



# Green smart

GS E&C Sustainability Report 2010



Green Smart



## Overview of the report

### Significance

This report contains GS E&C's efforts and outcomes in all areas of economy, environment, and society. Through communication and materiality tests, GS E&C has drawn nine major issues reflecting the interest of diverse stakeholders and linked them with core values. The reliability of the outcomes of sustainability management was enhanced through third party assurance.

### Scope and period

This report mainly contains major outcomes from January 1, 2010 to December 31, 2010 while containing information for three years on quantitative outcomes to enable the analysis of yearly trends (provided that, for qualitative outcomes judged to be significant, some outcomes before 2010 were also included).

The scope of the report includes management activities of 10 buildings GS E&C owns in Korea including the head office and a total of 354 sites but does not include the management activities of affiliated companies and invested companies.

GS E&C will expand the scope of report to activities in overseas business places and publish the report every year.

### Standard of disclosure

This report was prepared based on the GRI G3 Guidelines and the details can be found in the GRI Index.

## Characteristics of the report

### Extensive stakeholder engagement

GS E&C defined 10 major stakeholders, communication channels, roles and responsibilities and reflected results drawn from meetings and workshops with internal/external stakeholders, online surveys, and visiting/written interviews to identify what matters to stakeholder.

### Integration of sustainability management issues and the core values

GS E&C has drawn a total of nine major sustainability management issues through materiality tests and disclosed related outcomes in linkage with three core values (Great Innovation, Great Challenge, and Great Partnership) to emphasize association between GS E&C's activities and sustainability management.

### Future-oriented contents

GS E&C highlighted future plans for major reporting issues to express its commitment for growth through sustainability management.

## Application level

GS E&C Sustainability Report 2010 has been compiled to meet all requirement, for A+ level of GRI G3 Guideline Application Level. GRI has confirmed that this report qualifies for A+ level.



			C	C+	B	B+	A	A+
Standard Disclosures	G3 Profile	OUT PUT	Report on: 1.1 2.1~2.10 3.1~3.8, 3.10~3.12 4.1~4.4, 4.14~4.15		Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5~4.13, 4.16~4.17		Same as requirement for Level B	
	G3 Management Approach Disclosures	OUT PUT	Not required	Report Externally Assured	Disclosure of Management Approach for each Indicator Category	Report Externally Assured	Disclosure of Management Approach for each Indicator Category	Report Externally Assured
	G3 Performance Indicators & Sector Supplement Performance Indicators	OUT PUT	Report on a minimum of 10 Performance Indicators, including at least one from each of: Economic, Social and Environment		Report on a minimum of 20 Performance Indicators, at least one from each of: Economic, Environment, Human Rights, Labor, Society, Product Responsibility		Report on each core G3 and Sector Supplement Indicator with due regard to the Materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission	

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## GS E&C will remain focused on progress as the sustainable leader.

Dear readers,

In this warm and vibrant spring, the season of hope, it is my great pleasure to introduce our sustainability report to those who have shown interest in GS E&C. I wish all your families and businesses be full of prosperity and hope.

As you can see from the recent cases of Toyota's vehicle recalls and BP's oil spill in the Gulf of Mexico, we are living in an age where businesses' social and environmental responsibilities are directly connected to their survival and economic performance.

GS E&C has perceived the importance of sustainability management that puts emphasis on balance among social, environmental, and economic activities and has been implementing related activities. Through these activities, GS E&C has been actively communicating with internal/external stakeholders including customers, shareholders, employees, and partner companies.

On the social side, GS E&C is implementing diverse activities to broaden communication with stakeholders. GS E&C is making efforts to build win-win cooperation with partner companies and to create optimal corporate culture. Moreover, GS E&C is concentrating its capabilities on the reinforcement of safety management, the very foundation of construction industry.

On the environmental side, GS E&C is continuously implementing low-carbon green management, collaborating to the global activities in response to climate change. GS E&C has improved environmental management policies and guidelines. In this regard, we have set greenhouse gas reduction goals and are executing various counter-activities to reduce greenhouse gas emissions and energy consumption.

On the economic side, GS E&C is concentrating company-wide efforts on the development of the future growth engines. GS E&C has reinforced and is operating company-wide risk management system for both financial and non-financial risks and programs to maximize customer satisfaction.

Through these proactive sustainability management activities, GS E&C has received the prize for the Most Trusted Business in Korea for two consecutive years for the first time in the construction industry. In 2010, GS E&C was listed on the internationally recognized Dow Jones Sustainability Indexes (DJSI) World. Now, we have published this sustainability report that compiles various activities of GS E&C and we would like to share it with various internal/external stakeholders.

