

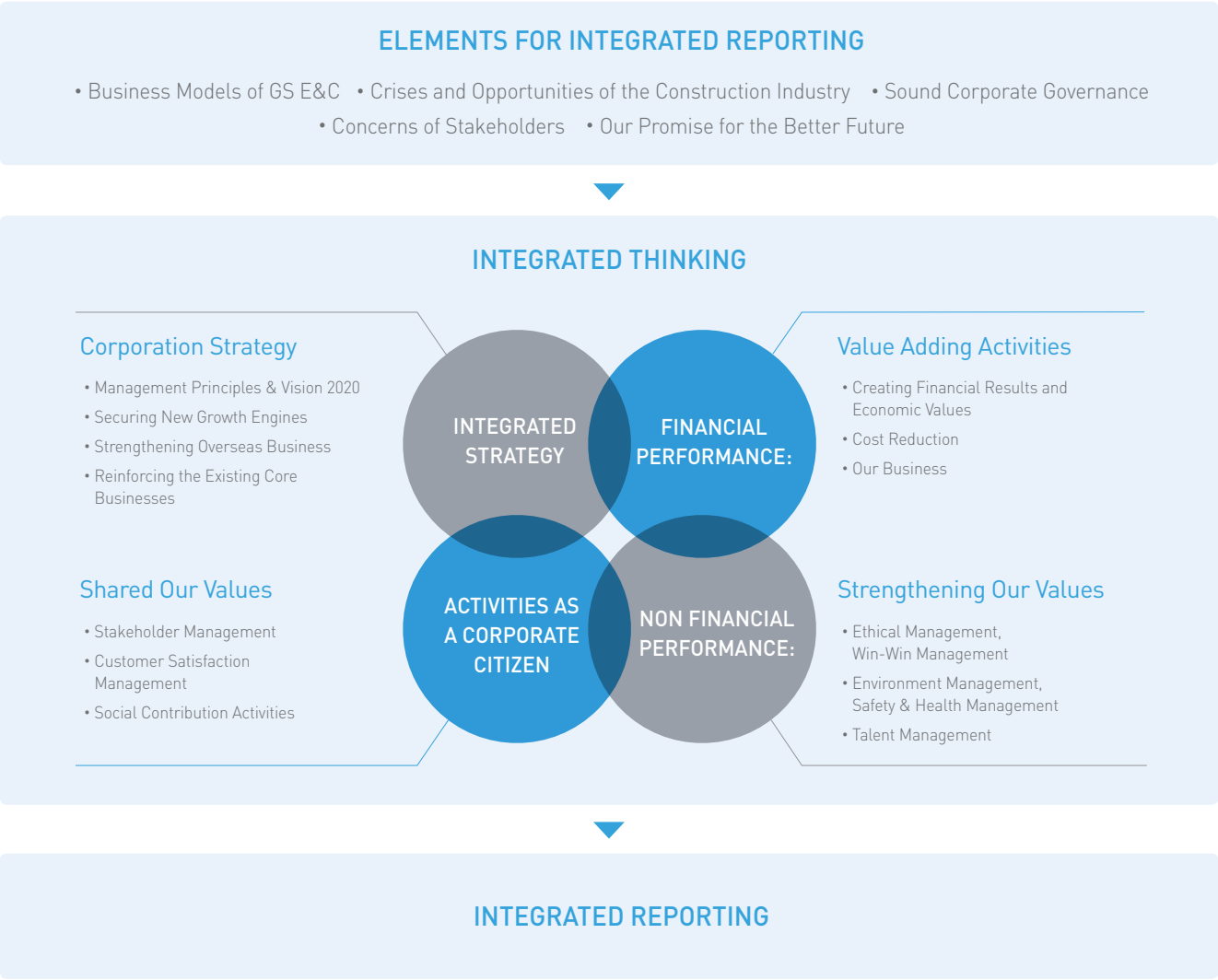
GS E&C INTEGRATED REPORT 2012

www.gsconst.co.kr

GS E&C INTEGRATED REPORTING

This report aims to incorporate our strategies and financial and non-financial achievements and to share with stakeholders.

Integrated Reporting Map



CEO's Message

“We will make our best effort to become a sustainable global leader that grows with you.”

Greetings, Stakeholders

GS E&C has been providing values needed for our customers and community while making a solid growth thanks to well-balanced portfolio covering plant, power, environment, architecture, and housing business since its foundation in 1969.

The year 2012 was extremely challenging for us. Although sales increased slightly, profit declined from the previous year due to a rise in cost rate of the projects won over fierce competition since 2010.

As global economic recession persists and growth slows down, competition in the construction industry is expected to become even harsher in 2013. However, GS E&S has grown as a global company overcoming numerous difficulties in business environment for the last 44 years. We are certain that we are able to survive the current adversity as long as we take this crisis as an opportunity to look back on our past, grow, and respond to the challenge together with all our members.

GS E&C Growth Strategy is based on Vision 2020.

We are implementing action plans in the direction of the three main strategies of “Reaching full potential of the current operations,” “Nurturing new growth drivers,” and “Securing core competence” and having visible results including the M&A of the Spanish desalination facility maker Inima, and the signing an MOU with the Algerian state energy firm Sonatrach.

For a successful achievement of our Vision 2020, strong corporate culture is more important than anything else.

Corporate culture is one of the core competitiveness of a company to unite its members. We are committed to instilling our core values – “Great Challenge,” “Great Innovation,” and “Great Partnership”- into our employees’ way of thinking and doing their jobs. Communication is also important. We can prove our trust and sincerity only when we listen to the voice of our stakeholders including customers, shareholders, suppliers, and workers on the construction site as well as our employees and apply their opinions to management activities.

We will continue our best effort to become a sustainable global leader that grows with you.

July 2013

GS E&C Corp.

President & CEO

Byeong-Yong Lim

안병용



COMPANY PROFILE

GS E&C has been making a constant growth thanks to a well-balanced portfolio covering plant, power, environment, architecture, and the housing business since its foundation in 1969. We will remain committed to advancing toward a top-tier company that puts the priority on creating great customer value and being the best partner, growing together with stakeholders.

General Information	
Corporate Name	GS Engineering & Construction Corp. [GS E&C]
Date of Establishment	December 19, 1969
Representative	Byeong-Yong Lim
Head Office	GS Yeokjeon Tower, 537 Namdaemun-ro 5-ga, Jung-gu, Seoul
No. of Major Domestic and Overseas Sites	Domestic: 251 sites, Overseas: 49 sites, Total: 300 sites
Main Businesses	Plant, power & environment, civil engineering, housing, architecture, and development
Credit Ratings	AA- by Korea Ratings (as of Dec. 2012)
No. of Employees	6,727(as of Dec. 2012)

Domestic & Overseas Subsidiaries		
Division	Name	Main Businesses
Domestic	Parnas Hotel Co., Ltd.	Hotels & travel
	EziVille Inc.	Value-added networks
	Xi service	Construction
	G-Estec Co., Ltd.	Construction
	GLS Service	Services
	GCS Plus	Services
	BSM	Processing services
	GS O&M	Services
	Sanglak Food Co., Ltd.	Contract food service management
	Eunpyeong Saegil Co., Ltd.	Construction
Overseas	GS E&C Nanjing Co.,Ltd.	Construction
	GS Nha Be Development One-Member LLC	Construction
	GS Saigon Development One-Member LLC	Construction
	GS E&C India Private Ltd.	Construction
	GS (Cambodia) Development Co.,Ltd.	Construction
	GS Construction Arabia Co.,Ltd.	Construction
	GS Saudi Co., Ltd.	Construction
	GS E&C Poland SP.ZO.O	Construction
	GS E&C Construction Canada Ltd.	Construction
	GS E&C Panama S.A.	Rental
	GS Inima Environment S.A	Construction

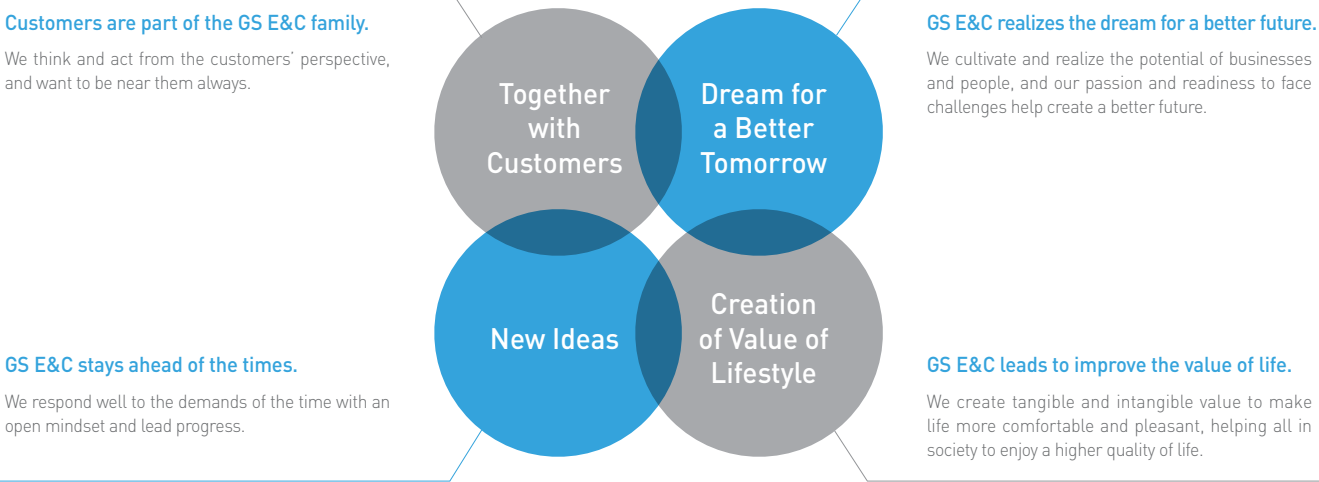


VISION

Mission Statement

The mission statement of GS E&C is to Create Value of New Lifestyles and Dreams of a Better Tomorrow with Customers. The statement demonstrates our commitment to creating value that can be shared among various stakeholders and fulfilling responsibilities as a corporate citizen.

“Best Partner & First Company”



Core Values

Core values of the company is a medium through which employees share common values and a foundation for realizing our corporate vision and mission statement. GS E&C will lay the groundwork towards sustainable growth and development by maximizing organizational competence based on core values of Great Innovation, Great Challenge and Great Partnership.



Vision 2020

Our vision aims to become the Best Partner and the First Company by creatively and passionately building value for the world and earn trust to grow as a sustainable global company.

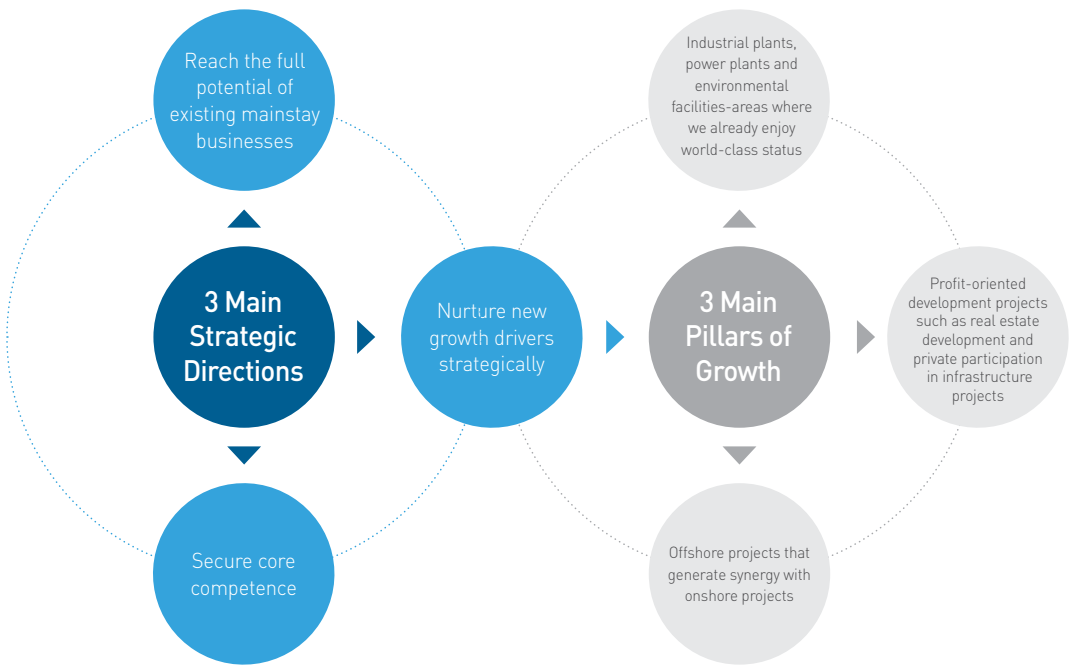


Strategic Directions and Blueprint for GS E&C 2020

Three main strategic directions and the blueprint for GS E&C 2020 are summarized as followed:
First, realize the highest revenues possible based on the maximum operational efficiency for current operations; Second, nurture new growth engine businesses strategically. GS E&C will focus on the 3 Main Pillars of Growth for the next ten years: (1) industrial plants, power plants and environmental facilities including nuclear, coal-fired/ combined cycle thermal power plants, seawater desalination plant, and natural gas liquefaction—areas where we already enjoy world-class status; (2) profit-oriented development projects such as real estate development and private participation in infrastructure projects; and (3) offshore projects that generate synergy with onshore projects. Finally, to successfully follow the two strategic directions (strengthening current operations and nurturing new businesses), we need to secure core competence to enhance fundamental competitiveness.
GS E&C aims to distance itself from the past in terms of financial performance, portfolio and growth base. Our business goal is to grow 3~4 times the current financial results. As for portfolio, we set global strategies to expand technology-intensive projects and to increase the proportion of overseas projects up to 70%. To achieve these goals, we will pursue global operation and increase M&A expanding the proportion of local employees to over 50% of our workforce including executives and managers and bringing in global leaders in the industry as our subsidiaries.

VISION

Vision 2020: 3 Main Strategic Directions and Pillars of Growth



2013 Management Strategic Directions

To resolve project risks and strengthen internal soundness, while domestic and global economic slump persist, we will set the management direction of “bolstering competitiveness by practicing basic principles” to carry our business in 2013.

Management Environment

Market Outlook
<ul style="list-style-type: none">• Delay in economic recovery of advanced nations and slowing economy in emerging markets• Tightening global austerity measures and financial regulation• Persistent uncertainty in key economic indicators such as exchange rate/ oil price• Lasting weakness in the domestic construction market• Delay in real estate market recovery

Management Strategic Directions

Bolstering competitiveness by practicing basic principles		
Key Action Plans	Strengthening business abilities	<ul style="list-style-type: none">• Enhance project skills• Establish task-oriented operation system
	Cost Innovation	<ul style="list-style-type: none">• Create results from cost innovation activities• Retrenchment
	Cash Flow, Profit-focused management	<ul style="list-style-type: none">• Cash Flow-centered management• Profit-focused order winning strategy• Invest in the future growth engines

2012 Vision and Performance of Sustainability Management

“Pursue Growth by Creating Sustainable Value Together Vision with Stakeholders.” Details are covered in the related pages. We set our strategic directions toward sustainability as “Establish a low-carbon, green management system,” “Strengthen the profit-oriented, new growth regime,” and “Expand communication with stakeholders” in association with GS E&C’s core values of Great Innovation, Great Challenge and Great Partnership to take our sustainability management to the level of global standards. Now we are implementing the related action plans.

In addition, GS E&C operates a dedicated organization for sustainability management. All sustainability management-related activities are carried out under the supervision of the Sustainability Management Committee and the Management Committee as the top decision-makers with the participation of with various related organizations. The Head Office and all other operations, both domestic and overseas, including subsidiaries and branches, affiliates and field offices, carry out sustainability management activities in GS E&C.

Vision “Pursue Growth by Creating Sustainable Value Together Vision with Stakeholders”

Strategic Directions	Specified Strategies	Action Plans	Major Achievements in 2012	Major Objectives in 2020	page
Strengthen Growth Regime	Reach the full potential of existing mainstay businesses	<ul style="list-style-type: none">• Grow by diversifying customer base for Oil refineries and Petrochemical plant• Bolster fundamental competitiveness (New orders/ Cost)• Develop global technology-intensive civil engineering projects	<ul style="list-style-type: none">• M&A and PMI with the Spanish company, Inima• Signed an MOU with the Algerian company, Sonatrach• Carried out advanced BIM-based projects	<ul style="list-style-type: none">• Secure global leadership in oil refineries/ petrochemical projects as one of the top three companies• Gain solid leadership in the technology-intensive market; core technologies of plant/power/environment• Expand technology-oriented civil engineering projects in the global market	29, 31- 33
	Fostering new growth engine business strategically	<ul style="list-style-type: none">• Expand a presence in the overseas core markets• Carry out offshore business• Expand development projects	<ul style="list-style-type: none">• Moved into the overseas coal/combined-cycle power plant• Qualified as arranger for developing nuclear power plant• Signed an MOU with KOGAS to enter the global liquefaction market	<ul style="list-style-type: none">• Solidify the position as a leading global FPSO contractor• Spread into related areas such as FLNG and Subsea	25-28
	Secure core competence	<ul style="list-style-type: none">• Secure core technologies through R&D• Cost innovation	<ul style="list-style-type: none">• Conducted 17 government –commissioned projects• Cost innovation activities	<ul style="list-style-type: none">• continues to create technology-based future growth drivers• Lay groundwork for cost innovation and obtain innovation capabilities	24-25, 30
Establish a Low-carbon, Green Management System	Advanced environment management Establish a system	<ul style="list-style-type: none">• Improve environment management policies and guideline• Operation of domestic and overseas environment performance management system	<ul style="list-style-type: none">• Operated and improved green management system• Expand internationally certified environment management experts• Achieved the KPIs of corporate-wide green management	<ul style="list-style-type: none">• Enhance green management system• Achieve the KPIs of corporate-wide green management	51, 40-47
	Expand green business	<ul style="list-style-type: none">• Expand green business• Expand green R&D	<ul style="list-style-type: none">• Realized technology commercialization rate of 44.7%• Applied 108 new technologies to 89 construction sites	<ul style="list-style-type: none">• Foster green projects into main businesses	36-39
	Strengthen response to climate change	<ul style="list-style-type: none">• Manage domestic and overseas GHG inventory• GHG reduction activities• Respond to climate change	<ul style="list-style-type: none">• Create the Energy Management Committee• Assess GHG emission and find cases of emission reduction at domestic and overseas sites• Wage energy saving campaigns at the headquarters and construction sites	<ul style="list-style-type: none">• Reach 100% coverage of domestic and overseas GHG inventory• Realized the goal of GHG reduction 100%• Minimize risks (cost, reputation) through proper response to climate change	50-51
Expand Social Responsibilities	Strengthen win-win cooperation	<ul style="list-style-type: none">• Enhance win-win cooperative system• Increase social contribution	<ul style="list-style-type: none">• Improved cash payment ratio to 76% (cash equivalent payment ratio: 100%)• Supported the dissemination of green management• Conducted strategic CSR activities	<ul style="list-style-type: none">• Achieve zero delinquency rate of major suppliers• Increase the proportion of strategic social contribution to over 30%	62-65 70-73
	Established an advanced corporate culture	<ul style="list-style-type: none">• Strengthen ethical management• Enhance anti-corruption and anti-trust policies• Disseminate core values to more employees	<ul style="list-style-type: none">• Cases of ethical standard violation decreased• Can Happy Family program	<ul style="list-style-type: none">• Zero cases of ethical standard violation• Zero cases of anti-corruption and anti-trust violation• Enhance employee satisfaction	78-79 68-69
	Enhance safety	<ul style="list-style-type: none">• Operate advanced safety education system• Strengthen domestic and overseas safety management system	<ul style="list-style-type: none">• Created the safety innovation team• Revamped curriculum for Safety Innovation School• Conducted visiting consulting service	<ul style="list-style-type: none">• Realize zero fatality	54-57

External Evaluation of Sustainable Management

Listed on the DJSI World Index for 3rd Year in a Row, Recognized as the World Sector Leader in the Consturction Category

GS E&C has been listed on the Dow Jones Sustainability Index World for the third consecutive year since 2010 and selected as the world sector leader in the construction category. In addition, the Company was awarded the gold medal at the 2013 Sustainability Olympics at the World Economic Forum in Davos. Going forward, we will fulfill our obligations as a leader in sustainability management practic

Listed on the DJSI World in 2012
Supersector Leader



Won the gold at the 2013
Sustainability Olympics



OUR BUSINESS

GS E&C will become a sustainable company by bolstering competitiveness by practicing basic principles.

GS E&C has pursued management activities to become a global top-tier company by establishing Vision 2020 and is delivering “the values of the world” to stakeholders through these efforts. However, our business performance was rather slow due to the prolonged global economic recession and heated competition between construction companies. We will commit ourselves to surviving the current crisis and becoming a sustainable global company based on the experience for the past 40 years, for which we has grown as a global player overcoming a number of management difficulties.

12 Plant • 14 Power • Environment • 16 Civil Engineering • 18 Architecture • Housing
20 Technology



Plant



We aim to become the Plant Business Division contributing to raising the quality of life of humankind through win-win growth with suppliers as well as global customers.



“Values of the World” We aim to deliver through the Plant Business

GS E&C is recognized as a competitive EPC company in the global market thanks to its technological competence and operational abilities accumulated from many large-scale projects in the refinery, petrochemical, and gas processing industry it successfully conducted at home and abroad. However, we will not rest on our laurels and continue our efforts to diversify our business portfolio and the market through a thorough risk analysis as a global leading company in the plant industry.

GS E&C is taking full advantage of its 40-year experience and technological knowhow to provide products and facilities customers needs and wants and to create social values for local communities. Firstly, we help supply energy source required for the development of the community and the improvement of residents' quality of life. Not only that, GS E&C is playing an important role in increasing export of the nation and growing together with suppliers through collaboration with the manufacturers of machinery and materials related to the plant business. At the same time, we are taking the lead in mitigating the unemployment problem by creating new jobs through business expansion.

2012 Business Environment of the Plant Industry

The plant market has witnessed increasing uncertainties due to the global economic recession including the European sovereign debt crisis. As a result, the issuance of new orders for some large projects was delayed or cancelled with decreasing investment. At the same time, competition for winning new orders between domestic EPC companies is heightening. To deal with this challenge, GS E&C is trying to focus on profitable projects instead of blindly pursuing large projects. In addition, we concentrate on the analysis and response to risks of the past projects as well as creating business opportunities in the current market.

2012 Performance Summary

In 2012, the Plant Division won orders for the Rabigh-II project in Saudi Arabia and UHV project in Thailand, strengthening the stature of GS E&C in the Middle East, the world's largest market for new plant construction and Asia, an emerging market. In addition, winning orders for the Vietnamese NSRP project enabled us successful inroads into a new regional market receiving new order of KRW 3.2 trillion. However, we were faced with unexpected risks in machinery, materials and construction cost in implementing projects. Also, fierce competition between domestic EPC companies for the last two or three years led a drop in profit in overseas market, especially in the Middle East.

2013 Outlook and Plans

The decline in new orders last year resulted from the competition in the plant business but we expect a fair profit rate in the future as we were able to win orders for projects which guarantee a proper margin. However, we stay alert and establish a range of measures to detect and resolve potential risks of individual projects to deal with ever-present risks such as a rise in raw material price and volatility in exchange rate. Also, we will implement stronger strategies to cut cost by strengthening VE activities and change management activities, running a dedicated organization, and reducing operational cost.

In order to pursue our mid-term and long-term visions, we will accelerate preparation to move into the gas liquefaction business, participate in marine plant projects and continue fostering experts in the related fields. We need to grow in the technology-intensive market such as refinery and petrochemical plant to the maximum and solidify our global leadership to reach the full potential of our existing mainstay businesses.

New orders in the plant business mainly arise from the following three types of owners, who respectively focus on; technology, relationship, or financial benefits. Until now, GS E&C tended to target the last two types of owners based on a customer network and price competitiveness. From now on, we will expand our customer base to include those who put priority on technology, quality and trust.

Unit: billions of KRW

New Orders



3,195

Order Backlog



12,197

Sales Revenues



3,953

Gross Profit



234



01 UAE Green Diesel

- Location : Ruwais, UAE
 - Vacuum unit 35,000
 - Hydrocracker 41,000
 - Gas oil hydrotreater 44,000
- Project Period : Jan. 2008-Nov. 2011

02 Manifa Gas Facilities Project

- Location: Khursaniyah, Saudi Arabia
 - Gas inlet facilities, gas processing: 90 MMSCFD
 - Condensate stripping : 66,400 BPSD
 - SRU : 900 TPD×2
- Project Period : Aug. 2008-Oct. 2011

03 IRPC Project

- Location: Thailand
- Project Period: Aug. 2010-Dec. 2012

Power • Environment

“
Playing a lead role in
domestic and overseas
power and environment
market by nurturing
creative talents and
accumulate technological
capabilities”

“Values of the World”

We aim to deliver through the Power and Environment Business

GS E&C is striving to become the best partner of our customers based on the technological knowhow and experience we have had in the environment industry whose coverage ranges from water treatment to waste treatment and the power business which provides light and energy to the world.

GS E&C is delivering a variety of social and environmental values based on these accumulated competence. First of all, we are creating environmental values using the past experience and skills including water treatment technology. With our advanced technologies in sewage and waste water treatment, we are taking the lead in water resource management, which has become a buzzword in the business. Also, we are participating in addressing environmental issues such as waste treatment and recycling projects. We understand exhaustion of natural resources and pollution due to increase in energy demand along with the world's economic growth and increase in income will become major issues in the future power industry. Against the backdrop we will proactively address these issues by participating in the development of cogeneration plants and renewable energy sources to increase energy efficiency contributing to the creation of economic values of the community.

2012 Business Environment of the Power • Environment Industry

The overseas power plant construction market is expected to grow over the long term, mainly in Asia, Latin America, the Middle East and Africa, while competition with other Korean contractors as well as European and local constructors will become fiercer. Domestically, new orders for power plants are projected to increase because the power reserve rate has become lower, and the implementation of renewable energy quotas will likely boost the share of renewable energy projects in the overall mix. Under these circumstances, the Division is making continuous effort to strengthen capabilities to execute new growth projects such as renewable energy and nuclear power plants.

2012 Performance Summary

The Division's power plant segment performed well for new domestic business by winning orders for the Andong combined-cycle power plant and the Dangjin 4 biomass power plant project, a domestic renewable energy source business. Overseas, the Division won an order for the PP-12 project, a combined-cycle power plant in Saudi Arabia, the largest power market in the Middle East.

In the environment segment, the Division won domestic bids for the modernization of basic environmental facilities (e.g. waste water reuse) in Gumi City; wastewater treatment plant in Busan Nambu. Overseas, the Division completed the M&A with Inima, one of the world's top ten reverse osmosis desalination specialists and established a collaborative system to exchange technologies and carry out projects together laying groundwork for future growth. In the new growth business segment, the Division won the tender for the Dangjin 4 biomass power plant project and soil remediation project at the Janghnag Refinery.

2013 Outlook and Plans

Major domestic competitors are trying to move into Africa and South East Asian market as well as the existing Middle East area while actively pursuing opportunities to participate in the national and international IPP projects. The overseas environment market is expected to grow especially in the Middle East and Asia.

The Division will focus its competence on areas where competition is relatively lower while exploring new markets in addition to the Middle East to increase new orders from the overseas. In the case of EPC projects with growing competition, we will overcome difficulties by raising the success rate of winning orders by selection and focus. In the overseas environment segment, the Division will focus on lucrative projects in the target regions while trying to win bids for SWRO projects and participate in concession business through technological collaboration with Inima in the new growth business segment. Domestically, we will actively seek opportunities to join the IPP project as well as focusing our efforts on winning private power construction projects. The Division will continue its efforts to secure cost competitiveness for sustainable growth by; applying cost innovation process to all its projects. We also strengthened our issue reporting system to proactively respond to cost and other risks.

Unit: billions of KRW

New Orders



1,697

Order Backlog



3,906

Sales Revenues

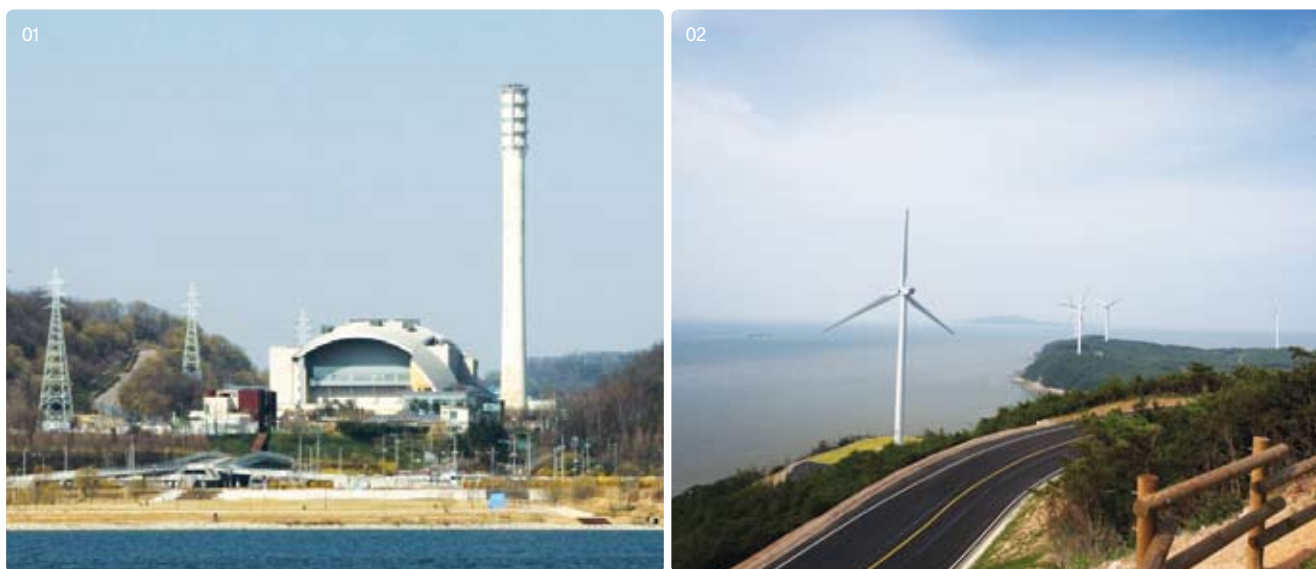


1,113

Gross Profit



109



01 Mapo Municipal Solid Waste Treatment Plant

Location : Seoul, Korea
 • Incineration plant : 250 ton/day×3units
 • Stoker type
 Project Period : Nov. 2001-Apr. 2005

02 Youngheung Wind Power Center

Location : Incheon, Korea
 • Total 20MW
 Project Period: Jan. 2010-Jul. 2011

03 Yerevan Combined Cycle Power Plant

Location: Yerevan, Armenia
 • Combined cycle power plant: 230MW
 • Gas turbine 167MW×1
 • Steam turbine 63MW×1
 Project Period : Dec. 2007-Apr. 2010

Civil Engineering



Growing as a global top-tier company by building a wide range of social and environmental values to make the life of stakeholders better



“Values of the World”

We aim to deliver through the Civil Engineering Business

GS E&C successfully completed numerous civil/ SOC projects with the pride in contributing to the balanced development of the land and growth of the national economy. The Civil Engineering Division is providing high-quality infrastructure service with excellent technology and responsible construction amidst heated competition with big domestic constructors and global companies. The Division boasts of supreme technological competence in the segment of bridge building and underground space. We have built and are currently building many civil engineering structures - some of them considered as landmarks across the national borders and regions. Building on these achievements, GS E&C is creating a wide range of social and environmental values to make the life of stakeholders better by generating economic values of the corporation. First, we build social infrastructure such as road, bridge, and railways to help balance development of the land and national economy, based on which every member of the society can share social values equally.

Additionally, the Division provides stable supply of water for community residents and protection against natural disasters through the construction of dams. We have returned cultural values as well as natural values to Seoul citizens by recovering the Cheong-gye stream and restoring surrounding ecosystem and a 600-year-old cultural heritage.

2012 Business Environment of the Civil Engineering Industry

Domestically, the construction market was slow as the government budget was assigned mainly for the timely completion of existing public projects such as the Four Major River Restoration Project. Many of the planned projects have been canceled or delayed to the next year according to the policy to raise investment efficiency decreasing the number of potential new orders. Poor management performance of some established constructors and contractors heightened the burden on big corporations. On the overseas front, it was not easy to win the bid for lucrative projects as the issuance of the new orders for large-scale projects was delayed in the Middle East and the South East Asia toughening competition between bidders and underbidding by overseas construction companies.

2012 Performance Summary

Although the Civil Engineering Division received new amounting an approximate worth KRW 577.2 billion, lower than those of the past three years, due to reduced order volume domestically and internationally as well as fierce competition, it was able to diversify its business portfolio by completing Mokpo Grand Bridge and Yeosu Grand Bridge – which won the Gold Prize at the 2013 Contest for the “Best civil Engineering Structures of the Year” – and getting more experience in technology-intensive projects. In addition, the Division earned the market trust once again by completing large government projects in time such as the Four River project and Gyeongin Ara Waterway project. In the overseas market, the Division solidified its presence as a global contractor by launching a 500 million-dollar subway project in Ho Chi Minh, Vietnam. We also raised our status as the best partner and the first company in the advanced construction market by achieving BSC and the TBM Breakthrough for the first time out of the 10 construction sections of the DTL2 MRT project in Singapore.

*BSC: Basic Structural Completion, TBM: Tunnel Boring Machine

2013 Outlook and Plans

In 2013, domestic construction market is expected to continue its slow pace centered around the timely completion of existing projects including a highway project while, on the other hand, the overseas market shows signs of activity as increasing infrastructure demand in the south East Asian region and expected boost in demand before the 2022 FIFA World Cup Qatar. To respond to these changes, the Division will concentrate on profit-oriented public and private projects in the domestic market to build a base camp to advance smoothly into the global market. On the overseas front, we plan to receive new orders worth KRW 2.1 in 2013 by expanding market share on strategic positions and diversifying strongholds to the Middle East. For the mid-term and long-term, the Division will continue to increase the proportion of overseas projects as the slump in domestic market is expected to last due to market saturation. In the year 2020, when our Vision 2020 will be achieved, we will be winning orders worth KRW 3 trillion from overseas out of KRW 4.3 trillion, the 2020 goal for new orders. To achieve the goal, the Division will pursue diversification of regions around key businesses we have competitive edge over our rivals; special long span bridge, underground transportation infrastructure, and port construction. Also, we will strengthen our competitiveness to win orders by expanding business scheme such as increasing the proportion of PPP projects and partnering with global prestigious design companies and advanced construction companies.

Unit: billions of KRW

New Orders



557

Order Backlog



4,419

Sales Revenues



1,239

Gross Profit



45



01 Mokpo Bridge

Location : Mokpo, Korea
 • Total length 4.1km
 • Cable-stayed bridge 900m, PSC Bridge
 Project Period : Nov. 2004-Dec. 2012

02 Downtown Line No.2 C913

Location : Singapore
 • Shield TBM Extension 1.23km
 • Stations and Elevated Highway
 Project Period: Aug. 2009-Jul. 2015

03 Ruwais Refinery Expansion PKG7

Location: UAE Abu Dhabi
 • Access Trestle Extension 5.2km
 • Berth 3 Units
 Project Period: Dec. 2009-Jan. 2014

Architecture • Housing



We will lay a solid foundation to grow by creating synergy and raising efficiency through organizational integration.



“Values of the World”

We aim to deliver through the Architectural & Housing Business

The architectural & housing business builds the final objective public and private clients require and conducts planning, design, and construction of a wide spectrum of architectural products from residential space to work and manufacturing facilities. The industry has bigger boosting effects by creating values and new jobs than others and plays a role of a locomotive to vitalize economy.

The Division was created by integrating the Housing Division (mainly dealing with apartment building projects) and the Architecture Division (covering work areas, commercial facilities) in 2012 to create synergy effect in building business. We believe we will continue our growth as a market leader by minimizing repetitive tasks and taking focusing on the strengths of each segment.

GS E&C is delivering unique values of its own to customer and community with advanced technological capabilities in the architectural and housing business. GS E&C has always been leading housing culture in the nation. Recently, we are creating sound social capital of the local community by providing the space for communication and cultural activities such as “Xian Center.” Also, GS E&C provides local residents more access to cultural events by constructing a variety of cultural and art centers based on its excellence in technology and ample experience. We are also playing a role in establishing green housing culture by introducing green smart system reducing energy consumption.

2012 Business Environment of the Architectural & Housing Industry

Domestically, the business environment was unfavorable as the lasting housing slump led to the decline in transaction amount and prices. This trend brought about new changes in the housing market including a rent rise. Also, the government implemented policies to promote real estate market through controlling housing demand and supply by reducing Boguem-jari public housing project as well as reforming real estate market regulations.

