in emergency response and network management.

#### Basis for Safety Culture

For the main safety activities for 2016, Daewoo E&C strives to manage a leading indicator, increase the level of safety through prevention activities and implement 'Daewoo CLEAR Safety System', a future-oriented safety culture. This is Daewoo E&C's unique safety culture program focusing on executives' leading by example (Commitment), two-way communication (Listen and Speak), risk elimination through identifying UA/UC (Eliminate), appreciation and encouragement by exploring SA/SC (Appreciate) and improvement of relationship among all members (Relationship).

#### Prevention of Health and Safety Risks

- Improvement of a model for prevention activities
  - Analyze leading indicators > Predict project risks > Check, Diagnose, Audit > Customized Solution > Act Feedback > Prevention of accidents
- Pre-inspection on safety of temporary structure engineering

<b>Target</b>	Scaffold (31m), retaining (tunnel/sheathing/over 5m), power using temporary structure, cast with walk plate
<b>Process</b>	engineering review > Detail drawing of construction > Structure review > Construction plan > Safety inspection > Prevention of collapse

- Manage 5 main items for eliminating serious disaster at overseas operation sites
  - Permit to Work, Work in closed space, High place work, Heavy equipment work and Lockout Tagout (control system)
- HSE system audit for every phase of overseas site construction, explore and response risks
  - Analyze risks and establish countermeasures according to the construction progress at each operation site
  - Set and manage the stages of 'Safe/Warning/Alert' through analyzing safety activities at each operation site
- Prevention of unsafe activities through operating practical Permit to Work

#### Implementation of Worker Protection System

- Increased utilization of ISO 22301 system
- Systemization of overseas sites community management
  - Conduct community education before assigning on-site managers
  - Systemically support according to the construction phases
- Enhancement of competence in emergency response and network management
  - Analyze security information: Support newly entering countries in advance and re-mobile for existing countries
  - Manage emergency response: Strengthen simulation training between the headquarters and operation sites, support 3-month dispatch of headquarter official when on-site mobile in dangerous countries
  - Enhance security collaboration with governmental organizations such as National Intelligence Service, Ministry of Foreign Affairs, Ministry of Land, Infrastructure and Transport, Office of National Security and International Contractors Association of Korea

#### Management of Accident Rates

##### Targets for the Management of Accident Rates

	Category	2015 Performances	2015 Objectives	Remarks
<b>Domestic</b>	Converted accident rate	0.22	0.15	▽32%
<b>Overseas</b>	Lost Time Injury Rate (LTIR)	0.17	0.05	▽71%

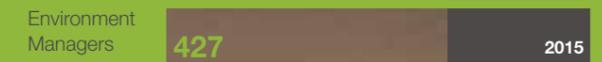


Senior Researcher  
Juyeon Kim

# ECO-FRIENDLY CONSTRUCTION

## Eco-Friendly Construction

Environment Manager (Unit: Persons/As of November 2015)



The eco-friendly construction has become a must with the series of rising trends and events including an increase in demand for corporate responsibility on the environment, the agreement of the international community on the New Climate System after 2020, and the increase in potential for companies to create values through the environment-friendly business model. Highly regarding environmental protection and respect for life as the overriding values of corporate management, Daewoo E&C strives to become a global eco-friendly construction leader by continuously expanding its eco-friendly business as well as making effort to prevent global warming.

### Goals

- **Environmental management**
  - Accomplish zero violation of environmental laws and occurrence of environmental accidents
  - Reassign roles and responsibilities of environment managers
  - Raise the level of environmental management in operation sites through the implementation of HSE One Stop Service
  - Achieve the target to reduce costs of waste disposal compared to sales: 0.20%
- **Response to climate change**
  - Assess estimated amount of GHG emission and set objective and strategy for reduction
  - Increase disclosure of environmental information, win CDP (Carbon Disclosure Project) Sector Winners, participate in the environmental information disclosure initiative by the Ministry of Environment
- **Eco-friendly businesses**
  - Develop optimal technology and construction process to build high-rise zero energy houses
  - Develop DECO2 (Daewoo Elimination of CO<sub>2</sub>) integrated process optimal technology and seek methods to commercialize carbon capture byproducts

### Activities and Achievements

- **Environmental management**
  - Accomplished zero penalty and sanction for violation of environmental laws
  - Reestablished the roles and responsibilities of environment managers
  - Implemented HSE One Stop Service
  - Achieved the target to reduce costs of waste disposal compared to sales: 0.18% (calculated with estimated sales at the end of November 2015)
- **Response to climate change**
  - Expanded public disclosure of environmental information: Won CDP (Carbon Disclosure Project) Sector Winners Award
- **Eco-friendly businesses**
  - Secured core technologies to accomplish Green Premium roadmap and established zero energy house (ZENERHEIM)
  - Became the first in Korea to develop DECO2 integrated process optimal technology and design a direct synthesis for CO<sub>2</sub> integrated process plant

### Plans for 2016

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>• <b>Environment management</b> <ul style="list-style-type: none"> <li>- Accomplish zero violation of environmental laws and occurrence of environmental accidents</li> <li>- Enhance job competency of environment manager</li> <li>- Prepare to convert to ISO 14001:2015</li> <li>- Achieve the target to reduce costs of waste disposal compared to sales: 0.19%</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Response to climate change</b> <ul style="list-style-type: none"> <li>- Assign reduction target for the company, division, on-site/team and execute real time monitoring</li> <li>- Conduct consistent training and promotion on GHG reduction</li> <li>- Actively respond to public disclosure on environment information</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Eco-friendly businesses</b> <ul style="list-style-type: none"> <li>- Develop optimal technology and construction process to actualize zero energy house in projects and reduce 80% of energy consumption</li> <li>- Design and install the first year lay out design for a direct synthesis pilot plant for CO<sub>2</sub> integrated process</li> <li>- Enter new market for domestic/overseas new renewable energy business and secure performance</li> </ul> </li> </ul> |
|--|---|---|

# Environmental Management

## Strategic Direction

Environmental management is essential in promoting sustainable construction business. To live up to our top priorities, which lie in the values of human being and the environment, we promote continuous improvements on our environmental management. We have established guidelines on complying with regulations and operating environment management system, have made universal announcement on our established environmental objectives, such as accomplishing zero violation of environmental laws and occurrence of environmental accidents, and have managed the implementation results. In addition, we have retained the environmental management system certification, ISO 14001, since 1997 through post-certification inspections.

company-wide environmental management, and Global HSE Team, which takes care of overseas on-site environment management. The Corporate HSE Team is keeping up with the status of the environmental management system implementation, while the Global HSE Team is constantly strengthening environmental management in overseas operation sites.

<b>Environmental Policies</b>	<ul style="list-style-type: none"> <li>- Operate environmental management system according to ISO 14001 and comply with environmental regulations</li> <li>- Prevent environmental pollution caused by construction activities</li> <li>- Reflect and implement stakeholders' opinions on environment and climate change</li> </ul>
<b>Environmental Targets</b>	<ul style="list-style-type: none"> <li>- Prevent environmental regulations violation and accidents</li> <li>- Set and achieve targets to conserve energy and other</li> <li>- Set and achieve targets to reduce costs of waste disposal compared to sales</li> </ul>

## Environmental Management Organization

Daewoo E&C's environmental management organization is composed of Corporate HSE Team, which supervises a

## Environmental Management Organizations throughout the Company and by Division

Company Environmental Management Organization



Environmental Management Organization by Division



## Reestablishment of Role and Responsibilities of Environment Managers

In October 2015, the Corporate HSE Team reestablished the appointment standards and the roles of environment managers to increase work efficiency and minimize environmental risk. Persons were selected for management, project control and construction.

## Site Environment Organizational Structure

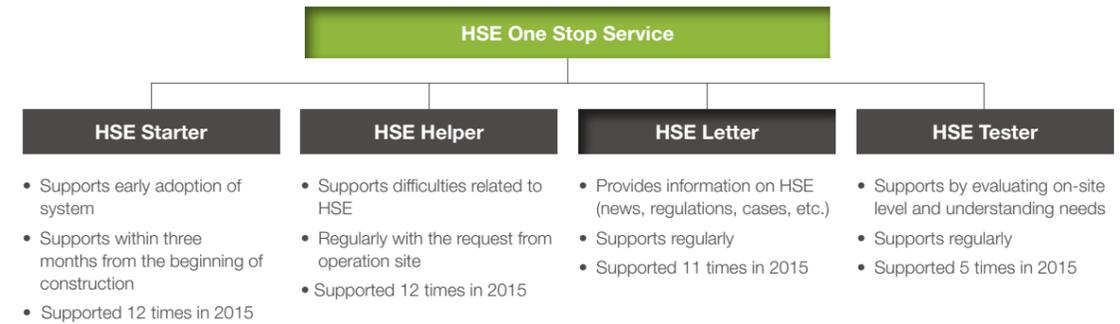


## Activities and Achievements

Daewoo E&C, a trustworthy and eco-friendly construction company, has improved the quality of on-site environment management through the implementation of HSE One Stop Service, to comply with environmental regulations and to settle its environment management system. We have also achieved zero penalty and sanction on violation of environmental laws by conducting a thorough HSE management system audits. As for the target ratio of waste disposal costs to sales, we recorded 0.18%, far surpassing the 0.20% which we set out earlier through the implementation of the environment management system.

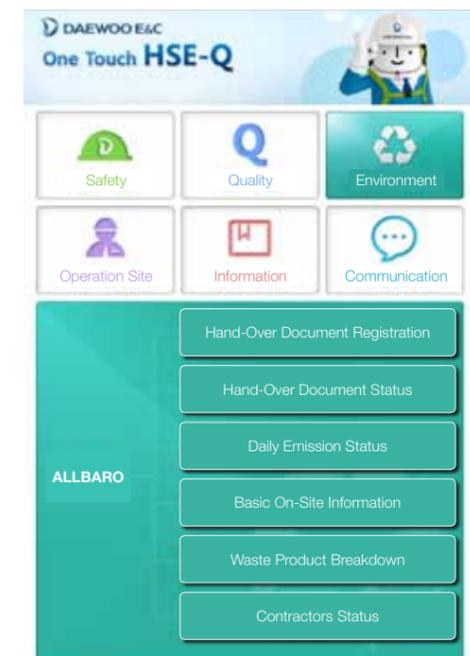
## HSE One Stop Service

To encourage domestic and overseas operation sites to comply with environmental regulations and establish the environment management system, Daewoo E&C implemented the HSE One Stop Service. It serves as the total support service on HSE to HSE managers, on-site employees, and on-site suppliers' employees. The service consists of HSE Starter, Helper, Letter, Tester and supports employees for the early adoption of HSE system, providing training, evaluation and various information. It made a great contribution to our environment management competency enhancement by providing its services 40 times in 2015.



## Development of One Touch HSE-Q Mobile Application

Daewoo E&C has first developed the One Touch HSE-Q application in the construction industry in order to enhance transparency and convenience in waste disposal. Using this mobile HSE-Q application, our employees can manage the 'ALLBARO' system at operation site. Since One Touch HSE-Q is well connected with the 'ALLBARO' system of Korea Environment Corporation and the company's waste disposal system (DW-PMIS) in real time, anyone can create, delete and manage electronic hand-over document anytime and anywhere. Through the mobile application, which enable employees to register hand-over document with photos attached, the number of errors occurred by not posting the document or miswriting has significantly decreased. In recognition of our efforts, Mobile HSE-Q won the Chairman Award for the 'Best Practice for Construction Environment Management' in November 2015.



### HSE Management System Audits

Daewoo E&C has been conducting annual HSE management system audits to supervise the operation status of the environment management and compliance of environmental regulations of operation sites. In 2015, Daewoo E&C has executed 66 HSE management system audits on our operation sites and notified operation sites of the results, by announcing exemplary and poor cases. In addition, by enhancing the compliance inspection on environmental regulations, Daewoo E&C achieved zero penalty and sanction on the violation of environmental regulations.



### HSE Management System Audits Performance

Category	Civil Project	Building Works	Housing	Plant/Power	Total
HSE management system audits (regular)	17	6	10	-	33
HSE management system audits (special)	2	-	-	-	2
HSE management system audits (fugitive dust)	13	4	12	2	31
<b>Total</b>	<b>32</b>	<b>10</b>	<b>22</b>	<b>2</b>	<b>66</b>



### Environmental Management Training

Daewoo E&C provides environmental training for environment managers, on-site managers, on-site workers, and on-site executives of excellent and major suppliers in order to prevent environmental accidents and cultivate functional knowledge on environmental management. On-site trainings are conducted autonomously once a month, based on the environmental training materials prepared by the Corporate HSE Team.



31,944 participants completed environmental training in 2015

### Environmental Training Performance

(As of December 31, 2015)

Category	Name of Training	Period	Number of Participants
Trainings Hosted	Job competence training for environment managers (Level 1)_ The first half of the year	1 <sup>st</sup> Round: April 21 2 <sup>nd</sup> Round: April 28 3 <sup>rd</sup> Round: May 19	251
	Job competence training for environment managers (Level 1)_ The second half of the year	1 <sup>st</sup> Round: October 19 2 <sup>nd</sup> Round: October 20	96
Trainings Supported	2015 The 3 <sup>rd</sup> Chief Manager Conference (Southern region)	August 18	14
	2015 The 3 <sup>rd</sup> Chief Manager Conference (Central region)	August 19	21
	2015 The 3 <sup>rd</sup> Chief Manager Conference (Western region)	August 21	23
	2015 The 3 <sup>rd</sup> Chief Manager Conference (Seoul region)	August 21	22
	2015 The 3 <sup>rd</sup> Chief Manager Conference (Eastern region)	August 25	29
	Working-level training on on-site environment management (6 sites including Guri/Pocheon Business Unit)		20
Monthly Environmental Training (operation site)	On-site environmental training (Civil Project Division)	January 1	7,937
	On-site environmental training (Building Works Division)	~ December 31	10,588
	On-site environmental training (Housing Division)		9,947
	On-site environmental training (Plant/Power Business Division)		2,996
<b>Total</b>			<b>31,944</b>

### Visions and Objectives

Daewoo E&C will continue to strengthen the expertise of our environment managers and environmental management system. For the settlement of environment managers' roles and responsibilities, the company will conduct environment management training by appointing environment managers for each business division. Preparation to convert to ISO 14001:2015 will also take place as well as supporting site environment management via the HSE One Stop Service. Through the consistent improvements on environment management activities, we will once again, pursue zero violation on environmental laws and occurrence of environmental accidents and 0.19% ratio of waste disposal costs to total sales.

- Enhancement of job competency of environment manager
  - Support and confirm on-site application of HSE One Stop Service
  - Revise working-level guidebook for on-site environment

management

- Appoint environment managers for business divisions and conduct trainings
- Support environment managers in acquiring management license on toxic chemical substances
- Preparation to convert to ISO 14001:2015
  - Complete training course on system conversion (once a year, 16 hours)
  - Analyze revised version of ISO 14001:2015
  - Prepare for conversion screening inspection
- Waste management
  - Achieve the target to reduce costs of waste disposal compared to sales (0.19%) for 2016
  - Identify and register exemplary waste treatment companies by region
  - Establish methods to recycle the waste (construction sludge, waste soil, etc.) generated in operation sites within three years

## Key Environmental Performance

### Waste

Category	Unit	2013	2014	2015
<b>Waste Volume*</b>	ton	479,180	628,471	410,081
<b>Treatment Cost*</b>	KRW 100 million	89	156	108

\*Waste volume and treatment cost for domestic operation sites

### Energy

(Unit: TJ)

Category	2013			2014			2015		
	Fuel	Electricity	Total	Fuel	Electricity	Total	Fuel	Electricity	Total
<b>Headquarters (HQ)</b>	34.08	48.35	82	36.14	47.78	83	33.09	49.76	82
<b>Daewoo Institute of Construction Technology (DICT)</b>	4.53	14.00	18	3.26	11.99	15	4.89	14.66	19
<b>Dormitory</b>	8.87	9.45	18	7.73	8.44	16	6.29	8.56	14
<b>Asset Management Team</b>	24.57	10.81	35	4.10	44.47	48	0.	34.12	34
<b>Construction sites</b>	152.41	1,004.55	1,156	127.43	949.24	1,076	138.29	1,015.31	1,153
<b>Housing gallery</b>	1.46	9.38	10	9.29	9.29	9	1.14	9.28	10
<b>Migliore mall Busan, Lease business</b>	0.	91.14	91				-	-	-
<b>Jungbu Branch</b>	0.22	0.36	0	0.10	0.35	0	0.20	0.36	0
<b>Total</b>	226.13	1,188.05	1,410	188.04	1,071.56	1,247	183.90	1,132.05	1,312

### GHG Emissions

(Unit: tCO<sub>2</sub>-e)

Category	2013			2014			2015		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
<b>Headquarters (HQ)</b>	1,995.12	2,348.089	4,343	2,137.727	2,320.629	4,458	1,965.429	2,416.653	4,382
<b>Daewoo Institute of Construction Technology (DICT)</b>	241.59	680.14	921	170.36	582.28	752	274.22	712.13	986
<b>Dormitory</b>	449.95	459.18	909	391.99	409.80	801	319.31	415.94	735
<b>Asset Management Team</b>	1,246.77	524.92	1,771	208.28	2,159.76	2,368	0	1,656.99	1,656
<b>Construction sites</b>	9,756.37	48,788.94	58,545	8,244.77	46,102.50	54,347	8,898.70	49,311.41	58,210
<b>Housing gallery</b>	74.82	455.62	530	34.66	451.01	485	59.66	450.74	510
<b>Migliore mall Busan, Lease business</b>	0.	4,426.67	4,426				-	-	-
<b>Jungbu Branch</b>	12.57	17.35	29	4.91	17.20	22	11.74	17.32	29
<b>Total</b>	13,777.19	57,700.91	71,474	11,192.70	52,043.19	63,233	11,529.05	54,981.17	66,508

## Climate Change

### Strategic Direction

In December 2015, as the result of COP21 held in Paris, an agreement which imposed activities on mandatory emission reduction and a response to climate change, was reached among 195 countries including developing countries. As the government's target for 2030 national GHG emission reduction was set at 37% compared to Business As Usual (BAU), it became urgent for the industry to reduce more of GHG emission. Following the current domestic and international trends, Daewoo E&C is promoting a sustainable management based on two major strategic directions: 1) Understanding climate change risks and opportunities and 2) Preparing a climate change response system. The HSE-Q Division leads the arrangement of climate change response system as the head of HSE-Q Division is the chief officer in

climate change. In addition, as we discharge a large amount of GHG due to the nature of the industry from constructing buildings to using and disposing construction materials, Daewoo E&C constantly monitors and manages the impact on climate change.

- Establishment of climate change response system
  - Head of HSE-Q Division: manages the overall climate change response activities
  - Evaluate executives' environmental Management: Conduct evaluations annually, examine climate change response activities and performances
- Climate change risks and opportunities
  - Analyze risks and opportunities according to changes in regulations due to climate change, physical changes, and changes in customer behavior

### Analysis of Risks and Opportunities in Climate Change

Category	Risks	Opportunities
<b>Regulatory Factors</b>	<ul style="list-style-type: none"> <li>• <b>Target Management System for GHG/energy</b> <ul style="list-style-type: none"> <li>- Expenses involved in upgrading GHG inventory</li> </ul> </li> <li>• <b>Emissions Trading</b> <ul style="list-style-type: none"> <li>- Fines levied when exceeding carbon credits</li> </ul> </li> <li>• <b>Green Building Construction Support Act</b> <ul style="list-style-type: none"> <li>- Additional authentication cost when acquiring 'Green Buildings Certificate', technology development expenses</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Target Management System for GHG/energy</b> <ul style="list-style-type: none"> <li>- Cost saving by reducing GHG, less fines levied when targets are accomplished</li> </ul> </li> <li>• <b>Renewable Portfolio Standard (RPS)</b> <ul style="list-style-type: none"> <li>- Growth of new renewable energy market and participation in related projects</li> </ul> </li> <li>• <b>Green Buildings Construction Support Act</b> <ul style="list-style-type: none"> <li>- Competitive advantage with accumulated eco-friendly/energy/saving technologies</li> </ul> </li> </ul>
<b>Physical Factors</b>	<ul style="list-style-type: none"> <li>• <b>Increase in Average Precipitation</b> <ul style="list-style-type: none"> <li>- Delayed construction period due to flood damage, building durability problems due to increasing moisture</li> </ul> </li> <li>• <b>Rise in Temperature</b> <ul style="list-style-type: none"> <li>- Increased dust scattering, negative impacts on product quality due to changes in construction materials</li> </ul> </li> <li>• <b>Changes in Natural Resources</b> <ul style="list-style-type: none"> <li>- Unstable supply of materials, increased project expenses and delayed construction period</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Increase in Average Precipitation</b> <ul style="list-style-type: none"> <li>- Increased demand in repair works and loss minimization facilities due to increased number of disaster occurrence</li> </ul> </li> <li>• <b>Rise in Temperature</b> <ul style="list-style-type: none"> <li>- Increased demand in high-insulation, low energy constructions suitable for hot environment</li> </ul> </li> </ul>
<b>Other Factors</b>	<ul style="list-style-type: none"> <li>• <b>Reputation</b> <ul style="list-style-type: none"> <li>- Increased demand in public disclosure of non-financial information, loss of reputation and fall in stock price when requirements are not fulfilled</li> </ul> </li> <li>• <b>Change in Customer Behavior</b> <ul style="list-style-type: none"> <li>- Higher demands in low carbon, eco-friendly constructions, corporate image tarnished when response fails</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reputation</b> <ul style="list-style-type: none"> <li>- Rise of brand value and sales increase</li> </ul> </li> <li>• <b>Change in Customer Behavior</b> <ul style="list-style-type: none"> <li>- Higher demands in low carbon, eco-friendly constructions, expansion of related markets</li> </ul> </li> </ul>

1) Carbon Management Sector Winners is a status given to the top 4 companies.  
 2) Organization based in the United Kingdom which works with shareholders and corporations to disclose the greenhouse gas emissions of major corporations

### Activities and Achievements

#### Utilizing GHG Inventory System

To be able to effectively manage GHG emission, Daewoo E&C has been operating GHG inventory system within 'BAROCON', an integrated construction management system, since 2012. The inventory system measures the energy consumption and GHG emissions of all operation sites and buildings in detail. Using the updated system that automatically estimates the ratio of GHG emissions to sales and shows the level of accomplishment for monthly reduction targets when reduction targets for each department are entered, we are keeping a close watch on the progress to accomplish our objectives.