In particular, this report has been prepared focusing on environmental, economic, and social responsibilities in linkage with three set core values of GS E&C – Great Innovation, Great Challenge, and Great Partnership. This report lays out the vision and commitment of the company to internalize sustainability management.

GS E&C will remain focused on progress as the sustainable leader that fulfills its social responsibilities and pursues sustainable growth and development. I hereby sincerely request your great attention.

Thank you.



2011. 4  
GS E&C Corp.  
President & CEO  
Myung-Soo Huh

A handwritten signature in black ink, appearing to read 'M. S. Huh', positioned to the right of the printed name.

## Mokpo Bridge

A 4.1km-long, 900m-high cable-stayed bridge currently under construction in Mokpo, Jeollanam-do



# SUSTAINABILITY at GS E&C



With green wisdom that connects the humanity and the nature  
With the best technology that creates the new world  
As a trusted partner who creates happiness and shares hope  
Today, GS E&C is creating our beautiful future.

# About

## Company overview

Since its establishment in 1969, GS E&C has been continuously growing in a number of business areas including plant, housing, civil engineering, architecture, power & environment, and development. Through continuous investment in human resources and technology, GS E&C has prepared a foundation to become a global top-tier construction company. GS E&C strives to become the best partner that grows together with its stakeholders and puts priority on customer value.

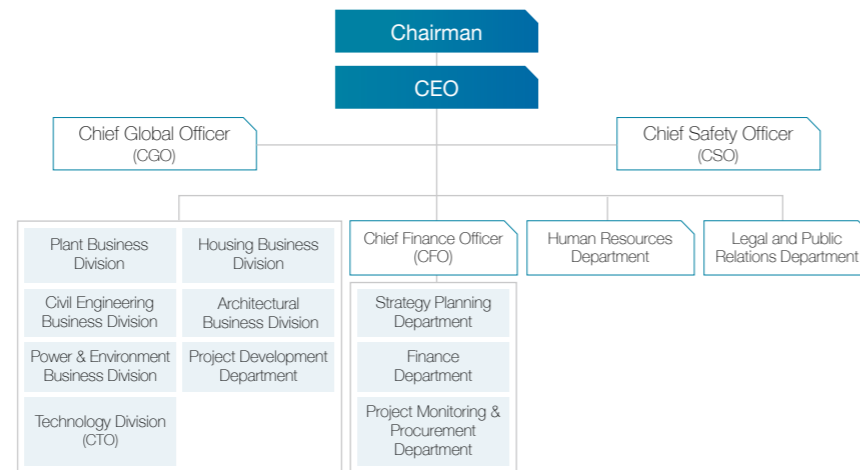
<b>Company name</b>	GS Engineering & Construction Corp. (GS E&C)
<b>Date of establishment</b>	December 19, 1969
<b>Representative</b>	Myung-Soo Huh
<b>Head office</b>	GS Yeokjeon Tower, #537, 5-ga, Namdaemun-ro, Jung-gu, Seoul
<b>Major businesses</b>	Plant, housing, civil engineering, architecture, power & environment, development
<b>Credit rating</b>	Korea Ratings AA~ (as of December 31, 2010)

### Affiliated companies

Category	Company name	Share ratio (%)
Domestic	BSM Corp.	100
	Sangjak Food Corp.	97.69
	Eunpyeong Saegil Co.	54.40
	ezVille	83
	Xi Service	100
	GCS Plus Corp.	100
	GS O&M Corp.	100
	GS Tech	100
	Pamas Hotel Corp.	67.56
	GLS Service	100
Overseas	GS Cambodia Development	100
	GS Construction Saudi Co., Ltd.	80
	GS Cu Chi Development One-Member Ltd.	100
	GS E&C Construction Arabia	98
	GS E&C Construction Canada Ltd.	100
	GS E&C India Private Ltd.	100
	GS E&C Nanjing	100
	GS E&C POLAND SP.ZO.O	100
	GS GLOBAL BIO Co., Ltd.	100
	GS NIHA BE Development One-Member Ltd.	100
	GS Saigon Development One-Member Ltd.	100

\* As of December 31, 2010  
 \* Only those affiliated companies in which GS E&C has 50% or higher share ratio are listed

### Organizational structure



## History

### Establishment & pioneering (1969~1994)

- 1969 Lakhee Development Co., Ltd. was established
- 1981 Initial public offering
- 1984 Awarded for overseas construction export worth 10 billion USD
- 1993 Acquired a certification of the ability to construct nuclear power plants from American Society of Mechanical Engineers (ASME)
- 1994 Certified with ISO9001