In the domestic architectural market, the Division did fairly well in the public sector with the increase in new orders for the residential units as well as the transfer of government offices. However, private projects showed slow growth heightening the overall competition. Globally, we received new orders for residential and hotel projects thanks to the increase in demand in the Middle East and for reconstruction projects. Also, the Division increased its market share slightly in South East Asia.

2012 Performance Summary

We provided Dongtan Central Xi apartment buildings, mostly middle and small-sized units to meet customer needs in Phase 2 of the Dongtan new city and sold Andong Cetnral Xi units through the KT&G group housing project with success. Also, Shinchon Xi-Ella apartment units were provided through a profit-oriented real estate project targeting students and office workers as end users.

In 2012, GS E&C received new orders of KRW 1.2 trillion and sales revenue of KRW 1.1 trillion while pursuing growth in substance instead of in size amidst persistent recession in the real estate market. Due to poor performance in the Middle East and public sector, the Architectural business achieved KRW 2.4 trillion in new orders, 16 % decrease from the previous year's KRW 2.8 trillion and KRW 1.6 trillion in sales, 28 % decrease from the previous year. However, the Division won order for the NgTeng Fong Hospital Project in Singapore consolidating its status in the South East Asian market.

2013 Outlook and Plans

In the housing business, we expect homebuyers are considering the purchase of new houses with the expectation about a rise in rents and deposits as well as the new government's real estate policies and there is a slight increase in the transaction of apartment units. Although it is premature to predict full recovery, the Korean housing market is forecast to rebound slightly in the latter half of the year. In addition, the domestic architectural market is expected to depress in both public and private sectors as government offices completed moving reducing new issuance of orders and economic uncertainties linger. On the contrary, the market is forecast to grow with continuing orders from the Middle Eastern and south East Asian market and business expansion into the electricity and communication segment. The Architectural Division is ready to jump into the overseas market as well as the domestic market in 2013. We will enhance our competitiveness by focusing on lucrative projects in the public T/K market and private business while winning more new orders from the South East Asian customers with the Singaporean sites as a stronghold. We will also carry out aggressive sales initiatives to win bids in the Middle Eastern region including Saudi Arabia. The 2013 businesses targets were set at KRW 2.4 trillion in new orders and KRW 1.8 trillion in sales revenue.

Unit: billions of KRW

New Orders



3,639

Order Backlog



17,055

Sales Revenues



2,705

Gross Profit



280



01 IFC Seoul

Location : Seoul, Korea
Total floor area: 509,524m²
B7-55F, Work Facility, Hotel, and Commercial Facility
Project Period: Jan. 2008-Dec. 2011

02 Fusionopolis 2A

Location: Singapore
Total floor area: Tower AB - 84,215m², Tower C - 19,418m²
Tower AB - B3-18F, Tower C - B2-5F
Project Period: Tower AB - Nov. 2011-Mar. 2014
Tower C - Dec. 2011-Feb. 2015

03 Ng Teng Fong Hospital

Location: Singapore
Total floor area: 237,191m²
Regional Hospital (8-16F, 700 beds),
Community Hospital (12F, 400 beds),
Specialist Outpatient Clinics (8F)
Project Period: Jun. 2012-Feb. 2015

Technology

“
Innovative Profit Center
leading the future with
innovative technologies for
value creation”

“Values of the World”

We aim to deliver through the technological development

The Technology Division, the core competitiveness of GS E&C, concentrates on advancing into new businesses through securing global top-tier technologies, bolstering the technological competitiveness of the existing businesses, and conducting research on state-of-art technology to lead the future of the construction industry to create the best values with technology. In addition, the Division reestablished its mid-term and long-term strategies to successfully achieve Vision 2020 and is working based on the three main strategies; “supporting new growth businesses by securing core technology; maximizing cost saving through technology” and strengthening the technological strategy to create promising business areas for the future. The Best Values GS E&C pursue include environmental values as well as economic values of the company such as cost reduction and optimal operational efficiency. A case in point is our effort to address social issues such as water shortage through seawater desalination technology. We are also establishing human-friendly housing environment harnessing new housing and building technology. In addition, we are providing sustainable environmental values of GS E&C to our customers and community by securing green technologies for waste treatment, offshore wind farm, and liquefaction of natural gas.

2012 Business Environment of the Technology Division

Global economy is faced with unfavorable conditions in the wake of the European sovereign debt crisis and the financial crisis in the United States. This challenging environment reduced new issuance of orders and toughened competition. Rivals in and outside the nation are struggling to create new business opportunities in the Plant and Power industries as well as to foster talents and secure technological competence.



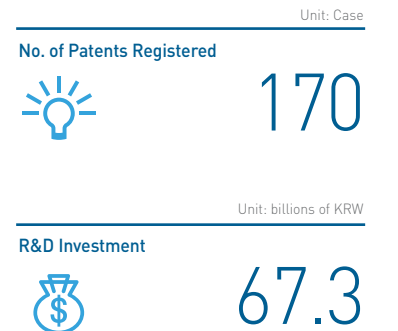
용인 기술 연구소

2012 Performance Summary

The Division has committed itself to review strategies and organization, to reduce cost and secure business abilities for conducting new business to realize Vision 2020. We are finally seeing the results of R&D efforts and accumulated technological competence for new growth drivers such as natural gas liquefaction, RO desalination, special long span bridge, and green smart building. Also, we are making progress in support for winning orders and project performance by bidding and design support, VE activities, and technology and safety inspection. In addition, we continue to obtain intellectual properties through R&D and promoting our technological power through technology marketing and network building.

2013 Outlook and Plans

In the coming year, the Division will focus on strengthening technology-based business competitiveness and cost innovation activities, securing new growth business competence and doubling the future prediction efforts following the directions of the Division such as; strengthening business abilities, implementing cost innovation, conducting profit-oriented projects, and bolstering risk management amidst prolonged slump in domestic and global market. First, we will secure global technological competence required to conduct overseas business through active R&D activities including open innovation in order to sharpen the competitive edge of technology-based business. In particular, we will reinforce the management of technological risks at the overseas and special sites by creating synergy from collaboration with Inima in the water treatment segment. Second, cost innovation activities aim to address risks of on-going projects of the Division and bring solid profits. To this end, we will strengthen technological support during the bidding/design stage, cross projects between Divisions, and the sites under direct management of the company and expand the application of skills to enhance productivity obtained as a result of our R&D efforts. Finally, we will create/ select new growth business and promising future business through the analysis of technology trends and the market to secure abilities to predict the future and conduct new growth business. Also, we will make sure that we acquire core technologies for the selected new businesses at an early stage.



GS E&C Research Institute of Construction & Economy

In 2008 we established the GS E&C RICE, the first economic research institute in Korea's construction industry, to respond to global market developments in a timely manner, manage operational risks effectively and identify business opportunities at an early stage by analyzing the fast-changing international business environment. We aim to become a world-leading think-tank in Construction by strengthening risk management through the analysis of macro and microeconomic indices as uncertainties in the global economy increased in the wake of the European financial crisis.



GREAT CHALLENGE

OUR APPROACH

GS E&C has put efforts into overcoming the risk factors and gain a momentum for long-term growth amidst persistent global economic slowdown and lingering uncertainties. We aim to maintain corporate values for the future and grow as a sustainable company by securing new growth drivers as well as strengthening overseas projects and the existing mainstay business.

OUR EFFORTS

GS E&C went a step further to creating a new growth engine centered on our three main growth pillars. Also, we are making continuous effort to increase the proportion of overseas projects from the Middle East and South East Asia to include North and South Americas and Africa. Not only that, we aim to maintain fundamental competitive advantage as a construction company by securing cost competitiveness through cost innovation and realization of the full potential of the existing mainstay business.

CREATED VALUE

GS E&C is creating social and environmental values as well as economic values in a wide spectrum of business segments. We are creating additional economic values through innovation such as cost reduction and contributing to the development of the community and national economy by generating values from production. Not only that, we are delivering social and environmental values to the community through waste water treatment, water treatment facility construction and soil remediation projects.

24 Securing a New Growth Engine • 27 Expanding Overseas Business

30 Strengthening the Existing Mainstay Business



Sohar Aromatics



Banpo Xi

IFC Seoul

- Location: Seoul, Korea
- Project Period: Jan. 2008-Dec. 2011
- Description: IFC Seoul, located in the Yeouido district, the financial heart of Korea, is a landmark serving as a multi-functional finance center.



Securing a new growth engine

OUR APPROACH

GS E&C coordinated its mid-and-long-term growth strategies and goals to accommodate the changes of the internal and external business environment especially including financial crisis. We went a step further to creating a new growth engine by exploring, testing, and complementing new businesses leaving behind our old growth model – highly dependent on contract projects. This is accompanied by our investment efforts centered around core growth segments and continuous endeavor to grow the existing core businesses to make them reach their full-potential.

- Industrial plants, power plants and environmental facilities-areas where we already enjoy world-class status
- Development projects such as real estate development and private participation in infrastructure
- Offshore projects generating synergy with onshore projects



HOW TO CREATE OUR VALUE

GS E&C tries to enhance the company's economic values by creating new growth engine businesses.

- Creating economic values with new growth engines
- Growing as a sustainable company



3 Main Pillars of Growth

Industrial plants, power plants and environmental facilities—World-class competence

Main Business

- natural gas liquefaction
- nuclear power
- coal-fired | combined cycle thermal power
- seawater desalination

Strategies for nurturing new growth drivers

- Focused pre-investment in a few selected items with potential for massive global growth
- Participate in overseas IPP projects to improve competitiveness

World-class Industrial plants, power plants and environmental facilities

GS E&C identified the “candidates – types of businesses with potential to become new growth engines within 10 years” based on our competence such as past achievements/experience, easiness to secure required resources and market appeal. Selected candidates – natural gas liquefaction, nuclear power generation, combined cycle power generation, desalination of seawater – will be nourished as new core businesses to grow world-class through massive investment. GS E&C is planning to break into the natural gas liquefaction market -which is currently dominated by a handful of large global companies- in collaboration with LNG export companies to gain experience first and then join the race of big players based on the domestic demands and performances. In 2012, GS E&C focused on accumulating technologies and project experience as it signed the MOU with Korea Gas Corporation (KOGAS) to secure a bridgehead to enter the natural gas liquefaction market and performed the 17 projects commissioned by the government. We plan to participate through equity investment in the future project when KOGAS secures a gas filed while continuing to carry out national projects to build up technological competence and work experience.

INPUT. What kind of organizations are in place in GS E&C to secure new growth engines?

GS E&C is installing new departments and reorganizing the existing structure to lay the groundwork to create new growth engine businesses in a more systematic manner. First of all, we established Global New Business Division to accelerate new business development overseas including; I&I Sales, Market Intelligence, and Offshore Sales Team. At the same time, we are exploring various business strategies –IPP, PPP, concession agreement- at Global Investment Team, newly installed to analyze

overseas market. New Business Development Teams are operated by business division. Housing Division runs New Housing Business Team and recently transferred Vietnamese/Cambodian Projects under the direction of CFO to raise operational efficiency. Civil Engineering, as well, is reinforcing its organization by adding a new team in charge of increasing Vietnamese projects.

* IPP (Independent Power Producer), PPP (Public Private Partnership)

GS E&C was qualified as the national organizer for developing the nuclear power plant in 2102. At first, we will go overseas in collaboration with the government organizations to get better prepared to compete in the global market. At the same time, we will pay constant attention to securing global talents with a nuclear power plant background. Coal-fired and combined cycle thermal power plants are continuing its growth. GS E&C won an order for the Saudi Arabia’s PP-12 project. We expect to grow our engineering competence and attract more orders. Also, GS E&C is making equity investment in IPPs (Independent Power Producer) and taking orders in such areas as EPC (Engineering, Procurement, and Construction) based on the investment. RO (reverse osmosis) desalination technology is the latest technology in the seawater desalination market and its commercialization is expected to happen in the near future. GS E&C bought the Spanish company Inima, which has the world’s top desalination technology and experience and collaborating on developing desalination technology and exchanges of personnel with domestic and international organizations including KAUST (Saudi). Our goal is to enter RO desalination market concession projects to grow as a leading global water resources company.

Development projects; real estate, private participation in infrastructure

Real estate development is a type of business including total life cycle of a project from the early-stage planning/ exploration to operations and management (O&M) after the project as well as the conventional portfolio centered on the construction work itself. Building on the achievements in the development projects, GS E&C hopes to grow as a leading company in the industry. To reach this goal, we established firm business principles and a total risk management system. In 2012, We conducted advanced real estate projects such as the Gohyeon Port redevelopment in Geoje Island while releasing a new model of apartment units, Xi-Ella, customized to the urban life style. Also, we tested a new business model, KT&G group housing projects. Currently, we are considering a joint venture of project management consultancy for complex development in cooperation with the Japanese real estate development company, Mori. In addition to development projects based on a new model, we are planning to conduct a wide range of advanced real estate development projects providing customized housing, for instance, compact homes or silver town. GS E&C established the Global Investment Team to analyze international market trends in an effort to create new business opportunities through equity investment instead of the traditional contract projects; civil engineering PPP, power plant PPP, and concession agreement in environment filed. This change will lead us to maximize long-term operational profits and earnings sustainably.

3 Main Pillars of Growth

Profit-oriented development projects such as real estate development and private investment in infrastructure

Main Business

- Real estate development
- Private investment in infrastructure

Strategies for nurturing new growth drivers

- Get projects under way to maximize development profits
- Continuous investment to secure a package of competencies

VALUE CREATED ACTIVITY. Creating social values; participating in the construction of public facilities and infrastructure

GS E&C is contributing to the national economic growth as it helps building social infrastructure for the public good. In 2012 we took order for domestic projects such as; Wonju-Gangreung railway Section No. 7, the 2nd Outer Icheon-Osan Expressway, and Siheung Bangsan sewage treatment facility. Internationally, we are helping developing countries through the construction work of social infrastructure, including Bahrain’s waste water treatment facility and the Vietnamese Hanoi-Haiphong Expressway project.



3 Main Pillars for Growth

Offshore projects that generate synergy with onshore projects

Main Business

- FPSO
- FLNG
- Subsea

- Strategies for nurturing new growth drivers
- Generate synergy based on onshore EPC competence
 - Enter market swiftly through M&A and nurture as a growth engine

Offshore projects that generate synergy with onshore projects

The offshore plant market is expected to grow at a constant pace at an annual average of 10 percent as offshore production cost of oil and gas increases. GS E&C is interested in moving into the offshore plant market utilizing its competence in onshore plant projects. We are looking to expand into FLNG and Subsea segments in the future after successful entering in such areas as fixed platform, artificial island, and FPSO Topside. In 2012, we created teams for plant offshore projects and offshore sales to get offshore plant business moving. First, we are trying to win orders for fixed platform projects and while recruiting individuals with offshore experience. Also, we are training engineers through simulation project to help them raise competence. On the other hand, we are considering investment in offshore designers and engineering, procurement, construction, and installing company to create synergy effect.

* FPSO[Floating Production Storage Offloading, FLNG[Floating liquefied natural gas, Subsea.

Performance 2012	
Division	Performance 2012
Overall	<ul style="list-style-type: none">Established Global New Business Division and organize specialized teams - I&I Sales team and Market Intelligence team
Industrial plants, power plants and environmental facilities—World-class competence	<ul style="list-style-type: none">Securing bridgehead for entering natural gas liquefaction market → Signed MOU with KOGASAccumulate technologies and experience through government-commissioned projects [17 projects including natural gas liquefaction and offshore development in 2012]Overseas coal-fired/ combined power plant (Saudi PP-12)Qualified as arranger for developing nuclear power plant
Real estate development and private investment in infrastructure	<ul style="list-style-type: none">Established strategies for conducting development projects through company-wide task forceAdvanced real estate projects [Gohyeon Port redevelopment in Geojje Island –selected as preferred bidder]Launched Xi-Ella, urban-lifestyle apartment unitsNew business model - Andong KT&G group housing projectForming joint venture of project management consultancy for complex development with Japanese real estate developer, MoriEstablished Global Investment Team for market analysis (IPP, PPP, Concession)
Offshore projects generating synergy with onshore projects	<p>Established new teams to supplement offshore business → Plant Offshore team and Offshore Sales team Conducted marine simulation projects [Fixed Platform, FPSO]</p>

INTERVIEW “ Creating new growth drivers based on Vision 2020 ”

Recently, construction companies are faced with harsh business environment such as reduced domestic orders and increasing uncertainties in the overseas market and under pressure to create “new growth engines.” Against the backdrop, GS E&C has chosen drivers responsible for future growth of the company through intensive investment. It seems to set a good precedence to its industry peers as well as identifying its future image.

I believe Vision 2020 and the 3 main pillars for growth –established to preemptively respond to the challenges toward sustainable and profitable growth- will help the company to secure sustainability in its future business activities. GS E&C selected the three main growth drivers and Seed business after prioritizing a range of new growth engines of leading global companies and business opportunities induced by the company. The criteria for selection were the feasibility to secure core competences and business appeal.

I expect GS E&C to be able to generate more profits than its rivals by focused investment in selected business –requiring pre-investment- instead of distributed investments over a number of businesses. Moreover, balanced allocation of short-term and mid-long-term investment resources will help realize sustainable growth, more than just temporary growth in size.

Lastly, For GS E&C to grow as a global sustainable corporation built on its past achievement, the company needs to strengthen its core competitiveness to keep raising shareholder’s values and nurture global leaders as well as proactive and focused investment on new growth engines.

Shim Seung Taek, Partner, Bain & Company



Expanding Overseas Business

OUR APPROACH

Overseas sales account for 49.6% of GS E&C’s total sales in 2012. Despite the prospect for heightening competition in the global market, we are aiming to increase the share of overseas sales up to 70 per cent through more strategic approach to the various regional markets including Middle East, South-east Asia, Americas, and Africa.

- Overseas Business
- Create Network by Region
- Enter the African Market
- Special Issue; Acquisition of Inima



HOW TO CREATE OUR VALUE

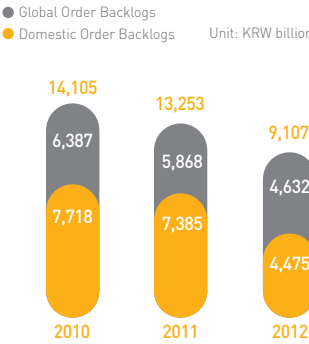
GS E&C will expand global business to increase economic values of the company. Currently we are creating values for global communities through a variety of construction work in many regions. For instance, waste water treatment and soil remediation projects are adding great values to the environment.

- Increasing economic values through expanding overseas businesses
- Creating value in local communities through regional diversification
- Creating environmental values with waste water treatment and soil remediation projects



Global Business

As the global economic slump drags on and the domestic construction market growth slows, competition for winning orders is getting tougher in the global market. In 2012 GS E&C newly established overseas sales division integrating the existing sales operations under each business division. We opened new branches in Turkey, Iraq, and Libya and aggressively hired local talents to strengthen our global network. In the Civil Division, we are diligently moving to win orders for subway works in the Middle East area based on our rich experience of subway projects in East Asian countries such as Singapore and Viet Nam. In the Construction division, we won orders for large-scale projects including NgTeng Fong hospital construction in Viet Nam. Plant Division is considering expanding into unconventional oil business such as Shale gas based on the experience form the Canadian Black Gold Oil Sand project.



INTERVIEW “ Securing a New Growth Engine in the Global Market ”

Korea’s domestic construction market is saturated and competition is getting ever fiercer with latecomers such as India and China joining the race of big global players. To find a breakthrough in the overseas market, most construction companies are pushing ahead with aggressive strategies to expand overseas sales. I understand GS E&C is also trying to set global strategies centered on overseas business and diversifying its business structure with the increase of overseas operation. I believe Canada’s Black Gold project, nation’s first oil sand project, and purchase of the Spanish water treatment company, Inima, will serve as a leaping board for becoming a leading global construction company. Inima, currently in the post merger integration process after the merger in May 2012, is already creating successful economic results and expected to play a role of a bridgehead for exploring new markets in the future.

In order for GS E&C to hold a dominant position in the global construction market, two things need to be considered. First of all, you need to take full advantage of local talents; not only hiring them but also raising their competence. Also, localization strategy needs to be set before entering into a new market to better understand the culture and sentiment of the local community.

Finally, I know that recently there has been loss in an effort to underbid others among heated competition for taking orders. In the future, GS E&C will have to develop strategies to win order considering profitability and find a way of doing business overseas representing social and environmental values of the company.

Seung-Hwan Lim, Assistant Manager, YTN



Networking by Region

We selected major regions based on volume of orders, profitability, competition, and the need for a sales network in the mid-and-long term perspective to strengthen global business more strategically. We approach each region with different networking strategies.

First, the Middle East/ Asia region is a big market with a secure project order plan. We will fortify the existing sales network to enhance competitiveness in the region. On the other hand, Latin America/ Africa/ Turkey & the CIS region is an unproved market but has a great growth potential with rich natural resources. We are planning to establish and expand sales network in the region as a future strategic market.



Moving into the African Market

Africa is a market of strategic importance with growing business opportunities. In 2012, GS E&C signed a MOU with Sonatrach, the Algerian state-run oil company and now is in the process of establishing a joint venture for EPC to fully engage in the local market. We are planning to expand our business to the neighboring countries in the continent with Algeria as an advance base.



Performance 2012

Category	Performance 2012
Global Sales	<ul style="list-style-type: none">Laid groundwork for business in Saudi; obtain the IK-EPC (In Kingdom - Engineering, Procurement & Construction) license and grow GSCASecured a bridgehead for the African market – signed MOU with the Algerian national oil company, SonatrachEstablished GTM strategy and action plans to enter/grow in major regional marketsSelected target customers and hired executives to manage Huston, America to diversify industrial plant customer base
Compnay-wide	<ul style="list-style-type: none">Acquisition of Inima, Spanish RO desalination plant and water treatment companyConducted post merger integration process of InimaOperating Global Operating Model T/F

* IOC(international oil company), NOC(national oil company)

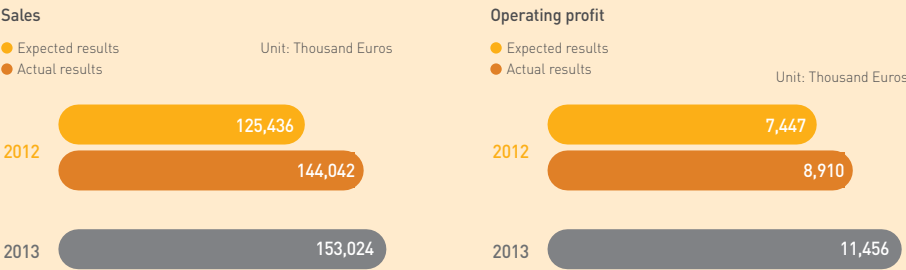
SPECIAL ISSUE. Acquisition of Inima

GS E&C bought the world’s top water treatment company, Inima, in May 2012 as a stepping stone to join the global water treatment business. During the early stage of M&A, we integrated organizational culture.

Business Performance

In 2012, GS E&C posted 144 million euros in sales and 8.9 million euros in operating profit, respectively 14.8% and 19.6% higher than planned. We will continue this robust growth pace with the goal of 153 million euros in sales and 11.5 million euros in operating profit for the year 2013, which are up by 6.4% and 28.6% from the previous year.

For the first year after acquisition, GS E&C focused on profitability and cash flow management of Inima and set a priority on establishing a new system as an independent company maintaining “stability amid changes.” We will optimize the collaboration between GS E&C and Inima to generate great synergy to expand overseas business and ultimately nurture Inima as the top global player in the water treatment industry with the 2020 sales goal of KRW 1trillion.



Business Status

In 2012, water treatment market environment was unfavorable with reduced bidding opportunities due to budget cut of governments of major clients amid persistent global recession, which made competition in the Middle East, the biggest demander of the water treatment services, fiercer than ever.

Inima plans to create new business opportunities as it breaks into new markets including the Middle East and south East Asia in partnership with GS E&C in addition to the Spanish and Latain American market where we’re already doing business.

Not only that, we will continue to pursue social and environmental values by addressing issues such as water shortage and soil pollution while creating high added values in the RO desalination, water and waste water treatment, and soil remediation projects in the Latin American region.



Strengthening the Existing Mainstay Business

OUR APPROACH

On the global front, economic recovery in the advanced markets is being delays while uncertainties persist in emerging economies with slow growth and volatility in exchange rate and oil price. Domestically, prolonged depression in the construction market and slowing recovery in the real estate market are threats to the business environment. Other risk factors in the industry include heated competition in the plant market in the Middle East and reduction in the issuance of new orders from the public organizations. To overcome the obstacles GS E&C is carrying out corporate-wide cost innovation activities to secure cost competitiveness, a fundamental strength a construction company should have. Also, we pursue diversification of regions by adding Latin America –with potential for growth and sound profitability - to our existing market list of the Middle East and the South East Asia.

HOW TO CREATE OUR VALUE

GS E&C aims to enhance sustainability and achieve a qualitative growth by bolstering fundamental business competitiveness such as cost reduction, new orders, and excellent technology.

- Cost innovation
- Reaching full potential of the existing business by Divisions



- Reducing expenditure by cost cut and creating economic values by enhancing work efficiency
- Contributing to the national economy and community by producing and generating additional values



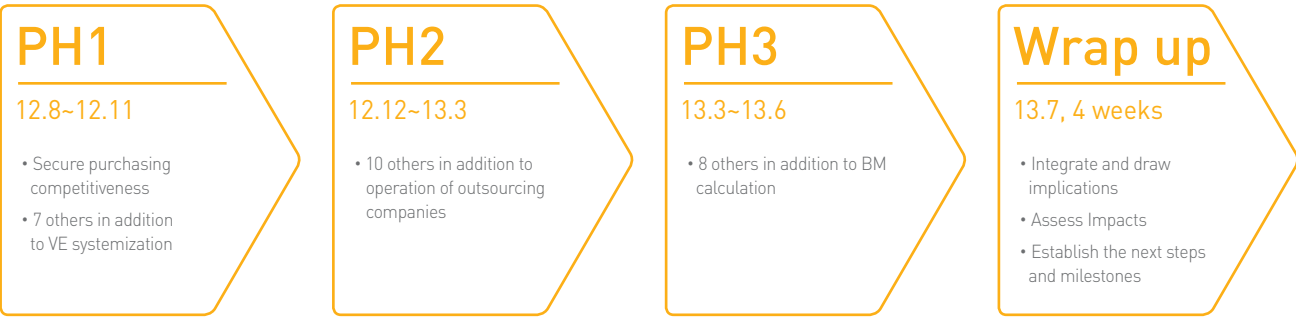
Cost Innovation

Given the unfavorable business environment where the domestic and global market become sluggish and competitors take aggressive measures to win orders, it is imperative for a business to strengthen cost competitiveness “continuously” and “incessantly” to survive and thrive. GS E&C is concentrating its competence on maximizing profits through cost reduction as profit rate in the construction industry declines to overcome economic slump and recession.

GS E&C has set the action plans for the mid-term and long-term to save cost including; conducting corporate-wide innovation tasks; disseminating the Lessons Learned; and strengthening the skills to implement the innovation tasks of the past year. We are also carrying out the 8 innovation tasks at the company level including the “advancement of the construction management by applying Bim+Lean.” This is expected to save roughly KRW 114.7 billion in overall cost. In order to strengthen cost competitiveness even further we share the Lessons Learned by stage to apply before launching a project and expand the best innovation practices from the last year to corporate-wide projects.

The goal of cost innovation is improving the organizational health to make it more cost-effective. To this end, we create a roadmap of cost innovation activities by Division and by function to monitor the progress. 30 tasks were identified throughout the whole business process from receiving orders to design and construction and categorized into 4 different phases.

Plan to implement tasks by phase



We put emphasis on integrating tasks to raise overall efficiency. Key action plans include securing purchasing competitiveness and activating integrated issuance of orders. We also created guidelines on cost innovation activities and manage the process systematically through weekly checkups, regular meetings of the persons in charge, and various communication channels online. We will continue our effort to make cost innovation one of our fundamental competitive advantages by identifying tasks and create results.

Reach the full potential of the Existing Mainstay Business by Division

Plant | The mainstay businesses of the Division are EPC projects in refinery and petrochemical plant. The market is forecast to grow 2 to 3 % in volume and is divided into two extreme types; 1) companies based on advanced technologies; 2) companies based on cost competitiveness. Against the backdrop, we need to achieve maximum growth in the technology-intensive market such as refinery and petrochemical projects and consolidate global leadership for the existing mainstay businesses to reach their full potential. New orders in the plant business mainly come from the following three types of owners, who respectively focus on; technology, relationship, or financial benefits. Until now, GS E&C tended to target the last two types of owners based on customer network and price competitiveness. From now on, however, we need to expand our customer base to include those who put priority on technology, quality and trust.

Architecture | Mainstay business of the Division is general construction projects ordered from the public, related companies, and private organizations. The architectural market is going through a slump with increasing competition with smaller companies not to speak of the five major players. Under the circumstance, we need to strengthen fundamental competitiveness in the domestic market and focus on selected orders after careful review of strategic values and profitability of a project in the overseas market for the existing mainstay businesses to reach their full potential.It means that in the construction business, we are able to create stable results through constant bolstering fundamental competitiveness. Interview with a number of key people in the industry showed that they consider the current construction market a crisis with slowing growth and decreasing profits. It was difficult to find successful examples of domestic rivals in the overseas market because they are able to generate profits only after complete localization in the unfavorable local business environment. Analysis of the past examples revealed that only 1 to 3 % of profit is expected even in the areas where the companies had capabilities and localization needed to conduct the project. It means we need to set the direction in the overseas market to gradually expand the market by winning orders while establishing competence instead of seeking growth in volume.

Civil Engineering | Mainstay business of the Division is general civil works whose orders were placed by the public organizations. The market is expected to record a negative growth in real terms and also the competition is increasing. Against the backdrop, we need to strengthen fundamental competitiveness – cost and new orders - in the domestic market and expanding overseas projects gradually centered around the technology-intensive projects such as special long span bridge, underground transportation infrastructure, and port construction to reach the full potential of the existing mainstay business.

Key cost innovation activities

- Optimize safety management
- Standardize materials
- Create VE of housing projects and maximize its application
- Promote integrated issuance of orders between sites
- Expand supplier pool for civil & architecture procurement and strengthen bidding process
- plant purchasing
- Minimize plant rework
- Optimize outsourced design work (Power&Environment Business Division)

VALUE CREATED ACTIVITY. Generate Economic Activities Indirectly

Production inducement effect” means how much effect increased end-user demand by one unit for a particular product has on productive activities in all industries, directly and indirectly. Construction tends to stimulate more economic activities than other industries. According to the Bank of Korea, the production inducement coefficient of Korea’s construction sector is 2.104 for every KRW 100 million. If you calculate our domestic production inducement effect for 2012, you will get KRW 8.59 trillion. From the perspective of the national economy, added value means how much an individual company contributes to the national income. Based on the added value inducement coefficient of 0.749 for every KRW 100 million announced by the Bank of Korea, we helped generate more than KRW 3.59 trillion in economic activities contributing to the national economic growth in 2012.

Production inducement coefficient: 2.104/ KRW 100 million, Added value inducement coefficient: 0.749/ KRW 100 million
(Input-output tables of Korea, The Bank of Korea, 2012)

2012 Production inducement effect

 KRW 8.59^{trillion}

2012 Added value inducement effect

 KRW 3.58^{trillion}

Housing | Mainstay business of the Division is mass apartment units development projects and maintenance works. The market is sluggish and profits are declining while target market of GS E&C is gradually reducing. Under the circumstance, we need to maximize profits by repositioning brands in the domestic market and focus on development projects and establishing brands successfully in the overseas market for the existing mainstay housing businesses to reach their full potential.

Core strategy to maximize profits in the housing business is to continuously strengthen the position of Xi as the top domestic brand. Xi is considered to hold a dominant position over other competing brands by successfully positioning itself as a “premium mass” brand.

2012 Major Achievements

Division	2012 Major Achievements
Plant	<ul style="list-style-type: none">Received new orders for large global projects (Rabigh– II)Signed an MOU with PSOCO (in an effort to enter the Metal Plant business)Created new business (Shale Gas, Metal Plant etc)
Architectural and Housing	<ul style="list-style-type: none">Green Building NTFH in Singapore
Civil Engineering	<ul style="list-style-type: none">Established global growth strategies for technology-driven projects and FUConducted bidding for collaborative projects with an advanced global company (w/Vinci)Signed the technological alliance and provided technological services – suspension bridge technology for the 2nd Namhae Grand Bridge: T.Y Lin(US), IHI(Japan)Nurtured seed business- [Near-surface urban railways system], Signed an MOU with Korea Railroad Research Institute (Dec. 2012)
Technology	<ul style="list-style-type: none">Established the process for BIM-based advanced construction projects - DPR(US) and NC-soft
Corporate-wide	<ul style="list-style-type: none">Operated cost innovation task force 1 and 2, Selected tasks by segment

CASE STUDY. Concentrating on technology-driven projects

The Civil Engineering Division aims to expand presence in the high-added value market for technology-intensive projects such as special long span bridge, underground transportation infrastructure, and port construction, breaking the existing low-added value business scheme including the construction of highways, railways, LTR, and housing complex. For example, building special long span bridges is lucrative business with high success rate for winning orders because of the limited competition due to high entry barrier.

GS E&C is planning to expand global market presence by partnering with overseas companies and operating dedicated organization possessing core technologies, based on our experience of completing Mokpo Grand Bridge and Yeosu Grand Bridge, cable-stayed bridges with the central span of over 4oom. Underground transportation infrastructure is emerging as an alternative without land acquisition and near-surface hindrance and overseas large underwater tunnel projects are in the pipeline. GS E&C achieved a breakthrough by using TBM for the first time out of two sections of the C913 subway project in Singapore in 2012. In the coming year, we aim to win orders for the construction of Thomson Line in Singapore and Doha Metro in Qatar.

We are building effective talent pools of experienced workers and sharpening competitive edge through alliance with domestic and overseas research institutes. As global port construction market is less competitive than other segments with many large projects in the pipeline, we need to secure competitiveness for winning orders and carrying out the projects.

The Division manufactured and launched successfully a large caisson with 8,000 ton-capacity at the site of Southern Breakwater for Pohang Youngil New Port in 2012. Once we complete the project and the RRE#7 project in UAE, we will be ready to make a bid for overseas projects more aggressively based on the experience and personnel engaged in the making of large caisson.



GREAT INNOVATION

OUR APPROACH

GS E&C is proactively responding to the global trend focusing on environment and safety issues in the business world. We are laying the groundwork for sustainable growth by developing green technologies - emerging as a new future competitive edge, minimizing environmental impact through the business cycle, and preventing major disasters and accidents through preemptive safety measures.

OUR EFFORT

GS E&C is developing a wide range of green technologies through strengthening infrastructure and carrying out green businesses in connection with the developed technologies. Also, we are committing ourselves to minimizing environmental impact throughout the process from design, to procurement, transportation, construction, operation, and demolition to practice Life Cycle Assessment. Not only that, we are trying our best to minimize environmental and social cost through corporate-wide preventive measures to reduce safety accidents and pollution.

CREATED VALUE

With green technology, GS E&C is creating environmental and social values as well as economic results by minimizing environmental impact through business activities. In addition, we are putting efforts to realize social values through green communication while implementing environmental values -such as carbon emission reduction- by proactively responding to climate change. Our corporate-wide precautionary safety initiatives have enabled us to prevent environmental accidents to minimize the environmental and social cost.