#### Public Disclosure of Environment Information

We have actively and transparently been responding to the public disclosure of environmental information requested by external parties. As a result, we were elected as the 2015 Carbon Management Sector Winner<sup>1)</sup> hosted by Korea CDP<sup>2)</sup> and improved our score on disclosure section from 94 in 2014 to 97 in 2015. We have also accomplished A band on environment section from the ESG evaluation by Korea Corporate Governance Service, as well as participating on statistical survey on chemical substances. Based on the excellent performance on responding to the request for information disclosure, Daewoo E&C strives to build up trust among stakeholders including investors.

CDP Information Disclosure Score

2014  
94

2015  
97

A Band on Environment Section from ESG Evaluation

A

### Visions and Objectives

Efforts to mitigate and adapt to climate change must be continuously enhanced. Therefore, starting 2016, from which GHG target management system is implemented, Daewoo E&C aims to promote company-wide reduction activities according to GHG management guideline and directives. As the reduction target has been set, we seek to analyze the

amount of GHG emissions and execute reduction activities around the areas with high volume, while continuing to identify items for reduction. Furthermore, we will strive to expand our promotion activities to raise company-wide interests in GHG reduction and strengthen our transparency and trust among stakeholders by proactively responding to the request for carbon disclosure.

#### Plan for Promotion of GHG Reduction

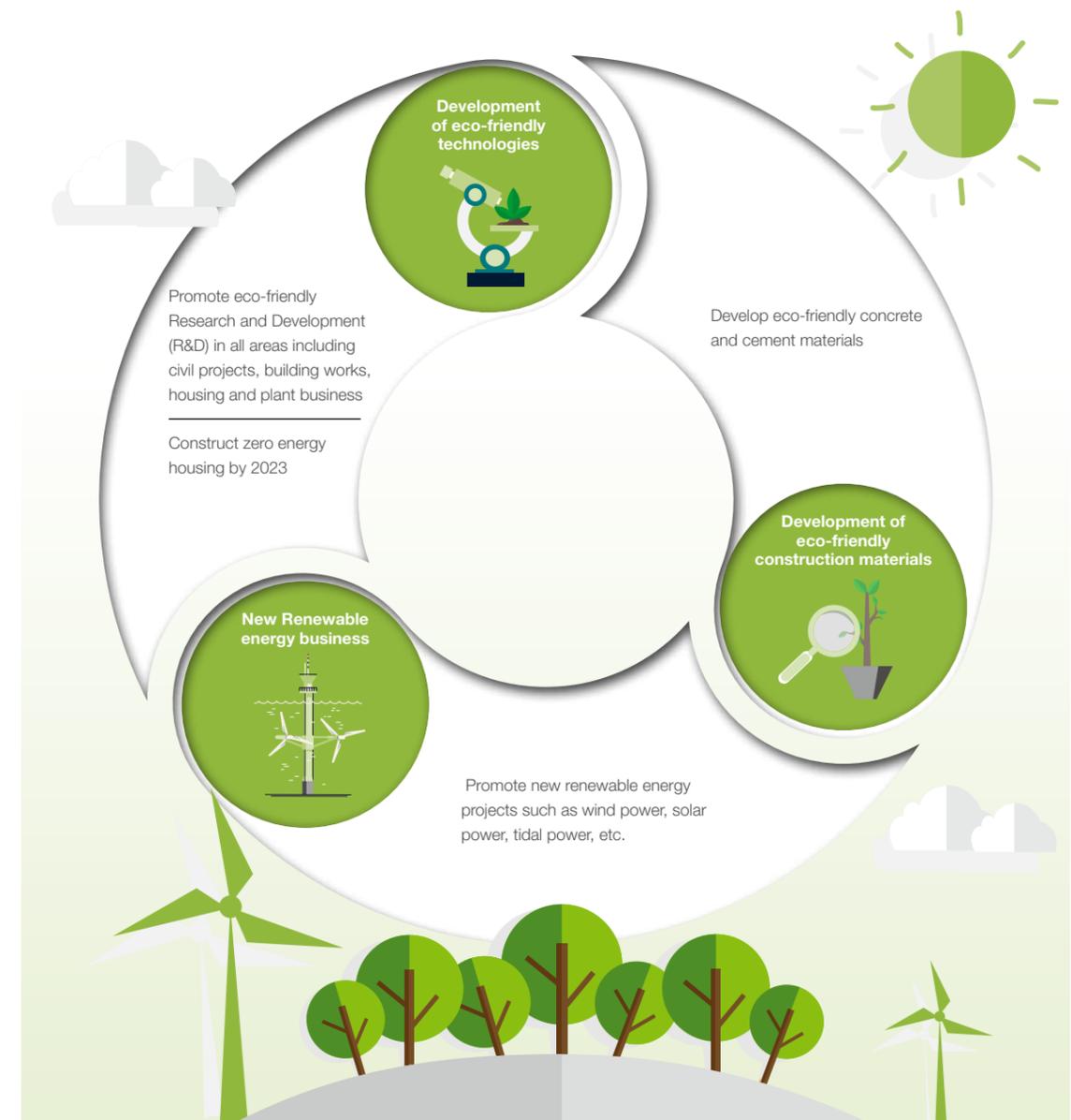
<b>Short-term Plan (2016)</b>	- Allocation of reduction target for the company, business divisions, operation site/team and implication of realtime monitoring: BAROCON - Execution of continuous training, promotion, and campaign: E-book publication and slogan contest
<b>Mid- and long-term Plan (2017~2019)</b>	- Substitute LED light on underground parking lot and emergency stairs on HQ - Apply temporary LED lights on operation sites - Introduce Energy Management System (ISO50001)
<b>Long-term Plan (2019~)</b>	- Establish an annual 2.1% reduction plan

## Eco-Friendly Business

### Strategic Direction

Increase in demand for environmental responsibilities can also mean a new business opportunity for a company. Daewoo E&C is diversifying eco-friendly business into various areas such as the development of eco-friendly technologies and construction materials, eco-friendly architecture business, and new renewable energy business that aids the reduction of environmental impacts. Targeting zero energy on housing

construction by 2023, Daewoo E&C is on its way to create a cleaner and safer world to live in through the development of eco-friendly technologies and building materials within all sectors and areas such as civil, building works, housing and plant business. In addition, as there has been growing demand to diversify energy distribution due to the response on the Climate Change Convention and fluctuations in oil prices, we are in the midst of developing and promoting domestic and overseas new renewable energy businesses.



## Activities and Achievements

### Development of Eco-Friendly Technologies

In September 2009, Daewoo E&C established construction objectives to build 'Zero Energy House', in which energy is produced and used within the apartment complex by 2023, and has developed and applied the 'Green Premium' technology consisted of eco-friendly and energy saving residential products.

In 2015, with the objective to come up with a new alternative that can overcome the storage limit of CO<sub>2</sub>, we started

developing a technology (DECO2), utilizing building materials and carbon capture for the first time in Korea. This research project is to develop a continuous carbon capture process that can hold up to 40 tons of CO<sub>2</sub> per day through the direct reaction of CO<sub>2</sub> in the exhaust gas and use the capture as materials for civil work and building construction, where mass usage is possible. We aim to complete the commercialization of the process development by 2019, starting June 2015. As of 2015, we have completed the basic and implementation design of the direct reaction plant that can capture 40 tons of CO<sub>2</sub> a day.

### First time entering the Chinese market for an air pollution elimination technology

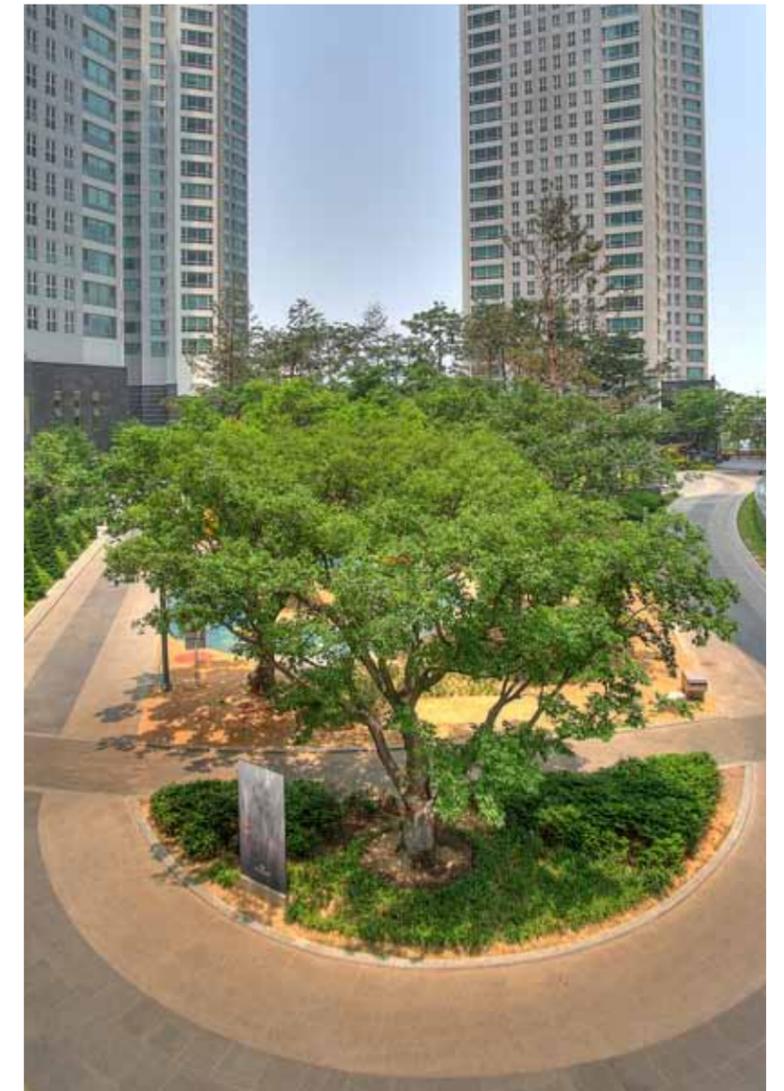
In November 2015, Daewoo E&C has set the stage for the expansion of its eco-friendly technologies to the Chinese market, by signing a MOA with Shandong Guohuan Industry Investment Co., Ltd, a representative company for the environment sector in China, and Liaocheng incineration plant, to apply a technology that eliminates air pollution. We agreed to provide 1) designing of Dual Bag Filter (DBF), which we developed and own, 2) an operation technology, and 3) a portion of necessary tools and materials, while Shandong Guohuan Industry Investment Co., Ltd taking charge in on-site construction, licensing, and operation.

\* What is Dual Bag Filter? It is an eco-friendly technology that eliminates substances such as particulate matter and dioxin that create air pollution in the process of incineration. Registered as New Environment Technology and Green Technology in Korea, it not only grasps the aspect of eco-friendliness, but also secures economic efficiency as the consumption of activated carbon is reduced to less than 1/5 through the recycle of the activated carbon. The technology is in the commercialization phase and it is expected draw a great interest from foundries with issues concerning particulate matter and high concentrated dioxin.

### Eco-Friendly Technology, 'Green Premium'

'Green Premium' is an eco-friendly technology developed by Daewoo E&C that can save energy costs such as electricity and gas to ultimately accomplish the Zero Energy House. This can be achieved by applying the passive and active technologies that are optimized into a building. A passive technology minimizes the energy consumption within the building, whereas an active technology produces energy. For apartments Green Premium technology has been applied, various functions are provided, including a real-time energy monitoring system, a smart batch control switch enabling gas shut-offs, lights controls, securities settings, and elevator calls all at once, heating energy consumption saving system, and standby power shutoff devices. A collection and analysis of information on consumption of five services, which

are electricity, gas, water, hot-water, and heating, are provided through a telemetering monitoring system. Moreover, we foster an eco-friendly residential culture by installing energy saving equipment such as air volume control multi-drop chambers, sensor type sink water saving machines, and highly water-efficient toilets. Daewoo E&C has established the 'Green Premium' roadmap to accomplish Zero Energy House by 2023 and succeeded in securing the core technologies to achieve the roadmap in 2015. Through the firmly established method for analyzing energy saving rate, we put together the optimal plan to achieve 80% of energy saving. Furthermore, with the application of an energy saving technology, we developed a formula for estimating the energy saving rate that enables us to figure out the effect of the saved energy in the early stage of a project.





**Development of Eco-Friendly Construction Materials**

Daewoo E&C has made efforts to reduce resource use and minimize GHG emissions by developing eco-friendly construction materials. Instead of cement with high CO<sub>2</sub> emissions, the Eco-Friendly Mass Concrete was developed through the combination of fly ash, blast furnace slag powder and high contents of other industrial byproducts. By using industrial waste and byproducts, we were able to reduce cement contents by 40% compared to the regular concrete, resulting in a decrease of 79kg of CO<sub>2</sub> per m<sup>3</sup>. It is currently being used in various sites as the level of its eco-friendliness, quality, and the economic efficiency have been enhanced compared to the existing material.

**Eco-Friendly Architecture Business**

An eco-friendly architecture is designed to minimize the environmental harm throughout its entire lifecycle of engineering, construction, operation and maintenance, destruction with the objective of providing a pleasant residential environment while saving energy and resources, recycling, and preserving natural environment. In 2014, Daewoo E&C constructed various eco-friendly buildings. Certifications such as eco-friendly architecture, Green Buildings and Energy Efficiency Ratings were also obtained.

**Eco-Friendly/Quality Product Certification Status**

Project	Eco-Friendly and Quality Product Certificates	Project	Eco-Friendly and Quality Product Certificates
<b>Gwanggyo Central Prugio City</b>	- Green Building main certification: 'Green 2 <sup>nd</sup> grade'	<b>Jegidong Station Complex Building site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 2 <sup>nd</sup> grade'
<b>Kyunghee University SPACE21 site</b>	- Green Building preliminary certification: 'Green 3 <sup>rd</sup> grade'	<b>Cheonan Buldang Park Prugio 1<sup>st</sup>/2<sup>nd</sup> Complex sites</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade'
<b>Gwangmyeong Station Residential and Commercial Complex site</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'	<b>Wirye New Town Songpa Prugio</b>	- Green Building main certification: 'Green 2 <sup>nd</sup> grade'
<b>Dongtan 2<sup>nd</sup> New Town First Tower site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade	<b>Incheon Seochang (2) 5BL Apartment Package with Private Sector Participation</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'
<b>Samsung Wonheung Station Prugio site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade	<b>Prugio+LH Apartment (A5BL)</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'
<b>Songdo Edu-Fore Prugio site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade	<b>Prugio+LH Apartment (A6BL)</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'
<b>Wirye Art River Prugio site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade	<b>Guri Galmae Bogeumjari Residential Area C1BI Apartment House</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'
<b>Wirye Central Prugio site</b>	- Green Building preliminary certification: 'Green 2 <sup>nd</sup> grade' - Energy Efficiency preliminary certification: 1 <sup>st</sup> grade	<b>Paju Unjeong Housing Site Development District A25 Block Apartment</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'
		<b>Gimpo Pungmu 2<sup>nd</sup> Complex 24 Block 1 Lot Apartment House for City Development Project</b>	- Green Building preliminary certification: 'Green 4 <sup>th</sup> grade'

**New Renewable Energy Business**

Daewoo E&C actively examines and fosters the expansion of new renewable energy business through the application of eco-friendly technologies, such as organic waste-to energy technology (a technology that produces new renewable energy using organic waste such as sewage sludge, livestock manure, and food waste), CCU (Carbon Capture and Utilization) and CCS (Carbon Capture and Storage) in obtaining contracts. Having secured a foothold

in the business with the on-going project on developing offshore wind power structure designing regulations and concrete structures by the Ministry of Oceans and Fisheries, we were able to acquire business license for wind power plants in Haenam, Jeollanam-do in July 2015. In September, we received a business license for solar power plants in Jeju Island. Relevant teams at Daewoo E&C are constantly collaborating in order to expand business within the new renewable energy sector.

**Visions and Objectives**

To become a sustainable eco-friendly construction company that raises the value of the earth and quality of life, Daewoo E&C will continue to actively promote the development of eco-friendly technologies and businesses such as eco-friendly housing, construction, and energy.

- Development of eco-friendly technologies
  - Design and install first year lay out design for a direct synthesis pilot plant for CO<sub>2</sub> integrated process
  - Establish CO<sub>2</sub> integrated direct synthesis pilot plant for emitted gas within three years

- Achieve zero energy house as a business in high-rise housing buildings
- Development of eco-friendly construction materials
  - Continuously develop and apply eco-friendly cement materials
- Eco-friendly green growth business and new renewable energy business
  - Focus on winning contracts for domestic projects based on project performance capabilities and cutting edge technologies on water treatment and biogas plant
  - Develop and promote domestic and foreign new renewable energy business such as wind power, solar power and tidal power



Staff  
Yeonjoo Kim

# CUSTOMER SATISFACTION

## CUSTOMER SATISFACTION

Customer satisfaction is the core value determining the company's sustainable future and vision as well as the foremost prerequisite for Daewoo E&C, which is growing to be the best company in the world. As the age of limitless competition continues, quality management, quick understanding of customer needs and stabilized/customized services have become important factors that lead to the customer satisfaction. Daewoo E&C is performing customer-focused quality management throughout all business activities from business planning, production, marketing, sales to services and rearranging policies on IT security and information protection as well as reorganizing the system for customer satisfaction. Particularly in 2015, Daewoo E&C improved quality assurance process through systematized situation audit on each division and enhanced mobile system.

### External Certificates

<b>ISO 9001</b> International Organization for Standardization	<b>KEPIC</b> Korea Electric Power Industry Code
<b>ASME</b> American Society of Mechanical Engineers	<b>NBBI</b> The National Board of Boiler and Pressure Vessel Inspectors

### Goals

- Increase global quality competitiveness, achieve zero major quality accident
- Enhance brand identity and power through customer communication, customer satisfaction activities
- Inspect current situation on methodical information management and build up the integrated system for information leakage management

### Activities and Achievements

- **Quality management**
  - Secured quality competitiveness through external quality certifications
  - Increased effectiveness and suitability of the quality system by enacting and revising operating rules, as well as conducting quality audits
  - Promoted quality awareness through a quality training program
  - Established a mobile quality accident prevention system
- **Customer satisfaction**
  - Improved response rate and reduced average turnaround time at integrated call center
  - Reinforced customer satisfaction surveys
  - Awarded the grand prize for internet communication (Prugio)
  - Continuous promotion of Life Premium
- **Privacy and information protection**
  - Acquired ISO 27001 certification
  - Examined the current status of personal information management
  - Expanded mobile system
  - Strengthened IT security management
  - Inspected hacking prevention measurements
  - Established manual for personal information protection in relation to housing and construction and provided training for the personal information transactors

### Plans for 2016

- **Quality management**
  - Receive 85 or above on the Quality Performance Indicator (QPI)
  - Improve quality management system internally, cultivate a quality culture that adheres to the basic principles, improve equipment quality
  - Establish foundation for voluntary on-site quality activities, reinforce preventive management on quality
- **Customer satisfaction**
  - Establish consolidated system for complaint management
  - Reinforce customer satisfaction surveys
  - Continuous promotion of Life Premium
- **Privacy and information protection**
  - Renew ISO 27001:2013 certification upon expiration
  - Self-inspection on the actual condition of personal information management
  - Enhance IT security
  - Revise manual for personal information protection in relation to housing and construction and strengthen training for the external transactors of personal information

# Quality Management

## Strategic Direction

Customer satisfaction comes from quality innovation on products and services. In order to guarantee the world's best quality competitiveness, Daewoo E&C laid foundation for advanced quality system with our 2015 quality management strategies of securing the global level of quality competitiveness and zero rate of significant quality issues which resulted in the management policy of 2016 for the customer trustworthy quality. According to such management policy, Daewoo E&C will reaffirm to be a Global

Infra & Energy Developer by accelerating our consistent quality management based on the company culture where all executives and staff members from Quality Management Team, Quality Control Team and Division CM Team prioritize the customer satisfaction.