### Development & take-off (1995~2002)

- 1995 Renamed itself to LG Construction
- 1996 Certified with ISO14001
- 1997 Awarded in 6 categories including Best Management at '94 Construction Management Award held by Korea Management Association
- 1999 Acquired LG Engineering
- 2001 Awarded Excellence Prize for corporate governance by Korean Stock Exchange

### Structural solidification (2003~2006)

- 2003 Announced Vision 2010
- 2004 Awarded Grand Prize in the Construction Sector category at the Environmental Management Awards
- 2005 Renamed itself to GS E&C
  - Achieved 1<sup>st</sup> Place in Global Customer Satisfaction Index
  - Achieved 1<sup>st</sup> Place in the apartment building category of KS-SQ

### Global expansion (2007~)

- 2007 Selected by ENR as the top 31<sup>st</sup> contractor in the world
- 2009 Grand Prize for Customer Satisfaction Management at Global Management Awards
- 2010 Excellence Prize in the Plant category at 2010 Overseas Construction Award
  - Listed on DJSI World, Asia-Pacific, Korea
  - Recognized as the Most Trusted Company for two consecutive years

## Sustainability at GS E&C

## Business portfolio

GS E&C's six main business areas are plant, housing, civil engineering, architecture, power & environment, and development. We are expanding business areas in line with changes in domestic/overseas management environment.



### Pursue total service through the expansion of value chain

- Oil refinery plants
- Petrochemical plants



### Increase domestic/overseas market share

- Roads, bridges, railroads, ports
- Tidal power generation
- Underground space



### Expand domestic/overseas businesses

- Nuclear power generation, combined cycle power generation
- Water treatment, waste-to-energy



### Enhance profitability through brand power and stable bases for receiving orders

- Apartment
- Multi-purpose buildings



### Expand business area from contractor to project developer

- Business facilities
- Education, R&D, and hospital facilities
- Entertainment, leisure, sports
- Clean room, production facility, logistics



### Diversify domestic/overseas development projects

- New city development projects
- Large mixed-use development projects

## Global network



- 1 United Kingdom**
  - GS E&C Corp. London
- 2 Russia**
  - GS E&C Corp. Moscow
- 3 Armenia**
  - Yerevan CCPP
- 4 Egypt**
  - ERC
  - GS E&C Corp. Egypt
- 5 Saudi Arabia**
  - Manifa
  - GS Construction Arabia Co., Ltd.
  - GS Saudi Co., Ltd.
  - GS E&C Corp. Al-Khobar
  - GS E&C Corp. Saudi Arabia Riyadh
- 6 Kuwait**
  - GS E&C Corp. Kuwait
- 7 Bahrain**
  - BAPCO Wastewater Treatment Facility
  - GS E&C Corp. Manama
- 8 Qatar**
  - GS E&C Corp. Qatar
- 9 Oman**
  - SNDC
  - Sohar 2 IPP
  - Barka 3 IPP
  - GS E&C Corp. Oman
- 10 UAE**
  - Green Diesel
  - 4<sup>th</sup> NGL
  - RRE-2
  - RRE-7
  - GS E&C Corp. UAE Dubai
  - GS E&C Corp. UAE Abu Dhabi
- 11 Iran**
  - SP 9-10
  - GS E&C Corp. Iran
- 12 India**
  - GS Engineering & Construction India Pvt., Ltd.
  - GS E&C Corp. India
- 13 Thailand**
  - PTT LNG
  - IRPC
  - HMC PP
  - GS Engineering & Construction Thai Co., Ltd.
  - GS E&C Corp. Thailand
- 14 Vietnam**
  - Laguna Hue - Angsana Hotel
  - Hanoi - Haiphong Expressway Sector 7
  - TBO Highway
  - Xi Riverview Palace
  - GS Cu Chi Development One-Member LLC
  - GS NIHA BE DEVELOPMENT One-Member LLC
  - GS SAIGON DEVELOPMENT One-Member LLC
  - GS E&C Corp. Hanoi
  - GS E&C Corp. Hochiminh
- 15 Cambodia**
  - GS Cambodia Development Co., Ltd.
  - GS Phnom Penh Development Co., Ltd.
  - GS E&C Corp. Cambodia
- 16 Singapore**
  - Subway Depot C-911
  - Subway DTL C-913
  - GS E&C Corp. Singapore
- 17 Indonesia**
  - GS E&C Corp. Jakarta
- 18 China**
  - Guangzhou G2
  - Guangzhou CFC
  - LG Chem I&E Materials Plant #3
  - N3 Module Expansion Project
  - GS E&C Nanjing Co., Ltd.
  - GS E&C Corp. Beijing
- 19 Canada**
  - Black Gold
  - GS E&C Construction Canada Ltd.
- 20 USA**
  - GS E&C Corp. Houston
- 21 Columbia**
  - GS E&C Corp. Columbia