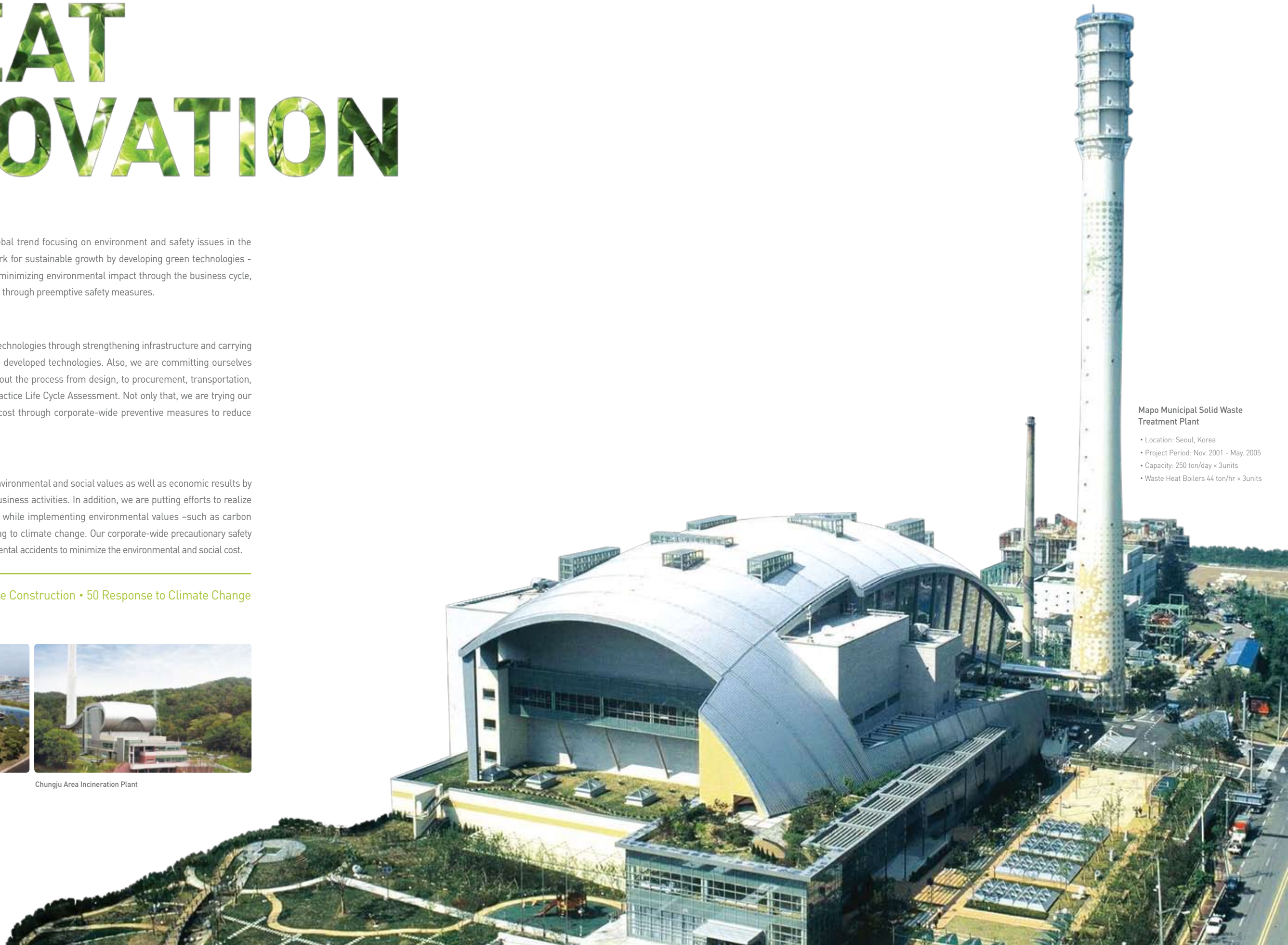
36 Green Technology • 40 Sustainable Construction • 50 Response to Climate Change
54 Safety & Health Management



Jeju Advanced Sewage Treatment Plant



Chungju Area Incineration Plant



Mapo Municipal Solid Waste Treatment Plant

- Location: Seoul, Korea
- Project Period: Nov. 2001 - May. 2005
- Capacity: 250 ton/day × 3units
- Waste Heat Boilers 44 ton/hr × 3units

Green Technology

OUR APPROACH

Construction industry involves a host of technologies during the process from design, execution, maintenance, and demolition. Such technologies are applied in various processes and construction methods to create the facilities as well as in the facilities. GS E&C put its effort into capturing new business opportunities by acquiring green technology –attracting attention as the future competitive edge – while strengthening technological competitiveness in the existing business. Through the aggressive investment in environmental R&D, we are expanding green business as the basis for sustainable growth.

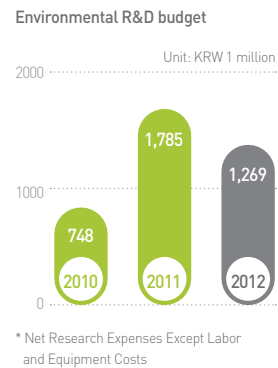
- Improve infrastructure for eco-friendly technology
- Develop green construction materials and construction technology
- Nurture low-carbon industry
- Develop water resources
- Conduct waste-to-energy program
- Strengthen the link between technology and business



HOW TO CREATE OUR VALUE

GS E&C develops and adopts green technology not only to contribute to creating economic values but also to minimize environmental impact by its business activities as a leader of green construction. Not only that, we deliver social value for our stakeholders by providing a technological solution to social issues such as noise between floors.

- Create economic value by securing new growth engine and cost reduction
- Create environmental value by developing green technology such as minimizing pollution
- Create social value by providing technological solution to social issues



Strengthening Infrastructure for green technology

Personnel & Budget | GS E&C is expanding investment in green R&D and supplementing the research personnel. In 2012, R&D budget stood at KRW 12.7 million, which mainly went to the lab equipment supply and field support activities to help preemptive technology development. At the same time, we brought in 15 new employees in core technology fields such as industrial plant, energy, and environment and plan to recruit more talented individuals in 2013 to carry out core new growth business, cost innovation, and commercialization of technology.

Government-commissioned Projects | GS E&C is conducting several tasks in collaboration with the government which recognized its advanced green technology. In particular, we present opinions on policies related to; energy consumption in buildings, greenhouse gas analysis & management system development, and integrated certification system for green architecture based on green index as we carried out "The establishment of the integrated system for evaluation and certification of GHG emission to promote green architecture," a project commissioned by the Ministry of Land, Transport and Maritime Affairs. Thanks to these efforts, we received the Minister of Land, Transport and Maritime Award at the "8th Construction Environmental Management Best Case Competition" and participated in the "6th Construction Technological Research Presentation" confirming our leadership in the construction environment field.

INPUT. What is GS E&C doing to nurture talents with technological expertise?

GS E&C is securing and nurturing experts to accelerate the development and commercialization of new growth business technology. In 2012, we nourished core talents in 8 fields – including offshore and desalination – and provided self-development opportunities for overseas employees based on-the-job training required for global tasks. Also, we established a technological experts rotation system between divisions. In 2013, we will support systematic expert training course based on PTH Road Map*, recruiting outside experts, and OJT at overseas sites in order to give momentum to new growth business.

Plan 2013 to enhance expertise and work competency of employees		
Increasing operational efficiency of the employees	Strengthening global competency of personnel	Securing outside experts
<ul style="list-style-type: none">• Expert rotation between business divisions• Flexible management of R&D and tech support personnel according to business environment	<ul style="list-style-type: none">• Hold PTH Roadmap* expert courses for new growth business• Conduct OJT at overseas sites	<ul style="list-style-type: none">• experts in core new growth business• experts in cost innovation and technology commercialization

* PTH Roadmap : Product – Technology – Human Roadmap

Developing green construction materials and tecnology

Green Construction Materials | 53% of carbon emission from construction materials during the construction stage from the life cycle of construction comes from concrete. GS E&C developed green concrete with reduced carbon emission in 2011 and improved its endurance and cost element in 2012. The average price of green concrete is lower than normal concrete by 6% contributing to cost reduction. Green concrete is not only eco-friendly with reduced carbon emission but also has high resistance to crack growth and durability.

3 Zero House | GS E&C's 3 Zero House is an eco-friendly residence model that features reduced energy consumption (Energy Zero), free-noise residential environment (Noise Zero), and clean indoor air (Air Pollution Zero). The 3 Zero House will help GS E&C create eco-friendly lifestyles and improve quality of life for residents.

Green & Smart Building | GS E&C has proposed the Green & Smart Building model as a future-oriented construction approach that features eco-friendliness and intelligent functions, and developed related technologies. The eco-friendly construction technologies are combined to form a solution package, which has been applied to actual projects. The technology set has helped the company build structures with eco-friendliness, economic benefits and fine external appearance. Based on construction projects completed during 2012, 55% of total projects were executed with eco-friendly technologies.

* Projects completed by the Architectural & Housing Business Division in 2012

Nurturing low carbon industry

Smart Grid | GS E&C has participated in the Jeju Smart Grid Test-bed since December 2009 to secure core technologies. In addition, in order to verify micro-grid technology at the building level, GS E&C established a demonstration facility applied with the building integrated photovoltaic system (BIPV), wind power, geothermal heat, and fuel cells at the residential hall of GS Research Institute in the city of Yongin, in Gyeonggi Province.

Large-capacity LNG Plant * | Natural gas is thought of as a clean, stable, and convenient alternative to fossil fuel as the world energy market if faced with new environmental constraints such as GHG emissions control as well as resource nationalism. This has brought attention to the LNG plant industry , including the processes for pre-treatment and liquefaction of natural gas. GS E&C is planning to develop LNG plant process control and design technology to secure its own technological competency on LNG plant and enter the global LNG plant market.

* LNG Plant: Natural gas extracted from the gas field is pretreated and condensed into a liquid by cooling it to -162 °C (-260 °F) to make it about 1/600th the volume of natural gas in the gaseous state for ease of storage and transportation.

ENERGY ZERO

Concept

Apply up-to-date heat insulation, renewable energy solution, and energy management system to apartment units in order to reduce energy demand and maximize energy efficiency

Technology

- Technology to reduce energy loads for heating and cooling
- Optimization technology to apply renewable energy sources
- Integrated energy supply and control technology
- Technology to implement geothermal air-conditioning system

NOISE ZERO

Concept

Insulate noise transmission between floors, block noise from outside, and remove equipment noise effectively to make the residential environment free from noise

Technology

- Active noise control
- Optimized acoustic design
- High Performance sound absorption and insulation system
- Soundscape design

AIR POLLUTION ZERO

Concept

Remove chemical gases, viruses, fungi and other hazardous materials to create safe and clean indoor environment.

Technology

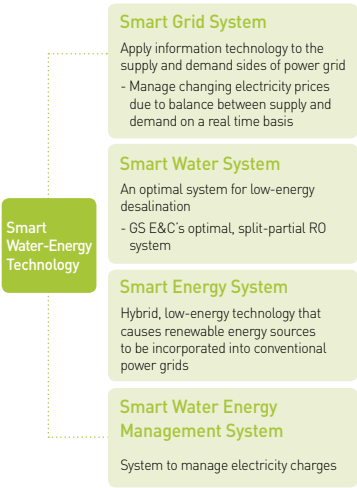
- Nanotechnology-applied, eco-friendly materials
- Building design to prevent pollution spread
- Intelligent air purifying system

CASE STUDY. Developing technology to set up a high-rise fire scenario

GS E&C developed a technology to build a high-rise fire scenario for the first time as a domestic construction company. It is one of the core technologies in disaster prevention and Korean companies used to totally depend on foreign developers until now. GS E&C established a high-rise fire scenario conducting "The Development of a High-rise Fire Safety Technology, " a research project supervised by the Ministry of Land, Transport and Maritime Affairs starting from 2009. We quantified frequency and impact of a total of 148 cases of high-rise fire through statistical analysis of the major high-rise fire in the world and created a program which enables users to select the appropriate fire scenario with ease. In the past, disaster-preventing design of a building meant randomly applying a few cases out of the 7 fire scenarios announced by the National Emergency Management Agency. GS E&C scenario is considering both frequency and impact based on the data from the 2010 Analysis of the cases of fire in the special buildings published by Korea Fire Protection Association so that users are given choices to select from and apply. It makes GS E&C high-rise fire scenario far more reliable than the old ones and expected to play an important role in enhancing fire safety in very tall buildings.



Outline of the Smart Water-Energy Technology



Water Resource Development

Water Reuse System | GS E&C's water reuse system is an active response toward the government's policy encouraging sewage reuse and a realistic alternative to address water-related risks such as water shortage. The system consists of advanced wastewater treatment, sewage reuse, and sludge-to-resources parts and features recycling water with high efficiency at 10% lower production costs compared to conventional methods. We developed wastewater reuse technologies, including the reuse of reverse osmosis concentrate and automated indicator of economic terms for cleaning the RO membrane at desalination plants to minimize emission of hazardous materials and secure a new growth engine in connection with operating / management technology as well as raising EPC business competency at home and abroad.

Seawater Desalination Technology | Seawater desalination is a new growth area with great potential, which can help GS E&C enter the global desalination market as well as create huge added value. Our well-known technologies is the "Smart WE (water-energy)" technology, which allows an operator of an RO desalination plant to reduce power costs. This technology will play an important role for GS E&C to advance into overseas desalination markets.

Waste-to-energy Solution

Waste-to-energy Solution | GS E&C has carried out an R&D project for a total solid waste-to-energy solution, which features optimal methods for all the processes from waste collection to final disposal. The integrated solid waste collection and treatment process transmutes wastes into harmless materials and relates to green technology and business which recovers useful energy (electricity, heat) and materials (compost, construction materials) from the waste. GS E&C will minimize the environmental and social impact of business activities while raising economic efficiency and recycling rate of resources using our eco-friendly facilities.

Stronger connection between technology and business

Commercializing New Technologies | GS E&C has commercialized 44.7% of the technologies developed over the past three years. In 2012, 108 of our original technologies were applied at 89 construction sites.

INTERVIEW “Secure sustainability through the development of green technology”

Recently, many construction companies are focusing on the development of environmental system and technologies to secure a new growth engine. Green technology, in particular, the new buzzword in the industry has become an important element considered by the clients and is seen as a key indicator of a company's growth potential.

Against the backdrop, the following needs to be considered for GS E&C to achieve sustainable growth. First, although most construction companies are developing green technology with the increase in demand from customers and the government, they are still highly dependent on foreign technology or just blindly following a uniform pattern instead of reflecting their own strengths and competence.

GS E&C needs to focus on what it can do best and continue to develop technology with which foreign technology can be modified to meet the conditions of the domestic market. Next, in order to establish a competitive construction business, the company needs to nurture SME partners by developing new technology together and provide them with patent support. It is crucial to keep a win-win relationship with SMEs through active technological exchanges and collaborative R&D activities.

Last, you cannot overestimate the importance of the determination of the CEO to pursue sustainable management such as green management and the company vision and goals must include environmental indicators. These efforts will help keep business relation with clients and builders as a business partner and also serve as a stepping stone to outperforming its competitors.

Professor **Dong Jong In**, University of Seoul



2012 Major Achievements in the Development of Green Technologies

Divisions	Technology/ Products	Description	Eco-friendliness	Major Projects in 2012	Major Objectives in 2013
Power & Environment	Low-energy seawater desalination plant	A technology to minimize electricity consumption to a level of 3.0kWh/ ton	<ul style="list-style-type: none">• Reduce carbon emissions	<ul style="list-style-type: none">• Carry out two joint R&D projects with overseas organizations: KAUST, USC, INIMA• Develop SWRO/PRO hybrid process• Develop Smart WE seawater desalination process	<ul style="list-style-type: none">• Carry out SWRO/PRO hybrid process development commissioned by the government• Support research and winning orders for ocean tides control process
	Water reuse system	A low-energy technology of construction and operation for water treatment using inorganic membrane	<ul style="list-style-type: none">• Minimize energy consumption• Minimize waste water and industrial wastes	<ul style="list-style-type: none">• Develop low-energy high-efficient MBR processes with total phosphorus emissions and technology to treat wastewater for industrial use	<ul style="list-style-type: none">• Develop technologies to reduce 10% of energy cost compared to the conventional sewage treatment technology
	Integrated Management of Waterworks	A total solution model for production/supply of high-quality tap water and optimal operation/ management	<ul style="list-style-type: none">• Produce and provide customized water services• Increase efficiency of limited water resource and energy use	<ul style="list-style-type: none">• Carry out the Eco-Smart Water Supply project commissioned by the Ministry of Environment• Carry out the Next-generation Intelligent Water Supply Network project commissioned by the Ministry of Environment	<ul style="list-style-type: none">• Secure technologies to design, build, and operate high-performance water treatment plant and water supply system• Commercialize technologies developed through test-beds in Daegu, Gwang-ju in Gyeonggi province, and Ho Chi Minh City, Vietnam
	Large-capacity clean incinerator plant	A project to design and construct an waste treatment and energy/ materials recovery plant through incineration of combustible waste	<ul style="list-style-type: none">• Reduce GHG emissions	<ul style="list-style-type: none">• Develop a program to design incinerators• Develop a fire grate with capacity of burning 500 tons of solid waste per day	<ul style="list-style-type: none">• Complete the development of large stoker incinerator with the daily capacity of 200 to 500 tons
	Optimal MBT processes for high WUR(water uptake rate) waste treatment	A project to design and construct an waste treatment and energy/ materials recovery plant turning combustible waste into RDF	<ul style="list-style-type: none">• Reduce GHG emissions	<ul style="list-style-type: none">• Reduce KRW 2.46 billion in operational cost by applying waste-to-energy facility to Daegu	<ul style="list-style-type: none">• Carry out certification of new green technology• Apply to the private investment projects
	Biogas production process	A project to design and construct an waste treatment and energy/ materials recovery plant turning organic waste into biogas	<ul style="list-style-type: none">• Hazardous waste-to-energy• Reduce GHG emissions	<ul style="list-style-type: none">• Develop high-efficiency hybrid biogas anaerobic digestion (dry-wet process)	<ul style="list-style-type: none">• Optimize Hybrid Biogas process and develop component technologies
	Automated waste collection system	A business to build a door-to-platform system transferring wastes from the large-scale/ apartment complex to dump sites/ treatment facilities.	<ul style="list-style-type: none">• Reduce GHG emissions	<ul style="list-style-type: none">• Develop automated one-way waste collection system for buildings	<ul style="list-style-type: none">• Maximize technological integrity
	Design and construction of Offshore Wind Farm	A technology to design offshore wind farm, to design and interpret wind farm structure, and to develop green construction method	<ul style="list-style-type: none">• Reduce GHG emissions	<ul style="list-style-type: none">• Carry out feasibility study on offshore wind farm complex• Design support for offshore projects planned to bid for	<ul style="list-style-type: none">• Continue to carry out feasibility study on offshore wind farm design• Support bidding for offshore wind farm• Carry out simulation test for green construction method of offshore wind farm
Civil Engineering	Underground transportation infrastructure	A technology to build a super-long span tunnel of over 50 meters in length within a short period of time	<ul style="list-style-type: none">• Reduce travel distances	<ul style="list-style-type: none">• Develop high-performance technologies for tunnel support system• Develop technologies to improve water resistance of tunnels	<ul style="list-style-type: none">• Develop technologies to secure stability in excavating tunnels• Develop technologies to control air pressure in submarine tunnels
Civil Engineering & Housing	Green concrete	New Bundang Line extension (Jeongja-Gwanggyo section) of double-track electric rail Section 12-16 of Cheong-jin	<ul style="list-style-type: none">• Reduce GHG emissions	<ul style="list-style-type: none">• Carry out feasibility study on green concrete	<ul style="list-style-type: none">• Continuous effort to commercialize and apply new technologies at construction sites• Apply to upper frames
Architecture	Green & Smart Building	A business combining cutting-edge technologies such as Green Buildings, Intelligent Buildings and specialized designs, which will lead future construction market	<ul style="list-style-type: none">• Save energy• Improve environment	<ul style="list-style-type: none">• Establish BIM Lean Process• Analyze green building business in the Middle East	<ul style="list-style-type: none">• Secure core competency for green remodeling business• Establish energy-saving quality control system

Sustainable Construction

OUR APPROACH

Based on the Life Cycle Assessment, GS E&C is taking into consideration impact to the environment in all business activities as well as technologies and management techniques needed in planning, green procurement, transportation, construction, operation and demolition. By pursuing these green business activities GS E&C will continue to work on sustainable development and stakeholders as well as reduce environmental effects on the surrounding ecosystem.

- Early Prevention of Impact to the Environment
- Sustainable Procurement and Transportation
- Sustainable Construction
- Sustainable Operation and Demolition



HOW TO CREATE OUR VALUE

GS E&C takes into consideration not only raw material innovation and economic value but also the value of social environment in all of its business practices. Through green construction and green operation GS E&C is creating its very own eco-friendly value. In addition, through green procurement we strive to create growth together with our partners and create eco-friendly economic value in addition to social value.

- Create environmental value through sustainable procurement, transportation, construction, operation and demolition.
- Achieve growth alongside our partners through green procurement.



Key Activities of Environment Manager	
Overview Inspect Environment Response	<ul style="list-style-type: none">• Mar~May Special inspection of dust• May~June Special inspection of waste• Dec~Jan Illegal incineration during winter months
Inspect Environment and Overview of Civil Complaints	<ul style="list-style-type: none">• Inspect facilities• Train workers on the environment• Prevent local civil complaints
Install/operate on- site environmental facilities	<ul style="list-style-type: none">• Vehicle Wheel Cleaning Facilities/ Sludge Dryer• Waste storage etc.• Waste water disposal facility/ septic tank
Training on the Environment at the Head Office and Activities with Local Council	<ul style="list-style-type: none">• Training for environment manager• Local council at each head office• Contact at each head office

Activities to Prevent Impact on Environment

Build System for On-site Management of Environment | Since 2010, GS E&C has been building a system to conduct environment-related work by designating a person to be in charge of managing the environment at each work site. The assistant foreman on-site also serves as the environment manager and chooses an employee to be in charge in each of the four high risk areas (documents on the environment, environmental facility management, environmental monitoring, green information system operation).

Conduct Environmental Impact Assessments | GS E&C is reducing the number of civil complaints and impact to the environment while conducting its business activities, in addition to writing and managing reports that outline plans on managing the environment for each construction site. For those sites that are targets of environmental impact assessments, we conduct post construction environmental impact evaluations each quarter and by managing environmental facilities and preserving the surrounding ecology we prevent any damage to the environment. The Q-HSE/CM team is in charge of leading and inspecting basic environmental impact assessments for the entire company while the Green Environment Team is in charge of environmental support for any problems that may arise.

INTERVIEW “ I hope the foundation for sustainable construction is based from the viewpoint of the Life Cycle Assessment (LCA). ”

One can say that the sustainability of green management related to the environment in the construction industry is one area of sustainable management from the point of view of the entire company. However, with the exception of some of the leading companies the level of those responding to this is still sub-par. In this situation, GS E&C's green management activities set a good example in the industry. In particular, by conducting research and technology development, procurement, transport, construction, operation and demolition, from the Life Cycle Assessment (LCA) vantage point all of the processes in the construction industry can be improved on to become eco-friendly processes. I believe that all of the data on raw materials and energy use at each business site is that is collected contributes greatly to creating not only social and environmental value but economic value for GS E&C as well. As such, through sustainable construction, GS E&C can set differentiated goals at each phase from procurement to demolition and a detailed action plan provides a realistic and comparable advantage over its competitors. I believe that in the future GS E&C needs to set goals and sustain activities that are specific only to GS E&C instead of merely reacting to government policy and generational trends or criteria and methods similar to its competitors. In particular, I believe that the establishing action plans that are realistic, systematic management and assessment of items that are being promoted, process improvements and improvements in the materials used and equipment is needed and in doing so will ultimately enhance GS E&C's competitiveness as well as help in securing sustainability.

Korea Land and Housing Corporation, Land and Housing Researcher, **Dr. Son Jong-rak**



Consider Sustainability Prior to Construction

Sustainable Procurement and Construction

Green Procurement

Provide Green Certification and Incentive > GS E&C has established green procurement guidelines and when registering new companies is awarding additional points to those companies that have acquired green certification. In doing so, we are contributing to our partners actively looking to possess green certification. In addition, while we are actively identifying, registering and managing alternative green product manufacturers we are also giving additional points during regular evaluation of our partner companies (once a year) to those holding environmental certification and are giving financial rewards as well as exemptions on contract performance securities to outstanding companies. Also, through our green procurement system we manage information on certified manufacturers of companies producing eco-friendly materials and monitor green procurement records.

Encourage Participation from Procurement Partner Companies > GS E&C has included 3 of the 10 G-SCM participant companies (an arm of the Ministry of Environment's Support Project to Spread Green Management) as a procurement partner companies to establish a green management system, acquire green technology certification, publish reports on the environment as well as participate in exhibitions abroad to support the establishment of green management.

Publish and Distribute Green Procurement Guidelines > GS E&C has published "Green Procurement Guidelines" which include an overview of general rules for green procurement, process, product type and new company registration in addition to the reward system and procurement results. The Green Procurement Guidelines will become a requisite for partner companies and other construction companies in green management

Green Transportation

Eco Driving Campaign > GS E&C has started the Eco Driving campaign to minimize environmental impact during the green transportation process. Drivers of on-site equipment and construction cars are given in-house training on preventing pollution, maintaining appropriate driving speeds and restraining from use of aged equipment, vehicles etc. In the future, Eco Driving posters will be distributed and related campaigns will be launched regularly to promote eco-friendly driving.

Video Conferencing System > Since 2010, GS E&C has been conducting its regional environment management meetings via video conference. Environment management guidelines by issue/time and real-time key environmental information are shared via video conference. Not only does the system improve work efficiency but it minimizes travel by car thereby contributing to the reduction of gasoline use. The number of management and employees participating in video conferencing in 2012 totaled 83,430 which equals a reduction in GHG by 3.53tCO2 –e.

*This is similar to the amount of carbon dioxide emissions by a 2000cc car traveling round trip between Seoul-Busan 25 times.

Green Procurement Records in 2012	
Unit: billions of won	
HB Label	70.85
High-Energy-Efficiency Equipment & Materials	25.51
Energy Efficiency Ratings 1~2	52.38
Eco-label	79.40
Energy Savings Label	2.09
TOTAL	230.23



INPUT. What is GS E&C doing to prevent Q-HSE risk on-site?

GS E&C has built and is operating a failure management system which is a database of similar failed cases (incidents/accidents) in the areas of quality, safety and environment that have taken place abroad. For ease of use, related information is provided in a single sheet to on-site employees and by sharing this throughout the company awareness and ability for risk prediction is increased. The Failed Case Management System is made up of 4639 domestic and foreign mid-large incidents and each case can be searched by key word/area/date. In the future it will be linked to risk prediction activities and a DB system that is made up of defect cases and information customized by construction type, equipment type, etc. is in the works.



Support of Today's Failed Cases by Site



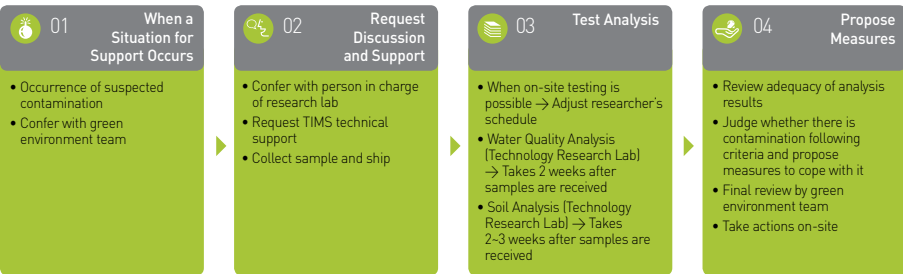
Support for Failed Cases through Search by Information

Number of Support for Failed Cases	
Unit: Cases	
Quality	1,564
Safety	2,626
Environment	449
Total	4,639

Considerations for Sustainability in the Construction Phase

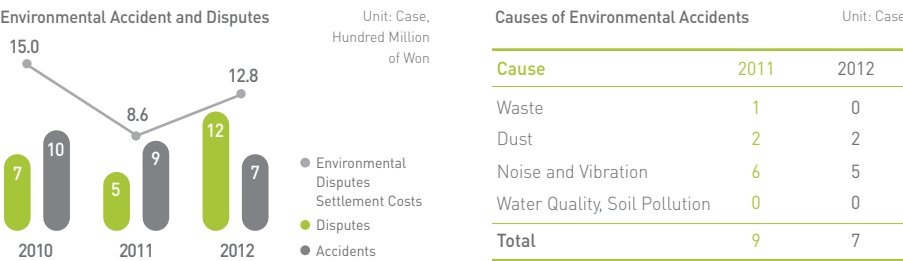
Sustainable Construction

Technology Information Management System(TIMs) Support | In the event environment technology and test analysis related to pollution and civil complaints is needed during construction, technical support is requested from TIMS (Technology Information Management System) our in-house information system and speedy assessment of the level of pollution at the construction site and control measures are presented.



Protection of Biodiversity | GS E&C is minimizing the impact of construction on the environment in order to preserve the ecosystem and plants and animals. In addition, the company is promoting activities to preserve biodiversity and through its green information management system is managing information on conservation areas, endangered animals and plants to prevent pollution and damage to the ecosystem as a result of construction. In 2012 Pre/Post Environmental Impact Assessments will be conducted at Yongbo Industrial Park, East Coast-Samchungak Highway site and Jinju-Kwangyang Kyungjin Rail sites.

Environmental Accidents and Dispute Prevention | GS E&C is strengthening initial support and on-site training on the environment in order to prevent environmental accidents and disputes on-site as well as monitoring the status of environmental accidents and disputes. In addition, in order to minimize such accidents and disputes the "Environmental Dispute Prediction Program" developed in 2005 is being used and at various sites SMS based communication activities are being used to manage civil complaints. As a result in 2012 although there were a total of 7 environmental accidents, fewer than in 2011, the cost of settling disputes increased.



Activities to Preserve the Ecosystem at the Jinju-Kwangyang Kyungjin Rail Construction Site



Prior to construction on the Jinju-Kwangyang Rail project to add new tracks, GS E&C conducted Environmental Impact Assessments on the areas surrounding the planned tracks that were expected to be affected by construction and operation. The results revealed a wide variety of plants and animals, in particular legally protected otters, leopards, large swans, eagles and the appearance of 6 bird species. Following this, the area under construction was monitored monthly and measures to minimize interference to the habitat were established, grit chambers and silt protectors were installed all of which worked to minimize any damage to the plant and wildlife and environment.

GS E&C's Eco-friendly Construction Management

GS E&C produces an environment management guidebook each year and distributes it to all of its construction sites using it to inspect and prevent pollution of the surrounding environment.

Waste Management

GS E&C has developed guidelines for waste management and is applying them to all construction sites.

Air Quality Management

In order to prevent dust at construction sites a wide variety of activities to improve air quality is being carried out.

Water Quality Management

Grit chambers, silt fences, temporary drainage ditches and other water quality control facilities at construction sites to minimize environmental damage have been installed.

Noise and Vibration Management

Noise and vibration management guidelines have been developed which call for complying with the installation of sound barriers prior to construction as well as the measurement and management of noise pollution.

Soil Pollution Management

In order to prevent soil pollution occurring on site, thorough management of facilities as well as the report/analysis/treatment process of soil pollution is being carried out.

A detailed look at the eco-friendly construction management GS E&C is promoting at its construction sites

Consideration of Sustainability during the Post Construction Phase

Sustainable Operation and Demolition

Green Operation
Expansion of Eco-friendly Certified Buildings > GS E&C has constructed eco-friendly buildings applying various green technologies and these efforts have been recognized through Green Building Certifications. GS E&C will strive to increase the number of its certifications such as the Green Building Certification, the LEED certification of the USA, and Singapore's Green Mark for its commercial building and housing.

Building Energy Management System > GS E&C is currently in the process of adopting the Building Energy Management System (BEMS). BEMS is a system that supplies the optimal strategy through analysis and management of the energy consumption status and once adopted will reduce energy use by 10% annually. In addition, we can expect to see a reduction in equipment maintenance costs and longer life span for equipment. GS E&C is conducting energy assessments on its head offices and is drawing up measures to improve energy performance and through building renovations and application of BEMS it is looking to strengthen its energy management capabilities.

Green Demolition
Eco-friendly Demolition Processes > A large volume of waste and pollutants may be released during the demolishing of a structure. GS E&C created waste management guidelines to minimize environmental impact during the demolishing processes. Strict guidelines are implemented from the time waste is produced to ensure different types of waste are separately managed, stored and disposed of. After demolition is complete, all the waste is collected from the site and handled by properly licensed waste-treatment specialists. When the demolition project is performed by a supplier, GS E&C requires the supplier to establish and implement site management plans on its own. A dedicated environmental manager is employed on the site to prevent dust and regular noise measurements are conducted to help minimize noise and vibration damage to local residents.

Proper Disposal of Waste Asbestos > GS E&C has developed the Asbestos Abatement Manual in compliance with the Industrial Safety and Health Act of Korea and US Environmental Protection Agency (EPA) standards. The manual was designed to remove waste asbestos appropriately during the demolishing of a structure, thereby protecting workers and residents living in the vicinity. Furthermore, we have created an "Asbestos Abatement Data Center" within the TPMS to share information on asbestos demolishing facilities and worker protection equipment. A final clearance test for asbestos is also conducted after the deconstruction process is over to ensure the asbestos is completely removed.



Eco-friendly Structure Certifications 2012

Structure	Certification Date	Certification Type
Korea Credit Guarantee Fund, New Daegu Headquarters	Feb 2012	Pre-certification
Kuwool Home	Mar 2012	Pre-certification
GS Square, Anyang	May 2012	Certification
Sejong City Government Office 2-1 Area	May 2012	Pre-certification
Military Culture Research Center	July 2012	Pre-certification



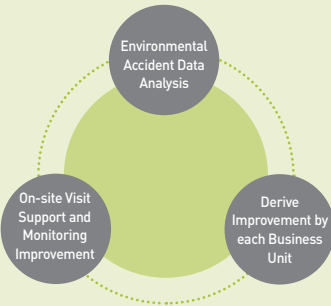
CASE STUDY. On-site Environmental Inspection

GS E&C regularly conducts on-site accident analysis and provides customized on-site support based on the information derived from improvements in each business area. Through the TPMS (Total Project Management System), Environment Information System and Green Information Management System, training on the environment, accidents, cases, environment management guidelines by area, Q&A from the Environment Ministry, environment results, greenhouse and amount of energy generated etc. is managed. Environment inspection is divided into two groups; for support purposes: map inspection, general survey, pre-support and issue monitoring and for monitoring purposes: special inspection. There were 89 on-site inspections in 2012, 15 map inspections and 74 special inspections. In addition, items pointed out during inspection and feedback on measures taken, are managed by the inspection system and can be checked on a real-time basis.

Environment Inspection Results (Unit: Case)

Map Inspection			Special Inspection			Total		
2010	2011	2012	2010	2011	2012	2010	2011	2012
261	72	15	24	3	74	285	75	89

Environment Inspection Process



VALUE CREATED ACTIVITY

GS E & C is not only creating economic value through raw material innovation in all of its business processes but is also creating environmental/social value through environmental pollution inspection and improved customer satisfaction.

01 Business Phase

Conserving the Ecosystem through Restoration of Soil Polluted by Oil

GS E&C was awarded a project to restore polluted soil to restore the desert in Kuwait contaminated by an oil leak. GS E&C is playing a role in restoring the ecosystem in the contaminated area by collecting the residual oil and restoring the soil in the areas that are most contaminated. American environment experts 'EBI (Environmental Business International)' a consulting company and UK government organization 'JEMU (Joint Environmental markets Unit)' are predicting that the soil restoration market will grow to \$53.4 billion (approx. 60 trillion KRW) in 2015 from \$30 billion (approx.. 33.735 trillion KRW) in 2005. Keeping in step with this trend, it is expected that restoration of contaminated soil in war-torn areas like Kuwait, Iraq and Libya will become a new global environment issue and new business models related to it will actively be developed. As such, it has provided new opportunities for GS E&C which has focused on soil restoration as a new growth area in the environment field and we expect to create environmental value by conserving the ecosystem in regions with soil contamination.



Soil Polluted by Oil

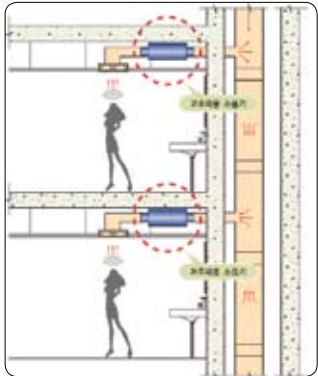


Kuwait Soil Restoration Project Site

02 Design Phase

Solve Social Problems, Maximize Customer Satisfaction through Development of Inter-floor Noise Prevention Technology

Recently noise from neighboring floors has created problems between neighbors and is making headlines as an issue faced by society. The Ministry of Land, Infrastructure and Transport has overhauled laws related to noise performance between neighboring floors at construction sites. However, research in the field of noise from floor impact has been experimental and we are faced with limits on finding the key cause and developing plans to reduce such noises. GS E&C has developed a floor system that reduces noise from impacts on the floor and a noise machine that minimizes noise from the bathroom and applied them during the construction of Dongtan's Central XII. We believe that this technology will reduce social issues caused by inter-floor noise as well as create customer satisfaction for home owners.



Bathroom Noise Machine Installation

Improve Constructability and Reduce Waste through use of Eco-friendly Paper Molds

GS E&C is using paper molds to reduce waste, minimize the generation of dust and air reduction effects post-construction. Unlike existing plastic and metal materials, paper molds are easy to install, move and take apart making it excellent for use in construction. It is a construction method that generates little dust during the finishing stages, is vibration-free and creates little noise which minimizes damage from civil complaints. In addition, paper can be recycled as scrap not only reducing waste disposal costs but also by saving resources we can seek out economic benefits. By applying this to the circular columns at our government office construction site in Sejong City we reduced waste disposal costs by 25.4 million KRW.



25,4 million KRW
Reduce Waste Disposal Costs

Sejong City Government Offices Construction Site
(Circular Column Paper Molds)

03 Construction Phase

Seek Customer Satisfaction through Management of Emotionally Driven Civil Complaints

Depending on the frequency of lawsuits, requests to stop construction and request for damages arising as a result of noise, vibration, and cracks in buildings, GS E&C designates someone on-site to send out daily texts informing residents near construction sites of construction dates and when vibration/noise is expected to occur. By managing civil complaints that are emotionally driven, environmental disputes and civil complaints have dropped by 37% and these activities are expected to build a positive company image and help secure future customers.