- Assurance of trustworthy quality
  - Optimization of principle-oriented practical quality system
  - Intension of on-site support and establishment of quality system

## Quality Management Promotion Organization



**Quality Management Team**  
Operate quality management system, maintain and manage external quality certifications, conduct quality trainings, audit headquarter quality system, evaluate quality on materials suppliers



**Quality Control Team**  
Manage on-site quality, audit on-site quality system, evaluate on-site quality activities, manage and analyze penalties, manage procurement/technologies



**Division CM Teams**  
Promote divisional quality management, manage on-site construction quality and after-sales service



## Activities and Achievements

### Securement of Quality Competitiveness

Through various quality related certifications that we acquired in 2015, it has been confirmed internally and externally that Daewoo E&C holds the capacity to provide the product that

customers desire. Seven construction sites and 22 teams at the headquarters renewed their ISO 9001 certifications along with the others who reconfirmed Daewoo E&C's ability for maintaining and replacing nuclear and power plant boilers by maintaining certifications from KEPIC, ASME, and NBBI in 2014.

### Acquired Certifications

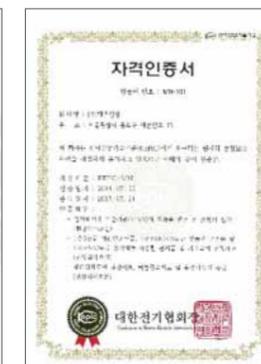
#### ISO 9001

- First Korean construction company to acquire it in 1993



#### KEPIC

- Nuclear
  - Construction: MN, SN, EN, MH
  - Engineering: MN, SN



#### ASME

- Nuclear: NA, NPT
- Non-nuclear: S, U, U2, PP



#### NBBI

- Nuclear: NR
- Non-nuclear: R



### Continuous Improvement in Quality System

We have constantly promoted the maximization of the effectiveness and suitability in our quality system through establishment and revision of our manuals, procedures, and instructions. Total 336 enactments and amendments were made while the company strengthened the quality fulfillment capacity by providing the feedback on quality system audit and result analysis to the headquarters and fields. We also increased the quality of Procurement by raising importance of the due diligence evaluation on the suppliers. Additionally, the 'Idea Space', a system for suggesting ideas, has been developed and operated to guarantee efficient business activities for employees at operation sites by sharing HSE-Q (Quality/Safety/Health/Environment/Security) related ideas.

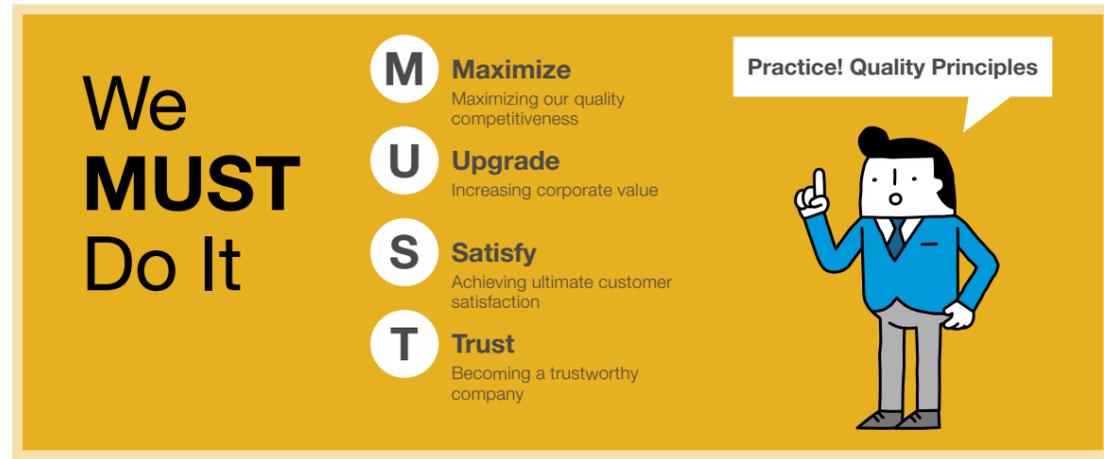
### Idea Space

- System improvement for user-friendly convenience and efficiency
  - Expecting ready source of suggestions and prompt feedbacks by simplifying the idea proposal process
- Promotion of practical use of ideas
  - Revitalizing the system by HSE-Q-focused operations (applicable scope to be expanded)
- Improvement of system accessibility through mobile and enhancement of participation rate
  - Interlocking with the One Touch HSE-Q mobile system

**Quality Awareness Promotion**

Daewoo E&C provided 16 courses of quality trainings, including the competency enhancement training for quality control managers, to 2,570 employees of Daewoo E&C

and our suppliers. As a part of the '2015 Company-wide Campaign for Quality', Daewoo E&C created and distributed posters on four grand principles on quality.



**Quality Management of Materials**

With the recent increase in poor quality of Chinese materials in domestic market and as the importance of the material quality management came to the fore upon the conclusion of the FTA between Korea and China, Daewoo E&C established guidelines for material quality management. According to the requirements of the material quality in the guideline, Daewoo E&C requests inspections to a quality audit institution on the materials with doubtful quality by performing quality prevention activities and to conduct monitoring on the transportation, handling, preservation, release, identification and tracking of the materials. This resulted in securing on-site construction quality and safety as we prevent the substandard, poor quality materials from entering the construction sites.

**Quality Discussion Forum**

Daewoo E&C held a Quality Discussion Forum with more than one on-site quality control manager from each field. Through this event, we could confirm that quality at each construction site is managed according to the plan based on the materials prepared for the Quality Discussion Forum on the progress of construction, quality management plan and external inspection.

**Quality Improvement on Housing**

In order to improve the quality of housing, Daewoo E&C concentrates our efforts for providing feedback on quality cases and technology support, quality check and evaluation, and overall trainings on quality.

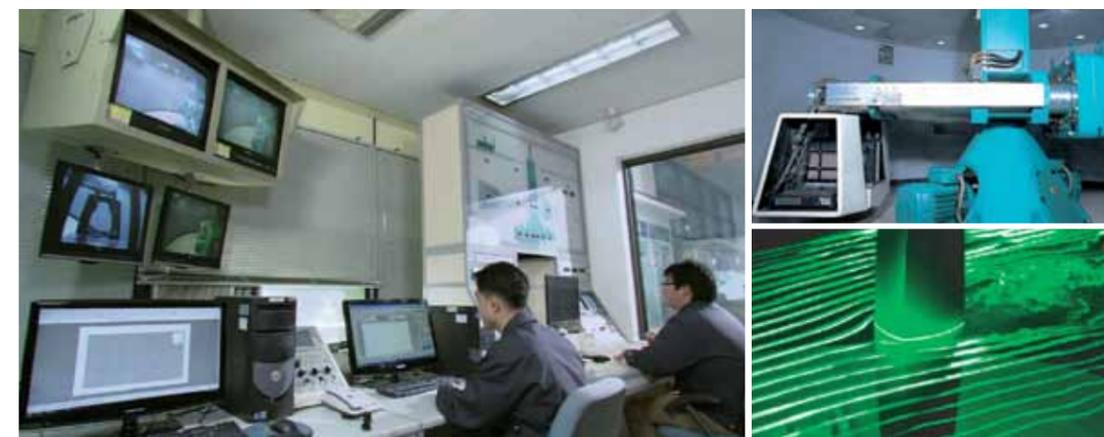
- Feedback on quality and technology support
  - Distributed casebook and training on instructive case of failure
  - Amended field operation manual
  - Enforced non-destructive inspection
  - Reviewed on completion publication
- Quality check and evaluation
  - Conducted 62 quality checks, 61 quality safety special inspections, 24 Pre-move-in quality checks
- Quality training
  - Conducted training on analysis of defect lawsuit/major complaints/defect cases and instructive cases of failure

**Visions and Objectives**

Daewoo E&C aims to obtain 85 or above on the Quality Performance Indicator (QPI) and to secure the trustworthy quality by our customers in year 2016. In order to achieve our target, we are planning to focus on establishing principle-

oriented practical quality system and strengthening on-site support on the quality system. As a mid- and long-term plan, we will expand our business from simple construction to O&M of infrastructure such as roads and railways to becoming a Global Infra & Energy Developer by settling the global level of quality system and advancement of quality culture.

<b>Optimization of principle-oriented practical quality system</b>	<b>Quality Management System</b>	<ul style="list-style-type: none"> <li>• Improvement of stable quality management system</li> </ul> Efficiency improvement on business process by conducting audit on functional quality management Settlement of monitoring DTMS on regular basis, Integrated management of DTMS and business flow
	<b>Quality Certification</b>	Risk management and build-up of foundation for conversion to performance-oriented quality management system (ISO 9001:2015)
	<b>Quality Contents Development</b>	Customized trainings and contents development for on-site quality improvement
	<b>Quality Campaign</b>	Establishment of baseline regulations, Production of posters, Distribution of quality cases, Publication of glossary for standard quality
<b>Intension of on-site support and establishment of quality system</b>	<b>On-site Support</b>	<ul style="list-style-type: none"> <li>• Establishment of principle-compliant quality culture</li> </ul> Customization of solutions for on-site support and development of guidelines for quality tasks
	<b>Quality System Audit</b>	Review of divisional/functional quality issues, penalty cases and social issues
	<b>One Stop Service</b>	Starter (support for system establishment and training), Helper (close support on field requests)
		<ul style="list-style-type: none"> <li>• Improve equipment quality                             <ul style="list-style-type: none"> <li>- Increase site inspection of new suppliers by 40% or more in order to secure quality equipment, tools and materials</li> <li>- Reinforce iron quality checks: Audit quality system at supplier when building steel structures, inspect rebar manufacturing sites</li> </ul> </li> <li>• Foundation for voluntary on-site quality activities                             <ul style="list-style-type: none"> <li>- Develop Site-Quality Performance Indicator and establish independent criteria for on-site quality audits</li> </ul> </li> <li>• Preventive management on quality</li> </ul>

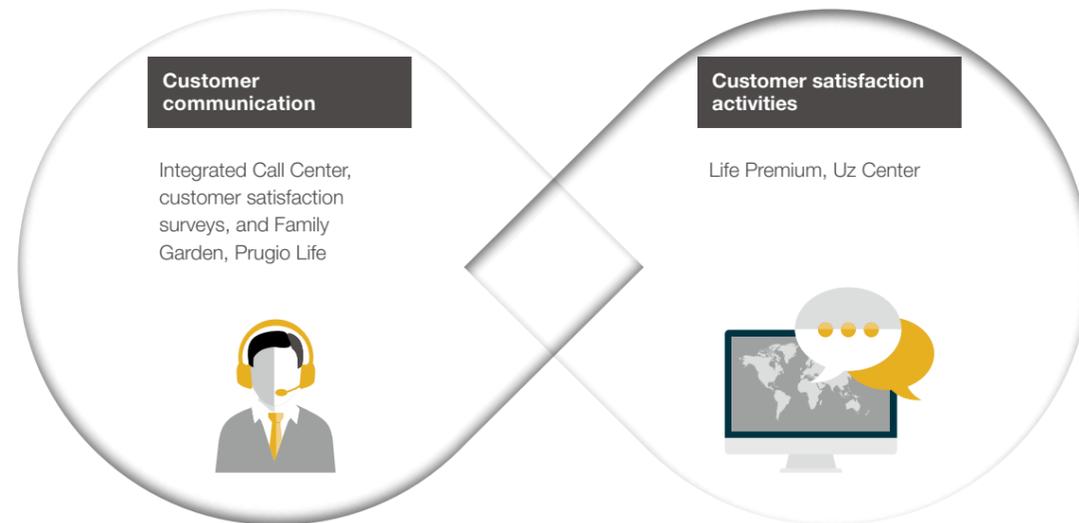


# Customer Satisfaction

## Strategic Direction

Daewoo E&C considers customer satisfaction as a top management priority, and therefore strives to communicate with and provide the highest service to customers. We have adopted various on/offline channels to communicate with customers to understand customer needs and satisfaction.

We strive to provide housing products that raise customers' safety, health, quality of life, and cultural standards while empowering brand identity and power through customer satisfaction activities. Furthermore, to provide precise information on our products and services via fair marketing, we are making continuous efforts to comply with relevant domestic and international regulations.



## Activities and Achievements

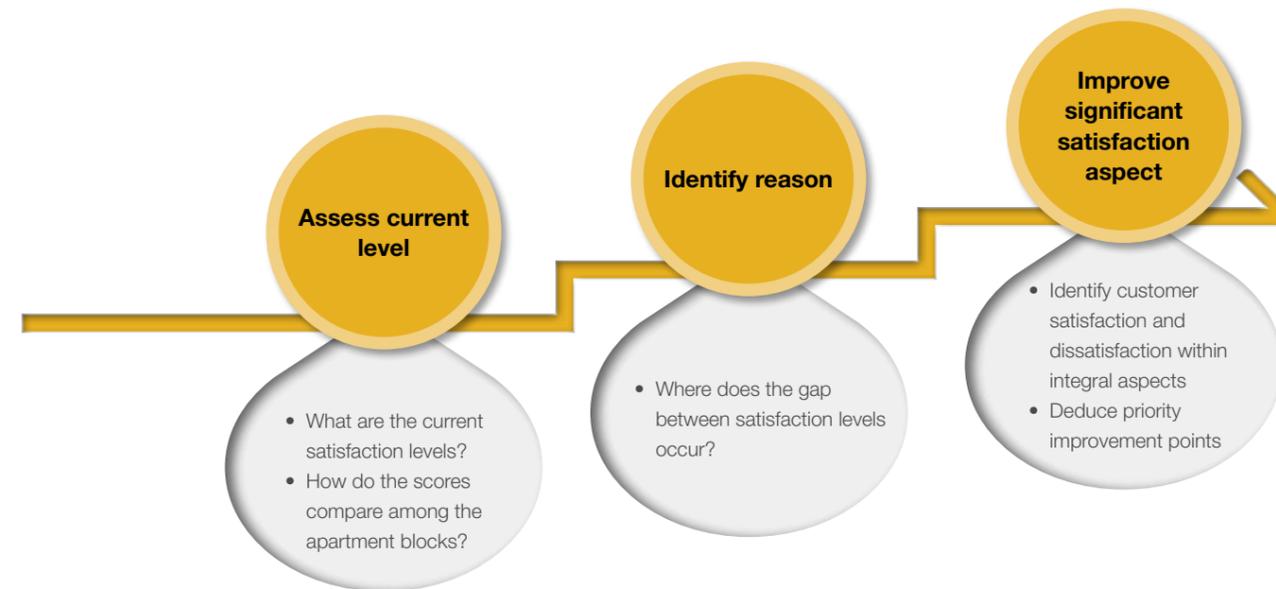
### Integrated Call Center

In 2013, Daewoo E&C launched the Integrated Call Center to maximize efficiency in our customer service system. The Integrated Call Center allows for the unified management of the entire customer experience through a single channel ranging from sales, contracts, move-in to after-sales service processes. In 2014, Voice of Customer (VOC) and Integrated Call Center were interconnected to increase the quality of our complaint response system and to enhance the classification and management functions of customer complaints. As for 2015, there has been improvements in the quality of the Integrated Call Center operation compared to 2014, with 4.6% increase in response rate and 2.5 days reduction on average days processing complaints.

### Customer Satisfaction Survey

In 2015, we conducted an independent customer satisfaction survey to develop products and services that fit with each and every one of our customers' needs by hearing their opinions. The survey was targeted to the residents of Prugio, with quantitative questionnaire such as the level of satisfaction on products and services of Daewoo E&C/other companies, repurchase intention, brand image, and qualitative surveys such as in-depth satisfaction regarding products and services, complaints, and specific needs. With such effort, we were able to win 4<sup>th</sup> place in a row on 2015 National Customer Satisfaction Index (NSCI).

## Purpose of Customer Satisfaction Surveys



### 2015 Survey Methods for Prugio Customer Satisfaction

- Survey design (Jul) → Quantitative survey (Aug) → Result analysis (Sep) → Qualitative (Oct) → Result analysis/final report (Nov)

Category	Quantitative Survey	Qualitative Survey
Direction	- 1-on-1 Face to face survey using questionnaire	- Focus group interview
Target Site	- 10 Daewoo E&C apartment complexes, 7 other apartment complexes	- 6 Daewoo E&C apartment complexes
Scale of Sample	- Total 1,700 (Daewoo E&C 1,150, other companies 550)	- Total 36 (6 apartment complexes, 6 people per complex)
Schedule	- Survey design (Jul), Execution (Aug)	- Survey design (Sep), Execution (Oct)

### Family Garden

Family Garden is an online and offline integrated prosumer (producer + customer) group run by Daewoo E&C since 2006 in order to reflect customer opinions in housing products and services. Family Garden is comprised of 248 male and female members in their 20s to 50s. Members may participate online or visit Daewoo E&C's model houses to provide prior evaluations and ideas for improvement. As ideas are presented by members themselves and reflected in the actual development of housing products, the level of satisfaction is very high among customers.

- Online activities
  - Participated in various online events including surveys
- Offline activities
  - Participated in events such as model house screening, meetings, cultural lectures, etc.

**Prugio Apartment Wins Six Consecutive Internet Communication Grand Award**

In November 2015, Prugio by Daewoo E&C once again, won the first place in the 8<sup>th</sup> ‘2015 Korea Internet Communication Award’ in construction/apartment section for six straight years. The award, given by a non-profit private organization, Korea Internet Communication Association (KICOA), under the Ministry of Science, ICT and Future Planning, was established to activate companies’ and public institutions’ communication via internet. Having chosen as the winner through the customer evaluation of competitiveness level in communication marketing, operation evaluation, integrated evaluation, and a review committee verification, we truly appreciate the meaning it gives – a proof of our effort to customers – and plans to continue to strive for a sincere communication with our customers.

**Prugio Life**

‘Prugio Life’, a webzine by Daewoo E&C, provides various living information including living area, culture, education, health, etc. In 2015, we reorganized the webzine structure, adding premium contents by interviewing experts in food and education field. As the leader of premium brand webzine within the same industry, ‘Prugio Life’ has been well-beloved by the customers and has won the Web Award Korea for four consecutive years, the most wins for a single service. Through such services and efforts, Daewoo E&C is providing practical contents that can add premium to customers’ cultural living style and enhancing customer satisfaction by expanding interactive communication.

**Life Premium**

With the utmost goal of satisfying the three principle housing needs of customers – existence, relation, and growth – Life Premium is a Prugio’s specialized service to provide our customers a meaningful and valuable residential area.

**Life Premium Overview**

Housing Needs	Existence	Relation	Growth			
						
Guideline	Healthy Life	Comfort Life	Active Life	Social Life	Creative Life	Proud Life
<b>Concept</b>	Safe and comfortable living environment	Convenient and easy service	UZ Center and Planning for added vitality	Support system for communication with neighbors and community events	Cultural activities that bring special joy	Pride in enjoying the outdoors
<b>Product/Services</b>	<ul style="list-style-type: none"> <li>• Healing Forest</li> <li>• Essay Walkway</li> <li>• Seniors’ Playground</li> <li>• Remember Tree</li> <li>• Kids’ Belt</li> <li>• Sprout’s Stop</li> <li>• Kids’ Safety Classroom</li> </ul>	<ul style="list-style-type: none"> <li>• Family Love service</li> <li>• Endless Love service</li> <li>• Love Nature service</li> <li>• Love the Sky service</li> <li>• Handy-man service</li> </ul>	<ul style="list-style-type: none"> <li>• Bike-sharing</li> <li>• Uz Center</li> <li>• Uz Planning</li> <li>• Fitness Trainer</li> <li>• Everyday-fitness Center</li> <li>• Kid’s Traditional Chinese class</li> <li>• Aerobics class</li> <li>• Yoga class</li> </ul>	<ul style="list-style-type: none"> <li>• Complex Welcome Party</li> <li>• Story telling</li> <li>• Concerts</li> <li>• Bubble Show</li> <li>• Cheery Sports Meet</li> <li>• Korean farm dance</li> <li>• Lifestyle information for residents</li> <li>• Kids’ Conference</li> <li>• Hand Memory</li> <li>• Green Library</li> <li>• One-point golf lessons</li> </ul>	<ul style="list-style-type: none"> <li>• Free rental of everyday cultural goods</li> <li>• Cooking class</li> <li>• Beauty class</li> <li>• Bicycle class</li> <li>• Brunch Cinema</li> </ul>	<ul style="list-style-type: none"> <li>• Petting Zoo</li> <li>• Glass House</li> <li>• Together Workshop</li> <li>• Mid-forest School</li> <li>• Gardening School</li> <li>• Tending vegetable gardens</li> </ul>

**Uz Center**

Uz, a combination of the words ‘you’ and ‘needs’, is a term coined by Daewoo E&C to express our willingness to provide customer-oriented convenience that meets the various needs of residents. PRUGIO Uz Center is where a number of facilities are combined to foster socialization among

residents. Daewoo E&C promotes the enhancement of quality of life and community value by supporting the healthy lifestyle of residents with amenities such as fitness club, driving range, and reading room. In addition, we provide support for human resources, equipment, operation costs, etc. for ‘Uz Planner’ to further activate Uz Center.

**Organization of the Uz Center**

<b>Residence Amenities</b>	<ul style="list-style-type: none"> <li>• Provide amenities considering the needs of residents</li> <li>- A daycare center for working couples, a reading room, in which children can study in a comfortable atmosphere</li> </ul>
<b>Life Culture Center</b>	<ul style="list-style-type: none"> <li>• Provides customized life cultural center for the health and socialization of residents</li> <li>- A fitness club equipped with various exercise equipment for physical training, an indoor driving range where residents can enjoy screen golf</li> </ul>



**Visions and Objectives**

Daewoo E&C plans to continue to expand customer communication and increase customer satisfaction through various activities. In 2016, by integrating the Call Center and VOC, and establishing the integrated customer service management system, Daewoo E&C will instantly respond to customer needs and enhance the operation efficiency of the Call Center. Moreover, we will try to increase customer satisfaction by solidifying our survey on customer satisfaction and promoting continuous life premium.