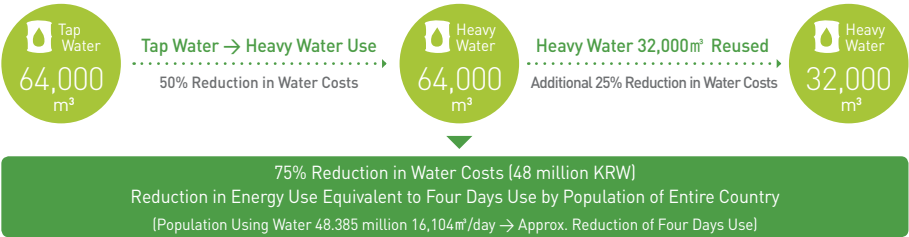
Increased Work Efficiency and Reduced Pollution through Building of Temporary Bridge

By building a temporary bridge on-site GS E&C has both improved work efficiency and reduced dust. In the early stages, despite being the same construction site, in order to use the local road cutting across the site vehicles had to go through vehicle wheel cleaners making it troublesome to go from one location to the next. In addition, it was discovered that due to frequent use of vehicle wheel cleaners, part of the earth and sand and wash water leaked out and there was a risk of on-site vehicles colliding with general traffic. To cope with this GS E&C built a temporary bridge to cross over the local road and in doing so transport time was reduced, travel become smoother and the increase in the number of trips led to improved work efficiency. This also led to a reduction in labor costs and minimizing of pollution to the environment.

Create Economic and Environmental Value through Recycling of Heavy Water

In order to solve the problem of the increase in cost ratio due to the skyrocketing cost of tap water and shortage of water as a result of industrial development, GS E&C is using heavy water instead of water during testing of oil storage tanks. The result was not only a 75% reduction in water costs but a reduction in the use of energy equivalent to four days of energy use by the population of the entire country.

Expected Effect, Economic Effects & Energy Reduction Effects



37%

Ratio of Reduction in Environmental Disputes and Civil Complaints

65 million KRW

Reduction in Costs Resulting from Building of Temporary Bridge

48 million KRW

Ratio of Reduction in Water Costs (Reduction Costs)



Existing Facility (Before Change)



Existing Facility (After Change)



Incheon Airport Refueling Facility

04 Operating Phase



- Solar System
 - Integrated Building BIPV System
- Home Network System
 - Gas Valve, Heating, Lighting Control System
- Automatic Trash Collection System
- Solar System
 - Solar Street Lights
- Rainwater Recycling System



- Heat Source System
 - Small Heat Generator
 - Water-Cooled EHP + Ice Thermal Storage System
 - Water-Cooled EHP System

Create Economic and Environmental Value through Green Smart Applied Technology

GS E&C is creating economic and environmental value by applying Green Smart Applied Technology during the operation process. In particular, eco-friendly system facilities (heat source system, automatic trash collection system, rainwater recycling system), electric eco-friendly systems (home network system –gas valve, heating, lighting control), solar systems (solar BIPV* system, solar street lights) etc. have been applied to the Mesena Polis Building in Seogye-dong Mapo-gu. The heat source system is based on a small heat generator system using gas to produce electricity and the waste heat generated is used in incidental facilities for heating and hot water thereby saving energy. In addition, through the eco-friendly system facilities, rainwater is recycled and is used for water in the home, landscaping and industrial use. During heavy rainfall, it not only prevents flooding, but it is an efficient use of water resources to prepare for future water shortages and creates economic benefits by reducing water and sewage costs. Also, the electric eco-friendly system BIPV system is used to produce pollution-free, unlimited, noiseless energy and the low maintenance cost as well as external eco-friendly image provide a great deal of promotional value.

* BIPV (Building Integrated Photo Voltaic) : Refers to solar energy modules integrated in a building.



2012 ENVIRONMENTAL PERFORMANCE

Sustainable Construction Process

INPUT

01 Green Technology Development and Design

- Strengthen green technology development
- Commercialize green technologies



02 Green Procurement

- Green certified product procurement
- Expand green procurement by partner companies



03 Green Transportation

- Build green transportation system



04 Green Construction

- Activities to reduce resource use
- Activities to minimize environmental impact



05 Green Operation

- Eco-friendly construction technology
- Expand development and certification



06 Green Demolition

- Minimize construction waste
- Proper handling of asbestos
- Recycling resources



OUTPUT

Investment in Environmental R&D Activities

(Unit: millions of KRW)



2010

748

2011

1,785

2012

1,269

Resource Consumption



Sand 88,694 m³

Plaster board 2,230,998 m²

*Data Collection Range: 250 domestic construction sites

Ready-mix concrete 2,063,610 m³

Cement 1,236,241 ton

Aggregate 341,262 m³

Asphalt concrete 362,964 ton

Reinforcement bar 218,300 ton

Recycled Aggregate 83,508 m³

Water Consumption

(Unit: m³)



Tap Water 1,124,730

Underground Water 564,210

River Water 351,156

Total 2,040,096

Recycled Water 41,308

*Data Collection Range: 250 domestic construction sites, 11 office buildings

Consumption by Energy Source

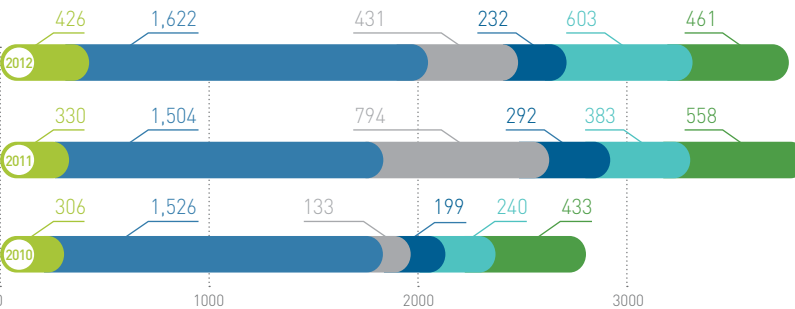


Total 3,774.5 TJ

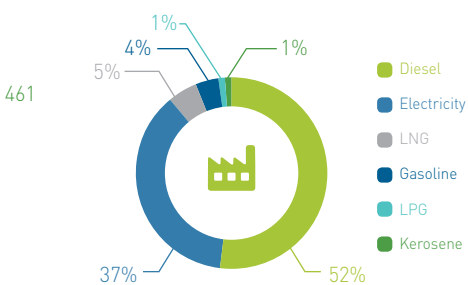
2.2% reduction compared to previous year

*Data Collection Range: 250 domestic construction sites, 11 office buildings

Buildings Civil Engineering Architecture Housing Plant Power Environment Unit: TJ



Consumption by Energy Source in 2012



Amount of Waste, wastewater and waste asbestos



The amount of waste disposal outsourced

Waste concrete 152,307 ton

Waste asphalt concrete 27,195 ton

Construction waste soil and stones 27,854 ton

Construction sludge 18 ton

*Data Collection Range: 250 domestic construction sites

Mixed construction waste 84,155 ton

Waste synthetic resins 4,923 ton

Waste wood 3,382 ton

Total 299,835 ton

Amount of wastewater



935,980 m³

Amount of waste asbestos



226 ton

Greenhouse emissions



Sales in KRW (Greenhouse gas emissions/Sales)

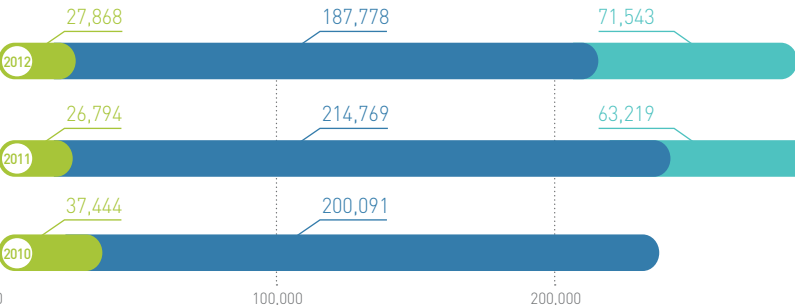
2010 4.25 tCO₂-e/100 million KRW (unit)

2011 3.88 tCO₂-e/100 million KRW (unit)

2012 3.39 tCO₂-e/100 million KRW (unit)

*Data Collection Range: 250 domestic construction sites, 36 overseas project sites, 11 office

Buildings Domestic project sites Overseas project sites



Exceeded 2012 greenhouse gas emission reduction targets 3%

Range of greenhouse gas inventory construction at overseas sites 82%

Energy and power reduction at the headquarters (compared to 2011) 6%

Response to Climate Change

OUR APPROACH

As climate change is emerging as a global issue, it is having a large impact on the sustainability of the country, society and companies. GS E&C is responding to climate change and carrying out its social responsibilities by strengthening its carbon management system through its target of reducing GHG by 30% compared to the BAU (Business As Usual) levels by 2020 and pursuing GHG and energy reducing businesses as well as conducting green communication activities to spread awareness throughout the company and its partner companies.

- Establish Energy Management Committee
- Operate Green Information Management System
- Manage Company-Wide Green Management KPI



HOW TO CREATE OUR VALUE

GS E&C is securing renewable energy businesses and new growth engines based on the risks and opportunities from climate change. The company is taking this opportunity to reduce carbon and not only realize environmental value but through green communication also realize social value as well.

- Create Environmental Value Together with Securing Business Opportunities through Response to Climate Change
- Achieve a Win-Win Partnership and Spread Environmental Value through Green Support of Partner Companies



Detailed Look at GS E&C's Environment Management Strategy and Task Force

Environment Management Strategy	
Environment Management Task Force	

See the official homepage of GS E&C.

Establish Energy Management Committee

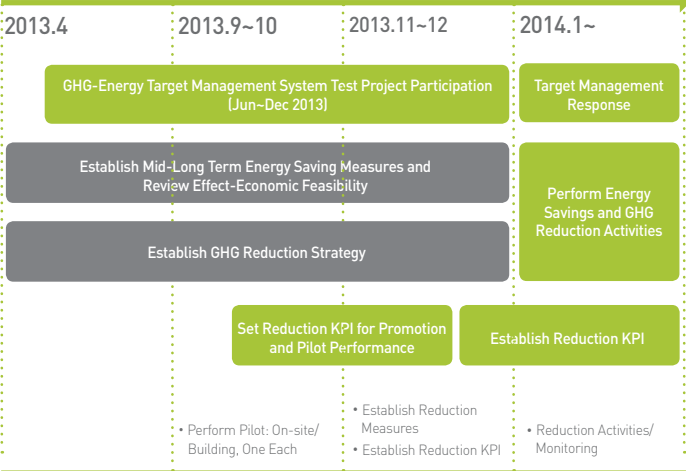
GS E&C has launched the Energy Management Committee to prepare for the increase in energy costs as a result of rising global oil prices and the GHG/Energy Target Management System that will be implemented in the construction sector starting in 2014.nvironmental monitoring, green information system operation).

Energy Management Committee Introduction | The Energy Management Committee that was established for representatives of business divisions and building managers to discuss ways to efficiently save energy. In order to save energy and reduce GHG, energy reduction goals for the company were established and an energy campaign continues to take place and is monitored to establish tasks on areas to be improved.

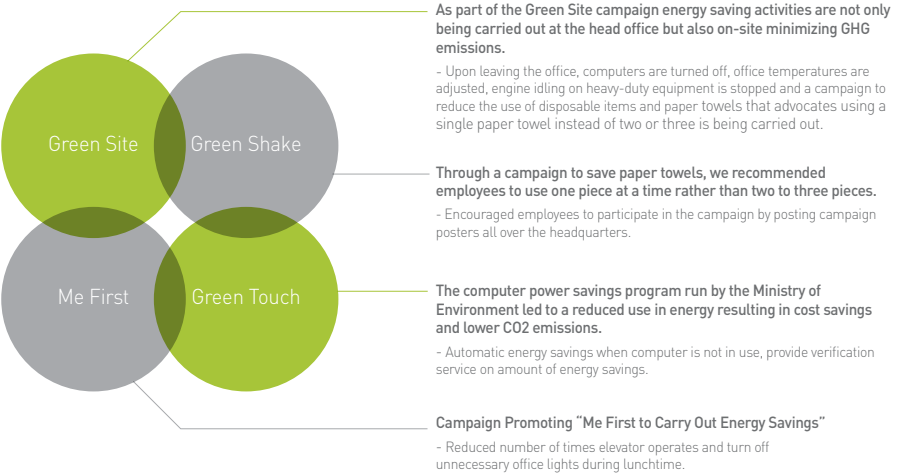
Energy Management Committee



Energy Management Committee Implementation Plan



Energy Management Committee Activities | The Energy Management Committee is continuously carrying out and monitoring the "Energy Savings Campaign" to ensure that all of the employees both at the head office and on-site live those ideals in their everyday life. In 2012 the campaign was carried out in three stages and it is being rolled out to construction sites, the head office and throughout the entire company.



Operate Green Information Management System

GS E&C has developed and operates a green information management system for managing environmental performance systematically and easy monitoring of data. In 2011, we expanded the scope of collecting environmental data by establishing the GHG inventories not only at domestic sites but also key overseas sites.

Role of Environmental Information Management System	
Establish and Implement Green Management Strategies	<ul style="list-style-type: none">• Establish and monitor quantitative targets for green management• Manage green management performance indicators
Prepare for Potential Regulatory Risks Regarding Climate Change	<ul style="list-style-type: none">• Prepare for potential regulatory risks regarding climate change by measuring and analyzing GHG emissions
Cost Reduction	<ul style="list-style-type: none">• Replace offline activities and paper copies with online business practices• Unify information collection channels to prevent excessive workload
Raise Awareness on Green Management	<ul style="list-style-type: none">• Raise employee awareness by sharing information on a real-time basis• Disseminate green management practices into construction sites

Manage Company-wide KPIs for Green Management

GS E&C set short-term (annual) and mid-/long-term targets for green management, and the performance of the targets is managed by establishing enterprise-wide KPIs.

KPI	Definition	Mid-/Long Term Target (2020)	Achievement against targets for 2012
Direct GHG Emissions (tCO ₂ -e)	Annual direct GHG emissions	7.1% On-Site Compared to BAU levels, Building 26.7% Reduction	● Achieved <div><div></div></div> 8%
Indirect GHG Emissions (tCO ₂ -e)	Annual indirect GHG emissions	7.1% On-Site Compared to BAU levels, Building 26.7% Reduction	● Achieved <div><div></div></div> 25%
Rate of Waste Reused and Recycled (%)	Proportion of waste reused /recycled to the total waste	Recycling Rate Over 90%	● Achieved <div><div></div></div> 33%
Rate of Raw/subsidiary Materials Obtained through Green Procurement Processes (%)	Proportion of expenses on materials with green certification to the total materials costs	11.8% Above	● High <div><div></div></div> -33%
Environmental Protection Activities (No. of activities)	Proportion of investment in green technology to the R&D investment	Above 50 Cases Annually	● Achieved <div><div></div></div> 46%
Rate of R&D Investment to Develop Green Products (%)	Technology development investments against investments in research and development for green technology	70% Above	● High <div><div></div></div> -3%

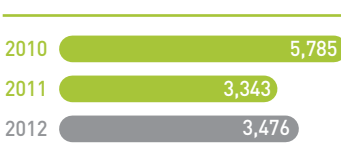
Green Touch Program



Green Touch Program Results

Installation Personnel (65.8%)	3,735	People
Energy Savings	149,276	kwh
CO2 Reduction	63.3	Ton

Green Environment Training



Support Project to Spread Green Management

For the sustainable growth of its partner companies, GS E&C is supporting them by establishing a green management system, nurturing green management experts, establishing a GHG inventory and green communication through the “Support Project to Spread Green Management in the Construction Industry” led by the Ministry of Environment. In 2012, three of the ten companies that participated were included as procurement partner companies and by establishing a green management system, obtaining green technology certification, publishing an environmental report and participating in overseas exhibitions we supported the establishment of green management in our partner companies.

Highlight of Key Activities in 2012

Establish Green Management System

For the establishment of a green management system in our partner companies, GS E&C has published an operations guideline. In addition, through a green management awareness survey and status diagnosis green management vision and goals for each participating company was established. In 2013, an integrated environment management guideline by construction type will be produced and published in order to spread the green management strategy of the host organization to all participating companies.



Partner Company Diagnosis (Interview)



Produce Integrated Environment Management Guideline based on the Characteristics of each Construction Type

Nurture Green Management Experts

GS E&C is carrying out Energy Management Workshops and training to nurture experts in order to improve the work abilities of workers and strengthen the green management mindset of employees in its partner companies. In particular, in order to get an understanding on overseas eco-friendly technology and material trends an overseas benchmarking program is in place through which partner companies have visited Singapore and Japan. In 2013, through the CEO forum and G-SCM results presentation, our good business performance over the past three years will be shared and used as the foundation for disseminating green management



Overseas Benchmarking

GHG/Resource and Energy Management

Companies by diagnosing the efficiency of their resources and energy and establishing a DB for items that have been reduced. Through these efforts, participating companies have been registered as Korea Voluntary Emission Reductions (KVERs), given ISO14001 certification, certified as Greenbiz, and obtained environmental new technology and environmental marks. In 2013, through energy diagnosis of our partner companies, optimized energy use, regulatory risk analysis and future emissions data for each company will be used to carry out GHG/ Energy reduction activities.



Greenbiz Certification (Spacemax)



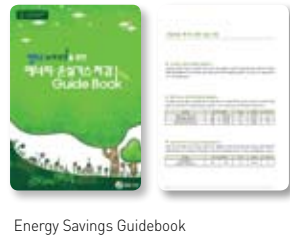
Energy Diagnosis of Participating Companies

Green Communication

GS E&C has published and distributed posters on saving energy and guidelines on reducing GHG/Energy to its partner companies and all of its construction sites. In 2013, the company plans on publishing the host organization’s integrated report and environment report of partner companies to be used in marketing activities and to share information on the results of green management with stakeholders. In addition, a casebook on green management will be published/distributed to disseminate green communication.

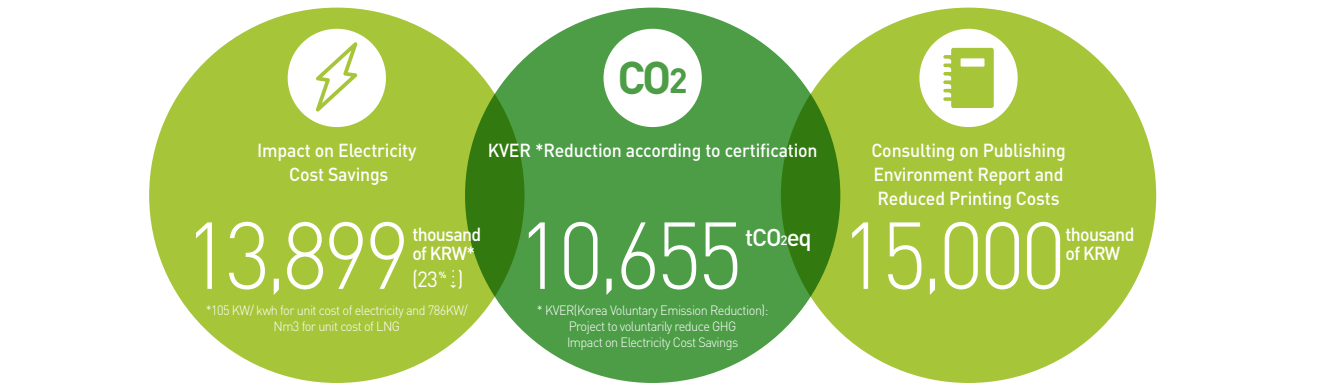


Publish Environment Report (Taehyung Company)



Energy Savings Guidebook

Major Performance of Suppliers through G-SCM Project



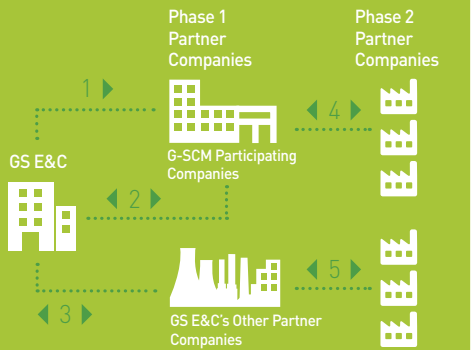
Key G-SCM Activities and Results

	Year 1 (Understanding Green Management)	Year 2 (Establishing Green Management)	Year 3 (Disseminate Green Management)
Develop Green Management Experts	Training to Develop Experts		
	Develop Books for Exclusive Talent		On-site Training for Participating Companies
	Overseas Benchmarking (Singapore)	Overseas Benchmarking (Japan)	Overseas Benchmarking (China)
Green Management System	Establish Green Management Vision, Goal and Policy	Green Management Diagnosis and Evaluation of Participating Companies	Green Technology Certification
	Publish Green Management System Operations Guideline	ISO 14001 Certification (Taehyung Company)	Publish Integrated Environment Guideline
GHG Support and Energy Management	Establish GHG Inventory for Participating Companies	Establish DB for Reduced Items	Drew items to be reduced
	Publish GNG Inventory Guideline	Evaluation Reduction Potential Rate of 5 Manufacturing Companies	Publish GHG Inventory Guideline
	Diagnosis on Resource and Energy Efficiency of Participating Companies	Energy Diagnosis (Sungchang ITS, Taehyung Company)	Energy Diagnosis (Sungchang ITS, Taehyung Company)
Green Procurement	Develop IT Based Green Procurement System	Disseminate Green Procurement System to Partner Companies	Expand Application of Green Procurement System
	Draw-up Supplements to Test Applications of Participating Companies	Publish Green Procurement Guidebook	Training on System Use for Partner Companies that are not Participating Companies
Green Communication	Establish Internal/External Stakeholders of Host Organization	Print Poster on Energy Savings	Publish Participating Companies Green Management Casebook
	Establish Green Communication Roadmap	Energy/GHG Reduction Guidebook	Publish Environment Report (2 Companies)
	Publish Sustainability Management Report (Host Organization: GS E&C)	Publish Environment Report (1 Company)	Results Presentation and CEO Forum

Expected Effects of Support Project to Spread Green Management

Through the G-SCM project GS E&C is passing on green management know-how and using this as a foundation to establish a cooperation system for green management with partner companies. In the future by establishing an integrated environment management system in the construction field we expect to build a two-way communication channel and continue to spread it.

1. Pass on GS E&C's green management know-how through the support for spread of the green management project.
2. Strengthen competitiveness through win-win management between GS E&C and participating companies.
3. Phase 1 Dissemination: Through the support for spread of green management project and acquired experience, establish a cooperation system for green management with partner companies.
4. Phase 2 Dissemination: Push forward with the support for spread of green management project with phase 2 partner companies and from those already participating.
5. Phase 3 Dissemination: Establish cooperation system for green management with phase 1 participating partner companies and relevant phase 2 partner companies.



Safety & Health Management

OUR APPROACH

In the construction industry, safety at sites is as important as providing reliable construction. GS E&C is preventing various accidents at construction sites through systematic preemptive measures and striving to realize the goal of “making sites accident-free for a long time” by means of sticking to basics and principles. At the same time, we are incorporating advanced safety culture through advanced safety management techniques and site-centered safety and health management. Also, we are raising construction worker’s awareness on safety by streamlining safety and health management system and providing safety education. We will continue our effort to prevent and control safety accidents through safety management matching global standards.

- Strengthening safety and health management system
- Activities to prevent safety accidents
- Nurturing equipment specialists
- Safety and health measures at overseas sites



HOW TO CREATE OUR VALUE

GS E&C prevents and controls major disasters and accidents under the safety and health management implementation system. We minimize environmental cost by preventing environmental accidents through safety and health management, safety education, and the development of safety gear. In addition, we are reducing social cost from safety accidents by achieving “zero major accidents at work.”

- Minimizing environmental cost from accidents through Safety & Health Management System
- Promoting a positive corporate image through preventing accidents



Safety and Health Certificates obtained by GS E&C KOSHA18001 and OHSAS 18001 See Certification Status in details



Strengthening Safety and Health Management Implementation System





Establishing Safety & Health Management System | GS E&C is implementing advanced safety management and site-centered safety management by means of sticking to basics and principles to achieve “zero major accidents.” In 2012, we established an integrated system to incorporate KOSHA 18001 with the safety and health related institutions of the company and the construction industry.

We made the whole process of identifying risks and taking response measures accessible by construction managers so that they can get a good grip on the potential risks while simplifying administrative tasks to raise work efficiency. We will continue to improve the system solving problems found during a pilot program and provide on-site training for our employees and partner companies.

VALUE CREATED ACTIVITY.

Reducing social cost by establishing Safety & Health Management System

GS E&C is creating social values as well as economic values such as cutting down labor expenses and other cost by minimizing risks of loss from accidents. We introduced the Safety & Health Management System in pilot programs and were able to enhance efficiency by reducing time to prepare risks assessment table, TBM materials, daily safety check table, and meetings. At the same time, we are creating social values we pursue by cutting down social cost from accidents.

	Anticipated Effects	Description
 Human Resources	0.5 person / site	Reduce workload of workers at sites by simplifying the risk assessment process (supplier, supervisor, safety manager) ▶ Increase time to take care of dangerous tasks at sites
 Time	Decrease 75% from the current practice (About KRW 1.3 bil.)	Reduce time to create and review risk assessment table by over 75% (100 min. ▶ 25 min.)
 Cost	Save office supplies (About KRW 45 mil./ year)	Reduce print-out costs by establishing electronic settlement system linked with TPMS (150 sites × KRW 0.3 mil. per site/year)
 Reducing Accidents	Save costs from accident loss (About KRW 6.74 bil.)	In the case of achieving the goal of reducing 20%; (Save KRW 33.72 bil. [Estimated cost from accident loss in 2012]× 20% = KRW 6.74 bil.)

Safety & Health Management Organization | GS E&C has a Quality, Health, Safety and Environment (Q.HSE) steering committee at company level, to encourage employees to pay more attention to safety and to strengthen quality and environment management activities. The committee is led by the Chief Domestic Business Officer (CDO) and attended by business division leaders and support departments. At the committee, the participants share and discuss major Q•HSE issues and prepare solutions. In 2012, we created a Safety Innovation Team to improve our skills to ensure safety at work and effectively implement safety measures and brought in health experts.

Preventing Accidents

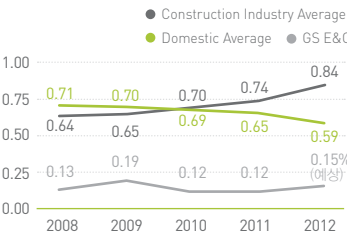
Visiting Consulting Service | GS E&C provides consulting to manage sites more effectively to prevent future safety accidents. Our consulting team, which comprises safety team, equipment management team, quality team, and green environment team, offers consulting mainly to high-risk sites where major accidents, cardinal rules violation, and other major issues have been reported. The team visits the sites to conduct self-inspection, customized education for individual site, and risk assessment on the process for the next two or three months.

Permit To Work Operation | GS E&C has a Permit To Work system to prevent safety accidents form high-risk core activities. The PTW is created daily to be posted in high-risk work areas including areas where there is a risk of fire or explosion and confined areas and safety mangers are checking regularly if the PTW procedure is strictly followed.

Communication Expansion | GS E&C carries PCM(Pre-Construction Meeting) to identify and prevent major risk factors in advance and it is a operation by the field and Technology Division. PCM is a meeting where construction process is simulated before high-risk process and relevant parties share their opinions. All the employees attend the meeting to discuss response measures to risk factors and to establish action plans to be applied at the site. In addition, we created a joint management-worker health and safety committee where labor and management discuss and decide on important health and safety issues to protect workers from potential risks or health problems.

Accidents Status Management | GS E&C tracks and manages accidents at work through the Q.HSE information system. In 2012, a number of major accidents took place mainly due to mishandling of equipment and inadequate supervision and accident rate is estimated to be 0.15%. Based on this experience, we will strive to minimize the number of accidents by pursuing safety activities continuously and improving the equipment management system.

Accident Rate Unit: %



Casualties Unit: persons

2010	2011	2012
8	6	9

• Source of domestic and industrial average: Industrial Accidents in 2012, Ministry of Employment and Labor

• GS E&C’s data: converted accident rate (the converted number of industrial accident victims / the number of permanent workers x100)



INTERVIEW

“We will continue safety management to match the global standards”

Safety management is crucial at construction sites. We are committed to achieving “zero major accidents at work” through advanced accident prevention and safety-focused business operations, by means of sticking to basics and principles. To make this happen, we consistently upgrade our safety management system and implement the “behavioral-based safety” strategy that requires thinking and acting from the workers’ perspective while managing equipment to prevent accidents. In addition, we work with our suppliers to raise the awareness of on-site workers about safety and share safety culture. On the other hand, GS E&C implementing active safety and health programs with the goal of “no accidents for 5 million hours at overseas construction sites.” Recently, we are running AIPP, an accident preventive program completed after two years of development effort, as a pilot program for the IRPC project in Thailand and other four overseas sites. I believe such aggressive safety and health activity is GS E&C’s one of the biggest strengths and the reason the company is considered a global leader in the safety and health management. This is a key requirement to consider for sustainable growth of business. We will continue our effort to establish a safety management system of global standards by implementing safety and health management from the long-term and lasting point of view based on our skills and competence in safety and health measures.

GS E&C Q.HSE Team **Jones Stephen**





Safety Innovation School

We founded a safety innovation school in March 2006, the first of its kind in Korea’s construction industry, to nurture safety innovation leaders through hands-on experience and practical training. In 2012, we revamped its courses to improve related abilities, induce changes in attitude, and enhance complex risk management skills. First of all, we provided training by organization at construction site, a change from the previous training by the type of work. Next, we reinforced case studies such as virtual reality simulation of dangers at work under the scenarios such as fire/explosion, confined spaces, emergency and electric field training along with programs to reinforce beliefs and raise awareness on safety. Not only that, we regularly monitor those who finished the course to see if they are actually applying what they learned at sites while paying special attention to those who did not receive safety training. Thanks to the efforts, our safety innovation school is benchmarked by many other domestic companies and South East Asian nations. In 2012, field construction personnel from overseas sites ,including Vetro[name needs to be confirmed] in Vietnam and the JCT project in Singapore, visited the school.

Direction of course reorganization at Safety Innovation School		
Curriculum	Hands-on Experience	Case Study
Goal	Attitude change through practice	Improve complex risk management skills
Contents	<ul style="list-style-type: none">• Create evacuation plan / How to extinguish fire• Install lightning arrester/ How to check dangerous machinery• How to deal with chemical materials / How to deal with emergencies	<ul style="list-style-type: none">• Draw risk factors and establish response measures in the case of combined works• Analyze causes for accidents by position• Learn risk management skills by teaching

Equipment Manager Training

Equipment Manager Training | GS E&C is reaching the goal of “Zero Accident” for all the equipments used in its construction sites through equipment manager training. In 2012, we conducted two rounds of equipment management training for 226 site equipment managers. The course consists of main tasks and performance report of the equipment management team, introduction to key safety management policies, and understanding about construction machinery and safety management. After finishing the course, attendees took a test designed to raise safety competence at the site.

Equipment Inspection at Overseas Sites | GS E&C is dispatching equipment specialists to overseas sites such as the Middle East and South East Asia, which are in need of experienced equipment operators, to help construction operations. In 2012, our equipment specialists visited the Nielsen Arch Bridge construction site in Ho Chi Minh, Vietnam to support local construction workers and conduct equipment inspection. They monitored the whole process from bringing in SPMT and assembly, to final checkup and setting, to disjointing while giving safety management and technological support especially during the process involving difficult equipment operation.

* SPMT (Self Propelled Modular Transporter)

CASE STUDY. How is GS E&C dealing with safety accident risks?

in August 2012, a fire broke out on the construction site of the new national art museum, central Seoul. The main cause of the fire was a short circuit and the number of casualties reached 15 including 4 deaths from gas poisoning. Immediately after the accident, GS E&C took safety measures to prevent similar accident from happening again, including; creating related departments, expanding communication between headquarters and sites, and hiring and allocating more safety personnel. First of all, we created the Safety Management Team and supplemented health staff in the Q.HSE team for more effective safety management. Next, we conduct regular meetings chaired by the CEO, to make decisions on major safety policies and support construction sites. Other safety measures include; establishing standards for fire fighting and air supply/exhaust system installation, tightening safety assessment standards, and emergency drills. We will commit ourselves to thorough prevention and systematic site management to prevent similar accidents from happening again.



From the fire safety guideline at construction sites

SPECIAL ISSUE. GS E&C Safety Management on Overseas Sites



Oman SNDC Project, Workers' ceremony on the Safety Inspection Day



Mock Drill for Fire Emergency

Practice Safety Management on Overseas Sites

Improve “Near Miss” Reporting | GS E&C is expanding the range of near-miss cases to prevent safety accidents at work as well as raising awareness on safety. We embrace employee suggestions on benefits, environment, health/ sanitary facilities for operation.

Compliance with Cardinal Rules(mandatory GS safety rules) | GS E&C is encouraging 100 percent compliance with the 6 cardinal rules required to prevent safety accidents at overseas sites as well as domestic sites. This enables us to minimize safety accidents by removing unsafe behaviors and status in advance. When in violation of the rules, the offenders are ordered to leave the site as punishment and best practices are rewarded with incentives. In addition, we try to emphasize the importance of the 6 cardinal rules through programs such as safety slogan-shouting at the safety meeting and annual safety rally.



Cardinal Rules

Safer Workplace in Kuwait

Fire mock drills | GS E&C conducts fire drills to get better prepared for emergencies such as fire, explosion, and other fatal situations. We carry out customized training for each process of a site focusing on the training of how to respond to accidents and to give first-aid treatment in the case of emergency. Kuwait construction site is equipped with emergency facilities such as fire fighting appliances, and fire alarms and conducts regular equipment inspection.

HSE Program | GS E&C operates the HSE Program to provide services from heavy equipment operation training to health care for employees. Through this program, we check up physical and mental health of the employees on a regular basis and consider individual employee’s conditions to allocate them to a specific position given the various risk factors on the construction site. On the other hand, we hold the HSE committee every month to share the accident trends, review the cases of safety rule violation, check worker’s overall health status, and identify dangerous areas.

Safety Awards | GS E&C finds and rewards exemplary workers who comply with the construction site safety rules at the site to help safety rule observance become a part of corporate culture at every site. Two or three workers are selected weekly and rewarded with a citation and meetings are held for all the workers to share HSE issues.



Employee Check-up



A Safety Award Winner

GREAT PARTNERSHIP

OUR APPROACH

It is essential to achieve active communication and cooperation with various stakeholders for sustainable management. GS E&C supports active communication to build mutual trust and share created values with our stakeholders.

OUR EFFORT

GS E&C aims to achieve 'customer emotion management' beyond simple customer management. We provide elegant products and services through meaningful activities. We also support management, finance, education, and training courses to build an ethical and transparent relationship with our suppliers for a win-win corporation. It is our priority to invest in diverse training programs and activities to strengthen our employees' abilities. Their satisfaction is boosted by fair and rational performance evaluation and rewards. Furthermore, we contribute to public welfare by running a major program for social contribution, which reflects on characteristics of the construction industry.

CREATED VALUE

GS E&C focus on customer satisfaction management, which fulfills both rational and emotional aspects, to maximize customer satisfaction and increase customer benefits. We also share sustainable values with our suppliers through projects for green management promotion. Our goal is to create employment effects through continuous employment, promote active regional economy, and support sustainable growth of both companies and individuals with the reinforcement of training, investment, assistance, etc for talented people. We also participate in activities for strategic social contribution, which are related to our business, to achieve the value of sharing and increase our corporate and brand values.

60 Customer • 62 Suppliers • 66 Employees • 70 Local Communities



University Student Volunteer Corps



House Repair of Hope



Customer

OUR APPROACH

GS E&C ‘thinks and acts for customers and always stays with them closely.’ Based on our management philosophy, we have built a customer satisfaction system and advanced various activities. In 2012, a sincere activity for customer satisfaction was carried out to achieve ‘customer emotion management’ beyond simple customer management. We promise to take the lead in providing diverse and elegant products and services and developing high-level housing culture with a customer-oriented mindset.

- Customer satisfaction management
- Customer emotion management
- Customer satisfaction activities



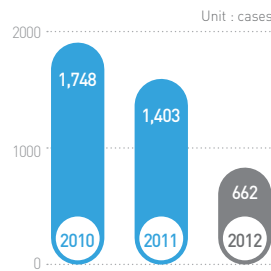
HOW TO CREATE OUR VALUE

GS E&C performs customer satisfaction management to determine customer needs and fulfill rationality and emotions.

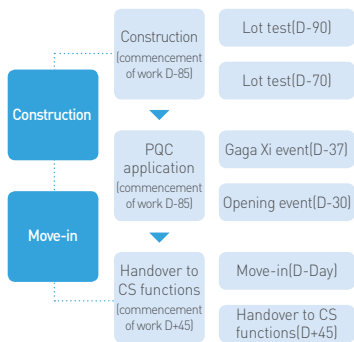
- Maximize customer satisfaction
- Increase customer benefits
- Develop housing culture



The Number of Home Buyer Complaints



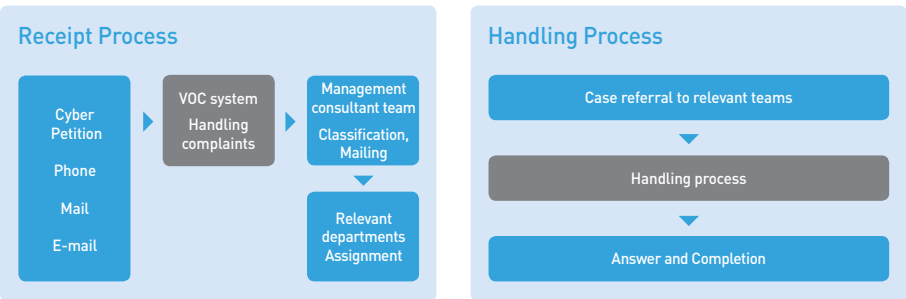
Manual Process for Pre Quality Control The Construction State



Customer Satisfaction Management

VOC System | We are maintaining a Voice of Customers (VOC) system and a resident customer complaint system to facilitate communication with our customers. The VOC system is designed to collect complaints and reports from customers and transmit them to the relevant departments. In principle, complaints registered through the resident customer complaint system should be responded to instantly. Serious issues are brought up for discussion at the Customer Relations Management (CRM) committee and handled according to their grade.

VOC System



Preparation of Pre Quality Control(PQC) Manual | GS E&C has created a ‘Pre Quality Control(PQC)’ manual, which responds to defects in advance. This minimizes the increasing number of complaints about defects in the housing industry and maximizes customer satisfaction. PQC refers to a pre quality control performance which is conducted by the cooperation of GS E&C, its suppliers, and the customer relationship management(CRM) organization from 85 days before apartment move-in to 60 days of the early stage after the move in. The PQC manual introduces phased work processes, including a lot test(BS), for employees and suppliers to comprehend defect-related tasks before and after the move-in.

Customer Emotion Management

Reinforcement of Customer Communication | We communicate with customers by publishing ‘Gaga Xi’, a lifestyle magazine aimed at residents, contractors, and members, and also sending contractors ‘Xi Story’, an additional newsletter which describes the dynamic processes of a construction site.

Activity Promotion in a Housing Complex | We are promoting activities such as foot volleyball, service for the elderly, and barbeque parties, in which our employees and residents can participate together to improve the atmosphere in the housing complex. These activities lead to natural creation of customer communities in the housing complex and offer opportunities for customers to experience high-quality lifestyle, which is Xi’s ultimate goal.



Application Development

We have developed integrated applications for smartphone and tablet PC users to receive various kinds of life and cultural event information such as house-selling situations.



Activities for Customer Satisfaction

1:1 Personalized Customer Service | GS E&C provides personalized customer service for every inquiry, including household checks, scheduling, customer call service on delays and defects, and a happy call service after problem-solving, depending on an individual customer’s schedule and situation. Especially, we developed a ‘Mobile Happy Call’ system in 2012, which is unprecedented in the industry. It enables customers to evaluate their satisfaction on results of customer service directly and submit complaints through text messages.

Customer Privacy Protection | According to the extended range of personal information in the Personal Information Protection Act, GS E&C encrypts personal information of, not only customers and recruiting, but also employees and suppliers. We also control access to the personal information processing system by a solution developed to control access to the database. We also established a corporate personal information protection committee in 2012 and conducted a variety of activities, including the establishment of a role and direction for personal information protection, creation of a privacy agreement, examination of amendments, etc.

Customer Satisfaction Survey | GS E&C has conducted customer satisfaction surveys to determine customers’ needs and complaints and offer better services. ‘Xi’, GS E&C’s representative apartment brand, has been ranked No.1 for consecutive 8 years in the Global Customer Satisfaction Competency Index(GCSI) which is a housing-related customer satisfaction survey conducted by the Japan Management Association. Meanwhile, we conducted a questionnaire on project management, human resources, communication, etc., to provide high-quality services for our clients.

Results of GCSI Surveys

Brand name: Xi			Unit: score
2010	2011	2012	
71.4	71.4	71.9	

Results of Client Satisfaction Surveys

A total sum of customer satisfaction index average		Unit: score
2011	88.73	
2012	83.49	

Suppliers

OUR APPROACH

GS E&C is building a sustainable management system with suppliers in accordance with social requirements and corporate group policies for mutual growth. Considering the construction industry’s high dependence on suppliers and needs for strategic promotion, we have performed win-win partnership activities, including financial and management support, construction execution enforcement, productivity growth through innovation, communication improvement, etc.

- Establishment of win-win partnership
- Communication improvement activities for Win-Win partnership
- Great partnership package operation



HOW TO CREATE OUR VALUE

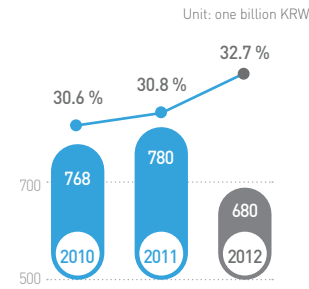
GS E&C contributes to suppliers’ economic achievements by establishing an ethical and transparent transaction relationship with corporate companies. We are also running green management promotion projects and supplier technology contests to share environmental values and technologies with suppliers.

- Suppliers’ economic achievements through the purchasing process of their products and services
- Sharing sustainable values with suppliers through Green Supply chain management(G-SCM)

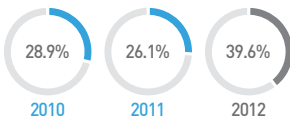


Purchase from Suppliers

The ratio of purchases generated in the whole partners in comparison with those of local partners



The Proportion of New Registration of Local partners



Establishment of Win-Win Partnership

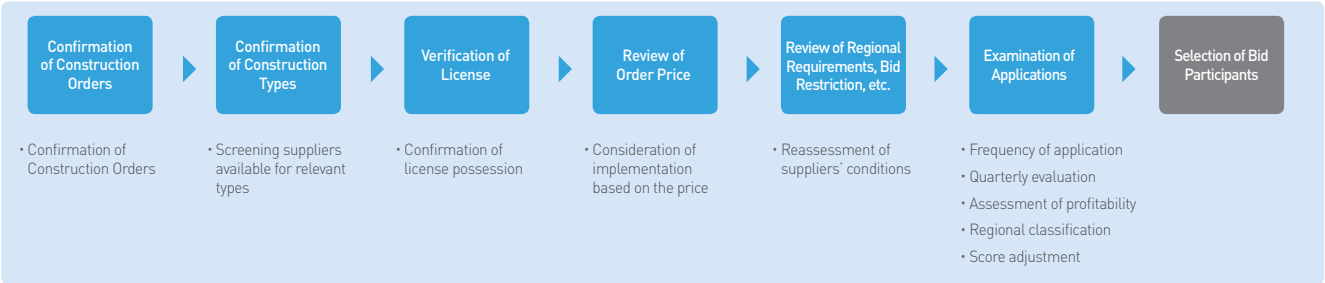
Business partners’ abilities and competitiveness play a key role in establishing GS E&C’s long-term growth foundation. GS E&C considers suppliers as long-term partners and attempts to achieve mutual growth. According to GS E&C, suppliers refer to companies which contribute to GS E&C’s successful project achievements based on stable performances. GS E&C has been in partnership with 755 companies as of 2012.

System to Select, Manage, and Evaluate Suppliers

Supplier Selection > GS E&C established an automatic bidder selection system for competitive suppliers to secure bid opportunities through fair and transparent processes. We select the most appropriate partners by proposing requirements to suppliers, which accord with quality, labor, and international standards in conformity to suppliers’ guidelines. Also, regional preference is considered for the selection of suppliers to stimulate the regional economy and support outstanding suppliers.

Management and Evaluation of Suppliers > GS E&C conducts a quarterly performance review policy, to evaluate construction site management, quality, environment, and safety of suppliers in each construction site to improve their executive abilities for sustainable business. Evaluation items include price competitiveness, quality level, delivery, completion by deadline, defect management, safety management, and level of cooperation. Evaluation standards are specified by characteristics of contract products. Evaluation results are open to suppliers transparently to secure the fairness of the evaluation and its management. We also conduct an overall assessment once a year, based on results of the quarterly performance review policy. Assessment results with feedback are used for re-registration, selection, and promotion of suppliers.

Selection Process for Bid Participatns



Risk Management of Suppliers > GS E&C are promoting diverse risk management performance, including visual inspection of suppliers, monitoring the volume of transaction of insolvent construction firms, credit grade management, etc, based on management guidelines of suppliers. High-risk suppliers are subject to bid restriction. Meanwhile, the percentage of bankrupt suppliers in 2012 increased by 2.43% from the previous year due to the increasing number of suppliers in financial difficulties, affected by continuous economic recession in the construction industry. By contrast, risks decreased as the prediction rate of bankrupt companies in 2012 increased by 13.7% from the previous year.

Communication Enhancement Activities through Win-Win Partnership

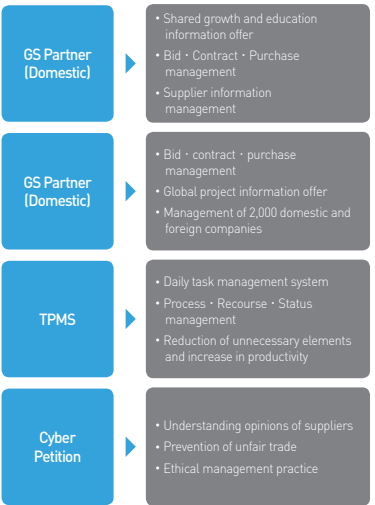
GS E&C’s Shared Growth Commission | GS E&C has been running ‘GS E&C’s Shared Growth Commission’, created in 2010. It consists of top executives and is in connection with the ‘Shared Growth Conference’, performed by the group. The president of the commission is GS E&C’s CEO.

Xi CEO Forum | ‘Xi CEO Forum’ is a representative activity for shared growth, aimed at the CEOs of suppliers and executives of GS E&C, which has been held regularly (twice per year) since 2004. GS E&C’s executives and the CEOs of suppliers discuss management innovation and competitiveness reinforcement in this forum.

Great Partnership Shared Growth Commission and Subcon Board | The Shared Growth Commission was established in 2011 for better communication with the CEOs of 20 major suppliers in the construction industry. It acts as a forum to consider difficulties and complaints of suppliers. Also, the Subcon Board is held 2-3 times a year for GS E&C and suppliers to discuss and find solutions on main policies and issues.

Cyber Petition | ‘GS Partner’, a cooperative website, acts as a place in which we exchange real-time information with 2,500 domestic and foreign suppliers for better communication. We also take the lead in preventing unfair trade through cyber petition.

Activities to Improve Communication with Suppliers



CASE STUDY. Running Supplier Technology Contests

GS E&C found through meetings, seminars, etc that suppliers have difficulty developing technology due to the lack of resources available to them. To solve this problem, we have held supplier technology contests since 2008 to promote excellent technology marketing. We select about 20 teams each year for research and development support and offer a reward for the final 8-10 suppliers to promote suppliers’ technology development. We also offer incentives such as bid opportunities and additional points for finalists, and advance strategic partnerships for excellent technology to increase the participation of suppliers. The supplier technology contest plays a key role as a means to create high value-added products and encourage shared growth partnership through technology cooperation. It is our plan to develop suppliers through mutual interest in new technology trends and business connection reinforcement. We will also support finance, technology, etc, to become the best partner, which is GS E&C’s vision.



Ilyang Construction Co.LTD | Special Bridge Bearing Method in the No.2 Subway Line
Ilyang Construction developed the ‘Bridge bearing method’. Its improvement in the construction method reduces the construction period, secures economic efficiency, and increases the stability of the No.2 subway line structure.

Minye Co.LTD | External Thermal Insulation Composite System
Minye developed environmentally friendly products which are made of a limited combustible insulator. External finishing can be applied to them in various ways. It acquired the Certification of Green Technology to satisfy needs for construction and production cost with regard to domestic and international policy reinforcement in environment and energy.

Seungyeon Co.LTD | F.R.P* Exterior Molding Technology
As existing exterior molding finishing materials for apartments had durability-related limits and risks of industrial accidents, Seungyeon developed exterior molding finishing materials which are economical, eco-friendly, and functional. It reduces production costs related to exterior molding and rooftop ornament construction and provides essential solutions for customer complaints.

*Fiberglass Reinforced Plastic(FRP), which consists of thermosetting resins and glass fiber, is referred to as the material of the 21st century. With its strong and light characteristics, it can be used in many fields.

Operation of the Great Partnership Package

GS E&C has operated the Great Partnership Package to achieve inter-corporate development and shared growth through mutual competitiveness reinforcement beyond simple assistance. The Great Partnership Package refers to efforts of GS E&C and its partners to encourage the Win-Win culture, which secures constructional performance reinforcement and price competitiveness, and builds mutual trust through financial soundness improvement and horizontal communication. It aims to develop competitive partner groups and maintain sustainable shared growth between GS E&C and its suppliers. The package consists of four sections, including constructional performance reinforcement, establishment of productivity-improving culture through structural construction culture innovation, financial soundness through financial and management support, and mutual trust enhancement through horizontal communication.

Financial Management Support	Construction Performance Reinforcement	Productivity Growth through Innovation	Communication Improvement
<ul style="list-style-type: none">• Business support fund• Win-win cooperation deposit• Improvement of payment conditions• Xi CEO forum• Potential CEO training• Business doctor program	<ul style="list-style-type: none">• Automatic bidder selection system• Cycle management by group• Joint overseas expansion• Site manager training• Safety innovation school	<ul style="list-style-type: none">• Technology contest• Handover between preceding and following companies• Quantification and optimization of bid conditions• Green management promotion	<ul style="list-style-type: none">• Shared growth commission• Subcon Board• Online portal websites of domestic and international suppliers• TPMS• Cyber petition, etc

Technological Assistance for suppliers’ competitiveness reinforcement | GS E&C performs continuous activities, such as joint technology development, technology workshops and seminars, technology contests, etc, to improve technological competitiveness of suppliers. Jointly developed technologies are actively used, from ordering and sales stages through to MOU. Workshops and seminars are held regularly to reinforce technology. Also, we present reward for outstanding suppliers and make an agreement with them for technological cooperation through the technology contest. Furthermore, we have implemented a technology escrow, which deposits suppliers’ core technology ideas in public institutions for technology protection.

INTERVIEW

“I hope shared growth activities will be continuous throughout the G-SCM project.”

It is important to achieve joint technology development and patent application support through small and medium-sized supplier training for the establishment of a competitive construction industry in Korea. Despite the economic recession in the construction industry (due to decrease of the real economy and increase of unsold housings), GS E&C actively collected social needs on shared growth and performed activities to maintain technological competitiveness and manage risks. Especially, our company participated in GS E&C’s G-SCM project, which was implemented to execute sustainable management with its suppliers. Thanks to this participation, we entered the environment field, which small and medium-sized companies generally have difficulty accessing. Our partner’s green consultations helped us build a green management and purchasing system. We also built an inventory which led to the acquisition of the Certifications of Carbon Emissions Estimation and Excellent Green-Biz. These activities contributed to creating a positive brand image for stakeholders inside and outside our company. It also helped secure distinct business competitiveness with low cost. Like other industries, the construction industry is influenced and developed by various stakeholders. I hope GS E&C will show its social leadership for shared growth by communicating with various stakeholders and operating diverse shared growth programs.

*Green Supply Chain Management

Eunyeong Yu, Deputy General Manager at Spacemax



Results of 2012 Win-Win Management Activities

Division	Program	Main Contents	Major achievements 2012
Financial and Management Support	Business support fund	<ul style="list-style-type: none">• Provide an advance upon request• Scale of up to KRW 15 billion per year	<ul style="list-style-type: none">• Supported KRW 15.6 billion to 20 suppliers
	Win-Win Cooperation Deposit	<ul style="list-style-type: none">• Create the Win-Win Cooperation Deposit amounting KRW 30 billion to support loans (loan interest reduction by 1.5%)* decreased the volume of deposit from KRW 60 billion to 30 billion and increased the reduction rate of loan interest from 1% to 1.5% for practical support effects	<ul style="list-style-type: none">• Supported KRS 20.49 billion to 27 suppliers
	Network Loan	<ul style="list-style-type: none">• Recommend suppliers to financial institutions to provide preferential loan examination• Loan limit: 1/6 of the record of transactions with GS E&C in the previous year	<ul style="list-style-type: none">• Sustainable management• Joint overseas expansion with the Export-Import Bank of Korea Signing an agreement for mutual cooperation program
	Improvement of payment conditions	<ul style="list-style-type: none">• Improve the ratio of cash payment• 100% compliance with the ratio of cash payment	<ul style="list-style-type: none">• The proportion of cash payment 76.8% (100% of cash payment)• Payment date: on the 10th of the next month after a monthly closing
	Exemption of Bid Bond	<ul style="list-style-type: none">• Exempt excellent/meritorious suppliers from bid/warranty bond to reduce their cost burden	<ul style="list-style-type: none">• Commission reduction assistance by KRW 450 million per year
Education • Training and Communication Improvement	Education for New CEOs at Suppliers	<ul style="list-style-type: none">• Provide opportunities to foster the next CEO’s management capabilities	<ul style="list-style-type: none">• Completed by 27 people
	Training for Suppliers’ Current and Incoming Site Supervisors	<ul style="list-style-type: none">• Improve site supervisors’ work competency• Provide advance education for suppliers’ candidates for future site supervisors	<ul style="list-style-type: none">• Site supervisor training completed by 120 people• Future site supervisor training completed by 60 people
	Safety Innovation School	<ul style="list-style-type: none">• Experimental learning for safety awareness	<ul style="list-style-type: none">• 939 people
	Training for Suppliers’ Working-Level People	<ul style="list-style-type: none">• Provide education for suppliers’ working-level officials on labor affairs, leadership, and quality	<ul style="list-style-type: none">• 141 people
	Xi CEO Forum	<ul style="list-style-type: none">• Invite distinguished speakers for presentation and award excellent/meritorious suppliers	<ul style="list-style-type: none">• Held twice
	Subcon Board	<ul style="list-style-type: none">• Gatherings to collect suppliers’ opinions	<ul style="list-style-type: none">• Held twice
Technological Support	Joint Development of New Technology	<ul style="list-style-type: none">• Undertake joint development and patent application of new technologies	<ul style="list-style-type: none">• 13 joint development are underway
	Technology Workshop • Seminar	<ul style="list-style-type: none">• Organize workshops & seminars to raise technological competitiveness	<ul style="list-style-type: none">• Held 23 times
	Supplier Technology Contest	<ul style="list-style-type: none">• Award suppliers with excellent technologies and adopt those onto the construction sites	<ul style="list-style-type: none">• 9 cases awarded (7 cases signed for technological cooperation)
	Technology Escrow	<ul style="list-style-type: none">• Protect important technologies of suppliers by putting the technologies in escrow services offered by public agencies	<ul style="list-style-type: none">• 5 escrow contracts signed for agreement
Management Support	GS Group Shared Growth Council	<ul style="list-style-type: none">• A Group-level council for pursuing shared growth• Members include suppliers’ CEOs	<ul style="list-style-type: none">• Held twice
	GS E&C Shared Growth Committee	<ul style="list-style-type: none">• Review the existing shared growth programs and discuss additional programs	<ul style="list-style-type: none">• Held twice
	Great Partnership Shared Growth Council	<ul style="list-style-type: none">• Top management discusses shared growth with suppliers’ CEOs.	<ul style="list-style-type: none">• Held twice
	Management Doctor	<ul style="list-style-type: none">• Support the Management Doctor operated by the Federation of the Korean Industries	<ul style="list-style-type: none">• No performance yet

Employees

OUR APPROACH

GS E&C believes that sustainable growth comes from talented people. It is our priority to invest in diverse training programs and activities to strengthen our employees' abilities; their satisfaction is also increased by fair and rational performance evaluation and rewards. In addition, we aim to create an innovate organizational culture that improves work efficiency, establishes a work environment in which employees work with pride, and helps them maintain the balance between work and life. These goals are summed up in the following five points, which represent targets for GS E&C

- Enhancement of employee work competency
- Fair performance evaluation and rewards
- Activities that encourage organizational culture innovation
- Establishment of family-friendly corporate culture
- Employee communication enhancement



HOW TO CREATE OUR VALUE

GS E&C strives for sustainable corporate and individual growth by enhancing education, investment, and assistance for talented people by seeking to do the following

- Generating employment effects through continuous job creation and activation of the regional economy
- Creating sustainable economic values through training of and investment in employees
- Establishing healthy local community culture by helping employees maintain the balance between work and life through fair rewards, various benefits, etc.



Enhancement of Employee Work Competency

Selection of Talented Employees | GS E&C contributes to individual career development through a performance management system that fosters employee growth and offers opportunities from education and coaching to office experiments. We provide in-house learning opportunities and promote self-improvement by using diverse methods, including online education, video education, and smartphone applications. In 2012, 136 hours of individual education were offered and the total cost of employee education was KRW 550 million.

GS E&C Leading Executive Development		
First School	Best School	G-School
<ul style="list-style-type: none">• Education for executives• Core talent development program• Basic common task training	<ul style="list-style-type: none">• Expert development program in 16 professional fields• Talent development program for overseas business• Construction competency improvement program	<ul style="list-style-type: none">• Global languages• GSE (foreign worker) development program• Educational program for overseas branches and corporations
Division-Centered Education Learning Organization Education Business Common Education External Education etc		
New Employees Experienced Employee Introduction Education		
Education System	Education Management	
Position Profile (Job Profile & Key Position Profile)		

VALUE CREATED ACTIVITY. Local Economy Promotion through Employment

Local Economy Promotion | There is a close relationship between construction and local economy. The presence of construction companies leads to job creation and local economy promotion; GS E&C's local suppliers account for 32.7% on the basis of the completed amount in Korea. As for overseas business, we follow local policies and employ local residents of the country. We also support the development of local communities in foreign countries by transferring advanced technology and professional skills to local employees.

Employment Effect | GS E&C contributes to national economy promotion through employment effects such as direct and indirect employment. We create demand for related businesses and suppliers throughout the entire business process, including material purchasing, designing, and construction. According to the annual inter-industry relations table released by the Bank of Korea, the employment inducement coefficient in the construction industry in 2012 was 12.1 people / KRW 100 million. GS E&C's direct and indirect employment effect was 49,416 people in 2012.

*Employment inducement coefficient: 12.1 people / KRW 100 million, (Inter-industry relations table, Bank of Korea, 2012)

The Number of Training Participants (2012)

Unit : people



62,154

Training Cost (2012)

Unit : KRW hundred million



55

The Amount of Time for Training (2012)

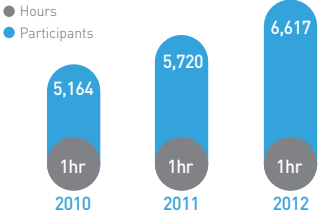
Unit : hour



136

Title of Education		Core Curriculum
Management Education (First School)	Executive Education	GS group common curriculum, exterior breakfast seminar for executives, executive value seminar, chief executive office program
	Core Talent Education	GS group common curriculum, exterior breakfast seminar for executives, executive value seminar, chief executive office program
	Basic Common Task Training	200 online courses, such as Introduction to Construction Sales
Task Education (Best School)	FM Program	A total of 25 programs including contract management, construction, civil engineering, and environment development
	Talent Development Program for Overseas Business	Program for enhancement of overseas work competency
	Expert Development Program in 16 Professional Fields	PM, CM, EM, LE, sales, estimation, QA, HSE, finance and economy, IT, judicial affairs, etc.
	Expert Development Program by Division	University for finance and economy, university for purchasing, overseas sales expert training
	Other Core Curricula	Certificate acquisition support program, supplementary education for construction engineers and consultant engineers, etc.
Global Education (G-School)	Global Language Course	Communication improvement program (GBC, BBC, AMBC, etc.)
		Practical English improvement program (GBS, ABS, SCS, etc.), video English learning course, online foreign language learning course
	GSE Education	Online basic education for foreign employees (core values, basic Korean language skills, etc.)
		Presentations by invited outstanding foreign employees
		Training course for new employees and managers in overseas corporation
Others	Online Essential Enterprise Course	Management policy, practice process, sexual harassment prevention program, ethical management, etc.
	Safety Innovation School	Safety innovation program for construction managers, safety innovation program for suppliers, etc.
	New Employee Training Program	Introductory course for new employees, introductory course for experienced employees, mentoring camp, etc.

Sexual Harassment Prevention Education



Welfare Benefit Policy

Life | Leisure Assistance

- Establishment of informal group / Activity cost support
- Assistance for use of recreational facilities, such as membership resorts
- Customized leave policy

Childbirth | Maternity Protection Support

- Support and child care benefits
- Operation of nursery facilities in company facilities
- Support baby bonus
- Maternity leave and child-care leave policies for mothers and spouses

Housing | Stable Living Support

- Funding support to buy a home
- Transportation and travel allowances for field workers
- Regular leave assistance for employees abroad

Medical Services | Health Support

- Medical examinations
- Medical indemnity insurance / group insurance assistance
- Insurance assistance for employees abroad

Education Support

- Assistance with children's school expenses

Legal Welfare Benefits

- Health insurance/National pension/Unemployment insurance/ Occupational health and safety insurance

Selective Welfare Benefits

- Self-improvement / leisure activity support

Congratulations and Condolences Support

- Congratulations / condolences leave and expenses
- Other supports (cars, goods, etc.)

Fair Performance Evaluation and Rewards

Performance Evaluation and Rewards | GS E&C conducts performance evaluations that are focused on achievement and work competency. Various evaluation methods, including MBO evaluation, multidimensional evaluation, and relative evaluation by group, are applied to complete a comprehensive performance evaluation. Employees receive feedback on the results of performance evaluations through an individual interview with their boss. Meanwhile, each organizational and individual achievement is related to fair performance rewards. There is no gender discrimination for wage. Executives are evaluated by comprehensive achievements on finance, awareness, environment, social affairs, and other areas.

Benefits for Employees | GS E&C operates diverse welfare programs which support employees' health, leisure life, family events, etc., to establish a work environment that supports the balance between work and life. We also encourage retirees' reemployment in connection with the General Employment Support Center for Middle-Grade Experts to support employees' working and post-retirement periods. Furthermore, we have implemented retirement pension plans to ensure retirees' stability later in life.

INPUT. What kinds of activities does GS E&C perform to enhance employees' global work competency?

Global Work Competency Enhancement Program

GSE (Foreign Employees) Program | GS E&C is running many programs to help foreign employees improve their sense of belonging, loyalty, and work and management competency, including an introduction program for foreign engineers, a GS Insight online course, Korean and English video learning courses, programs for overseas corporations' new employees and managers, and an outstanding foreign employee invitation program. Foreign employees also take an online management course in English.

Talent Development Program for Overseas Business | The Talent Development Program for Overseas Business consists of CM and global work competency improvement courses. It is a program which enhances global business work competency in relevant fields through practical education and sharing of the lessons learned by previous overseas employees before overseas dispatch, foreign site QJT, etc.

Global Language Course | GS E&C is running diverse language programs by occupation, period, and level to improve employees' language skills, including the Construction English Program for Globally Dispatched Workers (SCS), the Short-Term Skill Up Program for Overseas Division Employees (ABS), and the Long-Term Camp Training for Future Overseas Employees (GBC). Online and video English courses are also provided for employees who cannot join group education in domestic and international sites. On average, 1,300 employees are learning a total of 11 languages through online and video courses monthly.

Activities for Organizational Culture Innovation

G-SPIRIT-Based Activities for Organizational Culture Innovation | Organizational culture acts as a foundation for corporate survival, sustainable management, and excellent employee retention in the fast-paced management environment. Based on this philosophy, GS E&C established G-SPIRIT, which focuses on improving organizational culture and supporting core values such as change, excellence, and trust. We are also performing multidirectional activities to achieve the innovation of organizational culture in which G-SPIRIT is internalized in individual employees to create optimal performance.

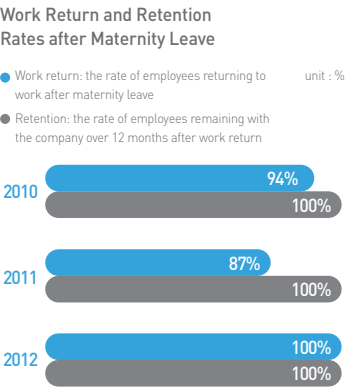
Family Love Program
Participation Figures for 2012

University Admission Information Session
A program which provides customized admission information
[Target audience : employees, spouses, children]
Participants: 156

Children's Dream Search Program
A program which supports children's potential career path through positive attitude formation and clear vision creation
[Target audience: children of employees]
Participants: 183

Self-Directed Learning
A program that teaches self-directed learning methods
[Target audience: children of employees]
Participants: 280

Happy Family Creation
Special lecture program on communication techniques, child-rearing and education, health care, etc., for family management
[Target audience: spouses of employees]
Participants: 119



WORK SMART ACTIVITY

“GS E&C aims to establish a smart work environment, remove unnecessary work, and increase work efficiency by promoting activities as follows.”

Establishment of Family-Friendly Corporate Culture

Family Love Program | GS E&C is running a Family Love program aimed at employees who live away from their families for their field work, to improve their enthusiasm and work engagement. The Family Love program consists of university admission information sessions for children, children's dream search events, a self-directed learning program, and a happy family creation program. We are planning to develop diverse programs which satisfy the needs of employees' families.

Overseas Deployed Employee's Family Invitation Event | GS E&C invites overseas deployed employees through our Overseas Deployed Employees' Family Invitation Event, in which we express our gratitude to employees' families and to encourage their pride as GS E&C employees, as well as enhance the bond between overseas deployed employees' families. The CEO of GS E&C attends the event to encourage overseas deployed employees and their families to reflect on their difficulties and hear their complaints in an effort to improve management.

Professional Counseling Program | Since April 2012, GS E&C has been running the Employee Assistance Program (EAP), aimed at employees and their families, to encourage happy families and workplaces. In this program, outside professional counselors provide advice not only on work-related issues such as work stress and career development, but also on personal matters such as marriage life, child-bearing, and financial consulting. This program has become quite popular, providing counseling for over 1,000 cases. Since 2012, we also have been running children's speech and language therapy courses in which experts provide face-to-face treatment for children who experience language delays or speech disorders.

Family-Friendly Welfare Benefits Policy | GS E&C is running a family-friendly welfare benefits policy to establish a family-friendly corporate culture, including medical indemnity insurance support, in-house nursery facility operation, and parental leave. An infertility leave policy will be implemented in 2013 for female employees who have difficulty getting pregnant.

- 01

WS Project Promotion by Group | A total of 21 projects promoted (management impact: KRW 268-316 million).

Main task | establishment of Occupational Health and Safety Management System (GS 18001) and Technical Data Management System (GS IES).
- 02

ERRC (Eliminate, Reduce, Raise, Create) Activities | Core work enhancement through removing unnecessary, inefficient, and wasteful tasks.
- 03

Internal Customer Satisfaction Index Management | Corporate cooperation system enhancement through employee task support evaluation.
- 04

04 Meeting and Reporting Culture Innovation | Establishment of efficient meeting and reporting culture through meeting system and report improvements.

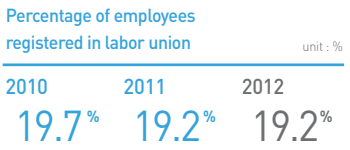
Employee Communication Enhancement

Open Management Program | GS E&C is enhancing a communication channel between the CEO and employees to make an exciting organization by preventing inter-division egoism, individualism, and indifference, which can occur easily in large-scale organizations. We select employee representatives by division to form the Global Young Board (GYB), listen to young employees' opinions through quarterly meetings, and run a walk & talk program to promote communication between the CEO and employees to increase their closeness.

Promotion of Information Exchange with Management | GS E&C maintains a communication system, in which every employee can exchange online and offline information with each other swiftly, to promote information exchange with management. We upload commonly necessary corporate information, such as a CEO message and main events announcements, to the online EIP board. We also hold a quarterly management issue meeting and a bimonthly site manager meeting to share the CEO's message and other management issues.

Shared Cooperation of Labor-Management | GS E&C is running a labor union which consists of 1,029 permanent employees (19.2%) below the rank of deputy manager (excluding the administration position group of finance and economy, planning, personnel, and general affairs). We respect labor's three primary rights, and we have made a collective agreement with the labor union. We also share and discuss important issues on corporate management with the union immediately. Furthermore, we hold a quarterly labor-management council to discuss issues related to labor-management benefits, including work environment; improving working conditions, safety, and health; employees' health care; and settling employees' complaints.

Employee Satisfaction | GS E&C conducts an employee satisfaction survey, composed of 9 categories, every year. According to the survey in 2012, the average total score was 69, an increase of 7 points from the previous year. The task process and reward and recognition categories showed an increase of over 20%, which indicates that employees are highly satisfied with these parts of the corporate culture. We will continue to improve employee satisfaction by increasing the efficiency of task processes through wasteful factor removal, clarifying roles and responsibilities through organizational structure improvement, and developing leadership for appropriate organizational management.



Case Study. Holiday Program for Foreign Employees: GS Mid-Autumn Festival

GS E&C is running a holiday program for foreign employees, which provides an opportunity for them to visit tourist attractions, cultural villages, and other places of importance in Korea, to introduce them to Korean culture and help them become familiar with it. The fact that foreign employees and their families can participate in it together makes this program very popular. In 2009, a total of 99 foreign employees from Southeast Asia, Europe, the United States, the Middle East, and other areas participated in the GS Mid-Autumn Festival holiday program, in which closeness was promoted through nonsense quizzes, traditional games, and other fun activities, and employees gained a meaningful understanding of Korean culture.

Festival Participation Review

We prepared this event to promote harmony and a sense of belonging and provide special experiences for foreign employees. As we prepared it with passion and ideals, I felt proud to see them enjoying every program passionately. I also had a fulfilling time becoming friends with everyone by participating in the event.

Suryeon Gwak / Staff / Global HR Team

Previously, there were not enough opportunities to become familiar with other employees from different races and divisions. But this time, I was so pleased to become friends with them in this exciting and wonderful program. I believe this kind of event will help foreign employees not only have meaningful experiences and memories, but also become devoted to the company.

Peter Phillips / Cliacap RFCC Project (Indonesia)



Local Community

OUR APPROACH

GS E&C has carried out corporate social roles and responsibilities as an enterprise citizen under its management philosophy, "Dream for tomorrow and create new life values with customers." Corporate social responsibility activities, which are not temporary charity activities, are performed as strategic activities to contribute to business performance and excellent employee retention in connection with corporate business strategies. In addition, we have accomplished activities which contribute to operating a main social responsibility program, reflecting on characteristics of the construction industry and promoting local community. We encourage employees' voluntary participation in social responsibility activities to support the same values as the wider corporation.

- Strategic social responsibility activities
- Sincere performance of social responsibility activities
- Management of social contribution achievement and evaluation



HOW TO CREATE OUR VALUE

GS E&C's sustainable management activities can only be achieved through the cooperation of local communities. We are growing in partnership with local communities by holding up corporate social responsibilities and sharing values through social responsibility activities.

- Corporate value improvement through strategic social responsibility activities in connection with corporate business
- Contribution to creating social values through support activities for youth, who are future society's most important resource
- Corporate brand value improvement through continuous social responsibility activities



Strategic Social Responsibility Activities

We have been performing strategic activities based on major fields (social welfare, education and culture, environment and safety). Particularly, we participate in strategic social responsibility activities, which include not only systematic and continuous activities, but also those specialized for the construction industry, to build trust between employees and achieve corporate social responsibilities.

Core Value	GREAT PARTNERSHIP : we are united as one and grow with the world we live in		
Core Field	Social welfare	Education & Culture	Environment & Safety
Social Responsibility Activities	Volunteering activities in headquarters and domestic / foreign sites	Study Room of Dreams and Hopes (education support for families)	Playground of Dreams and Hopes (safe playground)
	Support for the single elderly	Scholarship assistance (school life support)	House Repair of Hope
	Sharing of Kimchi of Love	Exciting after-school classes (after-school education support)	
	Employee fundraising activity (Pot / Money Box of Love)	GS E&C's University Volunteer Corps	
	Common activities of labor-management (Blood Donation of Love , support for the single elderly)		

Social Responsibility Activities in Connection with Corporate Strategies | GS E&C's social responsibility activities are performed to build trust with shareholders of domestic and international local communities in connection with corporate strategies. We also promote international social responsibility activities to achieve corporate strategies which aim to increase a global market share and enter into emerging markets. Considering social responsibility activities which satisfy the needs of local communities, we improve the relationship with shareholders in a project-performed region for the smooth construction process. Furthermore, we attempt to discover new business fields.

Aid Program for Developing Countries

Food Support

We support not only basic food needs, but also increase an in income, by encouraging residents to raise or grow assisted chickens, pigs, goats, corn, etc.