- Establishment of integrated customer service management system
  - Integrate systems for consultation, VOC, defects/housing business

- Monitor processing status for customer complaints in real time and implement mailing service on complaints
- Establish big data analysis and report functions
- Enhancement of customer satisfaction surveys
  - Regularize the implementation of customer satisfaction survey in the first half of year
  - Improve product/service by strengthening feedbacks from relevant teams
  - Expand the number of samples through surveys covering the entire 1<sup>st</sup> and 2<sup>nd</sup> year complexes after completion
- Promotion of continuous Life Premium
  - Increase efficiency applying Life Premium
  - Improve work process by setting a manual
  - Develop and improve Life Premium specialized items reflecting customer needs

# Information Protection

## Strategic Direction

Daewoo E&C has been aware of the hacking technology and its risk which have evolved along with the acceleration of media technologies such as IT and mobile. Therefore, we have positioned ourselves not to merely respond to the detected risks, but proactively prepare for it by establishing information protection system well beforehand. Since information covers not only the company's asset, but also personal information of all the stakeholders of Daewoo E&C, we have been establishing and operating policies for the protection of information under the control of CEO with partners being the Chief Privacy Officers (CPO). The robustness of Daewoo E&C's IT system, which have maintained its stabilized level of information protection with consistent regulations, is an opportunity factor for Daewoo E&C to expand its business performance and raise competitiveness as the global E&C leader. Therefore, we aim to create new business opportunities through the

improvement of our system in information database, co-research, and integrated education on construction and IT.

### Acquisition of ISO 27001 Certification

We updated the certification acquired in 2005 on compliance of ISO 27001 (International Standard for Information security management) to the latest version, ISO 27001:2013.

### Inspection on Personal Information Management Situation

Recognizing the importance of handling personal information, Daewoo E&C conducts situation inspections to improve information security in term in terms of managerial, physical, technological security. Situation inspections takes place twice a year via regular or random checks, regarding the compliance of the Personal Information Protection Act according to the life cycle process of collection/access/storage/disposal.

## Checklist for Personal Information Security in PC

Check points	Way to Verify
Are personal information files stored inside PC appropriately?	Verify personal information search program
Are the uses of USB and external hard drives controlled?	Verify installed PC security program
Is the screen saver locked with a password?	Verify PC security check program
Are security measures applied to personal information within PC?	Verify encrypted storage (DRM)
Is vaccine program designated by company used and updated to the latest version?	Verify installation and updates of V3
Are personal information files permanently deleted?	Verify installation and uses of WPM
Is a password of at least 8 characters of letters and numbers used?	Verify PC security check program
Is Windows security program updated to the latest version? (once a month)	Verify PC security check program

## Enhancement of IT Security Management

We are well aware of the seriousness and danger of the information leakage, coming from quickly evolving IT security risk. Among many, the APT (Advanced Persistent Threats) causes tangible and intangible damages, such as information leakage and network failures, using new and unknown malicious codes. We are paying a special attention to it and

have not only developed a preemptive security system, but also introduced a security solution program in response to new malicious codes in October 2015.

There have been 11 million hacking attempts from August 1, 2015 to October 23, 2015, and we blocked 15,093 APT hacking attempts among them.

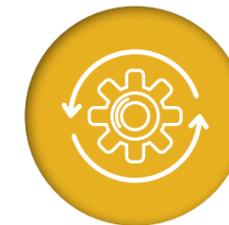
## APT

### Advanced



Uses dynamic technology to analyze files to identify opportunities for advanced threats

### Persistent

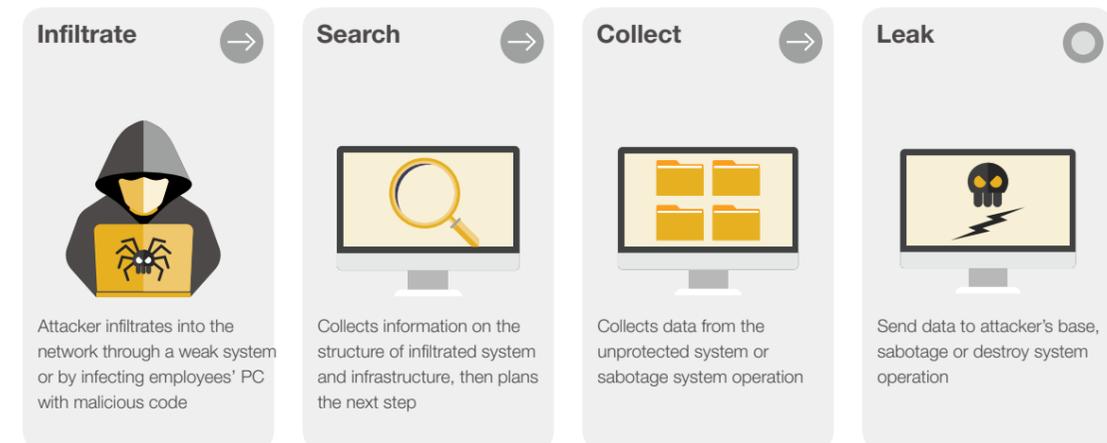


Uses inside and outside traffic analysis technology to identify opportunities for persistent threats

### Threats



Uses up-to-date intelligence information to seek for targeted attack, which is difficult to be identified as threats



**Information Security Campaign**

Since October 2015, Daewoo E&C has executed 'Office Diet Campaign' to make information security a part of employees' daily routine. The campaign is to discard unnecessary document or substitute them to electronic document, in order to prevent information leakage by shredding hard copies of document and to save paper consumption. For the settlement of the campaign, it is executed bimonthly.

**Inspection to Prevent Hacking**

As a part of information security, we conducted an inspection to prevent hacking once again from the last year. Simulation hacking tests were aimed at major websites of Daewoo E&C including Daewoo E&C Official and PRUGIO. By testing and analyzing the results, we plan to establish an effective information protection policy.

**Protection of Customer Information**

Daewoo E&C's information protection covers not only the central computer network system, but the entire business area. In July 2015, we enhanced our security by recognizing the importance of increased security regarding the handling of personal information in apartment lotting-out management system, under Article 30 (measures to secure safety) of the Personal Information Protection Act that which was passed on February 2015.

The Housing Division, which specifically handles larger amount of personal information than others, is conducting regular inspections twice a year and personal information protection work that covers relevant offices, including the headquarters, lotting-out office and resident support centers. Through these activities, we were able to spot where our weakness lies and in October 2015, we distributed a revised version of private information protection manual that contains guidelines, work procedures, and measures on private information protection, so that there be absolutely no leakage of our valued customer information.

Daewoo E&C provides trainings on information protection to not only the headquarters, but also employees of its subsidiaries and agencies. All of the employees of the Housing Division are annually taking online courses in the private information protection portal, operated by the Ministry of Government Affairs and Home Affairs, while operation site managers and lotting-out agency managers are taking training courses on understanding the private information protection law and mandatory guidelines regionally. Moreover, before the opening of our model house, we provide trainings to consultants and telemarketers, including lotting-out agencies. Before the move-in, move-in agency managers are provided with an adequate training as well. For our subsidiary, Prugio Service, we annually conduct trainings for treatment of private information in service centers.

**Visions and Objectives**

Daewoo E&C aims to establish flawless private information protection system by putting together a centralized document system and internal control system based on better structured inspection of IT information security and private information protection. First and foremost, we plan to conduct an assessment for renew of ISO 27001, as its expiration date is imminent. Then, through IT information security management status inspection, which checks upon the installation of any illegal software, PC information security for each operation site, and independent private information protection management situation inspection, which we have consistently executed regularly and randomly, we will objectively analyze our risks. According to the result, the internal control system on information leakage will be established, and based on the big data analysis, we will monitor symptoms of leakage to prevent a loss of our asset on IT information. Moreover, by establishing a centralized document system to save documents in Cloud, we will minimize the amount of document storage in PC and by establishing cooperation system that creates, shares, utilizes document company-wide, we plan to settle an integrated information leakage management system.

- Establishment of centralized document system
  - Minimize document storage in PC, save document by establishing Cloud system
  - Establish portal system for company-wide knowledge sharing and utilization: Enhance search function, Lessons Learned Database, etc.
  - Establish company-wide system for document creation and cooperation, information sharing and utilization
  - Prevent leakage of important information through centralized document system
  - Minimize trial and error, by transforming company-wide information into knowledge asset for recycling and sharing

The Housing Division will continue its activities regarding private information protection by revising the manual it distributed in October 2015 and enhancing its training on internal and external personnel in charge of the treatment of private information. In addition, through a cross inspection between housing and construction fields, we will improve the inspection level on our own. On the other hand, through consulting service, we plan to prepare for government institution's inspection by reviewing the headquarters' policies and internal management standard, and supplementing inspection targets and checklists.

**Amendments**

Category	Details
<b>Lotting-out Management System</b>	Changed a document for approval when requesting for authority, Added a column for 'agreement on privacy policy' for contractor in contract management
<b>Personal Information Collection</b>	Prohibition on collecting a copy of resident registration that contains family members' information when registering for ownership transfer - Substitute to a copy of resident registration that contains individual information rather than that of the entire family - Return relevant document to the contractor rather than collect and keep

# SUSTAINABILITY PERFORMANCE

98 **Economy**  
Risk Management  
Innovative Technology

107 **Environment**  
Air Pollution, Energy, Waste  
Biodiversity, Harmful Chemical Substances  
Environmental Campaigns, Investment, Eco-Friendly  
Procurement, Awards and Achievements

111 **Society**  
Employee  
Supplier  
Local Community  
Future Society

## Economy

### Risk Management

#### Risk Management Framework

In the era of increasing uncertainty throughout the low-growth domestic and global economy, a preemptive risk management has become crucial than ever. Since the establishment of the company-wide risk management framework in 2014 by devising a strategic direction on Daewoo E&C's key risks and supporting to establish the culture of risk management, Daewoo E&C has been expanding its risk management area and ensuring the internal stability.

In 2016, we will build a consistent risk management system by internalizing our risk management framework through cooperation and sharing, reinforcing management and support at overseas sites, and relevant IT systems.

- Internalization of a risk management framework based on cooperation and sharing- Strengthen integrated risk management, establish an early warning system, select management indicators, and systematically place responsibility/liability on executives
- Reinforcement of management and support at overseas sites- Fortify analysis of risks at overseas sites, improve the budget management system, develop process guidelines, and standardize construction completion management
- Increase in management capacity via IT systems- Establish an Integrated Project Management System, improve the Construction Management System, and set up an Experience Sharing System

To make full use of the opportunities of the competitive edge secured by actively responding to ever changing risks, Daewoo E&C plans to lay the groundwork for a new risk management paradigm, thus contributing to the company's substantial management through proactive communication and cooperation between business and administration divisions and identification of key risk factors.

#### Risk Management Organization

To increase the risk management expertise and enhance project risk management process, the Risk Management Department has been elevated to the Risk Management Division. The Risk Management Division will analyze and manage the risk factors by reinforcing the RM system through the efficient cooperation and communication among company-wide business divisions and support divisions. Moreover, under the supervision of the CEO, we have formed and operated risk committees in charge of the company-wide and project-based risks.

- Risk Management Committee
  - Suggest company-wide risk management policies and directions
  - Inspect management status of key risks, prepare quarterly issue reports, establishes and revise company-wide risk management regulations
- Risk Assessment Committee
  - Participate in specific meetings according to the business and project functions (Strategic Planning, Finance, Legal Affairs, Marketing, Risk Management, business divisions, etc.)
  - Deliberate and make decisions on major changes in business plans managed by the company
- Risk Occurrence Investigation Committee
  - Locate liability, identify the causes for the loss, and prevent reoccurrence when financial loss occurs due to falling profits

The RM Division shares and analyzes the management indicators in each committee in order to implement solid risk management.

#### Risk Monitoring Enhancement

Since 2015, Daewoo E&C has monitored and chosen company-wide risk management indicators on a regular basis. The company-wide risk management indicators monitoring was applied to assess the possibility of accomplishing the annual management objectives by analyzing the key performance indicators chosen for 2015 management objectives. Through the consistent enhancement of the monitoring process, Daewoo E&C has established the early warning system, which will enable us to prevent and respond to upcoming risks by identifying them faster than ever.

#### Project Risk Management

Daewoo E&C manages risks that are found in the bidding process of all overseas projects using risk assessment checklists and management registers. Executives provide a comprehensive review of the findings and corrective action plans made from the risk assessment of new construction projects, and project risks are managed with systematic follow-up measures. By using simulations, Daewoo E&C monetizes risks that were assessed in the bidding stages of the project and includes them in the project contingency relevance assessment.

To strengthen the competence of Daewoo E&C's project management, we have built an Integrated Management System in June 2016. The system will enable us to effectively integrate project life cycle data from decision-making stages to implementation and closing out stages, as its objective is to increase the efficiency of risk management at each project stage.

#### Company Risk Management Guideline

Daewoo E&C has developed a guideline that systematically defines and establishes the subject, organization, process, and methods of company-wide risk management. Within the guideline, there is a detailed guidance on how to identify, analyze, evaluate, treat, monitor, and report risks.

#### Analysis of Unfavorable Provisions

Daewoo E&C lists examples of unfavorable provisions in project contracts and methods to deal with such provisions as a means of preventing possible risks and damages in the process of concluding overseas project contracts, which can be applied to various operations, countries and clients. Daewoo E&C plans to form an active information-sharing system within the company through the continuous expansion of the list and automatic link of the relevant information to the integrated management system.

#### Establishment of Country Risk Database

With the increase of overseas projects, Daewoo E&C has set up a new country risk database to identify and respond to country risks effectively and efficiently. A multitude of risks (in terms of 70 different categories such as finance, taxation, politics, culture) in 46 countries are shared through BARONET, a company intranet.

# Innovative Technology

## Daewoo Institute of Construction Technology (DICT)

In November 1983, Daewoo E&C became the first Korean construction company to open a new chapter in the development of construction research and technology development by founding DICT. As a recognition for the strenuous efforts for the innovation of construction technology, the Presidential Award for the Best Corporate Research Institute (2000), Order of Science and Technology Merit (2004), the Presidential Award on Construction Technology's day (2006) were awarded, while IR52 Jang Youngshil Award for Technology Innovation (The Minister of Science, ICT and Future Planning Award) and Entrepreneur for Construction Technology R&D Award (The Chairman of the National Assembly Award) were granted in 2015.



IR52 Jang Youngshil Award for Technology Innovation (2015)



Entrepreneur for Construction Technology R&D Award (2015)

DICT contributes to the competitiveness in construction industry in Korea by participating in the government's core R&D projects. Our steady investment in new renewable energy and green technology, and high value-added products development enable us to develop innovative technology for our new growth engine and make improvement in the quality of our social infrastructure constructions. Based on the cutting edge professional experiment facilities and accumulated technologies, we contribute to the improvement of the quality of constructions as a national public certification body providing professional engineering and construction-related technologies by actively responding to what customers want. In addition, by innovating technology in terms of business, support, and development, DICT strives to exceed the perceived limits of traditional corporate research centers as cost centers, and seeks future growth engines. The establishment of DICT as the first standalone R&D center in the construction sector is in itself an action plan that redefines the role of research centers from cost center to profit center. DICT endeavors to become a global leader of innovative technology through site-oriented and future-oriented innovations which create value and world class competitiveness in technology for Daewoo E&C. We will continue to play a pivotal role in realizing the Daewoo E&C's vision of 'For the People & Better Tomorrow' as well as advancing site-oriented and future-oriented technology innovations.

### Strategic Direction of DICT

#### Management Goals

Increase in value of DICT through the substantial management

#### Management Policy

A standalone R&D center that contributes to the company through technological innovation

#### Core Management Measures

##### Enhancement of support for business divisions

- Reduce costs in operations sites and prevent non-executive budgets
- Support bidding by utilizing core technologies

##### Future growth technology development

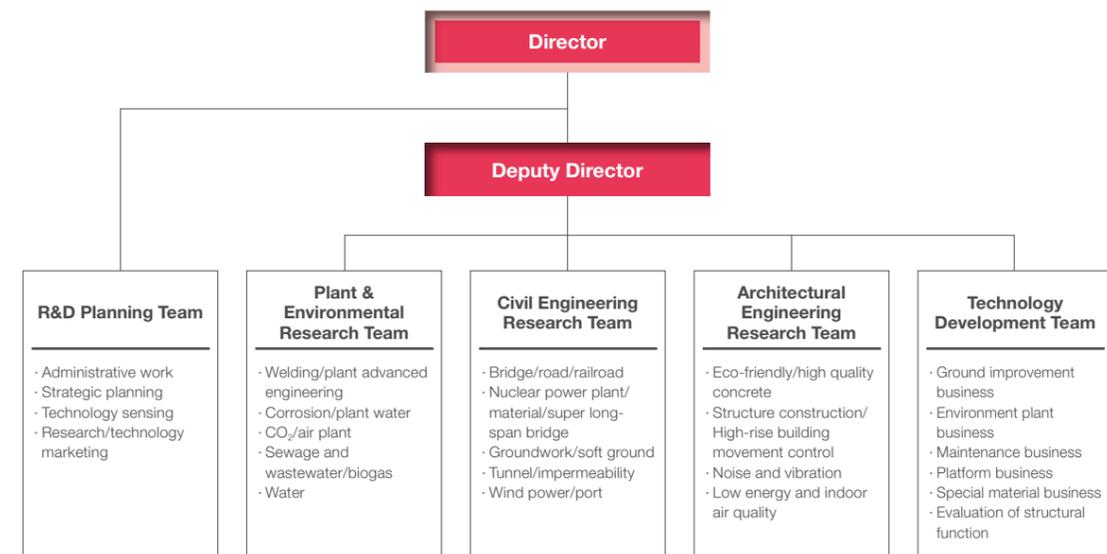
- Identify future growth engines for the company
- Collaborate on technology development with government-funded research institute

##### Enhancement of self-sufficiency through increase in winning contracts

- Advance price competitiveness by developing cutting edge technology
- Expand to new markets such as overseas business by collaborating with public institutions

## DICT Organization

Within DICT, the R&D Planning Team leads the development and management of the enterprise technology strategies. The Plant & Environmental Research Team, Civil Engineering Research Team and Architectural Engineering Research Team perform specialized research in each respective field for effective R&D management. The Technology Development Team aims to maximize the application and overall use of new technology on sites. Majority of the researchers at DICT are those with master's or doctorate degrees in their respective fields (as of December 2015, a total of 79 full-time employees). The researchers develop new technologies as well as new construction methods, and prepare to take a new leap towards becoming the world's best research facility of construction technology by supporting sites and strengthening technology infrastructure.



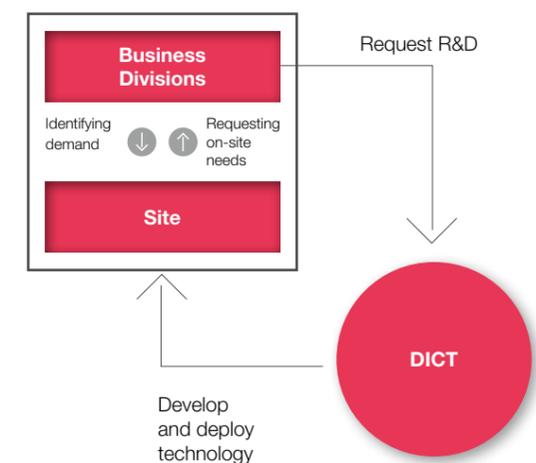
## Main Roles of DICT

### Site-Oriented R&D

Through a site-oriented R&D system, Daewoo E&C achieves competitiveness along with construction time and cost reduction. The system enables active communication between the business divisions and DICT, to convey on-site request on technological needs to DICT and the business divisions.

Through enhanced communication, DICT conducted 27 research projects as requested by the business divisions and 12 governmental projects in 2015.

### Site-Oriented R&D Structure



### On-Site Technology Support System

DICT performs on-site technology support in order to solve difficult challenges in construction sites. We employ an on-site technology support system to provide convenience and quantify the performance of such support. If a technological problem occurs in an operation site, technology support requests can be submitted to DICT via the system, where upon DICT reviews the submission and promptly provides support. Through this system, we predict and deal with the construction cost reduction and non-executive budget in advance. It also helps enhance the price competitiveness, while aligning with the developed technologies

### Technology Business

DICT performs technology business as well based on the developed technologies. Some of the major areas of technology business are Construction by Quick hardening fill using Co-products (CQC), Daewoo Biogas System (DBS), Daewoo Membrane Bio-Reactor (DMBR), Dual Bag Filter (DBF), Building Movement Control (BMC) and Structural Health Monitoring (SHM). With these technologies, DICT conducts various collaborative projects with the private and public sectors with the aim of order increase. In 2015, DICT recorded orders of KRW 13.3 billion and sales of KRW 7.1 billion, establishing a foundation of the first standalone R&D center in the construction sector.

### Creating Future Source of Income

The R&D center has partnered with a government funded research center to identify future source of income and secure markets that can apply our technologies by making use of public institutions' functions in policy-making. Furthermore, we have implemented various business agreement to secure the foundation for entering into the global technology business through the establishment of international cooperation.