Drinking-Water-Related Goods Support

We support drinking-water-related goods, such as water filters and diesel pumps, to provide drinking water and help in growing crops



Education Support Program for Children in Developing Countries



Social Responsibility Activities for Excellent Employee Retention | GS E&C is trying to achieve excellent future employee retention through social responsibility activities in the education field. We are building fellowship and a positive image to attract excellent potential employees through social responsibility activities in connection with universities.

Social Responsibility Activities for Employee Emotion Management | GS E&C promotes social responsibility activities on emotion management to establish a culture of sharing and encourage employees' pride. Executives support employees at volunteering sites to help them better understand and trust others and become proud of themselves through volunteering activities. We also support the labor union and headquarters in enthusiastically promoting social responsibility activities. In addition, we conduct a moneybox fundraising activity by team / location, and the Salvation Army fundraising activity at the end of the year to increase employees' participation in donation and establish a culture of sharing.

Sincere Performance of Social Responsibility Activities

House Repair of Hope | The House Repair of Hope project, in connection with Ministry of Public Administration and Security, is a program which is not only connected to corporate business, but also to job creation for the low-income population. Specifically, it is a project to replace a slate roof, which consists of asbestos, for 24 families of the socially disadvantaged class (the single elderly, families of physically challenging people, etc.) around the entire country every year. Additionally, we attempt to improve the environment and quality of life for low-income families by providing additional house repairs, including sink and window frame repair, papering, and floor change.

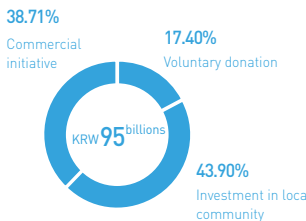
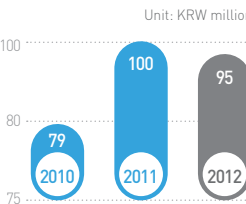
GS E&C's University Volunteer Corps | We are running a university volunteer corps to promote a volunteering culture in university students, who will take the leading role in GS E&C in the future, and help them become talented people with respectable personalities and work competencies. We support activity allowances for 8 volunteers selected from a yearly contest and provide education, and information related to volunteering activities. We also run volunteer activities for employees and university students in order to encourage sharing and communication.

Green Sharing Project | GS E&C is advancing a Green Sharing project with GS subsidiaries and affiliates to cure and prevent children of low-income families from being affected by environment-related diseases such as atopic dermatitis, asthma, and rhinitis. This project uses profits, generated by selling so-called "sharing products," to support residential environment improvement and medical treatment for children of low-income families who have environment-related diseases.

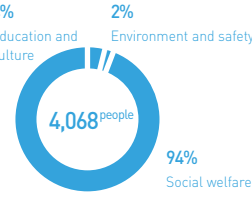
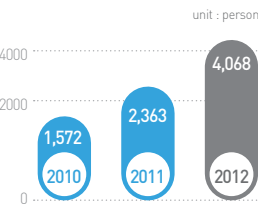
Management of Social Contribution Achievement and Evaluation

In 2012, GS E&C spent a total of KRW 95 million in social contributions, and a total of 4,068 employees participated in social responsibility activities. Regarding its efforts for social contribution, GS E&C was chosen as the No. 1 company of the construction field by Good Business Index in Korea in January 2013. We are managing selected indexes of social contribution achievement, including a number of press reports, disputes and complaints of local communities, and program beneficiaries.

The Amount of Money for Social Contribution and Its Contents



The Number of Employee Participants in Social Responsibility Activities and Their Performance Achievements by Field



“ We Support Children’s Dreams and Hopes ”

Study Room of Dreams and Hopes

GS E&C is running a Study Room of Dreams and Hopes project which provides a proper educational environment and opportunities for children of low-income families in which they can study and dream about the future as much as they want. GS E&C selects 40 students every year and visits their houses to decorate their study rooms. After decorating their study rooms, we also conduct mentoring activities twice a year which provide not only cultural experiences but also lectures and counseling on the future and encouragement to help them pursue their dream. By the end of 2012, 80 rooms had been created. Practical and continuous activities are underway which provide admission fees, registration fees, and early settlement fees for excellent students who will attend a university to help them graduate from the university independently and achieve their dreams.

Main Activities

Decoration of Study Room | After a pre-investigation, we work on papering, flooring changes, improvement of the electricity system, and other improvements. We also provide necessary goods for the study room, such as a desk, lamp, and computer.

Career Search Program | We provide counseling on studying and other issues, as well as mentoring programs, such as site-tours at universities students are interested in attending. We also provide first-time admission and registration fees and a total of KRW 1 million for early settlement, including textbook fees, to help students graduate from the university independently.

Total Number of Assisted Study Rooms of Dreams and Hopes

80 rooms

Total Number of Participants in One-to-One Mentoring Program

80 people



Playground of Dreams and Hopes

GS E&C provides playgrounds, in which children can play with each other actively and safely, through its Playground of Dreams and Hopes project. We also help ensure the safety of children through customized playground equipment and ecological study areas in local welfare facilities, which are used by children of low-income families who are often neglected after school. With this, we encourage healthy physical and mental growth. At the end of 2012, GS E&C had provided 8 playgrounds. We will build Playgrounds of Dreams and Hopes in 4 welfare facilities every year.

Main Activities

Playground Equipment Assistance | After discovering the desires of children who use welfare facilities, we build customized playground equipment which satisfies the needs of each facility.

Encouragement of Ecological Study | We support basic ecological study by establishing a “kitchen garden” in each playground where children can grow diverse plants.

Employee Participation | Employees can volunteer to help with growing the plants in a kitchen garden to support ecological study for children.



“ We Share the Importance and Value of Water ”

Clean Water Health Program

GS Inima* is a worldwide water treatment company. Through this company, we promote the importance and value of water to society to increase awareness and conduct educational activities on its proper use and management. As part of these efforts, GS Inima is running a clean water health program.

In 2005, we began the Clean Water Health Program in the Ribeirão Preto Wastewater Treatment Station in Brazil. Students of public and private schools visit the institution to learn about the advantages and quality of water treatment processes and discover the importance and value of water.

We are also running a weekly education program on water-related technology aimed at university students in various regions. Factory managers not only provide technology education for them directly, but also provide an opportunity to experience the practical processes of a wastewater treatment facility. Students who complete the education receive a certification on the final day. A total of 58,000 students have participated in the Clean Water Health Program so far. We will manage the program continuously in the future.

* GS Inima is a GS E&C subsidiary; we acquired Inima, a worldwide water treatment company in Spain, to promote the water treatment business globally.

Total Participants in the Clean Water Health Program

58,000 people



INTERVIEW

“ I Hope GS E&C Will Be a Company Which Shares the Awareness and Culture on Social Responsibility Activities. ”

GS E&C has offered diverse activities, such as Study Room of Dreams and Hopes, Playground of Dreams and Hopes, exciting after-school classes, and employee volunteering activities, through continuous partnership with the Korea Children’s Foundation. The Study Room of Dreams and Hopes and Playground of Dreams and Hopes, which are its main social responsibility activities, are enormously meaningful in that they reflect on characteristics of the construction industry, use corporate business at maximum, and establish social infrastructure. Recently, some social responsibility activities failed to achieve their purpose as many companies cancelled well-managed projects or implemented new programs to follow promotional timely business (social issue). In this sense, GS E&C’s achievement in social responsibility activities, which are conducted continuously in the long term, should be highly appreciated.

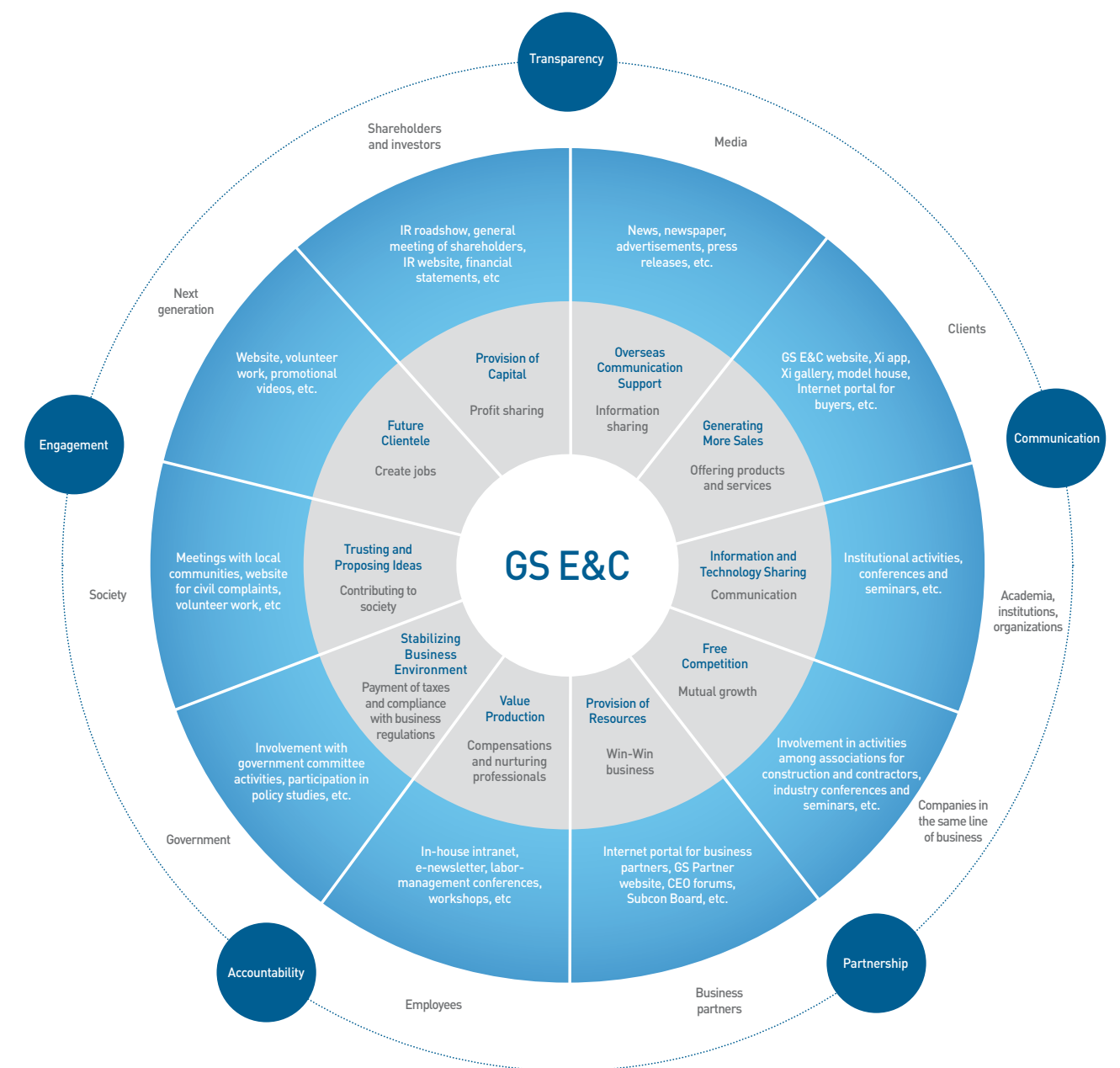
It’s been said that GS E&C will carry on international social responsibility activities in accordance with its international business expansion beyond Korea. For successful achievement of international social responsibility activities, GS E&C should support regional development or the establishment of high-quality environments as it did with the Study Room of Dreams and Hopes project. It should also promote life and emotional support in local communities. Furthermore, adequate communication around sharing and social responsibility activities should be exchanged between the company and its employees to support the organizational culture. Finally, I hope it will build an environment in which GS E&C’s customers can participate in the establishment of social responsibility by sharing in the activities of GS E&C and its employees.

Heeyeong Moon Team Leader, fund-raising division, Korea Children’s Foundation

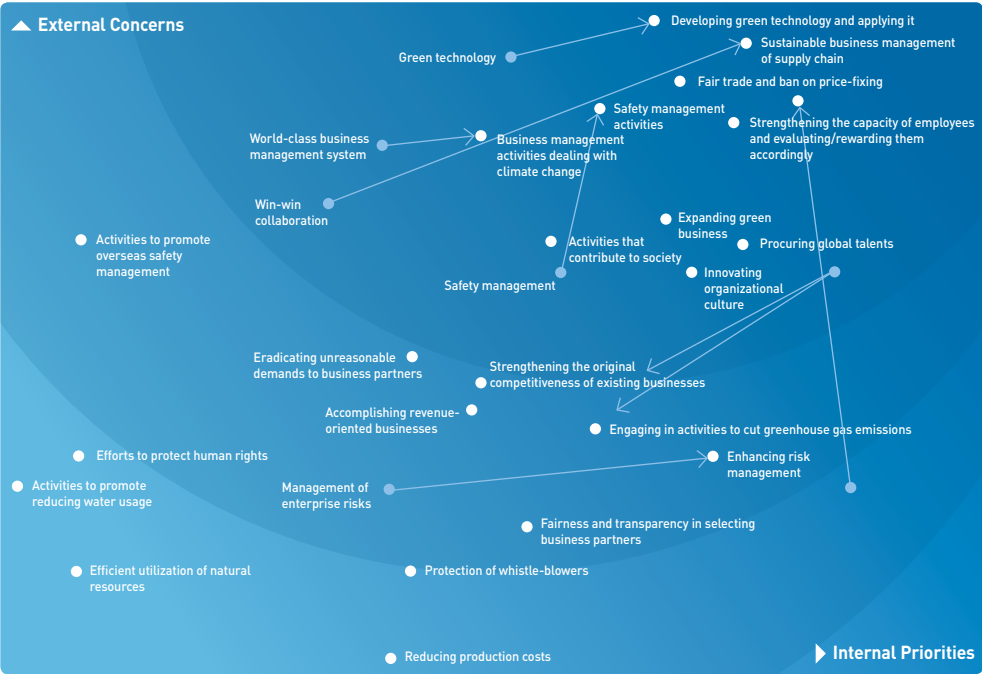


75 PARTICIPATION OF STAKEHOLDERS AND MATERIALITY TEST
77 GOVERNANCE
78 ETHIC MANAGEMENT & COMPLIANCE
80 RISK MANAGEMENT
82 OPERATIONAL DATA
85 REPORT OF INDEPENDENT AUDITORS
86 FINANCIAL PERFORMANCE
87 REPORT OF INDEPENDENT ACCOUNTANTS' REVIEW OF INTERNAL ACCOUNTING CONTROL SYSTEM
88 REPORT ON THE OPERATIONS OF THE INTERNAL ACCOUNTING CONTROL SYSTEM (IACS)
89 3RD PARTY ASSURANCE STATEMENT ON INTEGRATED REPORT
90 3RD PARTY ASSURANCE STATEMENT ON GREENHOUSE GAS INVENTORY
91 GRI INDEX
92 UNGC / ISO26000
93 ESTABLISHMENT OF GREEN MANAGEMENT SYSTEM
94 ASSOCIATIONS/AWARDS

In order to effectively deal with stakeholders' main interests and expectations, GS E&C has defined the key stakeholders into ten different categories which we can establish a communication channel to form a mutual understanding of their influences and roles.



Materiality Test | In order to incorporate the sustainable business management issues that the parties concerned want to know, GS E&C has conducted a Materiality Test and the results of the test were prioritized in a written report based on their importance and enforceability.



MATERIALITY TEST PROCESS

Step 1. Developing the Index for the Materiality Test

- Analyzing the domestic and foreign trends of the construction industry, reviewing the global standards including GRI and ISO and forming an issue pool
- Selecting 39 issues that correspond with the interests of GS E&C

Step 2. Materiality Test

Conducting a four-stage materiality test

Direct, short-term, financial effects → Extent of the relations with the company including GS E&C's business management strategies → Key common issues with companies in the same line of business, international standard recommendation, media issues → Survey on parties concerned

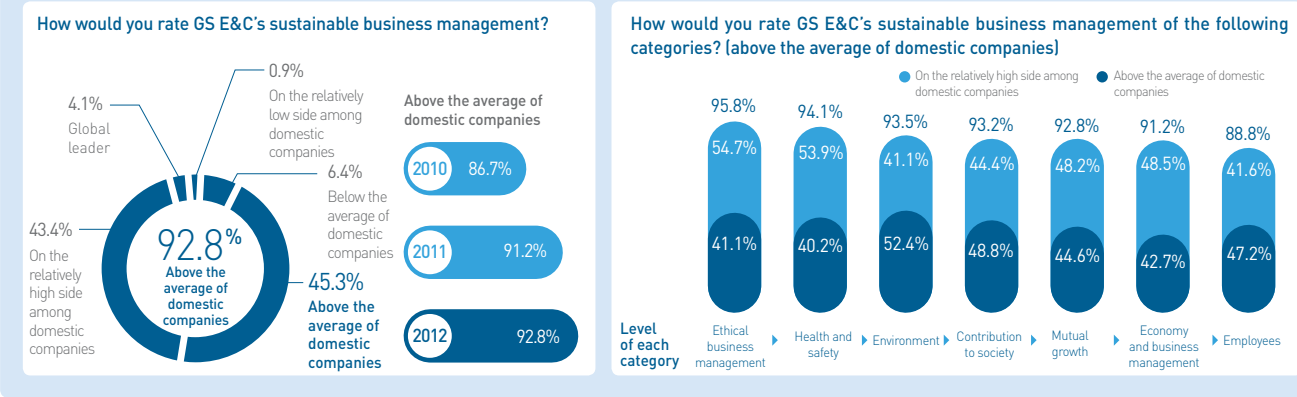
Conducting an assessment among internal/external parties concerned on the issues raised through the analysis of the sustainability of the current state (internal employees: 3,504, external parties concerned: 53)

Step 3. Selecting the Key Issues

- Determining the content of the report after analyzing the internal and external perspectives of the key issues

CASE STUDY. Results of a Survey on Employees' Awareness of Sustainable Business Management

According to a survey conducted on the employee's awareness of sustainable business management, 92.8% of those surveyed responded that GS E&C was above the average of domestic companies, showing their awareness on the level of sustainable business management has increased. By category, the level of ethical business management, health and safety as well as business environment management were rated high whereas economy and business management and employee-related activities were rated low.



GOVERNANCE

Equity | As of December 31, 2012, Chairman Chang-Soo Huh and other members of the Huh family were the major shareholders, with 30.42% of the total shares. An additional 2.82% are in the form of treasury stock or part of the employee stock sharing program. In addition, foreign investors owned 30.53% of the total shares.

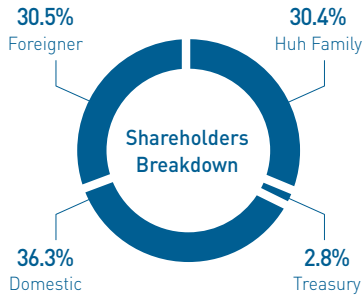
Establishment of Sustainable Governance | GS E&C has the Corporate Governance Charter and Operation Regulations for the Board of Directors, the Audit Committee, and the Outside Director Recommendation Committee. We disclose the corporate governance policy on the company website. Our board of directors has a unitary board structure composed of four inside directors and five outside directors. The GS E&C Board of Directors has a unitary board structure that consists of two standing members and five outside members. The Board is chaired by the Chairman of GS E&C in order to ensure responsible management.

BOD committees | GS E&C runs the Audit Committee, Outside Director Recommendation Committee, and Sustainable Management Committee within the Board of Directors. To ensure rational decision making and secure expertise in such fields as economy, society, and environment, we appoint experts who have expertise and abundant experience in those fields as independent outside directors. To assure fairness and objectivity in the appointment procedure, <Outside Director Recommendation Committee> composed of two outside directors and one closely screens outstanding director candidates and recommend final candidates to a general meeting of shareholders through the assurance process. Outstanding directors are appointed during the meeting.

Currently, our outside directors consist of an economic expert, a CEO of a company, a legal expert, a financial expert, and a professional engineer. We receive their thoughts and opinions on corporate strategies, financial status, and domestic and overseas projects discussed in BOD to improve the process of policy making.

BOD Operation | The Board of Directors makes and oversees key business decisions. The Board has authority over mid and long-term business strategy and policy, important financial issues and management of directors, as well as calling a general meeting of shareholders in conformity with the commercial law, nominating a representative director and approving financial statements. The Board convened 11 times in 2012 and deliberated on 21 agenda items with four business reports (with a 94.5% average attendance rate for outside directors). The BOD Operation Regulations indicate that the Board's minimum attendance rate is 70% and outside directors' holdings of issued shares shall not exceed 1% to ensure fairness in operating the Board of Directors.

BOD Performance Assessment & Compensation | GS E&C carries out a self-assessment of BOD operation and committee activities every year. Assessment criteria include roles, responsibilities and duties, composition, independence, operation procedures, agenda of the Board, and operation of its committees, and evaluation of the Audit Committee. Salaries and compensations for BOD and top management are made open each year through a business report. The average employee compensation equals 5% of executive management team compensation.



BOD Committees Status

Audit Committee

- Members: Byung-Hwa Jin, Young-Ho Hur, Kyung-Suh Park
- Duties: To oversee corporate accounting and business at a company level

Outside Director Recommendation Committee

- Members: Chang-Soo Huh, Chong-Kun Pyun
- Duties: To recommend candidates for outside directors to a general meeting of shareholders

Sustainable Management Committee

- Members: Chong-Kun Pyun, Byung-Hwa Jin, Young-Ho Hur, Seong-Woo Moon, Kyung-Suh Park
- Duties: To share company-wide sustainable vision and strategy, and review and advise on sustainable management policy

See more information about operation of the board of directors

2012 BOD Self-Assessment Results (Out of 5)

Unit: point

Composition and independence	4.9
Committees' Structure & Operation	4.8
Roles, responsibilities and duties	4.7
Agenda, Audit Committee's evaluation	4.6
Operation procedures	4.5

Standing Directors (In-house, 2)		Non-Standing Directors (Outside, 5)	
Chang-Soo Huh	Chairman and CEO of GS E&C	Byung-Hwa Jin	Outside Director, Audit Committee member, Former director of the Korea Technology Finance Corporation
Byeong-Yong Lim	President and CEO	Young-Ho Hur	Outside Director, Audit Committee member, Outside Director Recommendation Committee member, Former adviser at LG Innotek
		Seong-Woo Moon	Outside Director, Attorney at Law Firm Barun
		Hyuk Choe	Outside Director, Audit Committee member, Professor at Seoul National University Business School
		Ho-Seon Yu	Outside Director, Outside Director Recommendation Committee member, Professor at Department of Mechanical Engineering, Soongsil University

ETHIC MANAGEMENT & COMPLIANCE

Establishment of Ethics Management System

Ethics Committee Operation > Recognizing ethics management is essential for sustainable management, GS E&C has run the Ethics Committee to inspect ethics management activities and support ethical decision making of chief executives. The committee consists of a chairman (CFO), and its members composed of directors from different departments. In principle, the committee convenes semi-annually; however, it holds additional meetings to make quick decisions when urgent matters arise. It conducts such activities as assisting CEO's ethical decision making, deliberation/resolution on policies and standards related to ethics management, inspection and monitoring of ethics management activities.

Three Key Factors of Ethics Management Ethics Management



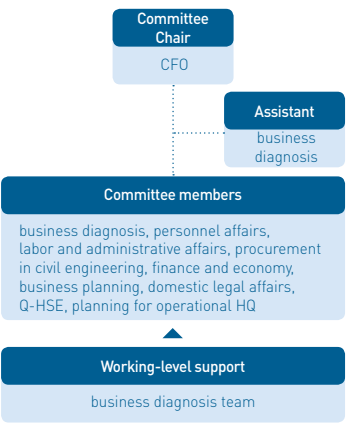
Code of Ethics > Our Code of Ethics is the standard of all employees' actions and decisions in key issues such as responsibilities to customers, employees and the nation and society as a whole, employees' basic ethics and fair competition and transactions. In addition, we have established practice guidelines for Code of Ethics that offer standards on decision-making and behaviors in ethical conflicts for employees to properly understand and practice our Code of Ethics.

Scope of Code of Ethics > The Code of Ethics governs the actions of all employees, affiliates and suppliers at home and abroad. When signing a contract with suppliers, we include ethical conditions, under which a violation results in disadvantages such as contract cancellation to reinforce penalties.

Ethics Management Guidebook Handout > GS E&C has published the Ethical Management Guidebook and distributed it to all employees to encourage them to establish their own ethical standards and raise the awareness of ethical management. The Guidebook helps review the direction of ethical practices and come up with reasonable solutions by introducing possible cases of ethical disputes with diverse stakeholders including customers, shareholders, employees and suppliers.

Reporting System on Unethical Business Practices > GS E&C has established the system that prevents corruption and irregularities the role. We receive reports on violence on ethical management through various channels such as phone calls, websites, emails, and mails. After inspecting such cases, we get back to informers results through phone calls or emails while protecting their identity by our privacy protection policy. If corruption or irregularities are found, we impose heavy and tough penalties. Through internal and external reports and regular inspection activities, we took a total of four disciplinary measures in 2012. GS E&C seeks to continue such activities to root out unethical business practices.

BOD Committees



Ethical Management Guidebook



Violations of Ethical Management



Disciplinary Actions against Violations

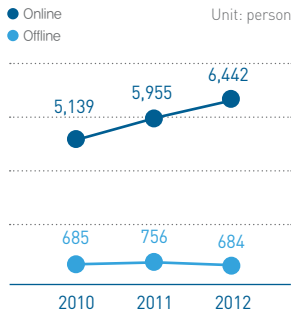
Details	2010	2011	2012
Discipline/Dismissal	-	-	-
Suspension	-	3	-
Wage Cut	4	8	-
Reprimand	1	3	-
Others	1	3	4
Total	6	17	4

Operation of Ethics Management Training

Ethics Management Training > We conduct online/offline ethical management training to enhance awareness and understanding of ethical management among employees.

- Offline Education : GS E&C includes educational sessions on ethics management in the training program for newly hired employees. We regularly conduct education programs focusing on actual cases occurred for employees in significant fields. Employees are able to strengthen the basis of ethics management through the education program by learning countermeasures to ethical dilemma situations and ruminating their role and accountability in practice of ethics management.
- Online Education : GS E&C runs online courses focusing on the ethics management policy and dilemma cases for employees to internalize ethics mindset. The online courses are composed of four modules: Understanding of Ethics Management, GS E&C's Ethics Management, Case study, Roles and Pledges. Employees electronically sign a Pledge of Ethics to practice ethics management after completing the courses.

Ethical Management Training Attendance



Four Modules in Ethics Management Online Courses



Activities to Practice Ethics Management

Ethical Pledge > GS E&C requires its employees to take a written oath for them to voluntarily participate in ethics management activities. The oath declares that employees of GS E&C reaffirm their will to practice ethics management and endeavor to establish an ethical corporate culture.

External Assurance on Ethics Management> We conducted external assurance on ethics management to assure suitability of the ethics management system, scheme, and program as well as prevent ethical risks. GS E&C continues improvement activities to globalize ethics management.

Report and Reward Scheme> GS E&C implements a system to give rewards to those who report unethical business practices of employees including bribery and embezzlement of public funds. Rewards are up to KRW 100 million and determined by the Reward Deliberation Committee.

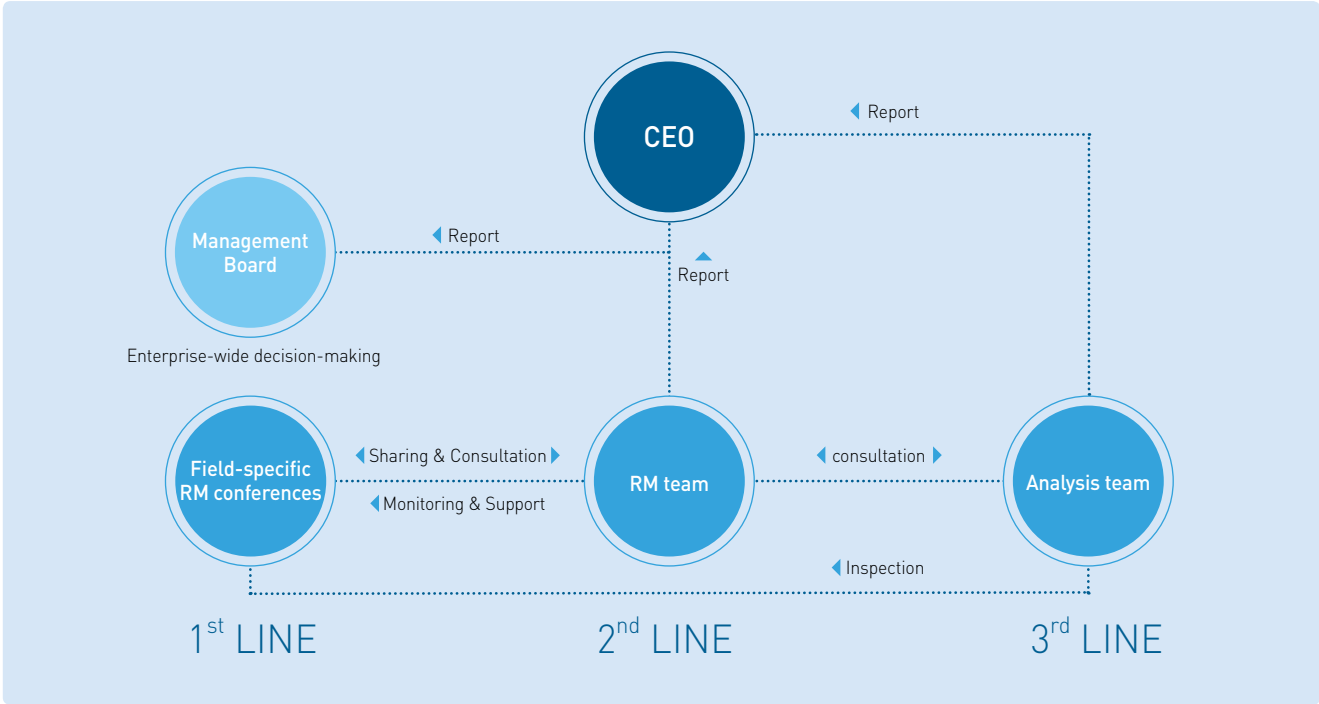
Joint Liability for Unethical Practices > In order to root out unethical business practices, GS E&C has been running a joint liability system in which not only the one who violated ethical terms but also his/her supervisor and team are also punished by cut in compensations.

RISK MANAGEMENT

Business Environment Risk Management

Management System > For the continuous survival of the company, it is necessary to analyze the effects of the changing business environment and take relevant preemptive action. The RM Team is taking charge of defining ten areas and 51 clauses as financial and non-financial risks that affect the company’s business environment and evaluating the importance, probability of occurrence and impact. Such risks are included in the Integrate Risk Management System (IRMS), established in 2011, and are managed in real time and are efficiently dealt with through an early warning system. In addition, probable risks are identified and evaluated through field-specific risk management conferences (macroeconomic indicators, ethics, regulations, finances, HR) and high-level risks are comprehensively reported and dealt with by the management board.

Risk management system for the business environment

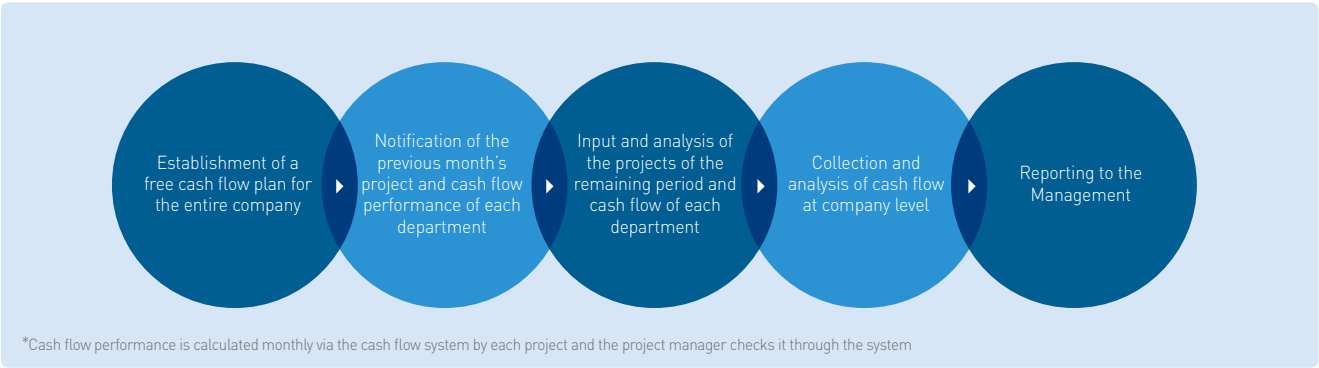


Financial Risks > Landing contracts, sales, profits and losses, cash flow, bonds, foreign exchange, interest rates, foreign exchange rates, etc. are categorized as financial risks and are managed accordingly. In addition, the company is intensifying its risk-preventative measures through regular domestic and foreign economic forecasts.

Non-Financial Risks > Safety management, business partner and member company management, litigation management are categorized as non-financial risks. Monitoring through in-depth analysis and situation-specific response capabilities are being reinforced.

Cash Flow-Oriented Business Management | In an effort to accurately analyze the present state of management by not only determining the company’s financial profits and losses but also additional cash flow information, GS E&C is operating a cash flow system. The cash flow system provides future cash-generating ability to individual management enterprises, thereby contributes to minimizing the uncertainties of future cash flow. In particular, the cash flow system enables the forecast of investment risks of new leading businesses, helping decide on the ideal timeframe to make investments.

Cash Flow Estimation Process



Business Promotion Risk Management

Management System > In order to efficiently deal with all the risks that may be detected in advance or occur unexpectedly throughout projects from the initial stages of the business to completion, GS E&C is establishing an organic risk management system within the business headquarters, domestic and overseas branches/ personnel and among the employees in their entirety. The ultimate risk inspection on project bids introduced through the screening process of business headquarters as well as domestic and overseas branches/ personnel and the review of significant risks that occur through business management take place at the Business Deliberation Committee level. In addition to the financial evaluations conducted for the review of business feasibility, risk management of non-financial risk evaluations are conducted by categorizing them into specialized groups based on the different stages of a project (before construction/mid-construction/completion).

Pre-Project Launch Risk Management

Safety evaluation of buyers, feasibility of the business, contractual form (establishment of a consortium), procurement of resources, air suitability, analysis of environmental/social impact, application of new technology/new construction methods, duration of planning and assessments, success or failure to follow bidding regulations, etc.

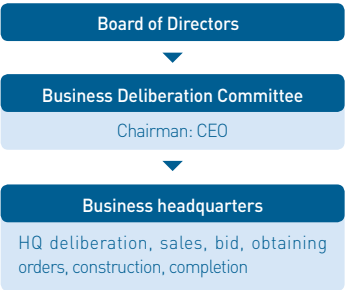
Mid-Project Risk Management

Performance of business partners, cost rate, compliance with air regulations, safety/quality/environmental management, compliance with drawings and specifications, mobilizing appropriate resources, management of civil complaints and overseas media, etc.

Project Completion Risk Management

Postponement of construction completion, managing maintenance and repair, decline of management quality, etc.

Business Promotion Risk Management System



INPUT. What are some of the activities GS E&C is undertaking in order to strengthen its risk management performance?

In 2012, GS E&C managed to strengthen its prior risk management capacity through heightened availability of its risk management system by improving the performance in the areas of business process, profits and losses and business characteristics and determining the cost trends. Particularly in the case of plant businesses, GS E&C succeeded in upgrading the system to a Total Project Management System (TPMS), optimized for business support.

Process	Profits and Losses	Business Characteristics
<p>Improvement of the Total Project Management System with a focus on usability and autonomy to increase the utilization value of each project’s process control function</p> <ul style="list-style-type: none">Expansion of free management at the sites, provision of on-line manualsBuyer outsourced planning and real-time management.	<p>Reinforcing the management of working budgets, existing and input cost flow and unexecuted future cost rate to improve the monitoring and risk management of profits and losses</p> <ul style="list-style-type: none">Improving the monitoring and risk management of profits and lossesReinforcing risk management through the analyses of CRV and CRI indicesStrengthening the management of the status of monthly deadlines for profits and lossesReinforcing the future cost rate management of unexecuted portions	<p>Improving an appropriate TPMS such as plant EPC, etc., including planning and sales</p> <ul style="list-style-type: none">Improving planning, sales and spacio-temporal information distribution infrastructureEstablishing a TPMS ideal for a comprehensive process support

OPERATIONAL DATA

Economic Performances | The year of 2012 had tough business environments due to the global financial crisis from the European financial crisis and the economic recession. The total amount of orders receive declined to 9.1069trillion won, a decrease of 31% compared to the previous year due to the reduced amount of public orders in Korea, reduced amount of plant orders resulted from the drop of oil price in the world market, and postponed bidding of ordering organization. However, our sales on a consolidated basis increased to 9.2896 trillion won, an increase of 3% compared to the previous year exceeding the goal at the beginning of the year of 9.5172 trillion won.