### Key Business Agreements and Collaborations

Business Model		Business Target	Strategy and Current Status
<b>O&amp;M based on Technology</b>		O&M project for apartment housing	MOA with Korea Housing Management (Oct. 27, 2015)
		O&M project for SOC	MOA with Korea Infrastructure Safety & Technology Corporation (Feb. 05, 2013)
<b>Technology Business</b>	CQC	Saemangeum Seawall Reclamation Project	MOA with Korea Rural Community Corporation (Nov. 06, 2013)
	DBS	Biogas project in Japan	Business agreement with Shimane and Tottori Prefecture (Aug. 01, 2015)
		Biogas project in China	MOU between government institution of Korea and China (Sep. 22, 2015)
	DBF	Demonstration project of air pollution in Korea and China	Selection of participating company (operating expenses KRW 20 bil.) (Jul. 24, 2015)
<b>Cooperative</b>		Construction Business Cooperative	MOA with Guohan in Shandong, China (Nov. 10, 2015)
		Environment Business Cooperative	MOU with POSCO R&D Center (Nov. 14, 2011)
<b>Cooperation in Technology Development (future source of income)</b>		Engineering service for overseas high-rise building	Export of technology to Vietin Bank Tower for the first time in Korea (May 28, 2015)
		Consulting for environment project	General meeting of cooperatives including 6 professional companies (Sep. 15, 2015)
		Smart Construction	MOA with Korea Institute of Civil Engineering and Building Technology (Oct. 02, 2015)
		Eurasian Railroad Project	MOA with Korea Railroad Research Institute (Mar. 29, 2016)



### R&D Achievement and Core Technology

Daewoo E&C is conducting research and development in sectors of building works/housing, civil projects, and environmental plant. In the building/housing sector, we are working on development of optimized technology to achieve 80% energy saving rate apartment, safety management of facility/construction noise, development of carbon reduced eco-mortar/low carbon crude steel concrete, etc. As for civil projects, we are in the progress of developing techniques related to long-span suspension bridge, rapid construction techniques for modular bridge (precast floor slab, barrier, pier) and precast modular retaining wall, and construction methods for improvement of soft ground, etc. In the environmental plant sector, we have developed various construction technologies such as a carbon capture technique for building materials, an organic waste-to-energy technology and a sewage advanced treatment method and applied them in pilot projects.

### DICT R&D Achievements

(Unit: Case)

Category	Details	Performance in 2015
<b>Research Projects</b>	Projects requested by business divisions	27
	Government projects	12
<b>Industrial Property Rights</b>	New Technology	2
	Patents	43
<b>Academic Papers</b>	Foreign	14
	Domestic	46
<b>Awards</b>	Domestic	6

### [Building Works/Housing]

In the building works and housing sector, Daewoo E&C has led the Korean housing culture through the technology development that raises the quality of life and the value of our earth.

### Green Premium

In 2009, Daewoo E&C announced 'Green Premium', an eco-friendly energy saving product, for the first time in the construction sector with an roadmap of providing 'Zero Energy House' by 2023, followed by Daewoo E&C's introduction of a philosophy in housing, 'Green Home, Clean Apartment' for the first time in Korea by applying a concept of eco-friendliness to an apartment in 1995. Therefore, we are developing and applying the 'Green Premium' technologies consisted of eco-friendly and energy saving residential products. The research team of the Green Premium has established analysis methods for energy saving rates in 2015, and developed a formula for estimating energy saving rates that enable us to figure out the effect of the saved energy by applying an energy saving technology in the early stage of a project.

### Construction Noise Management System (DW-CNMS)

This system applies an IoT (Internet of Things) technology that can effectively manage noise from construction sites in urban areas through the real time provision of the construction noise level, systematic management of data and statistical analysis. We have been developing this technology since 2009 based on the project, Core Environmental Technology Development Project for Next Generation by the Ministry of Environment, and established the noise monitoring system for construction sites in Seoul in 2015. Starting 2016, we aim to apply the IoT technologies in pilot projects to manage the construction noise created during the construction.

### Building Movement Control Technology

In the process of constructing a high-rise building, even a minor error can become a factor that threatens the safety of the entire building and its usability. The Building Movement Control Technology, developed by Daewoo E&C, predicts the alteration of the high-rise building in advance in order to manage these issues and make an accurate construction possible. The technology is comprised of alteration forecast, monitoring and control technologies. Its precision has been confirmed by having been applied to around 20 domestic and overseas high-rise building projects, and with the development of our own technologies, which mostly had been borrowed from the overseas to build high-rise buildings, we could raise the level of technological independence. Furthermore, it has been making a great contribution in exporting our technologies by entering various overseas market such as Malaysia, Singapore, and Vietnam.

### Structural Health Monitoring (SHM)

Daewoo E&C has established and is expanding the application of Structural Health Monitoring system with the advancement of Special Act on Disaster Management of High-Rise Building and on-site safety enhancement polices. Structural Health Monitoring (SHM) enables real-time monitoring and evaluation on structural movements and provides appropriate countermeasures when a symptom of any type occurs, in order to maintain structural safety. In 2015, we have applied it to Songdo M1 Residential Complex, a high-rise building over 50 stories, and established an operation plan for its application to special construction methods such as Lift-up, etc. In 2016, we will expand the establishment of the system in high-rise buildings and implement the system on a steel-frame Lift-up construction method. Furthermore, using the IoT sensor, we plan to develop the system into an ICT integrated system and apply it to maintenance control of smart city and intelligence facilities.

### User-Friendly Innovation on Concrete Crack Repair

With the invention of 'Power Cleaner', a concrete crack repair product, in October 2013 by Daewoo E&C in partnership with Seric Co., Ltd., we became the first in the industry to commercialize construction material to the public by registering the product for a patent. This user-friendly product enables both use-at-home and on-site in a way of simply applying the product to the crack after spraying water. Our technology to induce self-healing behavior of the material comprises the best feature of this high-quality product. We are actively in collaboration on the technology development by signing a cooperation MOA with Korea Housing Management and constantly strives to establish a business model and develop sustainable maintenance material and construction method.

### Smart Crack Reducing Concrete

On December 2015, the Ministry of Land, Infrastructure and Transport made an amendment on the 'criteria for crack defect on apartment housing'. Even though a crack is within the permissible width of 0.3mm, if it is accompanied by water leak or placed on the top of a reinforcing steel or aesthetically unpleasant, it is now defined as a crack defect. According to the amendment, we have therefore developed a 'smart crack reducing concrete' that can effectively control the cracks on concrete. As the technique that has acquired the domestic patent, it not only gives 10~20% increase in intensity and 90% increase in crack reducing effect, but also enables us to effectively reduce crack leak defect for micro cracks under 0.3mm by applying the self-developed technology of self-healing technique for cracks. We aim to apply this on the middle strip of a slab

in an underground parking lot, especially as an alternative for a wire mesh construction method for waterproofing layer of plain concrete to reduce onsite cost and enhance concrete quality.

### Non-Cement ECO Mortar

Non-cement ECO Mortar, one of the technologies for Green Premium, is a mortar production technology for finishing housing floor based on a resource-recycling design. Since it is a mixture of various industrial byproducts such as ground granulate blast furnace slag powder, fly-ash of combined heat power plants and desulfurization gypsum, without using any cement, it significantly reduces CO<sub>2</sub> generated from the cement. The technology has completed a co-registration for patent and signed an agreement for the engineering fee in 2015. As one of the core technologies in Prugio's 48 Green Premium technologies, we are in the process of expanding its distribution.

## [Civil Project]

Daewoo E&C analyzes diverse issues that arise from our civil project operation sites and provides optimum solutions which save construction costs and reduce construction periods.

### Super Long-Span Bridge Technology

DICT participates in the super long-span bridge project of the Ministry of Land, Infrastructure and Transport and has developed high performance concrete along with on-site concrete placement techniques and wind-resistant stabilizing system of the cable-stayed bridge during construction. These breakthroughs made it possible for us to deposit 400m-high concrete at once and acquire wind-resistant engineering technique on super long-span bridges. Furthermore, the integrated employment of the long-span bridge shape control and management and the structural health monitoring technology has greatly improved the structural health and safety of various bridges such as the Busan-Geoje Fixed Link bridge, the Yeonggwang-Haeje bridge, the New Millennium Bridge (Lot 1).

### Tuned Mass Damper (TMD) for Long-Span Bridges over the Sea

A Tuned Mass Damper (TMD) is a vibration control device installed at the top of the pylon, built on sea, to secure the stability of the long-span bridge against wind. Continuous resilience against wind can be obtained by tuning the frequency of the TMD according to the construction stages. The TMD technology is applicable to long-span special bridges, such as cable-stayed bridges and suspension bridges, which are vulnerable to wind. It is regarded both cost-effective and eco-friendly that does not require temporary foundations or excavation process, and thus reduces sub-surface pollution. The technology was applied to the construction of the Geoga Bridge, thereby significantly reducing the construction cost and period.

### Modular Bridge (precast floor slab, barrier, pier) Rapid Construction Technique

A modular bridge is built by assembling pre-manufactured components of the bridge at the construction site. The construction method is deemed excellent in terms of LCC, since it not only significantly reduces the construction period through the minimized on-site construction such as installation of area reinforcement or cast, but also increases the durability which is accompanied by a thorough quality management. As we have secured the construction method to build the entire modular bridge, the modular bridge technique is actively being used at Daewoo E&C as the optimized alternative for various occasions such as a new bridge construction that requires eco-friendliness and durability and a rapid construction for substitution of an aged bridge.

### Industrial Waste Utilization for High Quality Groundwork

In laying out the groundwork for construction, there are increasing number of cases, in which the mid- and long-term safety of a structure is threatened due to a sub-terrain sinking and distortion. In 2015, to reduce the sub-terrain sinking in the metropolitan area, we developed a technique to put buried objects underground as well as economical materials for backfills. In addition, we secured an eco-friendly dredged soil, and invented an eco-friendly, high-liquidity filling technology utilizing carbon capture byproducts. Aside from these, Daewoo E&C has exerted consistent efforts in the equipment development as well by developing a high-efficiency concrete mixing and distribution equipment and a high-liquidity cast-in-place system using the site soil. Through these technologies, Daewoo E&C makes full use of the various industrial byproducts as groundwork materials to improve construction efficiency and substantially enhance the construction groundwork, contributing to an increased construction safety.

### Technology for Precast Modular Retaining Wall

Precast Modular Retaining Wall technology can be applied in supporting the collapsed slope of a landslide without any complementary material such as an anchor. It is a rapid construction method since it can be applied on its own slope and weight while minimizing the amount of excavation thanks to its narrow base plate. With the attributes of convenience, structural safety and cost effectiveness, the technology can reduce the construction period up to 50%. It has been selected as the best practice in the construction technology research sector and granted an award by the Korea Federation of Construction Contractors. Recognized of its excellence, it has generated profits for Daewoo E&C by being applied to the operation sites of Cheongju High-Tech Industrial Complex, Happy City Entry Ramp, Geoje Central Prugio, etc.

## [Plant/Environment]

To make the world a cleaner and safer place, Daewoo E&C is developing eco-friendly technologies such as carbon capture and utilization, organic waste-to-energy technology and prevention of air pollution.

### Carbon Reduction Technology

Daewoo E&C's carbon capture and utilization technology (DECO2) is a GHG reducing, eco-friendly technology, which is at the center of attention in the international society. We are the first in Korea to develop this technology that captures CO<sub>2</sub> produced in power plants, incinerators, and biogas treatment facilities to utilize them as building materials. Our technology has gained a wide recognition around the world, by obtaining the Green Certification from the Ministry of Environment as well as acquiring 16 patents. Moreover, by participating in a government project in 2015, we have completed the basic and implementation design of the direct reaction plant that can capture 40 tons of CO<sub>2</sub> a day.

### Organic Waste-to-Energy Technology

The Daewoo Biogas System (DBS) is a technology that produces new renewable energy using organic waste such as sewage sludge, livestock manure, and food waste. This exceptionally eco-friendly technology was chosen as one of the top 10 innovative technologies in 2009, awarded two Green Certificates from the Ministry of Trade, Industry, and Energy (MoTIE) and the Green Technology of the Year Award in 2012. After successful construction, Daegu Food Waste and Excreta Treatment facility is now operated with our DBS technology, which has the highest treatment capacity (300 tons/day) in Asia. In 2016, we are devoted to continue with the commercialization of the technology business based on the completion of an upgraded DBS construction technology.

### Air Pollution Prevention Technology

Daewoo E&C's Dual Bag Filter, an eco-friendly technology, is registered in the New Environmental Technology and Green Technology in Korea with the recognition of reducing substances that cause air pollution. Those substances include particulate matter, dioxin, heavy metal, VOCs, which are generated in an incinerator. The technology not only is eco-friendly, but as it lowers the consumption of an activated carbon by 1/5 by maximizing the use of recycled carbon in the back filter, it also secures the cost effectiveness. We have a track record of its applications in various facilities including domestic incinerators and pyrolysis smelting furnace, and are expecting for steel mills with serious level of dioxin and particulate matter to be interested.

### Advanced Sewage Treatment Process (DNR, DMBR)

DNR (Daewoo Nutrient Removal) Process is one of the most representative advanced sewage treatment process as it holds the most and largest track record of being applied in KOREA to economically remove nitrogen and phosphorus in sewage. It has been applied to a total of 36 facilities including the Southern Water Resource Eco-Park (Bucheon, 2006) and Happy City Water Restoration Center (Sejong, 2013). DMBR (Daewoo Membrane Bio-Reactor), in turn, has been applied to 12 sewage treatment plants, including Sandong Sewage Treatment Plant (Gumi, 2009) and Hyocheon Water Light Playground (Gwangju, 2013) as a process that enables the treated water to be reused as high quality recreation water.

### Intelligent Waterworks System Toward Total Solution (DIMS, DIWS)

The intelligent waterworks system based on total solution is a sustainable and harmonized technology, which can provide stable supply of safe water to the citizen. Based on devoted experiences on engineering, construction and operation, we can provide water utilities with the customized treatment processes. Also, our system combined with O&M expertise and diagnosis technology can be economical and efficient for operators. The optimized technology of pump scheduling and performance monitoring in waterworks using on sensor and algorithm contributes in reducing the carbon emission. On the other hand, the accident response system and automatic water draining equipment designed for water distribution network guarantee safe and stable tap water to the customer.

### Automatic Welding System of Steel Structure for High Heat Input

Utilizing Daewoo E&C's automatic welding technology for high heat-input, we can produce an outstanding quality of storage tanks for various sources of energy including oil and natural gas in a short period of time. Our system and process hold a productivity over 30 times higher than existing manual method. In order to perform high productivity in welding, we have automated the EGW welding method, one of the high heat-input welding techniques, while developing a stable steel structure that withstands in intense heat. Therefore, with multiple track records that we possess in constructing storage tanks, along with technology that shortens the production period, we expect to have the best competitiveness in the field of storage tank construction.

# Environment

## Energy

Daewoo E&C manages energy consumption by operation site, building, and energy source for efficient use of resources. In order to raise awareness on inefficient energy use, we operate an energy conservation program for the headquarters and DICT employees.

### Energy Consumption<sup>1)</sup>

(Unit: TJ)

Category	2013			2014			2015		
	Fuel	Electricity	Total	Fuel	Electricity	Total	Fuel	Electricity	Total
HQ	34.08	48.35	82	36.14	47.78	83	33.09	49.76	82
DICT	4.53	14.00	18	3.26	11.99	15	4.89	14.66	19
Dormitory	8.87	9.45	18	7.73	8.44	16	6.29	8.56	14
Asset Management Team	24.57	10.81	35	4.10	44.47	48	0.	34.12	34
Construction Sites	152.41	1,004.55	1,156	127.43	949.24	1,076	138.29	1,015.31	1,153
Housing Gallery	1.46	9.38	10	9.29	9.29	9	1.14	9.28	10
Migliore Mall Busan, Lease Business	0.	91.14	91	-	-	-	-	-	-
Jungbu Branch	0.22	0.36	0	0.10	0.35	0	0.20	0.36	0
<b>Total</b>	<b>226.13</b>	<b>1,188.05</b>	<b>1,410</b>	<b>188.04</b>	<b>1,071.56</b>	<b>1,247</b>	<b>183.90</b>	<b>1,132.05</b>	<b>1,312</b>

1) Figures may vary slightly from National Greenhouse Gas (GHG) Management System data as they were rounded up from three decimal places.

## Air Pollutants

Daewoo E&C conducts 'HSE management system inspection on fugitive dust' focusing on operation sites in need of priority control in spring when fugitive dust especially becomes problematic. The inspection ascertains the status of fugitive dust management and any issue found in the inspection is reported to the Corporate HSE Team within a week. We disclose the inspection result and share both good and bad practices throughout our operating sites to achieve zero environmental accident. In 2016, we strengthened the management of the early stage earthwork in our operation sites by aligning the fugitive dust inspection, which used to be conducted only in spring with the support for HSE-Starter program at new operation sites.

### HSE Management System Audit Results on Fugitive Dust

HSE Management System Audit (fugitive dust)	Civil Project	Building Works	Housing	Plant Business/ Power Plant	Total
	13	4	12	2	31
Inspection Result	Strengths		Opportunities		Challenges
	63		71		21

## Waste Products

### Waste Product Management

In 2015, the costs of waste disposal compared to sales recorded 0.18%, overachieving the target of 0.20%. Daewoo E&C stores waste product separately for each waste type and treatment required and an external contractor handles the treatment. In 2011, we launched our waste management company registration system<sup>2)</sup> and the system was implemented throughout the country. After evaluation, outstanding companies with excellent performance in operations were selected. Reward and punishment based on the performances followed in order to motivate and incentivize appropriate waste treatment. Furthermore, we interconnected the One-Touch HSE-Q mobile application with Korea Environment Corporation's ALLBARO system, thereby establishing a system that can manage all of the phases from disposal of waste to final process treatment and write and delete a delivery note using the mobile in real-time.

- 2015 waste management assessment result
  - 17 companies with the lowest performances deregistered, 4 outstanding rewarded

2) Waste Management Company Registration System: The system by which outstanding waste management companies by region are discovered and registered companies are monitored and evaluated.

## Harmful Chemical Substances

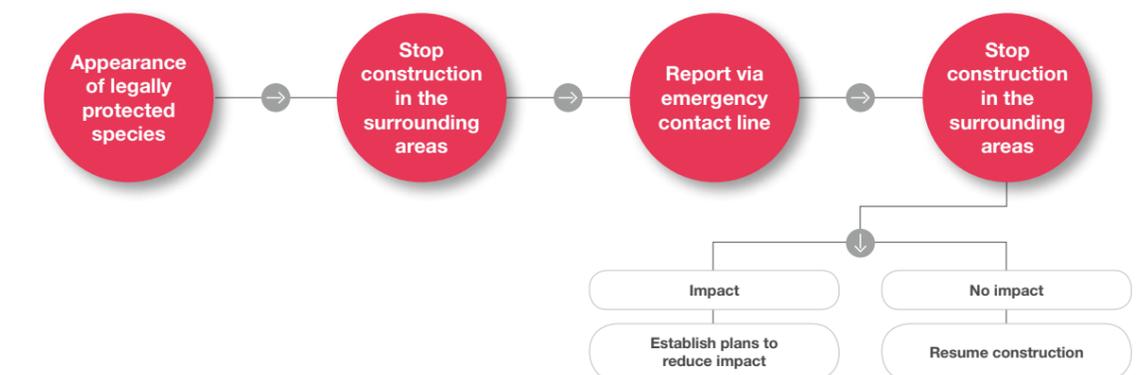
Daewoo E&C implements internal manuals for the management of harmful chemical substances, by which bentonite slurry, paints, oils, epoxies, and industrial strength adhesive are identified and stored in separate for safety. Waste oil, waste lacquer, and other designated wastes are stored in separate facilities as well to meet the environmental regulations. The stored wastes are then disposed by specialized waste treatment companies.

## Biodiversity

In order to protect biodiversity, Daewoo E&C not only complies with the Wildlife Protection Act, but also includes a biodiversity protection process in its construction procedures.

We assess our environmental impacts to examine the biodiversity status of endangered species in the surrounding area and prepare measures prior to the construction in order to minimize any damage on the ecosystem. In 2016, we plan to increase construction of structures for biodiversity protection including wildlife crossing and fence for roadkill prevention.

### Biodiversity Protection Process



### Creation of Terrestrial and Aquatic Biotope Inside the Complex

Daewoo E&C creates parks and greeneries in order to secure space for biodiversity and habitat inside the complex. Moreover, we strive to create terrestrial and aquatic biotope, so that greeneries and water system are interlinked, taking into account certain areas such as outskirts of sites or inner greeneries, where disturbance to local community can be minimized.

	(Unit: m <sup>2</sup> )	
	Terrestrial Biotope	Aquatic Biotope
Wirye Central PRUGIO	267	266
Ansan Laketown PRUGIO	401	98
Wirye Songpa PRUGIO	242	101
Wirye Green Park PRUGIO	435	136
Misa Gangbyun PRUGIO 1	180	-

### Algeria Oued El Harrach River Restoring Project

Oued El Harrach River in Algeria, running through Algeria's capital, had been highly polluted due to various industrial sewage, domestic sewage and livestock excretions as well as a lack of river improvement and development plan. Scheduled to be completed by April 2017, Daewoo E&C has been creating a landscape space for securing dimensional stability and water friendly activities in order to restore the biodiversity values in Oued El Harrach River.