(Based on K-IFRS unit: billion won)

Indicator		2010	2011	2012
Sales	Total	8,420	9,052	9,290
	Plant	2,671	3,434	3,953
	Power & Environment	542	921	1,113
	Civil Engineering	1,048	1,097	1,239
	Housing & Architecture	3,851	3,302	2,705
Gross Sales		1,029	1,036	716
Operating Profit		598	555	160
Earnings before Tax		564	553	170
Net Income		406	427	108
Total Assets		11,046	11,099	11,470
Total Loans		1,323	1,775	2,460
Amount of Orders	Total	14,105	13,253	9,107
	Plant Orders	5,789	4,180	3,195
	Power and Environment Orders	2,008	1,799	1,697
	Civil Engineering Orders	1,107	1,685	577
	Housing and Architecture Orders	5,201	5,589	3,639

Sharing of Economic Value | We share value created in our operations with our internal and external stakeholders in a fair manner. In 2012, we disbursed a total of KRW 7.188 trillion, 3% increase from the previous year, to our suppliers, academies, employees, government, local communities, etc.

Unit: billion won

Entities	Content	Items	2010	2011	2012
Material suppliers	Payments to material suppliers	Materials expenses	2,213	2,623	2,865
Outsourcing suppliers	Payments to outsourcing suppliers	Outsourcing expenses	3,128	3,466	3,384
Academies	R&D expenditures to academies	Academic-industrial joint R&D expenditures	0.7	0.6	0.7
Employees	Amounts paid employees	Labor costs, benefit expenses	584	685	798
Government	Taxes paid to the government	Corporate tax, other taxes and bills	150	136	61
Local communities	Voluntary contributions and investments in local communities	Donations, operational costs for community services	9	10	10
Capital expenses	Dividends to all shareholders	Dividends	49	49	12
	Interest expenses	Interest expenses	62	37	57

Social Performances | To jump up to be a global company, GS E&C pursues its ideal employees as ‘those who lead changes, aspire to be the best, and trusted through communication and win-win development.’ We comply with the principles of UN Global Compact, ILO, and the Labor Standard Act, and prohibit child and forced labor. In addition, we offer fair opportunities to everyone regardless of their region, gender, religion, or disability, and foster employees as talents who have creative entrepreneurship under our talent fostering system. As of December 2012, the number of employees of GS E&C was 6,727 including newly hired employees of 137. In addition, we have been sharing the value created and building a trusted relationship with stakeholders including customers, employees, partner companies, and local communities through active communication.

Items		unit	2010	2011	2012
Number of employees	Total number of employees	person	5,481	6,223	6,727
	Number of male employees	person	5,225	5,844	6,295
	Number of female employees	person	256	379	432
	Rate of permanent employees	%	82.9	80.3	81
	Rate of contract employees	%	17.1	19.7	18.6
	Less than 30 years old	person	650	948	1,054
	More than 30 years old and less than 50 years old	person	4,173	4,546	4,801
	More than 50 years old	person	658	729	872
	Rate of employees with disabilities	%	0.7	0.7	0.7
Rate of female managers		%	1.28	1.47	1.2
Number of local residents employed		person	642	600	685
Number of retired and resigned employees	Number of male employees retired/resigned	person	188	251	330
	Number of female employees retired/resigned	person	13	29	33
Training hours per employee		hour	124	158	136
Training costs for employees		million won	53	64	55
Number of disciplinary violations of ethical management		case	6	17	4
Ethical management training attendance (offline)		person	685	756	684
Ethical management training attendance (online)		person	5,139	5,955	6,442
Employee satisfaction survey results (rate of positive responses)		%	60	62	69
Unionized employees		person	871	951	1,029
Complaints from housing customers		case	1,749	1,138	662
Xi brand GCSI Customer Satisfaction Survey results		point	71.4	71.4	71.9
Social contribution expenditures		million won	79	100	95
Number of employees that participated in social contribution activities		point	1,572	2,363	4,068

This includes local residents in Thailand, India, Cambodia, Vietnam, and China. Local residents refer to citizens in applicable countries working for our overseas sites, corporate bodies, and offices.

Environmental Performance | GS E&C has established ‘Securing a Global Top Tier-Level Environmental System’ as its vision for environmental management and is actively dealing with relevant environmental issues. The company has also established a green management system and is exerting efforts to reinforce its green technology infrastructure as well as actively expanding communication not only within the company but also its business partners.

Category		Unit	2010	2011	2012
Amount of Construction Materials Used (Domestic Sites)	Amount of ready-mixed concrete used	m ³	2,236,448	2,617,233	2,063,610
	Amount of cement used	ton	1,296,412	112,842	1,236,241
	Amount of aggregates used	m ³	1,012,474	606,450	341,262
	Amount of asphalt used	ton	676,232	592,687	362,964
	Amount of sand used	m ³	1,517,745	95,469	88,694
	Amount of steel used	ton	395,044	399,108	218,300
	Amount of plaster boards used	m ²	3,324,068	3,031,365	2,230,998
Improvement Rate of Raw Materials Consumption by Unit		%	-	-	57
Amount of Recycled Aggregates Used (Domestic Sites)		m ³	60,371	168,382	83,508
Amount of Water Used (Domestic Sites + Buildings)		m ³	1,023,569	1,892,825	2,040,096
	Amount of service water used	m ³	590,157	797,725	1,124,730
	Amount of groundwater used	m ³	293,073	640,362	564,210
	Amount of river water used	m ³	140,339	454,738	351,156
Intensity of Building Water		m ³ /m ²	3.23	3.71	4.21
Amount of Energy Used (Domestic Sites + Overseas Sites + Buildings)		TJ	2,836	3,861	3,774
	LNG	TJ	28	52	192
	Propane	TJ	24	32	34
	Kerosene	TJ	63	117	53
	Diesel	TJ	2,117	2,800	1,962
	Electricity	TJ	43	167	147
	Others	TJ	561	693	1,387
		TJ	-	0.27	-
Intensity of Building Water		MWh/m ²	0.17	0.16	0.16
Amount of Generated Waste (Domestic Sites)		ton	163,610	347,277	299,835
	Amount of concrete waste	ton	89,825	160,240	152,307
	Amount of asphalt waste	ton	13,742	102,781	27,195
	Amount of sand and stone waste	ton	4,900	5,557	27,854
	Amount of construction waste	ton	46,554	58,416	84,155
	Amount of synthetic resin waste	ton	3,959	9,903	4,923
	Amount of timber waste	ton	4,400	661.84	3,382
	Amount of construction sludge	ton	230	9,718	18
Reuse Rate of Waste		%	95	94	97
Amount of Debris Emission (Domestic Sites)		ton	200.8	46.2	226
Amount of Wastewater Discharge (Domestic Sites)		ton	753,380	908,282	935,980
Amount of Greenhouse Gas Emissions (Domestic Sites + Buildings + Overseas Sites)		tCO ² -e	237,535	304,781	287,189
	Scope 1 [direct emission]	tCO ² -e	18,496	52,862	51,499
	Scope 2 [indirect emission]	tCO ² -e	73,094	83,257	70,890
	Scope 3 [other forms of indirect emissions]	tCO ² -e	145,945	168,662	164,801
Intensity of Greenhouse Gas Emissions by Buildings		tCO ² -e/m ²	0.16	0.12	0.12
Amount of greenhouse gas emissions by Korean won		tCO ² -e/	4.25	3.88	3.39
		100 million won			230.23
Green procurement costs		100 million won	568	477.3	12
Number of environmental disputes		Case	7	5	7
Number of environmental accidents		Case	10	9	12.8
Environmental dispute adjustment costs		100 million won	15	8.6	0.14
Hazard rate		%	0.12	0.17	3,476
Eco environment course completion status		People[total]	5,785	3,343	

1) Building water intensity = sum of annual water consumption / sum of floor area [11 buildings owned including the headquarters]
2) Building Energy Intensity = sum of annual electricity use / sum of floor area [11 buildings owned including the headquarters]
4) Greenhouse gas emissions intensity from buildings = sum of annual tons CO2 equivalent / sum of floor area [11 buildings owned including the headquarters]

REPORT OF INDEPENDENT AUDITORS

To the Shareholders and Board of Directors of
GS Engineering & Construction Corporation

We have audited the accompanying statements of financial position of GS Engineering & Construction Corporation as of December 31, 2011, and the related statements of income, comprehensive income, changes in equity and cash flows for both fiscal years of 2011 and 2012. The groups’ management is responsible for generating these financial statements. Our responsibility is to audit these statements and express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the Republic of Korea. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit and the report of other auditors provide a reasonable basis for our opinion.

In our opinion, based on our audit and the report of other auditors, the financial statements, referred to above, present fairly, in all material respects, the financial position of GS Engineering & Construction Corporation as of December 31, 2011 and December 31, 2012 and their financial performance and cash flows for those years then ended in accordance with Korean IFRS.

Ahn Kyung-Tae

Chairman and CEO
Samil PricewaterhouseCoopers
191, Hangangno-2ga, Yongsan-gu, Seoul

March 14, 2013

This report is effective as of March 14, 2012, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.



FINANCIAL PERFORMANCE

Consolidated Statements of Financial Position | end of the 44th: December 31, 2012, end of the 43rd: December 31, 2011

unit: won		
Items	The end of 44 th	The end of 43 rd
Assets		
I . Current assets	7,555,281,917,764	7,782,408,373,097
1. Cash and cashable assets	1,417,756,357,849	1,487,894,859,776
2. Trade and other receivables	4,502,123,437,038	4,626,771,400,817
3. Inventories	535,685,678,580	494,798,614,588
4. Short-term financial instrument assets	318,922,860,287	292,223,164,261
5. Other current assets	780,793,584,010	880,720,333,655
II . Non-current assets	3,914,245,244,771	3,481,168,003,332
1. Property, plant, and equipment	2,253,948,387,036	2,195,262,529,843
2. Intangible assets	190,309,874,300	53,711,819,496
3. Investment property	298,980,491,077	343,314,360,194
4. Investment in associates	77,757,392,907	64,129,136,570
5. Long-term receivables and other receivables	503,842,577,840	448,279,445,438
6. Deferred income tax assets	223,785,473,666	165,644,042,879
7. Long-term financial instrument assets	365,621,047,945	210,826,668,912
Total assets	11,469,527,162,535	11,263,576,376,429
Liabilities		
I . Current liabilities	5,080,648,153,355	5,346,016,947,135
1. Trade and other payables	1,412,252,544,051	1,734,421,614,390
2. Short-term financial instrument liabilities	1,225,250,609,860	999,435,117,515
3. Income tax payables	14,264,726,660	146,511,431,344
4. Other current liabilities	2,428,880,272,784	2,465,648,783,886
II . Non-current liabilities	2,391,298,283,653	1,959,521,786,467
1. Long-term financial instrument liabilities	1,486,994,398,341	977,781,297,372
2. Defined benefit liabilities	86,170,127,672	93,720,791,191
3. Long-term provisions	322,344,866,887	372,864,370,238
4. Deferred income tax payables	189,803,788,258	165,032,274,256
5. Other non-current liabilities	305,985,102,495	350,123,053,410
Total Liabilities	7,471,946,437,008	6,524,735,797,692
Equity		
I .Controlling shareholders' holdings	3,701,358,938,607	3,735,068,599,533
1. Capital stock	255,000,000,000	255,000,000,000
2. Capital surplus	159,012,656,312	159,933,622,758
3. Other components of equity	[145,408,649,854]	[82,059,874,119]
4. Accumulated other comprehensive income	[38,290,499,238]	[17,392,285,197]
5. Retained earnings	3,471,045,431,387	3,419,587,136,091
II .Non-controlling shareholders' holdings	296,221,786,920	222,969,043,294
Total equity	3,997,580,725,527	3,958,037,642,827
Total liabilities and equity	11,469,527,162,535	11,263,576,376,429

Consolidated Statements of Income | 44th: from January1 2012 to December 31 2012, 43rd: from January 1 2011 to December 31 2011

unit: won		
과목	The end of 44 th	The end of 43 rd
I . Sales	9,289,550,356,489	9,052,234,347,543
1. Construction operations	8,737,141,611,143	8,565,644,396,301
2. Housing construction and sales operations	189,372,004,524	106,892,388,253
3. Other operations	363,036,740,822	379,697,562,989
II . Cost of sales	8,573,361,856,618	8,012,812,824,272
1. Construction operations	8,038,113,351,383	7,483,753,902,685
2. Housing construction and sales operations	218,276,029,173	173,349,062,270
3. Other operations	316,972,476,062	355,709,859,317
III . Gross profit	716,188,499,871	1,039,421,523,271
IV . Selling and administrative expense	555,804,248,510	608,416,812,158
V . Operating income	160,384,251,361	431,004,711,113
VI . Other income	383,924,566,536	536,381,425,239
VII . Other expenses	446,239,613,225	369,308,529,736
VIII . Profit (Loss) from investments in associates	[2,883,900,413]	14,639,770,005
1. Gain on valuation of investment using the equity method of accounting	3,716,662,043	15,124,102,814
2. Loss on valuation of investment using the equity method of accounting	[6,600,562,456]	[484,332,809]
IX . Financial income	227,785,056,033	207,907,612,984
X . Financial expenses	153,142,643,215	256,988,463,928
XI . Net earnings (loss) before tax	169,827,717,077	563,636,525,677
XII . Income tax expenses	61,446,921,826	136,224,128,512
X III . Net income (loss)	108,380,795,251	427,412,397,165
1. Net income in controlling interests	102,123,282,575	423,676,712,843
2. Net income in non-controlling interests	6,257,512,676	3,735,684,322
X IV . Earnings per share	Basic (diluted) earnings per share	2,0638,563

Consolidated Statements of Comprehensive Income | 44th: from January1 2012 to December 31 2012, 43rd: from January 1 2011 to December 31 2011

Unit: won		
Items	44 th	43 th
I . Net profit	108,380,795,251	427,412,397,165
II . Other comprehensive income [loss]	[19,270,266,822]	[194,091,585,453]
1. Gain on valuation of available-for-sale financial assets	[19,404,514,494]	[161,412,177,677]
2. Loss on valuation of available-for-sale financial assets	1,688,475,887	[496,925,578]
3. Gain on valuation of investment stock using the equity method	[682,324,343]	624,546,937
4. Loss on valuation of investment stock using the equity method	[73,663,228]	[254,738,120]
5. Loss on overseas operations translation	[16,357,120,840]	[3,291,203,621]
6. Gain on valuation of derivate instruments	2,587,612,913	2,166,708,479
7. Loss on valuation of derivate instruments	8,462,480,439	82,343,492
8. Actuarial loss on defined benefit liability	4,508,786,844	[31,510,139,365]
III . Total comprehensive income for the year	89,110,528,429	233,320,811,712
1. Equity attributable to owners of parent	85,524,149,654	230,490,030,025
2. Non-controlling interests	3,586,378,775	2,830,781,687

Consolidated Statements of Changes in Equity | 44th: from January1 2012 to December 31 2012, 43rd: from January 1 2011 to December 31 2011

									unit: won
Items	Capital stock	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Equity attributable to owners of the Parent Company Total	Non-controlling interests	Total	
I. Jan 1, 2010	255,000,000,000	160,411,928,613	[83,052,912,119]	201,486,356,166	2,738,230,273,318	3,272,075,645,978	215,209,828,653	3,487,285,474,631	
II. Comprehensive income									
1. Net profit	-	-	-	-	397,337,821,841	397,337,821,841	8,204,955,123	405,542,776,964	
2. Gain on valuation of available-for-sale financial assets	-	-	-	[28,309,085,537]	-	[28,309,085,537]	59,233,201	[28,249,852,336]	
3. Loss on valuation of available-for-sale financial assets	-	-	-	[5,548,123,651]	-	[5,548,123,651]	-	[5,548,123,651]	
4. Gain on valuation of investment stock using the equity method	-	-	-	1,018,342,625	-	1,018,342,625	-	1,018,342,625	
5. Loss on valuation of investment stock using the equity method	-	-	-	-	-	-	-	-	
6. Currency translation differences	-	-	-	[13,745,553,256]	-	[13,745,553,256]	1,891,504	[13,743,661,752]	
7. Gain on valuation of derivative instruments	-	-	-	1,532,008,885	-	1,532,008,885	-	1,532,008,885	
8. Loss on valuation of derivative instruments	-	-	-	[11,362,468,060]	-	[11,362,468,060]	105,561,335	[11,256,906,725]	
9. Actuarial loss on defined benefit liability	-	-	-	-	[13,208,305,291]	[13,208,305,291]	[955,687,924]	[14,163,993,215]	
10. Total comprehensive income	-	-	-	[56,414,878,994]	384,129,516,550	327,714,637,556	7,415,953,239	335,130,590,795	
III. Transactions with equity holders of the Group									
1. Treasury stock	366,631,333	[449,635,000]	-	-	-	[83,003,667]	-	[83,003,667]	
2. Dividends to equity holders of the Group	-	-	-	-	[49,478,849,000]	[49,478,849,000]	[639,196,600]	[50,118,045,600]	
3. Changes in consolidated entity	-	-	-	-	-	-	-	-	
4. Changes in non-controlling shareholders' interests	-	-	-	-	-	-	-	-	
5. Total transactions with equity holders of the Group	-	354,266,360	-	-	[634,746,782]	[280,480,422]	[579,076,297]	[859,556,719]	
6. ransactions with equity holders of the Group	-	720,897,693	[449,635,000]	-	[50,113,595,782]	[49,842,333,089]	[1,218,272,897]	[51,060,605,986]	
IV. Dec 31, 2010	255,000,000,000	161,132,826,306	[83,502,547,119]	145,071,477,172	3,072,246,194,086	3,549,947,950,445	221,407,508,995	3,771,355,459,440	
I. Jan 1, 2011	255,000,000,000	161,132,826,306	[83,502,547,119]	145,071,477,172	3,072,246,194,086	3,549,947,950,445	221,407,508,995	3,771,355,459,440	
II. Comprehensive income									
1. Net profit	-	-	-	-	423,676,712,843	423,676,712,843	3,735,684,322	427,412,397,165	
2. Gain on valuation of available-for-sale financial assets	-	-	-	[161,352,944,476]	-	[161,352,944,476]	[59,233,201]	[161,412,177,677]	
3. Loss on valuation of available-for-sale financial assets	-	-	-	[462,708,718]	-	[462,708,718]	[34,216,860]	[496,925,578]	
4. Gain on valuation of investment stock using the equity method	-	-	-	624,546,937	-	624,546,937	-	624,546,937	
5. Loss on valuation of investment stock using the equity method	-	-	-	[172,089,966]	-	[172,089,966]	[82,648,154]	[254,738,120]	
6. Currency translation differences	-	-	-	[3,283,070,842]	-	[3,283,070,842]	[8,132,779]	[3,291,203,621]	
7. Gain on valuation of derivative instruments	-	-	-	2,166,708,479	-	2,166,708,479	-	2,166,708,479	
8. Loss on valuation of derivative instruments	-	-	-	15,796,217	-	15,796,217	66,547,275	82,343,492	
9. Actuarial loss on defined benefit liability	-	-	-	-	[30,722,920,449]	[30,722,920,449]	[787,218,916]	[31,510,139,365]	
10. Total comprehensive income	-	-	-	[162,463,762,369]	392,953,792,394	230,490,030,025	2,830,781,687	233,320,811,712	
III. Transactions with equity holders of the Group									
1. Treasury stock	-	[1,199,203,548]	1,442,673,000	-	-	243,469,452	-	243,469,452	
2. Dividends to equity holders of the Group	-	-	-	-	[49,478,849,000]	[49,478,849,000]	[1,235,986,430]	[50,714,835,430]	
3. Changes in consolidated entity	-	-	-	-	3,662,431,747	3,662,431,747	-	3,662,431,747	
4. Changes in non-controlling shareholders' interests	-	-	-	-	-	-	-	-	
5. Total transactions with equity holders of the Group	-	-	-	-	203,566,864	203,566,864	[33,260,958]	170,305,906	
6. ransactions with equity holders of the Group	-	[1,199,203,548]	1,442,673,000	-	[45,612,850,389]	[45,369,380,937]	[1,269,247,388]	[46,638,628,325]	
IV. Dec 31, 2011	255,000,000,000	159,933,622,758	[82,059,874,119]	[17,392,285,197]	3,419,587,136,091	3,735,068,599,533	222,969,043,294	3,958,037,642,827	
I. Jan 1, 2012	255,000,000,000	159,933,622,758	[82,059,874,119]	[17,392,285,197]	3,419,587,136,091	3,735,068,599,533	222,969,043,294	3,958,037,642,827	
II. Comprehensive income									
1. Net profit	-	-	-	-	102,123,282,575	102,123,282,575	6,257,512,676	108,380,795,251	
2. Gain on valuation of available-for-sale financial assets	-	-	-	[19,404,514,494]	-	[19,404,514,494]	-	[19,404,514,494]	
3. Loss on valuation of available-for-sale financial assets	-	-	-	1,684,115,928	-	1,684,115,928	4,359,959	1,688,475,887	
4. Gain on valuation of investment stock using the equity method	-	-	-	[682,324,343]	-	[682,324,343]	-	[682,324,343]	
5. Loss on valuation of investment stock using the equity method	-	-	-	[49,763,665]	-	[49,763,665]	[23,899,563]	[73,663,228]	
6. Currency translation differences	-	-	-	[15,020,407,819]	-	[15,020,407,819]	[1,336,713,021]	[16,357,120,840]	
7. Gain on valuation of derivative instruments	-	-	-	2,587,612,913	-	2,587,612,913	-	2,587,612,913	
8. Loss on valuation of derivative instruments	-	-	-	9,987,067,439	-	9,987,067,439	[1,524,587,000]	8,462,480,439	
9. Actuarial loss on defined benefit liability	-	-	-	-	4,299,081,120	4,299,081,120	209,705,724	4,508,786,844	
10. Total comprehensive income	-	-	-	[20,898,214,041]	106,422,363,695	85,524,149,654	3,586,378,775	89,110,528,429	
III. Transactions with equity holders of the Group									
1. Treasury stock	-	[935,609,264]	6,327,127,000	-	-	5,391,517,736	-	5,391,517,736	
2. Dividends to equity holders of the Group	-	-	-	-	[49,478,849,000]	[49,478,849,000]	[559,994,777]	[50,038,843,777]	
3. Changes in consolidated entity	-	-	[69,675,902,735]	-	-	[69,675,902,735]	68,230,248,593	[1,445,654,142]	
4. Changes in non-controlling shareholders' interests	-	14,642,818	-	-	-	14,642,818	12,671,788	27,314,606	
5. Total transactions with equity holders of the Group	-	-	-	-	[5,485,219,399]	[5,485,219,399]	1,983,439,247	[3,501,780,152]	
6. ransactions with equity holders of the Group	-	[920,966,446]	[63,348,775,735]	-	[54,964,068,399]	[119,233,810,580]	69,666,364,851	[49,567,445,729]	
IV. Dec 31, 2012	255,000,000,000	159,012,656,312	[145,408,649,854]	[38,290,499,238]	3,471,045,431,387	3,701,358,938,607	296,221,786,920	3,997,580,725,527	

Statements of Cash Flows | 44th: from January1 2012 to December 31 2012, 43rd: from January 1 2011 to December 31 2011

			unit: won
Item	44 th	43 rd	
I. Cash flows from operating activities	(328,170,424,054)	(481,705,192,458)	
1. Cash generated from operations	[116,697,666,488]	[265,769,538,672]	
2. Interest received	73,826,877,177	49,408,150,881	
3. Interest paid	[69,953,599,591]	[42,936,483,501]	
4. Dividends received	994,445,504	1,181,068,535	
5. Income tax paid	[216,340,480,656]	[223,588,389,701]	
II. Cash flows from investing activities	(295,409,893,699)	625,043,826,954	
1. Cash inflows from investing activities	809,160,985,452	233,446,718,735	
(1) Decrease in other receivables	448,562,549,731	15,351,901,943	
(2) Decrease in short-term financial instrument assets	184,312,808,323	203,797,100,569	
(3) Decrease in long-term other receivables	106,263,558,736	21,018,509,638	
(4) Decrease in long-term financial instrument assets	46,368,754,246	69,106,990	
(5) Disposal of investments in associates	-	11,757,821,222	
(6) Disposal of property, plant and equipment	581,383,619	10,331,204,642	
(7) Disposal of intangible assets	104,648,035	363,739,185	
(8) Disposal of investment property	21,733,924,432	15,846,817,669	
(9) Disposal of assets held for sale	-	163,944,000,000	
2. Cash outflows from investing activities	(1,104,570,879,151)	(557,391,070,694)	
(1) Increase in other receivables	[410,628,395,112]	[206,116,268,994]	
(2) Increase in short-term financial instrument assets	[74,364,854,789]	[27,841,407,000]	
(3) Increase in long-term other receivables	[269,821,079,566]	[236,242,132,428]	
(4) Increase in long-term financial instrument assets	[74,449,112,372]	[18,128,137,628]	
(5) Acquisition of investments in associates	[205,354,112,166]	[8,712,743,181]	
(6) Acquisition of property, plant and equipment	[63,918,270,916]	[51,244,886,347]	
(7) Acquisition of intangible assets	[6,035,054,230]	[2,543,212,800]	
(8) Acquisition of investment property	-	[6,562,282,316]	
III. Cash flows from financing activities	540,522,998,560	363,673,063,358	
1. Cash inflows from financial activities	1,977,503,101,557	1,767,928,730,096	
(1) Increase in short-term financial instrument liabilities	1,050,568,820,519	990,794,525,895	
(2) Increase in long-term financial instrument liabilities	904,718,587,191	739,812,217,273	
(3) Increase in other non-current liabilities	12,032,474,000	37,321,986,928	
(4) Disposal of own shares	5,092,813,987	-	
(5) Increase (decrease) in non-controlling interests	5,090,405,860	-	
2. Cash outflows from financial activities	(1,436,980,102,997)	(1,404,255,666,738)	
(1) Decrease in short-term financial instrument liabilities	(1,310,693,810,660)	(1,273,595,975,435)	
(2) Decrease in other current liabilities	(16,426,800,000)	-	
(3) Decrease in long-term financial instrument liabilities	[45,061,935,259]	[20,506,000,000]	
(4) Decrease in other non-current liabilities	[14,718,211,336]	[59,441,397,481]	
(5) Dividends	[50,079,345,742]	[50,712,293,822]	
IV. Exchange gains (losses) on cash and cash equivalents	12,918,817,266	4,799,887,675	
V. Net increase (decrease) in cash and cash equivalents	[70,138,501,927]	[5,640,068,647]	
VI. Cash and cash equivalents at beginning of the year	1,487,894,859,776	1,493,534,928,423	
VII. Cash and cash equivalents at the end of the year	1,417,756,357,849	1,487,894,859,776	

REPORT OF INDEPENDENT ACCOUNTANTS' REVIEW OF INTERNAL ACCOUNTING CONTROL SYSTEM

To the President of
GS Engineering & Construction Corporation



We have reviewed the accompanying management's report on the operations of the Internal Accounting Control System ("IACS") of GS Engineering & Construction Corporation (the "Company") as of December 31, 2012. The Company's management is responsible for designing and operating IACS and for its assessment of the effectiveness of IACS. Our responsibility is to review the management's report on the operations of the IACS and issue a report based on our review. The management's report on the operations of the IACS of the Company states that "based on its assessment of the operations of the IACS as of December 31, 2012, the Company's IACS has been designed and is operating effectively as of December 31, 2012, in all material respects, in accordance with the IACS standards established by the Internal Accounting Control System Operations Committee (IACSOC) of the Korea Listed Companies Association."

Our review was conducted in accordance with the IACS review standards established by the Korean Institute of Certified Public Accountants. Those standards require that we plan and perform, in all material respects, the review of management's report on the operations of the IACS to obtain a lower level of assurance than an audit. A review is to obtain an understanding of a company's IACS and consists principally of inquiries of management and, when deemed necessary, a limited inspection of underlying documents, which is substantially less in scope than an audit.

A company's IACS is a system to monitor and operate those policies and procedures designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("Korean- IFRS"). Because of its inherent limitations, IACS may not prevent or detect a material misstatement of the financial statements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Based on our review, nothing has come to our attention that causes us to believe that management's report on the operations of the IACS, referred to above, is not presented fairly, in all material respects, in accordance with the IACS standards established by IACSOC.

Our review is based on the Company's IACS as of December 31, 2012, and we did not review management's assessment of its IACS subsequent to December 31, 2012. This report has been prepared pursuant to the Acts on External Audit for Stock Companies in Korea and may not be appropriate for other purposes or for other users.

Ahn Kyung-Tae *Samil PricewaterhouseCoopers*

Chairman and CEO
Samil PricewaterhouseCoopers

March 14, 2013

REPORT ON THE OPERATIONS OF THE INTERNAL ACCOUNTING CONTROL SYSTEM

To the Board of Directors and Audit Committee of
GS Engineering & Construction Corporation



I, as the Internal Accounting Control Officer ("IACO") of GS Engineering & Construction Corporation (the "Company"), assessed the status of the design and operations of the Company's internal accounting control system ("IACS") for the year ended December 31, 2012.

The Company's management including IACO is responsible for designing and operating IACS. I, as the IACO, assessed whether the IACS has been effectively designed and is operating to prevent and detect any error or fraud which may cause any misstatement of the financial statements, for the purpose of establishing the reliability of financial reporting and the preparation of financial statements for external purposes. I, as the IACO, applied the IACS standards for the assessment of design and operations of the IACS.

Based on the assessment on the operations of the IACS, the Company's IACS has been effectively designed and is operating as of December 31, 2012, in all material respects, in accordance with the IACS standards.

February 19, 2013

Myung-Soo Huh, Chief Executive Officer

A handwritten signature in black ink.

Tae-Jin Kim, Internal Accounting Manager

A handwritten signature in black ink.

3RD PARTY ASSURANCE STATEMENT ON INTEGRATED REPORT

Introduction | Det Norske Veritas Certification Ltd. (hereinafter referred to as 'DNV') has been commissioned to carry out assurance engagement on GS Engineering & Construction Co., Ltd. (hereinafter referred to as 'GS E&C') Integrated Report 2012 (hereinafter referred to as 'the Report'). This engagement focused on the information provided in the Report and the underlying management and reporting processes.

This Assurance Statement is intended for the readers of the GS E&C's Integrated Report. GS E&C is responsible for the collection, analysis, aggregation and presentation of all information within the Report. DNV's responsibility regarding this Assurance engagement is to the management of GS E&C only, in accordance with terms of reference and scope of work agreed. DNV disclaims any liability or responsibility to a third-party for any decisions, whether investment or otherwise, based upon this Assurance Statement.

Scope of Assurance | This Assurance Engagement covered data from calendar year 2012. The scope of DNV's Assurance Engagement, as agreed with GS E&C included the verification of:

- Sustainability policy, goals, initiatives, parties and performance for calendar year 2012, as described in the Report. These were verified at company level.
- Health & Safety, Social and Environmental data management systems, and associated processes and tools for collecting, analysing, aggregating and reporting quantitative and qualitative information provided in the Report.
- Processes for defining the boundaries, focus and content of the Report. (Limited to Head office and project sites)
- Review of the extent to which the principles and requirements of the Global Reporting Initiative (GRI) Guidelines for Sustainability Reporting (GRI G3.1) and Construction and Real Estate Sector Supplement are reflected in the Report.
- Evaluation of Accountability Principles and Performance Information (Type 1) and evaluation of specific data and information with regard to water, waste and Accident rate (Type 2) with a moderate level of assurance, according to AA1000 Accountability Principles Standard 2008 and AA1000 Assurance Standard 2008.

GS E&C's reporting boundaries include all operations over which GS E&C's management exercises significant control.

Limitations | TThe engagement excluded the sustainability management, performance and reporting practices of GS E&C' suppliers, contractors and any third-parties mentioned in the Report. DNV did not interview external stakeholders as part of this Assurance Engagement. Economic performances including financial data were cross-checked at head-office with internal documents and the financial statements audited by another 3rd party. The assurance statement on the financial statements issued by another 3rd Party is also provided in the Report.

Statement of Competence and Independence | DNV provides sustainability risk management services through specialists worldwide. This engagement was undertaken by a multi-disciplinary team of suitably qualified and experienced sustainability professionals. DNV was not involved in the preparation of any information presented in the Report. DNV did not provide any services to GS E&C in 2011 and 2012 that could compromise the independence or impartiality of our work.

Verification Methodology | This Assurance Engagement was carried out from February until April 2012, and in accordance with the DNV Protocol for Verification of Sustainability Reporting and AA1000 AS (2008).

In reaching our conclusion, we have undertaken the following work;

- Interviewed GS E&C's executives and management representatives from different divisions and functions;
- Visited GS E&C's Head office in Seoul and 1 project sites in Republic of Korea;
- Examined relevant documents, data and other information requested by DNV and made available by GS E&C;
- Reviewed the mechanisms implemented by GS E&C to promote and oversee its sustainability-related policies as described in the Report;
- Reviewed a selection of internal communication and external media reports relating to GS E&C' sustainability management approach, performance and adherence to its policies;
- Analysed sustainability data management systems, assessing specific data and information reported. The assessment of reliability of data and information was based on explicit assertions regarding sustainability performance on material issues and included a review of their completeness and accuracy. It included a review of the methods, practices and tools used in the collection, aggregation, analysis, internal quality control and reporting of the data and information. DNV's assessment also included; high-level trend analysis; the identification and significant changes in performance from the previous reporting; a review of data traceability; and record checks at different stages in the data flows.
- Checked the Report fulfils the requirement of GRI Application Level A+.

Conclusion | In DNV's opinion, and based on the scope of this Assurance Engagement, the Report provides a reliable and fair representation of GS E&C' sustainability strategy, policy, practices and performance in 2012.

Based on the work undertaken as part of this Assurance Engagement, DNV believes that the Report generally meets the principles, content and quality requirements of GRI G3.1 and AA1000 AS (2008) for a Type 1 Moderate level of assurance. Further conclusions and observations on the adoption of reporting principles and specific performance information are made below;

Regarding the level of adherence to reporting principles, we conclude the following:


[AA1000 Principles]
Stakeholder Inclusivity > GS E&C has engaged with a wide range of stakeholders regarding sustainability issues via survey. 10 main stakeholder groups (Media, Customer, Academia/Association/Institutions, Peer, Partners, Employees, Government, Community, Future generation, Shareholders/Investors) are identified with the reason of being selected and the communication processes for respective groups in the Report. Stakeholders' views, interests and expectations sought from the survey are considered in the preparation of the Report and in the formulation of GS E&C's sustainability management approach. In our view, the level at which the Report adheres to the principle of Inclusivity is 'Good'.
Responsiveness > Stakeholders' views, interests and expectations sought from stakeholder communications are considered in the preparation of the Report and in the formulation of GS E&C's sustainability management approach. GS E&C has established targets corresponding to respective material issues and measured the performances so that progress of sustainability management can be presented to the stakeholders. The Report communicates the response on material issues with clarity. In our view, the level at which the Report adheres to the principle of Responsiveness is 'Good'.
Materiality > The Report generally provides an account of performance on the issues that are most significant to GS E&C's activities and which are most relevant to its stakeholders. The material issues were identified and prioritised based upon the stakeholders' opinion sought by survey. However GS E&C needs to make full use of identified engagement measures with the stakeholders in order to reflect their concerns and expectations into the sustainable management. In our view, the level at which the Report adheres to the principle of Materiality is 'Good'.
Completeness > Within the reporting boundary and scope defined by GS E&C, we conclude that the Report does not omit information that would significantly influence stakeholders' decisions. More efforts to improve reporting on the performance from overseas project need to be made. In our view, the level at which the Report adheres to the principle of Completeness is 'Acceptable'.
Principle of report quality > No material errors have been detected for data and information verified. Information in the Report is presented so as to allow comparison of year-on-year performance. In general the Report provides a fair and balanced representation of GS E&C's approach and performance in 2012. In our view, the level at which the Report adheres to the principle of Neutrality and Reliability are 'Acceptable'.
Findings in relation to specific sustainability performance information > DNV has evaluated the nature and extent of GS E&C's adherence to the AA1000 AccountAbility Principles as for Type 1 as described above. In addition, the reliability of the environmental performance (especially water consumption and waste generation) as well as accident rate is evaluated. DNV has interviewed the personnel responsible for the data of water consumption and waste generation, and accident rate in order to figure out the generation, aggregation and processing of data and information. The verification team has reviewed the relevant documents and records based on which the statements in the Report are addressed. GS E&C has developed an effective methodology for gathering the specific information and data to use in the Report. The specific data and information were found to be identifiable and traceable. The personnel responsible for the data were able to demonstrate the origin and interpretation of the data in a reliable manner. From our analysis of the data and information, and GS E&C's processes that generate them, we conclude that the data and information included in the Report are the results of stable and repeatable activities.

OPPORTUNITIES FOR IMPROVEMENT | The following is an excerpt from the observations and opportunities reported to GS E&C management. However, these do not affect our conclusions on the Report and are provided to encourage continual improvement.


- Sustainability performance of international projects needs to be disclosed considering the revenue contribution.
- Complement the explanation of technical terms for raising of awareness of stakeholder who lacks knowledge in construction sector.
- Disclosure at least 3 year performance for time series analysis.
- Manage systematically key process for producing the sustainability Report, from data gathering, analysis and reporting (for example documented procedures)

Seoul, Korea
May 2013


Cheol-Soo Kim
Lead Verifier





In-Kyoon Ahn
Lead Verifier



Seung-Hyun Kwak
Assurance Engagement
Reviewer



AA1000
Licensed Assurance Provider
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3RD PARTY ASSURANCE STATEMENT ON GREENHOUSE GAS INVENTORY

Introduction | DNV Certification Ltd. ("DNV") was commissioned by GS E&C Corporation ("GS E&C") to verify the GS E&C's Greenhouse Gas Inventory Report for the calendar year 2012 ("the report") based upon a limited level of assurance. GS E&C is responsible for the preparation of the GHG emissions data on the basis set out within the WRI/WBCSD GHG Protocol:2004 and the principles set out in ISO14064-1:2006. Our responsibility in performing this work is to the management of GS E&C only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this assurance statement.

Scope of Assurance | The emissions data covered by our examination comprise Direct emissions (Scope 1), Energy indirect emissions (Scope 2) and Other indirect emissions (Scope 3):

- Reporting period under verification: Calendar Year 2012
- Organizational boundary for reporting:

Organizational Boundaries	Address/Remark	Verification Activities
Headquarters	GS Yeokjeon Tower, 537, Namdaemun-Ro, 5-Ga, Joong-Gu, Seoul-si	Desk review, site visit, data verification
Buildings	10 Buildings: buildings owned or leased including R&D center and Resort	Desk review, site visit, data verification
Domestic construction sites	250 sites (Departments of Plant, Power & Environment, Civil Engineering, Housing, Architecture)	Desk review, site visit, data verification
Overseas construction sites	36 sites (Departments of Plant, Power & Environment, Civil Engineering, Housing, Architecture)	Desk review, data verification

Verification Approach | The verification has been conducted from March 25 through May 24, 2013 and performed in accordance with the verification principles and tasks outlined in ISO14064-3.We planned and performed our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a limited verification opinion concerning the completeness of the emission inventory as well as the reported emission figures in ton CO2 equivalent. As part of the verification process, we have reviewed and verified the followings:

- GS E&C's Green Information System
- GS E&C's GHG inventory Report
- GS E&C's process to generate, aggregate and report the GHG emissions data (linked with ERP system)

Conclusion | As a result of the work described above, in our opinion nothing has come to our attention that would cause us to believe that the GHG emissions data set out in GS E&C's report are not fairly stated. The GHG Emissions of GS E&C for the year 2012 were confirmed as below;

Greenhouse Gas Emissions of GS E&C Corporation in 2012				Unit: tCO ₂ -e
Organizational Boundary	Direct Emissions (Scope 1)	Indirect Energy Emissions (Scope 2)	Other Indirect Emissions (Scope 3)	Total Emissions
GS E&C Corporation	51,449	70,890	164,801	287,189

The above greenhouse gas emissions may have a difference of ±1 tCO2 from the actual value in the system due to round-off error.

* Total emissions = direct emissions + indirect energy emissions + other indirect emissions

May 24, 2013

Tae-Ho Kim Lead Verifier DNV Certification Ltd.



In-Kyoon Ahn Country Manager DNV Certification Ltd.



This Assurance Statement is valid as of the date of the issuance [24 May 2012]. Please note that this Assurance statement would be revised if any material discrepancy which may impact on the Greenhouse Gas Emissions of GS E&C Corporation is subsequently brought to our attention. In the event of ambiguity or contradiction in this statement between English version and Korean version, Korean shall be given precedent.

GRI INDEX



● Fully reported ❶ Partially reported ○ Not reported

GRI Index	No.	Description	Page	Level of Disclosure
Strategy and Analysis				
	1.1	Statement from the most senior decision-maker of the organization	2, 3	●
	1.2	Description of key impacts, risks, and opportunities	2, 3	●
Organizational Profile				
	2.1	Name of the organization	4,5	●
	2.2	Primary brands, products, and/or services	12-21	●
	2.3	Operational structure of the organization	4,5,77	●
	2.4	Location of organization's headquarters	4,5	●
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	4,5	●
	2.6	Nature of ownership and legal form	4,5,77	●
	2.7	Markets served	4,5	●
	2.8	Scale of the reporting organization	4,5	●
	2.9	Significant changes during the reporting period regarding size, structure, or ownership	4,5,77	●
	2.10	Awards received in the reporting period	9,104	●
Reportorial parameter				
Report Profile	3.1	Reporting period	105	●
	3.2	Date of most recent previous report	105	●
	3.3	Reporting cycle	105	●
	3.4	Contact point for questions regarding the report or its contents	105	●
	3.5	Process for defining report conten	76	●
	3.6	Boundary of the report	105	●
	3.7	Any specific limitations on the scope or boundary of the report	105	●
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations	105	●
	3.9	Date measurement techniques and the bases of calculations	105	●
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports	105	●
	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	105	●
GRI Index	3.12	GRI Content Index	96-99	●
Verification	3.13	Policy and current practice with regard to seeking external assurance for the report	92-93	●
Governance, Responsibility, Participation				
Governance	4.1	Governance structure of the organization	77	●
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer	77	●
	4.3	Composition of the highest governance body	77	●
	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	69,77	❶
	4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives	77	●
	4.6	Process in place for the highest governance body to ensure conflicts of interest are avoided	77, homepage 🏠	❶
	4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics	77	●
	4.8	Management principles	6-9	●
	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance	77	❶
	4.10	Process for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance	77	❶
External Participation	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	80,81	❶
	4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	9,104	●
	4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations	104	●
Stakeholders Engagement			75	●
	4.14	List of stakeholder groups engaged by the organization	75	●
	4.15	Basis for identification and selection of stakeholders with whom to engage	75	●
	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	75	●
	4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns	75,76	●

● Fully reported ❶ Partially reported ○ Not reported

GRI Index	No.	Description	Items in Our Report	Page	Level of Disclosure
Economic Indicators					
Economic Performances	EC1	Direct economic value generated and distributed	Economic performance, distribution of value by stakeholder	82	●
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Correspondence to climate change	50-53	●
Market Status	EC3	Coverage of the organization's defined benefit plan obligations	Benefit packages and retirement pension plans for employees	67	●
	EC4	Significant financial assistance received from government	Not significantly important to our operation or not applicable	n/a	●
	EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation	Entry level wage compared to legal minimum wage: 39%	-	●
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	Choosing suppliers and registration of local companies	62	❶
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	Recruitment of various talents and local residents	66,83	●
Indirect Economic Effects	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement (by type of investments and services)	SOC business and social contribution activities	25, 70-73	●
	EC9	Understanding and describing significant indirect economic impacts (including the extent of impacts)	Creation of social an environmental value	25, 31,44-47,66	●
Environmental Indicators					
Materials	EN1	Materials used by weight or volume	Resource consumption	48,49	●
	EN2	Percentage of materials used that are recycled input materials	Recycled aggregate consumption	48,49	●
Energy	EN3	Direct energy consumption by primary source	Direct energy use	48,49	●
	EN4	Indirect energy consumption by primary source	Indirect energy use	48,49	●
	EN5	Energy saved due to conservation and efficiency improvements	Energy Management Committee, green management promotion	51-53	●
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reduction in energy requirements as a result of these initiatives	Green construction, new and renewable energy, and smart grid projects	37-39	●
	EN7	Initiatives to reduce indirect energy consumption and reductions achieved	Fuel savings from transitioning to video conferencing system	41	●
Water	EN8	Total water withdrawal by source	Water use at domestic sites	48-49,84	●
	EN9	Water sources significantly affected by withdrawal of water	No significantly affected water source	-	●
	EN10	Percentage and total volume of water recycled and reused	Groundwater and rainwater reuse at sites, water saving toilets	46	●
Biodiversity	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	The double-tracking site at Gyeong-Jeon Line (Jinju-Gwangyang)	42	●
	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	Concerns on ecosystem destruction due to construction projects	42	❶
	EN13	Habitats protected or restored	The double-tracking site at Gyeong-Jeon Line (Jinju-Gwangyang)	42	❶
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	Monthly monitoring, measures to minimize impact on the habitat, provide passages and shelte	42	❶
	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	Six legally protected species including otter, wildcat, whooper swan, and eagle	42	❶
Air Emissions, Waste Water, Waste	EN16	Total direct and indirect greenhouse gas emissions by weight	Direct and indirect GHG emissions	48,49	●
	EN17	Other relevant indirect greenhouse gas emissions by weight	Other indirect GHG emissions	48,49	●
	EN18	Initiatives to reduce gas emissions and reductions achie	Eco-friendly construction materials and technology, low-carbon projects	37-39	●
	EN19	Emissions of ozone-depleting substances by weight	Low emissions of ozone-depleting substances such as HFC, CFC, and halon from refrigeration facilities are managed with other indirect GHG emissions	42	❶
	EN20	NOx, SOx and other significant air emissions by type and weight	Efforts to reduce air pollutants such as fugitive dust	42,homepage 🏠	●
	EN21	Total water discharge by quality and destination	Manage wastewater and water qualit	42,48,49,84	●
	EN22	Total weight of waste by type and disposal method	Volume of wastewater discharged	48,49,84	
	EN23	Total number and volume of significant spills	No spill occurred	-	
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and IV, and percentage of transported waste shipped internationally	hazardous waste exported	-	●
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	Preserve waters around construction sites through water quality management	42,homepage 🏠	❶
	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	Eco-friendly construction materials and technology, low-carbon projects, development of water resources, and use waste resources	37-39	●
Products and Services	EN27	Percentage of products sold and their packaging materials that are reclaimed by category	Not significant to our operations or not applicable	-	●
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Status of environmental accidents or disputes	42	●
Compliance with Laws and Regulations	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	Creation of economic and environmental value through installing a temporary bridge (Local Road #610)	41,46	●
Transportation	EN30	Total environmental protection expenditures and investments by type	Green procurement expenses, environmental R&D investment	36,41	●

					● Fully reported ❶ Partially reported ○ Not reported	
GRI Index	No.	Description	Items in Our Report	Page	Level of Disclosure	
Labor Indicators						
Employment	LA1	Total workforce by employment type, employment contract, and region	Status of employment	83	●	
	LA2	Total number and rate of employee turnover by age group, gender, and region	Number of newly hired employees, and employees retired and resigned	83	●	
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	Settlement of family-friendly corporate culture after parental	68,69	●	
Management-Worker Relations	LA4	Percentage of employees covered by collective bargaining agreements	Strengthening of employee communication	69	●	
	LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	Immediate notification when significant operational changes occur	-	●	
Occupational Health and Safety	LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees	The matter is discussed through Labor-management Council that represents 100% of the employees quarterly, and also discussed through meetings with the Occupational Safety Health Committee	55, 69	❶	
	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	Accidents status and cases data	55, 56	❶	
	LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	Run employee health management programs, prepare handling guidelines to prevent health-related risks for employees when dismissing or removing asbestos, manage risks through operating safety accident prevention activities, safety education, and safety innovation school, and equipment development to prevent safety accidents	55-57	●	
	LA9	Health and safety topics covered in formal agreements with trade unions	Discussions on work condition and safety and health enhancement through Labor-Management Council (quarterly)	69	●	
	LA10	Average hours of training per year per employee by employee category	Talent fostering activities /per employee: 136 hours in 2012	66,67	●	
Education and Training	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	Benefit packages / retiree support and employee education programs	67	●	
	LA12	Percentage of employees receiving regular performance and career development reviews	Performance evaluation and compensation for all employees	67	❶	
Diversity and Equal Opportunities	LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	Recruitment of various talents /status of BOD and employees	66,77,83	●	
	LA14	Ratio of basic salary of men to women by employee category	No gender discrimination in wage	83	●	
	LA15	Return to work and retention rates after parental leave, by gender	return rate after parental leave: 100%/ retention rate (working over 12 months) after parental leave: 100%	68	●	
Social Indicators						
Community	S01	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting	Risk management when carrying forward projects /risk management considering risks on local communities and environmental disputes, prevention of local disputes and complaints through running the forecasting program	80,81	●	
	S02	Percentage and total number of business units analyzed for risks related to corruption	Execution of ethical standard practice programs and education programs on ethical management	78,79	❶	
Corruption	S03	Percentage of employees trained in organization's anti-corruption policies and procedures	Number of employees who completed on/offline ethics education sessions	78,79	●	
	S04	Actions taken in response to incidents of corruption	Actions taken in response to violation of ethical management	78	●	
Public Policy	S05	Public policy positions and participation in public policy development and lobbying	Green management promotion	52,53	●	
	S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	Not applicable	n/a	●	
Anti-Competition Behavior	S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	No such incidents during reporting period	-	●	
	S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	No such cases during reporting period	-	●	
	S09	Operations with significant potential or actual negative impacts on local communities	Environmental impact prevention activities /sustainable construction	41-43	●	
	S010	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	Environmental impact prevention activities /sustainable construction	41-43	●	
Human Rights Indicators						
Investment and Procurement	HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	Currently, there is no significant investment agreements that undergo human rights screening but we are planning to include human rights clauses in agreements	-	○	
	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	There is no direct evaluation items on human rights in the evaluation sheet for selecting suppliers. However, we block suppliers from bidding if their violation on human rights (ethical management) is found	62,63,65	❶	
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	Hold sexual harassment prevention session for all employees	67	●	
Anti-Discrimination	HR4	Total number of incidents of discrimination and actions taken	No such incidents occurred	83	●	

					● Fully reported ❶ Partially reported ○ Not reported	
GRI Index	No.	Description	Items in Our Report	Page	Level of Disclosure	
Human Rights Indicators						
Right to Exercise Freedom of Association and Collective Bargaining	HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	Operate internal communication channels and labor-management cooperative activities	83	●	
Child Labor	HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor	Apply and follow the principles of UN Global Compact, ILO, and the Labor Standard Act	69,83	●	
Compulsory Labor	HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor	Apply and follow the principles of UN Global Compact, ILO, and the Labor Standard Act	83	●	
Security Practice	HR8	Percentage of security employee trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	Not significant to our operations or not applicable	-	●	
Rights of Indigenous People	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	No violations occurred	-	●	
	HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments	Consider social risks when managing non-financial risks and carrying forward projects	80,81	❶	
	HR11	Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms	Communicate with local communities through communication activities, no complaints received	70-73	●	
Product Accountability						
Customer Health and Safety	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	Conduct environmental impact reduction activities before, during, and after construction	40-47	●	
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes	PR2 Once (National Museum of Modern and Contemporary Art)	56	●	
Product and Service Labeling	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	Green Building Certification	43	●	
	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	No such incidents occurred	-	●	
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	Customer satisfaction management, customer emotion management, customer satisfaction activities	61	●	
Marketing Communications	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	Customer emotion management and cultural activities	61, home page 	❶	
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes	No such incidents occurred	-	●	
Customer Privacy	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	Customer privacy protection, no such complaints received	61	●	
Compliance with Laws and Regulations	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	No such violations occurred	-	●	
Supplement Indicators						
	CRE1	Building energy intensity	Building energy intensity of a head office and buildings owned	84	●	
	CRE2	Building water intensity	Building water intensity of a head office and buildings owned	84	●	
	CRE3	Greenhouse gas emissions intensity from buildings	GHG emissions intensity of a head office and buildings owned	84	●	
	CRE4	Greenhouse gas emissions intensity from new construction and redevelopment activity	GHG emissions intensity from construction sites	-	○	
	CRE5	Land remediated and in need of remediation for the existing or intended land use, according to applicable legal designations	No plan for the land remediation according to applicable legal designations	-	●	
	CRE6	Percentage of the organization operating in verified compliance with an internationally recognized health and safety management system	KOSHA18001, OHSAS18001 certification	54-55, home page 	●	
	CRE7	Number of persons voluntarily and involuntarily displaced and/or resettled by development, broken down by project	Internal management system development in process	-	○	
	CRE8	Type and number of sustainability certification, rating and labeling schemes for new construction, management, occupation and redevelopment	Green Building Certification	43	●	

UNGC / ISO26000

UN Global Compact

Participation and Compliance with the Principles | On August 4, 2010, GS E&C joined UNGC, a voluntary corporate initiative that promotes and encourages corporate social responsibility. By supporting the 10 Principles on human rights, labor, environment, and anti-corruption, GS E&C is taking its part in the global standard on corporate social responsibility and is reassuring its will to pursue sustainability management both nationally and internationally. GS E&C will continue to support and comply with the 10 Principles in order to respect the basic human and labor rights and respond to the global environmental crisis, by focusing on developing eco-friendly technologies and products as well as on managing and monitoring of corruption-prone activities. Please find our activities and policies related to the Principles in the table and the corresponding pages below.



UNGC Principles and Related Activities

Area	Related Activities	Principle	GRI	Page
Human Rights	Comply with ILO and UNGC	1. Businesses should support and respect the protection of internationally proclaimed human rights; and	HR1, HR2, HR3, HR4, HR5, HR6, HR7, HR8, HR9	83
	Hold sexual harassment prevention session and cross-cultural management session	2. Make sure that they are not complicit in human rights abuses.	HR1, HR2, HR8	67
Labor	Operate the TRADE Union and Labor-Management Council	3. Business should uphold the freedom of association and the effective recognition of the right to collective bargaining;	HR5, LA4, LA5	69, 83
	Comply with ILO and the ten principles of UNGC	4. The elimination of all forms of forced and compulsory labor;	HR7	83
		5. The effective abolition of child labor; and	HR6	83
	Set internal policy against any form of gender discrimination, no gender-based discrimination in compensation	6. The elimination of discrimination in respect of employment and occupation.	HR4, LA2, LA10, LA13, LA14	67, 83
Environment	Comply with the regulation regarding emissions on site, build environmental management system at worksites, conduct environmental impact evaluation, build GHG inventory, conduct GHG and energy consumption reduction activities, develop eco-friendly technologies, promote green management	7. Businesses should support a precautionary approach to environmental challenges;	EC2, SO5, EN18, EN26, EN30	42, 50-53
	Set an objective to reduce 30% GHG emissions against BAU by 2020, Sign the Voluntary Agreement on the Industry's Green Procurement and construct a guideline on green procurement, eco-friendly construction and demolition	8. Undertake initiatives to promote greater environmental responsibility; and	EN5, EN6, EN7, EN10, EN14, EN18, EN26, EN27	40-47
	Expand new and renewable energy business, systemize GHG inventory, R&D of green technologies, develop '3 Zero House', and eco-friendly housing model, develop 'Green Concrete, an eco-friendly construction material, participate in the Green Business Dissemination Supporting Project	9. Encourage the development and diffusion of environmentally friendly technologies.	EN2, EN5, EN6, EN7, EN10, EN18, EN26, EN27	35-39
Anti-corruption	Operate the Ethics Committee, promote employees' ethics-centered mindset through education and training on business ethics, establish and implement ethics management policy, run whistle-blowing program to eliminate anti-corruption	10. Business should work against corruption in all its forms, including extortion and bribery.	SO2, SO3, SO4	78, 97

ISO26000

Compliance with ISO26000 | ISO26000 comprises of seven core subjects of organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and community involvement and development. ISO26000 is not a management system standard and it is not intended or appropriate for certification purposes, regulatory or contractual use; nonetheless, GS E&C seeks to treat it as guidance for strengthening the company's sustainability management.

Core Subjects	Related Activities	Activities	Page
Organizational Governance		Governance structure centered on the Board of Directors; operation of the Audit Committee and Outside Director Recommendation Committee	77
Human Rights	Due diligence	Operation of the Audit Committee	77
	Human rights risk situations	Not applicable	-
	Avoidance of complicity	GS E&C does not support any organization that violates human rights	-
	Resolving grievances	Operate company-wide communication channels, Trade Union, and Labor-Management Council	69, 83
	Discrimination and vulnerable groups	Provide equal opportunities in salary, education and training, placement, and dismissal regardless of gender or disability	83
	Civil and political rights	Provide and respect the freedom to exchange information and ideas through company-wide communication channels such as an online community	69
	Economic, social and cultural rights	Run such programs as customized vacation systems and family-friendly programs; supports for cultural activities, medical and health, labor, children education, and retirees	68, 69
	Fundamental principles and rights at work	Comply with International Labor Organization standards; respect freedom of association through operation of Labor Union and Labor-Management Council; prohibit child and forced labor; prohibit all forms of discrimination	83
	Employment and employment relationships	Respect for employees; comply with international labor standards	83
	Conditions of work and social protection	Run such programs as customized vacation systems and family-friendly programs; supports for cultural activities, medical and health, labor, children education, and retirees	68, 69
Labor Practices	Social dialogue	Continuous dialogue through various employee communication channels, operation of Trade Union and Labor-Management Council	69
	Health and safety at work	Pursue a number of safety management activities under the safety management guidelines and the goal of 'zero serious accidents'	54-57
	Human development and training in the workplace	Operate education and training program fitted with talent development system	66, 67
Environment	Prevention of pollution	Prevent water pollution by installing water quality control facilities; activities to prevent dust scattering and soil erosion; appropriate treatment of waste by type following waste management guidelines; improvement of construction capabilities and reduction of waste by using eco-friendly casts	42, 43, 45
	Sustainable resource use	Efficient use of resources and reuse technologies; carry out energy savings campaign, recycle water resources	42, 43, 46
	Climate change mitigation and adaption	Greenhouse gas inventory; carry out greenhouse gas reduction activities; activate video conferencing system; develop smart grid technology and new and renewable energy technology; run the Energy Management Committee; promote green management	37, 41, 50-53
		Protection of the environment, biodiversity and restoration of natural habits	42, 44
	Anti-corruption	Establish ethics management system; implement a number of anti-corruption activities such as taking joint liability for unethical behavior	78, 79
Fair Operating Practices	Responsible political involvement	Participate in development of public environmental policies; support a number of industry-based initiatives	100, 104
	Fair competition	Take an oath to engage in fair competition (as part of Code of Ethics)	78, 79
	Promoting social responsibility in the value chain	Implement win-win management activities in four areas of finances, education and training, technology development, and other forms of management	70-73
	Respect of property rights	Not applicable	-
Consumer Issues	Fair marketing	Not applicable	-
	Protecting consumer's health and safety	Develop an indoor air quality sensor that detects chemical pollutants harmful to human body; provide cleaning service to housing customers	39, 47, 60
	Sustainable consumption	Develop many Green Smart technologies that save consumers' energy and water use	39, 47
	Consumer service, support, and complaint and dispute resolution	Make customer complaint-receiving channels simple and efficient; implement customer-oriented complaint handling policies; operate Customer Relationship Management (CRM) Committee	60
	Consumer data protection and privacy	Comply with laws and regulations related to consumer protection	61
	Access to essential services	Not applicable	-
	Education and awareness	Active exchange of information through smart phone applications	61
	Community involvement	Carry out a number of social contribution activities to realize joint value as a corporate citizen	70-73
	Education and culture	Hopes and Dreams Study Rooms, scholarships, and a number of cultural events	70-73
	Employment creation and skills development	Provide indirect job opportunities in the local community by giving suppliers from the community more points when choosing a supplier	65, 66
Community Involvement and Development	Technology development and access	Skill development classes specifically for the locals are not available	-
	Wealth and income creation	Give more points to the local suppliers when choosing a supplier	62
	Health	Operate employee benefit programs related to health such as checkups and support for medical expenses	54-57, 68
	Social investment	Social contribution activities such as House Repair of Hope Project; construct social infrastructures such as railway and water treatment facilities	70-73

GREEN MANAGEMENT SYSTEM CERTIFICATION SCHEME

Establishment of Green Management System | As laws and regulations aimed at improving corporations’ management of environmental impact and sustainability and economic development policies that considers environmental protection are being introduced across the globe, Korean government is preparing to announce Green Management System Certification Scheme (hereinafter GMS) in accordance with the Framework Act on Low Carbon, Green Growth.

The GMS has a number of objectives such as saving costs and improving efficiency for green growth, establishing an effective and efficient system for green management, encouraging employees to better understand and participate, managing key performance indicators, and realistically achieving green management performance as a result. It is categorized into Requirements and Performance Indicators.

GS E&C was selected to participate in the pilot certification and acquired the GMS certification in November 2011. GS E&C aims to become the leader in green management through continuous improvement.

Contents	Requirements	Related Activities	Page
4.1	General requirements	Establish green management systems and corresponding vision, objectives, and strategies	51
4.2	Green management policy	Commit to continuous improvement through CEO Message and Disclosure on Management Approach	34
4.3	Planning		
4.3.1	Green management aspects	Conduct environmental impact assessment, consider environmental values when obtaining project orders and designing, create database of failure cases to prevent risks in advance	40-41, 44-45
4.3.2	Regulations and other requirements	Build operational systems for environmental management at construction sites (management of environmental documents and facilities in accordance with regulations and our standards)	40
4.3.3	Objectives, detailed objectives and action plan	Establish green management systems and corresponding objectives, detailed objectives and action plans; disclose the above matters through our integrated report	51
4.4	Implementation		
4.4.1	Resources, roles, responsibility, and authority	Report the performance by green management organizations to the top executives and define R&R related to environmental work at construction sites	40, 50-51
4.4.2	Conformity, education and training, perception	Conduct environmental education sessions for employees and suppliers at both Head Offices and sites	42-43
4.4.3	Communication	Communicate with stakeholders through sustainability report, project site website, and information session for local residents, etc.	46, 60-61
4.4.4	Documentation	Document environmental data and information through Green Information System	51
4.4.5	Document management	Manage documents such as environmental guidelines for each process and construction site guidelines	42
4.4.6	Operational management	Indicate operational standards within the green management procedures and systemize division of works in regard to environmental management at sites	40
4.4.6.1	Planning and developmental activities	Consider and apply environmental performance improvement factors during planning and development	37, 45
4.4.6.2	Procurement activities	Plan to expand green procurement; consider environmental aspects when evaluating suppliers	41
4.4.7	Preparation for and response to emergency situations	Establish a contingency plan and system and build a system to prevent environmental pollution at sites	56-57
4.5	Inspection		
4.5.1	Monitoring and evaluation	Monitor and evaluate environmental impact through the environmental inspection system by process and period	43
4.5.2	Evaluation of compliance	Evaluate the degree of compliance with environmental regulations and other requirements through the environmental inspection system by process and period	43
4.5.3	Nonconformity, corrective actions, preventive measures	Correct any actual and potential nonconformity and conduct preventive measures by running the environmental dispute forecasting system and through regular communication	42
4.5.4	Record management	Manage records on green management performances by utilizing TPMS and Green Information System	51, 84
4.5.5	Internal examination	Regularly examine whether it is complying with environmental management certification such as ISO140001	9
4.6	Management review	Review the achievement status of green management organizations’ performance indicators	51

Contents	Requirements	Related Activities	Page
5.1	Mandatory management performance indicators (MPI)		
5.1.1	Establishment and achievement of green objectives	Establish short-term and mid-/long-term objectives for green management by setting green management KPIs	51
5.1.2	Green Procurement of MRO products	Manage procurement records of green products for MRO products annually	-
5.1.3	Green Procurement of raw materials	Manage records through the Green Procurement System, publish/distribute green procurement guidelines, and offer incentives to suppliers	41, 84
5.1.4	Green product development	Continue to invest in technology development of green construction and materials	37-39
5.1.5	Green products production and sales	Apply them to eco-friendly projects such as low-carbon transportation, waste-to-energy, etc. or green technology applied sites	37-39, 48-49
5.1.6	Hours spent on education and training	Provide environmental education sessions to all employees and suppliers	51
5.1.7	Opinions and complains	Communicate with sites through SMS, design buildings with a sound proof floor, and use the environmental dispute forecasting program	42, 45, 84
5.1.8	Compliance with legal requirements related to managing construction sites	Create database of failure cases to prevent environmental risks at sites	41, 84
5.1.9	Compliance with legal requirements related to supplying products		
5.1.10	Green management performance disclosures	Publish integrated reports (Sustainability Report +Annual Report)	34-57
5.1.11	Investment in green process	Not applicable	
5.2	Mandatory operation performance indicators (OPI)		
5.2.1	Energy use	Conduct energy reduction activities by managing energy consumption, and establishing the Energy Management Committee	48-49, 50-51
5.2.2	Direct GHG emissions	Manage direct GHG emissions and conduct GHG emission reduction activities	48-49, 50-51
5.2.3	Indirect GHG emissions	Manage indirect GHG emissions and conduct GHG emission reduction activities	48-49, 50-51
5.2.4	Water use	Manage water consumption, reuse ground water	46, 48-49
5.2.5	Resource consumption	Resource consumption management	48-49
5.2.5	Improvement rate of resource consumption by sale	Improvement rate of resource consumption by sale	84
5.2.6	Waste generated	Manage the amount of waste generated, recycling rate, and reduce waste by using paper casts	48-49, 84
5.2.7	Waste recycling rate		
5.2.8	Air pollutant emissions	Reduce dust scattering through activities and installment of a temporary bridge	42, 46
5.2.9	Wastewater discharged	Manage waste water emissions and conduct water pollution prevention activities	42, 48-49
5.2.10	Hazardous chemical substance use	Manage asbestos waste emissions and use asbestos treatment manual	43, 48-49

ASSOCIATIONS/AWARDS

Division	Association
Plant	Construction Industry Institute, Korea Plant Industries Association, Korea-Qatar Friendship Association, The Korea International Trade Association, International Contractors Association of Korea, Korea-Egypt Economic Cooperation Committee, Korea-Oman Friendship Association, Korea Price Data System, AACE International, The Gasification Technologies Council, International Register of Certified Auditors, Korea Gas Union
Power Plant and Environment	Korean Society of Water and Wastewater, Korean Society of Environmental Engineers, The Membrane Society of Korea, Korean Society on Water Quality, Korean Society of Water Science and Technology, The Korean Society of Combustion, Korean Society of Thermal Environmental Engineers, Korean Organic Resource Recycling Association, Korean Society of Waste Management, Korean Fluid Machinery Association, Society of Odor Research and Engineering, Korea Associate Council of Incineration Technology, The Korean Institute of Electrical and Electronic Material Engineers, Korea Association of Waste to Energy Technology, Korea Water and Wastewater Works Association, Korean Institute of Chemical Engineers, Korean Society of Atmospheric Environment, Korean Society of Soil and Groundwater Environment, YU Environmental Research Institute, Automated Waste Collection Technology Association, The Korean Institute of Power Electronics, Korea Electric Association, Korea Institute of Project Management Technology, Korea and Energy Industry Association, Korea Atomic Industrial Forum, Korean Nuclear Society, Korea Institute of Nuclear Safety
Civil Engineering	Korean Society of Transportation, Korean Society of Civil Engineers, Korean Society for Rock Mechanics, Korean Geotechnical Society, Korean Railway Construction Engineering Association, The Korean Society for Railway, The Korea Railway Association, Korea Port & Harbour Association, Korean Society of Coastal and Ocean Engineers, Korean Society of Hazard Mitigation, Korean Tunneling and Underground Space Association, Intelligent Transport Society of Korea, Korean National Committee on Large Dams, Korea Water Resources Association, Korean National Committee on Irrigation and Drainage, Chuncheon Global Water Forum, The Korean Society of Agricultural Engineers, Korea Road & Transportation Association, Korean Society of Road Engineers, Korea Disaster Prevention Association, Korean Society for Advanced Composite Structures, Korean Wetlands Society, Computational Structural Engineering Institute of Korea, Korea New Transit Association, Korean Society of Steel Construction
Housing	Korea Housing Association, The Korea Home Network Industry Association, Korea Ubiquitous Association, American Society of Landscape Architects, Korea Remodeling Association, Korea Marketing Association, Korean Society of Consumer Studies, The Organization of Consumer Affairs Professionals in Business
Construction	The Korean Institute of Electrical Engineers, Architectural Institute of Korea, The Korean Institute of Electrical and Electronic Material Engineers, Korea Information and Communications Society, The Korean Institute of Illuminating and Electrical Installation Engineers, Korea Railway Electrification Technical Association, Association of Korea Railway Signal Engineering, Korea Institute of Construction Engineering and Management, The Korea Institute of Building Construction, K-Housing Association, The Society of Air-Conditioning and Refrigerating Engineers of Korea, Korea Green Building Council, Korean Association of Air Conditioning Refrigerating and Sanitary Engineers, Korea Society of Geothermal Energy Engineers, Korea Solar Energy Society, Korea Council of Tall Building and Urban Habitat, Korea Air Cleaning Association, Korea Institute of Architectural Sustainable Environment and Building Systems, Korean Association for Energy Service Companies (ESCOs), Korea Construction Value Engineering Research Institute, Korea Association for Eco-environmental Greenspace on Artificial Ground, Korea Institute of Rural Architecture, The Society of Living Environment System, Korea, The Korean Society of Disaster Information, Korea Institute for Structural Maintenance Inspection
Technology	Korea Engineering & Consulting Association, Korea Industrial Technology Association, The Korea Construction New-Technology Association, buildingSMART Korea, Korea Green Business Association, Korean Geo-environmental Society, Korean Society of Hazard Mitigation, Architectural Institute of Korea, The Korean Society for Noise and Vibration Engineering, Korea Concrete Institute, Korean Society of Road Engineers, Earthquake Engineering Society of Korea, DEMS
Management	Korea Business Council for Sustainable Development, Korea Federation of Construction Contractors, The Korea Employers Federation, Korea Chamber of Commerce and Industry, The Federation of Korean Industries, Korea IR Service, American Bar Association, Fair Competition Federation, KOSHA 18001 Society, Construction Safety Manager Committee, Construction Safety Manager Association, Korea Society for Construction Quality, Korea Construction Quality Association, The Society for Environmental Construction, Construction Association of Korea, Korea Construction Engineers Association, Korea Specialty Contractors Association, Korea New & Renewable Energy Association, Korea Fire Construction Association, Korea Facilities Maintenance Association, Korea Mechanical Construction Contractors Association, Korea Electrical Contractors Association, Korea Information Communication Contractors Association, Korea Organization Management Development Association

Years	Area	Description	Award date.
2012	Economic	Grand Prize at Overseas Construction Awards by Money Today	Mar. 20
		Grand Prize for the Construction Sector at World Class Brand by Fortune Korea	Jun. 01
		Best Prize for the Customer Satisfaction Section at Hankyung Housing Culture Awards	Jul. 04
		Best Prize for the Leisure Section at the 8th Korea Civil Engineering & Construction Technology	Nov. 26
	Environmental	Grand Prize for the Commercial Architecture Section at the 4th Environmentally Friendly Construction Industry Awards	Jul. 24
		Green Housing Award hosted by Hanguk Ilbo	Nov. 07
		Grand Prize for the Design Sector at the 3rd Korea Green Architecture Awards	Nov. 16
	Social	Korea Excellent Co-Existence Award at the Korea Co-Existence Conference	Sep. 11
		Listed on the DJSI World Index for 3 consecutive years, selected as Super Sector Leader Company	Sep. 14
		"Most Trusted Company" Designation at 2010 Korea's Most Admired Business People & Most Respected Companies for 4 consecutive years	Sep. 17
		Grand Prize for the Social Contribution Sector at Asia Construction Awards	Sep. 25

ABOUT THIS REPORT

Overview of the Report

Report Period and Scope | This Integrated Report covers GS E&C’s major activities and attainments from January 1st through December 31st, 2012. As for quantitative results, data for the most recent three years, from January 1st 2010 to December 31 2012, are included to evaluate annual trends. Moreover, achievements after the end of 2012 are presented in this Integrated Report if they are deemed relevant. This Report covers the business activities carried out at the Head Office and eleven other directly-owned offices of GS E&C as well as at 300 construction sites where GS E&C is active (251 in Korea and 49 outside Korea). The business activities of subsidiaries and invested companies are not included herein. Meanwhile, the statement of financial position, income, and cash flow chart and other statements representing financial achievements encompass the performance of both the Head Offices and subsidiaries because the Korean International Financial Reporting Standards (K-IFRS) were adopted, starting from this Report.

Reporting Standards | This Integrated Report was written in accordance with the Global Reporting Initiative (GRI) G3.1 guidelines and the GRI Construction & Real Estate Sector Supplement Indicators. Detailed information on this reporting framework will be found in the GRI Index (p.96-99) of this Report.

Verification of the Report | To ensure the trustworthiness of the content, we commissioned a third party to audit and verify the accounts herein, and the results are contained in the Assurance Statement (p.92-93) and the Audit Report (p.90).

Features of the Report

Formation of the Report Framework | The contents of the Report are organized into three categories for stakeholders to understand GS E&C's sustainable management better and easily approach to the value created by the company: Our Approach, Our Effort, and How to Create Our Value.

Expanded Scope of Information Disclosure | This Integrated Report reveals the levels of GHG emissions at key overseas project sites, where greenhouse gas (GHG) inventory systems were newly installed, expanding the geographical scope of disclosed information.

GRI G3.1 Application Level

The GS E&C Integrated Report 2012 was written to meet all requirements for a GRI G3.1 Application Level of A+, and the GRI confirmed the application level.