- Building filter garden
  - Intend to purify the Oued Aada and Oued Smar, the branches of the Oued El Harrach River
  - Plan to create an aquatic biotope landscape with waterfront and plants
  - Utilize the natural treatment system and plan on water purification with water plants within the wetlands
- Plan to create habitats for animals and plants plankton, invertebrates, amphibians and provide a nature learning space and resting place for citizens
- Creation of wetlands
  - Intend to increase habitat density of various aquatic animals and insects after improving water quality to attract fish and birds
  - Plan to create wetlands and reed marsh

### Environmental Campaign

As part of our environmental activities, Daewoo E&C hosts environmental campaigns for each division, team, and operation site in an effort to preserve the local community's environment and establish an eco-friendly organizational culture. In 2015, 14,186 of our employees participated in the environmental campaigns.

### Environmental Campaign Status (Unit: Number of persons)



### Investment on Environment

Daewoo E&C actively invested on disposal of waste products, enhancement of environmental management system and environmental education, spending 84.3% of the environmental budget in 2015. In 2016, we will increase the amount of investment on environment to KRW 190 million, which was KRW 170 million in 2015.

### Eco-Friendly Procurement

Daewoo E&C promotes eco-friendly procurement, and the Business Partnership Planning Team places procurements for divisions upon request. In order to encourage such practices, Daewoo E&C plans to establish the 'Green Consumption Guideline', and award certificates or incentives on delivery performances to suppliers that provide with eco-friendly materials. In the first half of 2016, we plan to investigate whether the green procurement policy and system are established within the industry and then in the second half, we will examine the necessity to implement one.

### 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.

### Awards and Achievements

With our outstanding performance on environmental management activities, Daewoo E&C excels in the number of external awards and environmental competitions as the industry leader.

### Environmental Awards and Achievements in 2015<sup>3)</sup>

Site	Date of Award	Grantor	Details
Corporate HSE Team	Feb 18	Minister of Environment	Presentation of best practices
Civil Planning & Coordination Team	Jun 5	President	Contribution to preserving the environment
Wirye Central PRUGIO	Jun 13	Mayor of Seongnam City	Contribution to preserving the environment
Korea Electric Power Corporation (KPECO)'s new company building	Oct 20	Presidential Commission on Architecture Policy	Korea Green Building Competition Grand Prize
Wirye Central PRUGIO	Nov 4	Mayor of Songpa-gu	Best practice in construction sites
Corporate HSE Team	Nov 13	Chairman of the National Assembly	Award within competitive exhibition
Architectural Engineering Research Team	Nov 13	Minister of Land, Infrastructure and Transport	Award within competitive exhibition
Secho PRUGIO Summit	Nov 20	Mayor of Seocho-gu	Best practice in construction sites

<sup>3)</sup> President award: 1 / Chairman of the National Assembly Award: 1 / Minister Award: 2 / Gu-office award: 3 / Chief commissioner of Presidential Commission on Architecture Policy Award: 1

# Society

## Employee

### Employment

Daewoo E&C places great importance on equal employment opportunity for everyone and fair treatment without discrimination based on race, sex, and education. In an effort to actively recruit female employees and local talents who are prone to be neglected in terms of employment opportunities, we introduced an allocation policy for female employees as well as a local talents employment policy. As a result, over 22% of our new employees in 2015 were female. Furthermore, we aim to provide more opportunities by holding 'Recruitment Concerts', where participants are evaluated based solely on their presentations without any information given to the interviewer on participants' academic backgrounds and qualifications. The successful candidates of Recruitment Concerts are exempted from a documentation screening.

### Status of Employment

(Unit: Number of persons)

Category	Details	2013	2014	2015
<b>Total Number of Employees</b>		6,449	6,211	6,174
<b>Type of Employment</b>	Executive	64	47	39
	Full-time	4,771	4,089	4,053
	Contracted	384	389	412
	Other	1,884	1,686	1,670
<b>Employment by Region</b>	Domestic	5,194	5,002	4,950
	Overseas	1,255	1,209	1,224
<b>Diversity of Employees</b>	Male	5,739	5,591	5,600
	Female	710	620	574
	Aged (55 or older)	488	432	424
	Foreigner	110	75	70
	Disabled	77	64	65
<b>Number of Managers (section-chief or higher)</b>	Female	72	80	88
	Foreigner	-	-	-
<b>New Employment</b>	Male	241	136	90
	Female	49	19	20
<b>Employee Turnover/ Retirement</b>	Male	128	144	135
	Female	8	8	13

### Fair Evaluation & Compensation

We evaluate our employees objectively and fairly based on their job performances and contributions, not on their position, working period or gender. Employees are evaluated individually according to their performances and competencies.

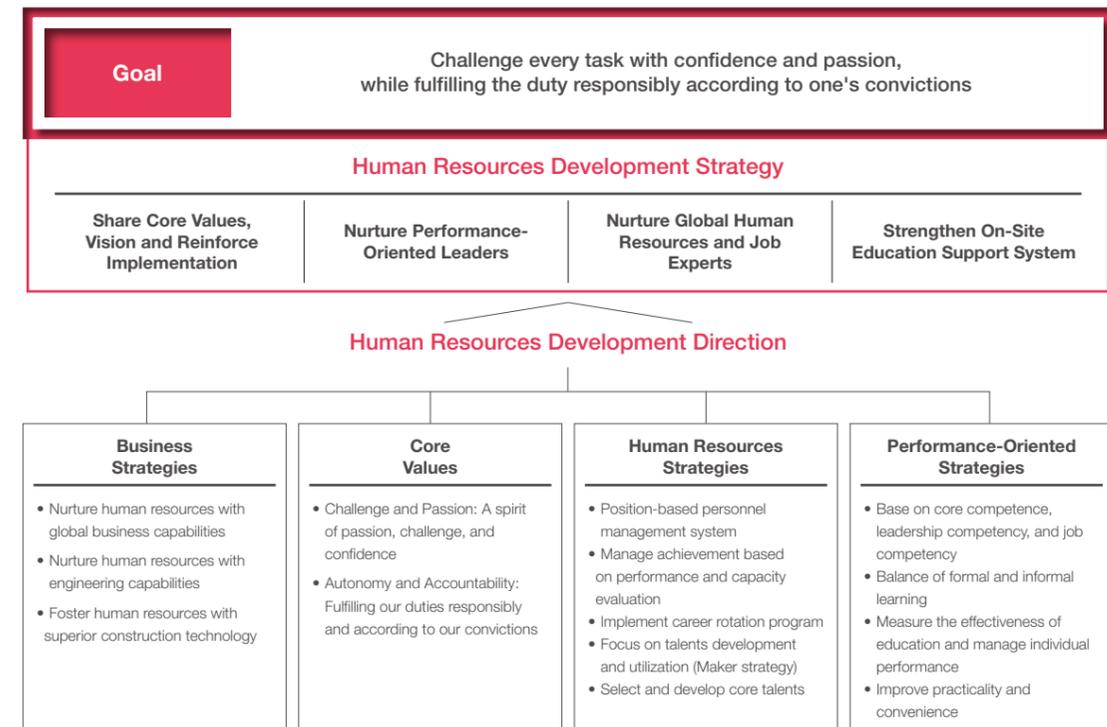
Differential increase rates are then applied to compensate each employee. In 2015, we simplified and rationalized the wage system in order to boost employee morale and efficiently manage the financial resources, whilst also improving the employee compensation system.

### Evaluation System for Executives

Daewoo E&C conducts annual leadership assessment for fair evaluation of management's leadership. Through this assessment, a new leadership figure is presented in accordance with the changes in business environment. By appointing a new leader, based on the presented leadership figure, executives' competence is expected to be enhanced. Additionally, we establish executive KPI and evaluation in order to effectively and systematically accomplish our business strategies and objectives.

### Human Resources Development

Daewoo E&C continues to establish and improve systematic education and training programs to develop talented global human resources. We foster outstanding human resources corresponding to our core values, 'Challenge every task with confidence and passion, while fulfilling the duty responsibly according to one's convictions.'



### Employee Education and Training Program Status

Category	Details	Unit	2013	2014	2015
<b>Performance on Education and Training</b>	Total number of education hours	Hours	757,485	627,428	501,455
	Total amount of education cost	KRW million	4,390	3,833	4,067
	Education hour per capita/year	Hours per capita	117	101	80

**Enhancement of Global Competence**

Daewoo E&C strives to foster global players in order to enhance our competitiveness in global business. We have been increasing the amount of investment on language courses every year and plan to increase even further. We support language education via LET (Language E-Tutoring) at overseas sites and run various programs such as internal language courses, global work skill courses, and short-term intensive courses on English in order to increase language skills within our employees.

**PM Development System**

PM Development System, which has been in place since 2015, is a long-term course to foster EPC project managers. By having our employees learn about engineering, procurement, construction, commissioning, contract and claim, project control, and scheduling management since junior level, we are setting the grounds for successful EPC projects. In 2016 and 2017, we will enhance the completeness of the course system by developing in-depth EM courses and elementary and intensive courses on SM, commissioning, and PCM.

**Employee Benefits**

**Family-Friendly Management**

Daewoo E&C proactively promotes family-friendly management to such an extent as to be the first in the industry to be chosen as 'Excellent Family-Friendly Company' in 2013. With the emphatic support of top executives, Daewoo E&C has implemented family-friendly educations and communications to establish family-friendly culture across the company. As a part of our family-friendly policy, we encourage the enhancement of family relationship and leisure time through various programs such as Leave of Absence for Family Nursing, Family Love Day, Family Love Vacation and Family Psychological Counselling Program. We recently built a daycare center within the company and extended the family benefits to temporary employees including medical check-ups, education expenses for children, and medical expenses for family members.

**Family-Friendly Programs**

Basic benefits	Specialized benefits
<ul style="list-style-type: none"> <li><b>Employee healthcare system</b> <ul style="list-style-type: none"> <li>- Provide medical checkups, group insurance, and antismoking campaign</li> </ul> </li> <li><b>Childbirth support system</b> <ul style="list-style-type: none"> <li>- Provide maternity leave (spouse), present birth supplies, including prenatal music CD, provide lactation room and employee lounge</li> </ul> </li> <li><b>Child rearing and education support system</b> <ul style="list-style-type: none"> <li>- Provide childcare leave and expenditures, invite employees' children for in-house education, provide tuition for employees' children in high school and university</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Family healthcare system</b> <ul style="list-style-type: none"> <li>- Provide medical check-ups for employee's spouse, medical expenses of family and of disabled family member, healthcare education, leave of absence (family nursing)</li> </ul> </li> <li><b>Support leisure time with family</b> <ul style="list-style-type: none"> <li>- Hold events with employee's family members, provide vacation, vacation bonus and leisure facility, support in-company leisure clubs</li> </ul> </li> <li><b>Family event support system</b> <ul style="list-style-type: none"> <li>- Provide expenditure for congratulations and condolences, and funeral services</li> </ul> </li> </ul>

**Childbirth Support System**

Daewoo E&C provides pregnant female employees with reduced working hours to create a mother-friendly work environment. For the benefit of female employees in their first twelve or last two to six weeks of pregnancy, we give the opportunity to work two hours less every day and provide payment equal to that of normal working hours. We also provide childcare leave and maternity leave, all of which may be why so many of our employees return to work after childbirth.

**Status of Maternity & Child-Care Leave**

Category	Details	Unit	2013	2014	2015
Maternity Leave	Persons on leave	Number of persons	204	178	208
	Persons returned from leave	Number of persons	201	171	204
	Return to work rate	%	99	96	98
Childcare Leave	Persons on leave	Number of persons	35	36	26
	Persons returned from leave	Number of persons	17	25	22
	Average days of leave	Days	244	245	275

**Family Unity Culture Program**

With the aim of achieving company-wide unity, Family Unity Culture Program is an employee participation program consisting of Harmony/Family/Culture events, Organization Healthcare and Pride and Morale Enhancement programs.



**Harmony/Family/Culture Event**

By arranging harmonious events such as company-wide Sports Day and cultural sharing among employees, Daewoo E&C promotes the family unity culture, and operates family-friendly management through programs including a family wall-painting and children-invited company events





**Organization Healthcare**

Organization Healthcare Program consists of Life&Work Balance Activities and Employee Health Campaigns. As a part of Life&Work Balance Activities, we provide an organizational healing program for those fatigued with everyday routines in order to manage organizational stress and improve communications between organizations. Since April 2015, we have implemented an individual healing program, managing employees' stress and providing psychological counselling programs. In 2016, we plan to expand our programs for employees' mental health to sleep disorder treatment and dietary counselling. Moreover, we are running the Three Health Campaigns for Employees (antismoking, metabolic syndrome control and blood donation) to support employee healthcare and encourage blood donations.

**Pride and Morale Enhancement**

Daewoo E&C strives to boost employees' pride and morale through various activities, such as opening 'PRUGIO Daycare Center,' designing a new on-site uniform with the Daewoo E&C's identity and arranging a family cooking class and a relay snack delivery 'Tong Tong (通通!) Snack Delivery.'

Particularly in 2015, we developed a song for Daewoo E&C 'Thanks to you, It's Possible!' which consists of a cheerful rhythm and hopeful lyrics whilst encompassing our vision, values and corporate culture. By forming a sound identity, our aim is to reestablish company identity, reinforce employee morale and increase loyalty to the company. 'Thanks to you, It's Possible!' is being used in various methods that include major corporate events, ring tones, and it has even been officially registered as a karaoke song.



## Labor-Management Relations

### Labor Union and Joint Labor-Management Committee

Daewoo E&C fully respects the freedom and rights of collective bargaining of all our employees. All our employees are free to seek admission and withdrawal from the labor union. For 17 years since the establishment of our integrated labor union in 1999, Daewoo E&C has had zero dispute and zero strike, sustaining a culture of cooperative labor-management. Our Joint Labor-Management Committee, established along with the foundation of the integrated labor union, is aimed at developing a healthy labor-management culture and creating a common interest of labor and management. We discuss major issues with a mutual understanding and appreciation to find the best way to resolve problems. In 2015, we signed a collective agreement and wage agreement without any dispute with the committee and came to an agreement regarding the use of joint annual leave and revision of compensation system. We immediately notify and discuss major changes in our management within committee meetings.

### Status of Joint Labor-Management Committee

Category	Details	Unit	2013	2014	2015
<b>Portion of Union Registrants</b>		%	26.4	26.5	26.3
<b>Labor-Management Committee Performance</b>	Number of meetings	Times	4	4	4
	Number of issues voted	Cases	4	4	6

## Labor Practice and Human Rights

### Labor Practice and Human Rights Policies

Daewoo E&C complies with the domestic Labor Standards Act and has publicly committed to support the Conventions and Recommendations on child labor of International Labor Organization (ILO). We strictly prohibit child labor and forced labor in all our operations at home and overseas. In 2013, we joined the United Nations Global Compact (UNGC) and publicly declared the fulfillment of our social responsibility with respect to human rights and labor.

### Prevention of Sexual Harassment and Human Rights Education

Daewoo E&C integrated educations with relation sexual harassment, human rights, compliance, sustainability and ESG into a single compliance education. Since 2014, we have implemented such education for all our employees at home and overseas. As of 2015, 6,062 employees have participated in the compliance education.

### Participants of Sexual Harassment Prevention and Human Rights Education<sup>1)</sup>

	2013	2014	2015
	6,169	6,273	6,062

1) The education on the prevention of sexual harassment was integrated with the compliance education in 2014.

### Labor Practice and Human Rights of Foreign Employee

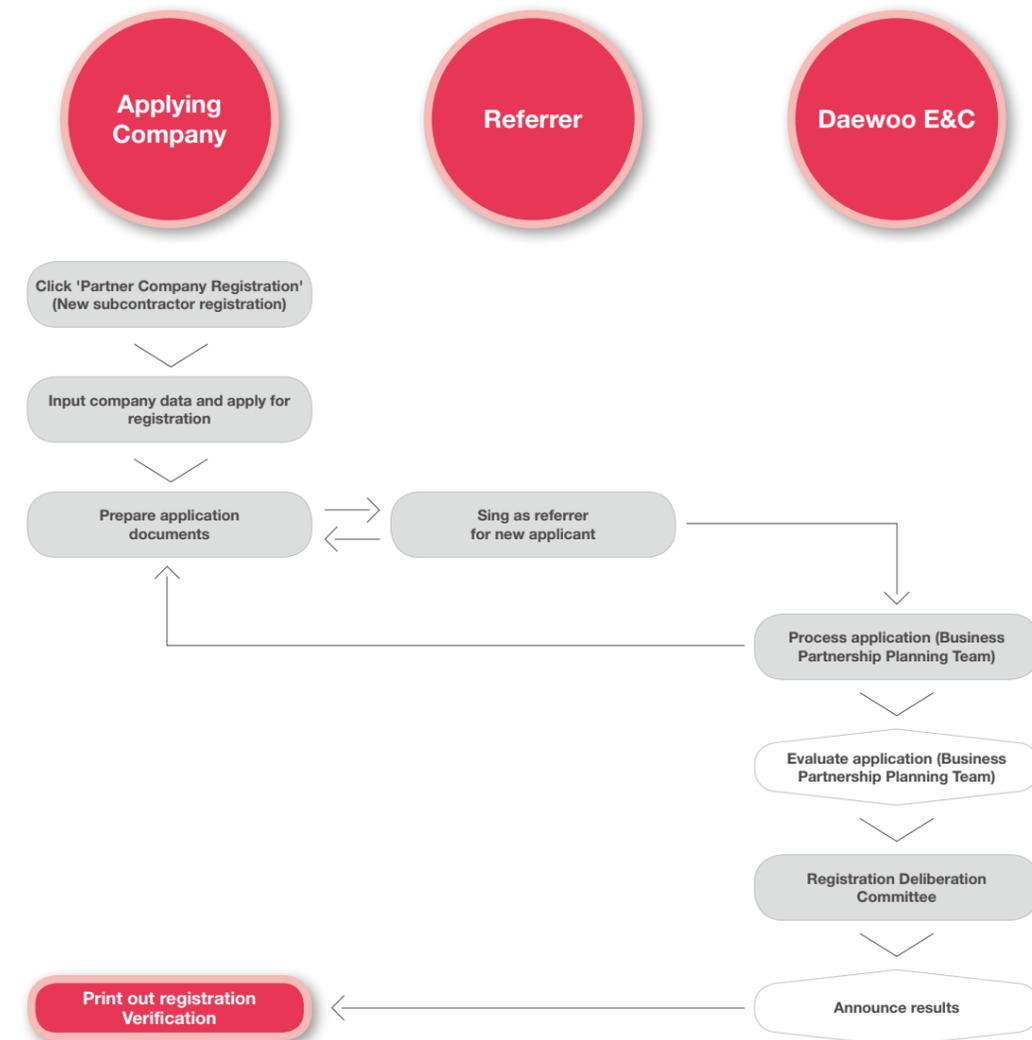
In an effort to respect the labor rights of foreign employees and realize the value of Daewoo E&C, we comply with the norms on human rights and global labor practice.

## Supplier

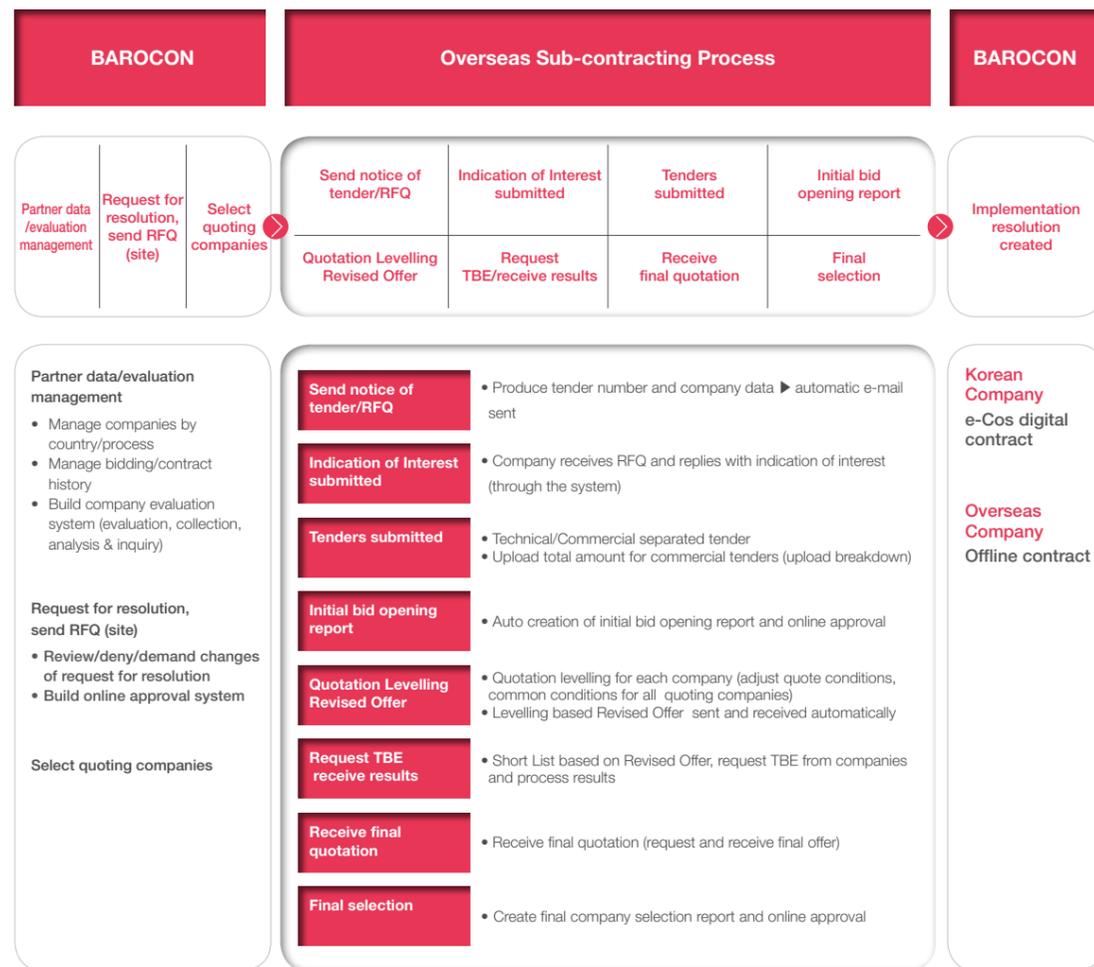
### Fair Selection of Supplier

Daewoo E&C adopts a fair selection process for registration of new suppliers. At the very first stage of the selection process, we hold an annual open call for new suppliers on our supplier website, 'e-Cos.' Companies that respond to the open call are evaluated online. Eligible companies are fairly reviewed by our Business Partnership Planning Team and the Registration Deliberation Committee before being finally selected as our supplier. Our policies prioritize local businesses and incentivize those who obtained ISO 14001 certifications. We built an online overseas subcontracting process, which is incorporated to our integrated management system, BAROCON, in order to enhance the uniformity and efficiency in selecting overseas suppliers. Additionally, in October 2015, we launched the overseas suppliers PQ system, 'Global Contractor Registration (PQ Application)', to share and make use of the information on overseas suppliers by integrating company-wide information.

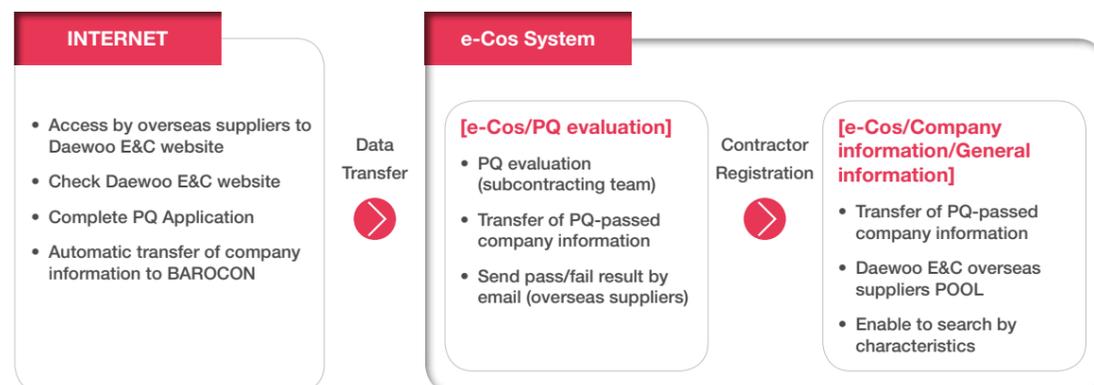
### New Supplier Registration Process



Overseas Subcontracting Process



Global Contractor Registration (PQ Application) System



Supplier Evaluation

Daewoo E&C evaluates suppliers (annual evaluation of the headquarters and semiannual evaluation of operation sites) in categories including certain sustainability aspects such as efforts to improve the environment, interest in the environment, ethical compass of management and safety management. Based on the results of such evaluations, suppliers are sorted into groups such as outstanding, adequate, inadequate and so on. Suppliers with excellent evaluation results are provided with benefits such as private contracts and exemption from contract guarantee insurance whereas inadequate suppliers are strictly restricted.

Overview of Supplier Evaluations

Category	Cycle	Details
Headquarters	Annually	Safety management, quality (defects) management, financial status, level of cooperation, level of contribution, feasibility
Operation Sites	Semiannually	Construction management, quality management, labor/materials/equipment/environment management, management evaluation, post-construction management

Supplier Screening Criteria Related to Sustainability Management

Items
Companies with potential and ongoing problems including delayed payment and other related issues
Companies that have caused financial loss or reputational damage to Daewoo E&C
Companies that have not addressed significant defects or request for repair
Companies that have colluded with others and spread rumors
Companies with repeated safety accidents (Companies with more than three major incidents a year; Companies with accidents that resulted in more than three deaths; Companies with unsatisfactory record in safety assessment for two consecutive years)
Companies that cause serious impact to quality and the environment

Support for Suppliers

Supplier Education

To improve job performance, we provide five education programs for employees working for our suppliers. The programs include education on construction function, subcontract law, and construction industry law. To raise safety awareness, we provide safety training for the suppliers and special education on safety management to enhance the understanding of CEO and construction managers of our major and newly-registered suppliers. In addition, we have developed materials for supplier's environmental education, which the environmental managers from the headquarters and operations sites use to provide the environmental training to our suppliers.

- Education on the improvement of job performances for suppliers
  - Conducted 7 times with 221 participants

Financial Support to Suppliers

Daewoo E&C raised a shared growth fund of KRW 22 billion (KRW 12 billion from Daewoo E&C and KRW 10 billion from Korea Development Bank) and provided all of it in loans, lending KRW 15 billion to 25 suppliers free of interest and security before Chuseok. We also extended a network loan agreement with Korea Export-Import Bank and exempted outstanding suppliers from contract guarantee insurance.



**Communication with Suppliers**

We operate multiple channels to broaden interactive communication with our suppliers through various programs and events. In 2015, a shared growth meeting was arranged with 116 employees from our five outstanding/major suppliers to discuss shared growth policies and related programs, and a CEO meeting was held in Namhae-gun, Gyeongsangnam-do, where 26 CEOs of our suppliers gathered. Beside the direct communication channel, we have a dedicated banner to ensure timely report on any breaches of ethical management within our supplier communication channel, 'DW-e-Cos' and 'Daewoo Shinmungo.' Reports are handled with great discretion and limited access in order to secure confidentiality and protect reporters.

**Support for Suppliers' Safety Management**

In terms of suppliers' safety management, suppliers with excellent inspection results are provided with an incentive of receiving 50% reduction on penalty in case a serious accident arise, whereas those with poor performance are penalized with measures such as limited bidding. We also hold Safety Inspection Days during which the persons concerned, including the CEO, and the construction manager of our suppliers, participate in briefings and meetings on safety.

**Win-Win Cooperative**

Daewoo E&C strives to accomplish sincere shared growth that enhances technological competitiveness and added-value of small and medium sized business. In this sense, rather than providing one-time financial support, we established an innovative shared growth model and an engineering-cooperative. The '4S Structure Safety Cooperative', in partnership with seven small and medium-sized businesses, is a new shared growth model that combines Daewoo E&C's innovative technology with suppliers' practical skills. It provides the total engineering solution with respect to construction safety at all phases of construction including engineering, construction, and maintenance after completion.

Furthermore, in 2015, we established a cooperative with expertise in core environment technology, 'KEEP COOP', with four businesses holding core technologies, providing the full scope of key services such as production of core materials, development of integrated management S/W, engineering, assessment, construction of plant, commissioning, and maintenance. For our suppliers, structural weaknesses shall be overcome, namely, limited human resources or research technology. In addition, expansion of business as well as business competitiveness are anticipated.

**Fair Trade Violations**

In order to achieve fair trade, one of the CP core strategic tasks, Daewoo E&C has fully adopted the '4 Guidelines of Fair Trade' and breaches can be reported via the company website cyber audit page, Ethics Help-Line and the ethical management reporting within 'e-Cos' for suppliers. Additionally, by first improving business conditions for our primary suppliers through various means such as implementation of subcontract protectors at certain operation sites, we are encouraging our primary suppliers to also improve business conditions for their secondary suppliers. In 2016, we plan to adopt standard subcontractor contract for domestic and overseas operations, spread benefit sharing and improve payment period, and cash payment ratio in order to widespread our culture of fair trade compliance.

**Fair Trade Violations**

Category	Details	Unit	2013	2014	2015
Breaches of Fair Trade (monopoly, collusion, etc.)	Number of breaches	Cases	1	7	6
	Penalties and compensations	KRW million	2,491	34,770	15,047



**Prevention of Unfair Trade**

Daewoo E&C's objective of shared growth is rooted in the belief that 'our suppliers' further growth directly leads to Daewoo E&C's future growth and sustainable development.' In order to prevent the risks of unfair trade that impedes suppliers' growth, we established countermeasures for management control related to fair trade with suppliers, created a coordination system between relevant divisions and conducted education and campaigns for our employees. Furthermore, we reinforced the reporting center to make substantial use of the nominal punishment policy. We will eliminate the case for compliance violations and restriction on relevant divisions by strengthening the control of unfair trade practices.

- Establishment of countermeasures for controlling fair trade with suppliers
  - Organize joint council with respect to fair trade
  - Develop and distribute self-checklist for prevention of unfair trade
  - Implement regular internal inspection for fair trade
- Reinforcement of reporting center for unfair trade with suppliers
  - Need to increase interest and participation of suppliers toward existing reporting center within e-COS
  - Send CEO message to encourage reports of unfair trade
  - Ensure confidentiality of the reporter and prohibit any punishments for reporting
- Development of self-check IT system for fair trade with suppliers
  - Draft stage: Conduct compliance self-check with guideline and self-checklist
  - Request stage: Confirm self-check for compliance with the related law through system pop-up when requesting electronic approval (if not checked, unable to request approval)
  - Review/Approval stage: Confirm self-check for compliance with the related law through the automatically linked pop-up in the case of approval (if not checked, unable to approve)

# Local Community

## Strategic Direction for Social Contribution Activities

Daewoo E&C, as a global corporate citizen, has established three major areas of our social contribution activities - protecting environment, increasing convenience facilities, and enhancing livelihood safety - in an effort to benefit the neglected social class. We focus on relay volunteer activities for improving infrastructure for neglected social class, utilizing our core resources and competencies as the leading construction company. We promote family programs through diversifying CSR activities while fostering voluntary participation of our employees across all our contribution activities.

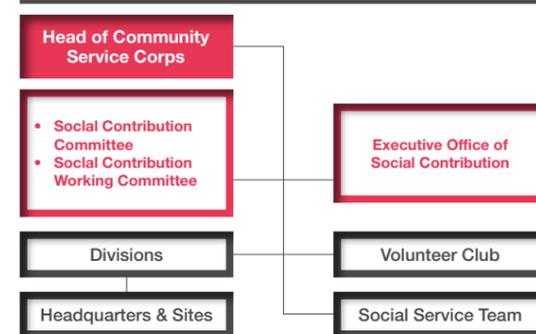
### Strategic Direction of Corporate Philanthropy

Major Areas	Core Values of Corporate Social Contribution	Beneficiaries	Main Activity
Environmental Protection	Clean	Neglected social class	Improve infrastructure for neglected social class
Convenience Facilities	Convenient		
Livelihood Safety	Safe		

## Organization for Social Contribution

In order to instill an active volunteering culture among our employees, Daewoo E&C operates Social Contribution Committee, Social Contribution Working Committee, and Executive Office of Social Contribution under the leadership of the Head of the Community Service Corps. In January 2016, we revised the operation guideline for Social Service Corps that applies to all employees, so as to specify the responsibilities and rights for the organization promoting social services and decide on financial resources, implementation measures, and support policy of Social Service Corps.

### Organizational Structure of Daewoo E&C Community Service Corps



## Achievements of Contribution Activities

### Annual Social Contribution Achievements

Category	Details	Unit	2013	2014	2015
<b>Social Contribution Achievements</b>	Annual number of participants	Number of persons	11,927	11,508	5,645
	Amount spent	KRW million	3,406	4,200	1,540
	- Operation costs	KRW million	16	1,170	50
	- Donations (Art, culture, etc.)	KRW million	3,390	3,030	1,490
	Average contribution hours per capita	Hours per capita	3.3	2.7	3.9
<b>Relay Volunteer Activities</b>	Culture & Arts	Times	99	6	5
	Others	Number of persons	1,826	424	241

## Contribution Programs

### Company-Wide Relay Volunteer Activities

As Daewoo E&C's signature social contribution program, the Relay Volunteer Activities represents a wide spectrum of our contribution activities, operated based on the voluntary participation of our employees. The Relay Volunteer Activities contribute to spread the culture of volunteerism within the company since the activities are neither limited to one-time event nor mere donations, but require increased participation of employees by nature as a relay program. In 2015, Daewoo E&C carried out five relay volunteer activities including housing facilities repair for the disabled and making and sharing kimchi out of love. We also have various other volunteer activities both domestic and overseas such as a campaign to knit hats for newborns and supporting local school remodeling work in Nigeria.

### Examples of Domestic and Overseas Volunteer Activities



#### Talent Donation of Decrepit Facility Renovation for Seoul Municipal Peace House

60 employees from the Corporate Management & Service Division and the Building Works Division visited 'Seoul Municipal Peace House,' a housing facility for the severely disabled located in Eunpyeong-gu, to renovate the decrepit facility. The mental stability room was too dark for the disabled to take rest. In order to solve this problem, the participants created a comforting environment with mats, mobiles, monitors and stereos so that patients can watch videos for mental stability. This was even more meaningful since 'Coin Collecting Fund' that has been raised from the employees' salaries by KRW 1,000 per month were used.

#### 'Sharing Love at Angels' Haven

In May 2015, 60 employees from the Power Plant Division, the HSE-Q Division, and RM Division visited Angels' Haven, a child welfare institution at Eunpyeong-gu, to clean the facility, spend time with the children and assist in teaching craft classes. Additionally, in November, 30 employees of the Strategic Planning Division and Finance Division made and delivered 300 heads of kimchi to Angels' Haven through 'Sharing Kimchi of Love' event.



#### Spring Picnic with the Disabled

In May 2015, followed by March 2014, employees from the Engineering & Procurement Service Division went to spring picnic to Lotte World at Jamsil with mentally handicapped people from a social welfare organization, 'Wusung Sanatorium for the Disabled in Godeok-dong, Sangdong-gu, Seoul.' The members enjoyed the rides and had a wonderful time with our employees.

**Domestic and Overseas Examples of Social Contribution Activities**



**'Knitting Hat Campaign for Saving Newborn Baby'**  
 In January 2015, 93 Daewoo E&C's employees and their families knitted hats for newborn babies suffering from hypothermia in Asian and Africa. This event, as the third time this year, was designed to share the meaning of volunteering with family members by participating in CSR activities together.



**Support for a Local School in Nigeria**  
 In May 2015, Daewoo Nigeria Limited Co., Ltd. visited Ebubu Community Junior Secondary School in Eleme, Port Harcourt to renovate the library and donate books. In order to help the community around the company, our employees painted the library building, replaced the gate and windows, and put desks and chairs. Moreover, Daewoo E&C installed a well in Eleme to resolve the chronic shortage of water and helped tackle challenges in the community by conducting various contribution activities with regard to education and culture.



**Future Society**

**Recruitment of the 12th University PR Ambassadors**

In April 2015, Daewoo E&C recruited the 12th 'Daewoo E&C University PR Ambassadors' for university students to demonstrate their creativity and passion. In a program called the 'Company,' participants got involved in a startup simulation where they planned and operated their own businesses. All profits from the business simulations were donated. At Daewoo E&C, we support university students by providing them with opportunities to have diverse experiences so that they can genuinely develop their talents rather than just adding one more line to their resumes.



**Daewoo E&C Event with Young Children**

Daewoo E&C holds event with children every year during summer vacation as a part of employee benefits. In the event held in 2015, 96 children of our employees went on a field trip to the headquarters in Gwanghwamun. They enjoyed the opportunity to experience their parent's work, which boosted their pride in the company and their parents. We have invited approximately 1,000 children to the company since 2004. This event has especially gained popularity with the overseas and domestic on-site workers who do not have much time with their family together. Yoon, Jin, a child of Younghoon Jin, the department head of the operation site in Damansara City, Malaysia, said, "I got to know better on what my father does for living," and "Although I cannot see him often since he works at the overseas operation site, I am proud of my hardworking father."



# APPENDIX

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(Economic/Environmental/Social)

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# Sustainability Performances

G4-22

## Economic Performance

Category	Details	Unit	2013	2014	2015	Notes
Orders	New orders	KRW 100 million	114,145	109,367	<b>130,736</b>	
	Order backlog	KRW 100 million	417,098	396,008	<b>402,929</b>	
Sales	Domestic sales ratio	%	65.4	68.0	<b>68.5</b>	
	Overseas sales ratio	%	34.6	32.0	<b>31.5</b>	
	Misc. sales ratio	%	0.0	0.0	<b>0.0</b>	
Sales by Business Division	Total sales	KRW 100 million	84,171	98,531	<b>98,775</b>	
	Civil Project Division	KRW 100 million	13,174	12,118	<b>11,932</b>	
	Building Works Division	KRW 100 million	21,176	22,938	<b>18,347</b>	
	Overseas Infrastructure Division	KRW 100 million	-	-	<b>11,604</b>	Overseas civil projects and building works
	Housing Division	KRW 100 million	19,996	28,909	<b>31,776</b>	
	Plant Business Division	KRW 100 million	15,708	15,169	<b>13,821</b>	
	Power Plant Division	KRW 100 million	13,932	12,877	<b>11,090</b>	
	Other	KRW 100 million	185	191	<b>204</b>	
Stakeholder Value Distribution	Employee	KRW million	863,472	864,828	<b>1,001,181</b>	
	Supplier	KRW million	6,580,902	7,371,570	<b>7,558,376</b>	
	Investor, shareholder	KRW million	103,767	111,193	<b>89,498</b>	
	Government	KRW million	127,569	48,429	<b>29,083</b>	
	Local Community	KRW million	3,406	4,200	<b>1,540</b>	
Board of Directors (BoD) Operation Performance	Meetings convened	Number of meetings	18	17	<b>14</b>	
	Agenda items	Number of meetings	66	48	<b>56</b>	
	Attendance	%	96.6	92.9	<b>98.1</b>	
Audit Committee Meetings	Number of meetings	5	5	<b>5</b>		
External Director Nominating Committee Meetings	Number of meetings	2	-	-		

\* Since 2014's Sales by business division in 2014 Annual Report are different from those in 2015 Annual Report, the figures in 2015 Annual Report are adopted.

## Environmental Performance

Category	Details	Unit	2013	2014	2015	Notes
Greenhouse Gas (GHG) Emissions	Total site emissions	t CO <sub>2</sub> -e	58,545	54,347		Scope 1+2
	Total building emissions	t CO <sub>2</sub> -e	12,929	8,886		Scope 1+2
	Total emissions	t CO <sub>2</sub> -e	71,474	63,233		Scope 1+2
	GHG intensity	t CO <sub>2</sub> -e/KRW 100 million	1.284	0.944		(Scope 1+2) / Domestic Sales
Energy Consumption	Total site consumption	TJ	1,156	1,076		
	Total building consumption	TJ	244	171		
	Total consumption	TJ	1,400	1,247		
	Energy intensity	TJ/KRW 100 million	0.026	0.019		Total consumption / Domestic Sales
Waste	Volume treated	ton	479,180	628,471	<b>410,081</b>	Domestic site
	Treatment cost	KRW 100 million	89	156	<b>108</b>	Domestic site

## Social Performance

Category	Details	Unit	2013	2014	2015	Notes
Total Employees		Number of persons	6,449	6,211	<b>6,174</b>	Executives, Contracted, Professionals, Full-time (foreigners excluded)
Type of Employment	Executives	Number of persons	64	47	<b>39</b>	
	Full-time	Number of persons	4,771	4,089	<b>4,053</b>	Specialized Executives included
	Contracted	Number of persons	384	389	<b>412</b>	Contracted Executives included
	Others	Number of persons	1,884	1,686	<b>1,670</b>	
Employment by Region	Domestic	Number of persons	5,194	5,002	<b>4,950</b>	
	Overseas	Number of persons	1,255	1,209	<b>1,224</b>	Excludes local employees at overseas sites
Employee Diversity	Male	Number of persons	5,739	5,591	<b>5,600</b>	
	Female	Number of persons	710	620	<b>574</b>	
	Seniors	Number of persons	488	432	<b>424</b>	Over 55 (born before 1960)
	Foreigners	Number of persons	110	75	<b>70</b>	Not included in total head count
	Disabled	Number of persons	77	64	<b>65</b>	
New Hires	Male	Number of persons	241	136	<b>90</b>	Full-time only
	Female	Number of persons	49	19	<b>20</b>	
Retirement/Resignation	Male	Number of persons	128	144	<b>135</b>	
	Female	Number of persons	8	8	<b>13</b>	
Training and Education Performance	Total training hours	Hours	757,485	627,428	<b>501,455</b>	
	Total cost	KRW 100 million	4,390	3,833	<b>4,067</b>	
	Training per person	Hours/person	117	101	<b>80</b>	Total training hours / total number of employees
Childbirth Leave	Persons on leave	Number of persons	204	178	<b>208</b>	
	Persons returned from leave	Number of persons	201	171	<b>204</b>	
	Return to work rate	%	99.0	96.0	<b>98.0</b>	
Parenting Leave	Persons on leave	Number of persons	35	36	<b>26</b>	
	Persons returned from leave	Number of persons	17	25	<b>22</b>	
	Average leave	Days	244	245	<b>275</b>	
Labor Union Membership		%	26.4	26.5	<b>26.3</b>	
Domestic	Converted accident rate <sup>1)</sup>	%	0.22	0.25	<b>0.22</b>	
Overseas	LTIR <sup>2)</sup>	Million hours	0.10	0.07	<b>0.17</b>	
Social Contribution Activity Outcomes	Annual participation	Number of persons	11,927	11,508	<b>5,645</b>	
	Total investment	KRW 100 million	3,406	4,200	<b>1,540</b>	
	Average activity time	Hours/person	3.3	2.7	<b>3.9</b>	
Customer Satisfaction Survey Result		Rank	3 <sup>d</sup>	4 <sup>th</sup>	<b>4<sup>th</sup></b>	National Customer Satisfaction Index (NCSI)

<sup>1)</sup> Converted accident rate = (Number of casualties, Converted / Number of full-time workers) x 100

<sup>2)</sup> Lost Time Injury Rate = (number of victims / total worked hours) x 1 million hours

# 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 2015 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 sustainability activities and performance data over the reporting period from 1<sup>st</sup> January to 31<sup>st</sup> December 2015. This also includes:

- Evaluation of the principles for defining the sustainability report content in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 4.0
- Evaluation of the process for determining material aspects 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>TM1</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 in April and May 2016. The site visits were made to DAEWOO E&C's Head quarter 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 outcomes of stakeholder consultation report and 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 G4. Further opinions with regards to the adherence to the Principles are made below;

## Stakeholder Inclusiveness

DAEWOO E&C has identified 8 internal and external stakeholder groups such as Customers, Local community, Employees, Government, and Shareholders, Subcontractors and Suppliers, Academia/Industry association/Institute, Future generation. 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. In addition, main responsibilities of DAEWOO E&C for respective stakeholder groups are addressed.

## Sustainability Context

The stakeholders can review DAEWOO E&C's vision (Vision 2025) and mid and long term strategy from the Report. The value creation model for stakeholder developed in 2015 is provided in the Report as well. DAEWOO E&C addresses how material issues grouped into 5 key aspects are managed and what was achieved in 2015, which would help the stakeholder understand the management approaches toward the material aspects.

## Materiality

DAEWOO E&C has conducted the materiality assessment to prepare the Report. The same issue pool as applied in 2014 materiality test was used on internal and external stakeholder survey to rate the material issues. 15 material issues 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 issues prioritized from the process are addressed in the Report.

## Completeness

The Report has covered sustainability performances of DAEWOO E&C and management approach to material issues for the reporting period. The reporting boundary includes the operations over which DAEWOO E&C implements management control in 2015 however the quantified performance data for the environmental aspects are collected from the operations only in Korea. DAEWOO E&C should consider expanding reporting boundary. The material environmental performance data generated from international projects should be reported once it is determined material.

## Accuracy and Reliability

The document allows the reader to examine both the positive and the negative trend of DAEWOO E&C's performance in 2015. The stakeholder can analyze changes in the sustainability performance over time. 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 Business Assurance is part of DNV GL Group and a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. Our environmental and social assurance specialists are present in over 100 countries. The assurance work was performed by independent team which meets DNV GL's competence requirements. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement.

May 2016  
Seoul, Korea

**In Kyoon Ahn**  
Country Representative  
DNV GL Business Assurance Korea Ltd.



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

# Assurance Statement on Greenhouse Gas Emissions

# GRI G4 Content Index



KSA-16-GHG-116

# 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 direct and indirect emissions.

### 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(2014-186) provided by Ministry of Environment, Republic of Korea
- Verification guideline for management of GHG emissions trading scheme(2014-153) provided by Ministry of Environment, 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.

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

GHG Emissions			
Year	Direct	Indirect	Total
2015	11,529	54,981	66,510

※ 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.)

April 01, 2016

PRESIDENT OF KSA

*Baek, Soo Hyun*

KOREAN STANDARDS ASSOCIATION

### General Standard Disclosure

Indicator Detail	Pages	Note
<b>Strategy and Analysis</b>		
G4-1 Provide a statement from the most senior decision-maker of the organization (incl. strategy relates to sustainability, impacts of the activities in relation to the stakeholders)	6-7, 8-9	
<b>Organization Profile</b>		
G4-3 Report the name of the organization	12	
G4-4 Report the primary brands, products, and services	18-19	
G4-5 Report the location of the organization's headquarters	12-13	
G4-6 Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	13, 39	
G4-7 Report the nature of ownership and legal form	12	
G4-8 Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	12-13, 19, 39	
G4-9 Report the scale of the organization, including: - Total number of employees - Total number of operations - Net sales (for private sector organizations) or net revenues (for public sector organizations) - Total capitalization broken down in terms of debt and equity (for private sector organizations) - Quantity of products or services provided	12, 32-33	
G4-10 a. Report the total number of employees by employment contract and gender. b. Report the total number of permanent employees by employment type and gender. c. Report the total workforce by employees and supervised workers and by gender. d. Report the total workforce by region and gender. e. Report whether a substantial portion of the organization's work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors. f. Report any significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries).	112, 130	
G4-11 Report the percentage of total employees covered by collective bargaining agreements.	118	
G4-12 Describe the organization's supply chain.	119-123	
G4-13 Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	12, 140	
G4-14 Report whether and how the precautionary approach or principle is addressed by the organization.	98-99	
G4-15 List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	137	
G4-16 List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: - Holds a position on the governance body - Participates in projects or committees - Provides substantive funding beyond routine membership dues - Views membership as strategic	139	
<b>Identified Material Aspects and Boundaries</b>		
G4-17 a. List all entities included in the organization's consolidated financial statements or equivalent documents. b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	13, 39, 139	
G4-18 a. Explain the process for defining the report content and the Aspect Boundaries. b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	26-27, 140	
G4-19 List all the material Aspects identified in the process for defining report content.	27	
G4-20 For each material Aspect, report the Aspect Boundary within the organization, as follows: - Report whether the aspect is material within the organization - If the Aspect is not material for all entities within the organization (as described in G4-17) - Report any limitations regarding the aspect boundary within the organization	26-27	
G4-21 For each material Aspect, report the Aspect Boundary outside the organization, as follows: - Report whether the Aspect is material outside of the organization - If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material - Report any specific limitation regarding the Aspect Boundary outside the organization	26-27	
G4-22 Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	38, 130	Change in scope of data; previous calculation error
G4-23 Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	140	
<b>Stakeholder Engagement</b>		
G4-24 Provide a list of stakeholder groups engaged by the organization.	25	
G4-25 Report the basis for identification and selection of stakeholders with whom to engage.	25	
G4-26 Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	25	
G4-27 Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	26-27, 31, 53, 59, 69, 83	
<b>Report Profile</b>		
G4-28 Reporting period (such as fiscal or calendar year) for information provided.	140	
G4-29 Date of most recent previous report (if any).	140	
G4-30 Reporting cycle (such as annual, biennial).	140	
G4-31 Provide the contact point for questions regarding the report or its contents.	140	
G4-32 GRI Index a. Report the 'in accordance' option the organization has chosen. b. Report the GRI Content Index for the chosen option (see tables below). c. Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines.	132-133, 135-136, 140	
G4-33 a. Report the organization's policy and current practice with regard to seeking external assurance for the report. b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided. c. Report the relationship between the organization and the assurance providers. d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.	132-133, 140	
<b>Governance</b>		
G4-34 Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts	20-21, 55	
<b>Ethics and Integrity</b>		
G4-56 Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	55	

# GRI G4 Content Index

## Specific Standard Disclosure

Material Aspects	DMA and Indicators	Indicator Detail	Pages	Note
<b>Economy</b>				
Economic Performance	DMA	Generic disclosures on management approach	31	
	G4-EC1	Direct economic value generated and distributed	32-33, 38	
	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	75	
	G4-EC4	Financial assistance received from government	None	
Indirect Economic Impacts	DMA	Generic disclosures on management approach	38	
	G4-EC7	Development and impact of infrastructure investments and services supported	34-35	
	G4-EC8	Significant indirect economic impacts, including the extent of impacts	38	
<b>Environment</b>				
Emissions	DMA	Generic disclosures on management approach	69, 75	
	G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	74, 130	
	G4-EN16	Indirect greenhouse gas (GHG) emissions (Scope 2)	74, 130	
	G4-EN18	Greenhouse gas (GHG) emissions intensity	130	
	G4-EN19	Reduction of greenhouse gas emissions	130	
	G4-CRE3	Greenhouse gas emissions intensity from buildings = Annual kilograms CO <sub>2</sub> equivalent in total/Floor area (m <sup>2</sup> ) or number of people in total	130	
	G4-CRE4	Greenhouse gas emissions intensity from new construction and redevelopment activity = Annual CO <sub>2</sub> equivalent emissions (tons) in total/Annual turnover from the construction activities in total (million)	130	
Effluents and Waste	G4-DMA	Generic disclosures on management approach	69, 109	
	G4-EN22	Total weight of waste by type and disposal method	74, 109	
	G4-EN23	Total number and volume of significant spills	None	
	G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	109-110	
Products and Services	DMA	Generic disclosures on management approach	69, 77	
	G4-EN27	Extent of impact mitigation of environmental impacts of products and services	78-81	
Compliance	DMA	Generic disclosures on management approach	69-70	
	G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	72	
<b>Society</b>				
<b>Labor Practices and Decent Work</b>				
Labor/Management Relations	DMA	Generic disclosures on management approach	118	
	G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	118	
Occupational Health and Safety	DMA	Generic disclosures on management approach	59-60	
	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	66	
	G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	64	
<b>Society</b>				
Anti-Corruption	DMA	Generic disclosures on management approach	53-54	
	G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	56	
	G4-SO4	Communication and training on anti-corruption policies and procedures	55-56	
Anti-Competitive Behavior	DMA	Generic disclosures on management approach	53, 122-123	
	G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	122-123	
Compliance	DMA	Generic disclosures on management approach	53-54	
	G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	None	
<b>Product Responsibility</b>				
Customer Health and Safety	DMA	Generic disclosures on management approach	83-84	
	G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	85	100% in terms of quality management
	G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	None	
Product and Service Labeling	DMA	Generic disclosures on management approach	83	
	G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	78-81	
	G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	None	
	G4-PR5	Results of surveys measuring customer satisfaction	88	
	G4-CRE8	Type and number of sustainability certification, rating and labelling schemes for new construction, management, occupation and redevelopment	81	
Compliance	DMA	Generic disclosures on management approach	83	
	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	None	

# United Nations Global Compact



In 2012, Daewoo E&C joined the UN Global Compact (UNGC), a strategic policy initiative for businesses that are committed in their corporate social responsibilities. By upholding the 10 Principles on human rights, labor, environment, and anti-corruption and participating in the global standards, we show our dedication towards corporate social responsibility.

## UN Global Compact Ten 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>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>	55, 118
	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>Abides by Korean Labor Standards Act</li> <li>Operates Labor Union and Joint Labor-Management Committee</li> </ul>	118
	4. Businesses should uphold the elimination of all forms of forced and compulsory labor.	<ul style="list-style-type: none"> <li>Abides by the International Labor Organization (ILO)'s Convention Concerning the Prohibition and Immediate Actions Toward the Elimination of the Worst Forms of Child Labor</li> <li>Abides by Korean Labor Standards Act</li> </ul>	118
	5. Businesses should uphold the effective abolition of child labor.		
Environment	6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.	<ul style="list-style-type: none"> <li>Implements fair evaluation and compensation</li> <li>Operates family-friendly welfare and benefits program</li> </ul>	112, 114-115
	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>Analyzes risks and opportunities in terms of climate change</li> </ul>	70, 75
	8. Businesses should undertake initiatives to promote greater environmental responsibility.	<ul style="list-style-type: none"> <li>Environmental compliance and accident minimization</li> <li>Operates a Waste Management Company Registration System</li> <li>Environment campaigns for each division, team and site</li> </ul>	72, 109-110
Anti-Corruption	9. Businesses should encourage the development and diffusion of environmentally friendly technologies.	<ul style="list-style-type: none"> <li>Developed Green Premium Roadmap</li> <li>Developed CCS technology</li> <li>Entered the Chinese market with Daewoo E&amp;C's air pollution elimination technology</li> </ul>	78-79
	10. Businesses should work against corruption in all its forms, including extortion and bribery.	<ul style="list-style-type: none"> <li>Implemented CP</li> <li>Autonomously promoted CP in each business division</li> <li>Operated Ethics Help Line</li> <li>Conducted ethical management campaigns</li> </ul>	55-57

# ISO 26000

ISO 26000 is an international standard for Corporate Social Responsibility that is comprised of 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 sustainable management and fulfill roles and responsibilities as a corporate citizen.

## ISO 26000 Core Subject and Related Activities

Core Subject	Issues	Related Activities	Pages	
Governance		Operated Audit Committee and Outside Director Recommendation Committee under the Board of Directors	20-21	
Human Rights	Due diligence	Operated Ethics Help line	55-56	
	Human rights risk situations	Conducted an ethical management campaign	57	
	Avoidance of complicity	Included sustainability factors in supplier assessment, penalized unqualified suppliers	121	
	Resolving grievances	Operated system for receiving grievances including Ethics Help line	122	
	Discrimination and vulnerable groups	Fair evaluation and compensation	112	
	Civil and political rights	Complied with Korea Labor Standards Act, ILO standards	118	
	Economic, social and cultural rights	Operated family-friendly programs, childbirth and parenting leave policy	114-115	
	Fundamental principles and rights at work	Complied with Korea Labor Standards Act, ILO standards, conducted sexual harassment prevention training	118	
Labor Practices	Employment and employment relationships	Complied with Korea Labor Standards Act, ILO standards	118	
	Conditions of work and social protection	Improved working conditions, family-friendly programs, conducted employee satisfaction surveys	114-115	
	Social dialogue	Operated Labor Union and Joint Labor-Management Committee	118	
	Health and safety at work	Operated Health and Safety Committee, Permit To Work (PTW) system for risky operations, and risk evaluation	60, 62	
	Human development and training in the workplace	Provided training and education based on talent development strategy	113	
	Environment	Prevention of pollution	Enhanced HSE management system audits including special inspections on Dust Scattering management	108-110
Sustainable resource use		Made eco-friendly procurement	111	
Climate change mitigation and adaptation		Strengthened GHG Inventory System, increased disclosure on environmental information	76	
Protection of the environment, biodiversity and restoration of natural habitats		Complied with environmental regulation, established wild animal protection guidelines	72, 109	
Fair Operating Practices		Anti-Corruption	Introduced CP	56
	Responsible political involvement	Signed in and participated in relevant associations and academic societies of business divisions	139	
	Fair competition	Introduced Fair Trade CP	56	
	Promoting social responsibility in the value chain	Applied sustainability factors in supplier evaluation, penalized unqualified suppliers	121	
	Respect for property rights	Operated Daewoo E&C 'Shinmungo,' regional subcontracting law training	122-123	
	Customer Issues	Fair marketing, factual and unbiased information and fair contractual practices	Complied with domestic and foreign laws on advertisement	88
Protecting customers' health and safety		Acquired global quality certifications (ISO 9001, KEPIC, ASME, NBBI, etc.)	85	
Sustainable consumption		Acquired Green Building certification, established and implemented Green Premium Roadmap	81	
Customer service, support, and complaint and dispute resolution		Operated integrated call center, conducted pre-move-in quality control activities, operated Family Garden	88-89	
Customer data protection and privacy		Acquired ISO 27001, inspected management status of personal information, established PC/Mobile security	92	
Access to essential services		Provided Life Premium services to meet basic needs	90	
Education and awareness		Operated move-in exhibition and Family Garden	88-89	
Community Involvement and Development		Community involvement	Conducted company-wide community service relay and social contribution activities in overseas sites	125-126
		Education and culture	Supported a local school in Nigeria	126
		Employment creation and skills development	Diversified the nationality of foreign employees, engaged in community when proceeding with overseas projects	41-43
	Technology development and access	Conducted Information and Communication Technology (ICT) integrated business	49	
	Wealth and income creation	Expanded local hiring, complied with local labor standards	41	
	Health	Community Service at Seoul Municipal Peace House	125	
Social investment	Built national infrastructure such as roads and ports	34-35		

# Membership

G4-17

Division	Associations and Institutes
Finance Division	Korea Electric Engineers Association, Engineering Financial Cooperative, Korea Engineering and Consulting Association
Corporate Management & Service Division	SeriCEO, Construction Industry Human Resource Manager Council, Korea Emergency Plan, National Association of Reservist Battalion Commander, National Commander's Council, Korean Human Resource Development Association, Korea Construction Engineers Association, Korea Employers Federation, Korea International Trade Association, Korea Fire Facility Association, Korea Software Technology Association, Korea Personnel Improvement Association, Korea Information Systems Audit and Control Association
Global Business Management Division	Korea Construction Association, Korea Facility Management Association, Korea Specialty Contractors Association, The Construction Management Association of Korea, Korea Federation of Construction Contractors, Construction & Economy Research Institute of Korea, Korea Electrical Contractors Association, Korea Information and Communications Contractors Association, Korea Plant Industries Association, Korea-Vietnam Friendship, Korea-Arab Society, Korea-Algeria Association, International Contractors Association of Korea
Overseas Infra Project Division	International Hydropower Association
Civil Project Division	Korean Society of Civil Engineers, Road Engineering Association of Asia & Australasia, Korean Society of Steel Construction, Korea Institute of Construction Engineering and Management, Korean National Committee on Irrigation and Drainage, Korea Road Forum, Korean National Committee on Large Dams, Korea Road & Transportation Association, 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
Building Works Division	IBS Korea, KMU Industry-Academic Cooperation Foundation, Korea Green Building Council, Architectural Institute of Korea, 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
Housing Division	Korea Remodeling Association, 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
Plant Business Division	Korea Gas Union, Korea Plant Industries Association (PEA Club), Korea Institute of Plant Engineering & Construction
Power Plant Division	Korea Electric Association, Korea Coating Experts Society, Korean Radioactive Waste Society, Korea Atomic Industrial Forum, Korean Nuclear Society, Korea Nuclear Association For International Cooperation, Korea Project Management Association, Korea Plant Industries Association (Plant Business Group)
Engineering & Procurement Service Division	Engineering Financial Cooperative, Korea Engineering & Consulting Association, Korea Electric Engineers Association
Strategic Planning Division	Korea Chamber of Commerce & Industry, Federation of Korean Industries, Korea-Indonesia Partnership Council, Korea Federation of Construction Contractors
HSE-Q Division	Construction Safety Organization of CEOs, Construction Safety Manager Committee, Association of Construction OHS Manager, Maekyung Safety & Environment Institute, Korea Society for Construction Quality, Korea Construction Quality Association, Korea Environment Construction Association, KOSHA 18001 Council, Korea Safety Management & Science, KEPIC WEEK Contribution (Korea Electric Association)
Institute of Construction Technology	International Association for Bridge and Structural Engineering, International Federation for Structure Concrete, American Concrete Institute, American Society of Civil Engineers, Architectural Institute of Japan, Japan Society of Civil Engineers, Korea Construction Transport New-Technology Association, Korea Institute of Science and Technology Information, Korea Industrial Technology Association, Korea Concrete Institute, Council on Tall Buildings and Urban Habitat, Korea Carbon Capture and Storage Association
Management Review Division	UN Global Compact

# Consolidated Subsidiary List

(As of December 31, 2015, Unit: KRW million)

Company Name	Main Business	Total Assets
Daewoo Steel Tech Co., Ltd	Steel structure manufacture, equipment lease	81,916
Daewoo Songdo Hotel Co., Ltd	Hotel business	168,123
PRUGIO Service Co., Ltd	Construction and maintenance	15,682
Korea Infrastructure Management Co., Ltd	Operation of roads and related facilities	7,572
Foodream Co., Ltd	Food and beverage industry	4,458
Busan Hi-technology Industrial Complex Development Co., Ltd	Real estate development and sales	1,571
Gangdong Project PFV Co., Ltd	Non-housing building construction	40,478
Daewoo Energy Co., Ltd	Power plant facilities maintenance	-
Daewoo America Development, Inc.	U.S. development business	5,688
Daewoo Tripoli Investment& Development Co.	Libya Tripoli hotel	180,913
THT Development Co., Ltd	Real estate investment and development	206,597
Saipan Lulau Development, Inc.	Saipan golf resort	66,278
Daewoo E&C Nigeria, Ltd.	Nigeria power plant business	-

# About This Report

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This is the fifth consecutive sustainability report by Daewoo Engineering and Construction Co., Ltd. since 2012. Our annual sustainability reports are a means for us to reflect on the sustainability of our business, and to communicate our efforts and accomplishments on the issues at hand to external stakeholders. Daewoo E&C, the 'For the People, Better Tomorrow,' will continue to uphold our commitment and fulfill our duties as a corporate citizen, growing together with our stakeholders.

## • Reporting Standard

This report is based on the Global Reporting Initiative (GRI) G4 Guidelines and Construction & Real Estate Sector Supplement. In terms of the 'accordance' principles set forth in the G4 Guidelines, this report satisfies the 'In Accordance - Core' option of disclosure.

## • Reporting Period

This Report covers key sustainability activities and achievements from January to December 2015 (Qualitative performance data includes those up to June 2016). In terms of quantitative performance, data for the last three years is presented for time series analysis.

## • Reporting Scope

This report covers all sites and buildings in which our operations take place - both domestic and overseas. Quantitative environmental data, however, is limited to domestic sites and buildings in use as of 2015 (328 sites and 6 buildings in total). Financial performance is reported based on separate standards of K-IFRS.

## • Questions about the Report

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