- Plant
- Housing
- Civil Engineering
- Architecture
- Power & Environment
- Subsidiary
- Branch

# Management philosophy

## Corporate ideology

GS E&C is making efforts to create values that can be shared among various stakeholders and to fulfill its social responsibilities. As part of such efforts, GS E&C is carrying out diverse sustainability management practices in the areas of environment, economy, and society under its corporate ideology: Dream tomorrow together with customers and create new values of life.

Together with customers	<b>To us, customers are like family members.</b> We will think and act at the standpoint of customers and always stay close to them.
Dream for tomorrow	<b>We dream for better tomorrow.</b> We cultivate work and human potential and make the future brighter and more vigorous than today with passion and challenging spirit.
New	<b>We walk ahead of the times.</b> We actively accommodate demands of this era with open mind and lead developmental changes.
Creation of values of life	<b>We enhance the value of life.</b> We will create visible/invisible value that makes life more convenient and pleasant so that everybody in the community can enjoy better lives.

## Vision

For better tomorrow, GS E&C is "building world values creative passion to become a reliable Best Partner & First Company."

Creative passion	This refers to our passion to create something from nothing based on a sense of challenge, entrepreneurship, professionalism, and a pioneering spirit.
Building world values	This refers to our direction and will, as a global company, to unceasingly pioneer new values for the better world and human life.
Reliable	This refers to our integrity and reliability to contribute to mankind and society, by giving an impression to the customers, a sense of accomplishment to the employees, and the best shareholder value to the investors.
Best Partner & First Company	We will become the Best Partner that grows together with employees, customers, shareholders, partner companies, and the society and the First Company that provides optimal value.

## Management principle

After carrying out its 2010 management principle as "value growth based on core strength enhancement," GS E&C established its 2011 management principle as "balance between growth and value management."  
To put this principle into action, GS E&C will actively carry out four core tasks: reinforcement of business competitiveness, advanced safety management, development of new business, and enhancement of core strengths.

### GS E&C vision



### The 2011 management principle



## Core value

Core values are the basis of corporate philosophy and vision as well as the standard for thoughts and behavior, easily accessed by and communicated amongst all employees. As internal/external management environment and paradigms change rapidly, GS E&C intends to unite all the employees by sharing core values.



### Great Innovation

I lead changes with open mind

**Diversity** Believe that diverse ideas are the foundation for positive change. Create a work environment where diverse opinions can be presented and encourage the employees to be open even for different ideas.

**Creativity** Break away from the existing framework and approach change from different perspectives. Believe that opportunities for new business can be created only when the employee can freely express their unique and original ideas.

**Change** React to the management environment proactively and lead change. It is more important than anything else for all the employees to proactively respond to changes in management environment and use flexible strategies by applying new technologies or methods to their expertise.



### Great Challenge

You and I create the highest value with passion

**Pioneership** Have faith in success and challenge yourself to meet your goals. Empower employees to have confidence that they can achieve their goals no matter how difficult the goals are.

**Initiative** Take the initiative when approaching your work. Treat your work as if you are the only one in charge of the given task and ensure that each employee can be entrusted with appropriate degree of authority to have a sense of responsibility.

**Excellence** Continuously strive to produce the best results. Growth of employees means growth of the company; provide conditions where individuals' competency can be maximized by delegating work effectively. Through this, each employee can develop expertise to become the best in his/her area and continuously contribute to the performance of the entire team.



### Great Partnership

We grow up together with the world

**Respect** Respect your co-workers and customers. Internally, support each other; externally, put yourself in customers' shoes and make decisions that prioritize their needs.

**Cooperation** Work together with stakeholders and co-workers to achieve a common goal. Strive it through sincere cooperation with internal/external stakeholders and pursue active and continuous communication through diverse channels.

**Win-win** Make a company that practices ethical management together with society and grows together with its employees. Implement shared growth strategies from a long-term perspective, reflecting demands from diverse stakeholders with balance.

# Sustainability management

## Sustainability management

### Objective

GS E&C intends to become a global top-tier business by continuously internalizing sustainability management.

In 2010, GS E&C organized the Sustainability Management Taskforce involving many departments so as to designate different areas of activities and to establish the strategy for company-wide sustainability management.

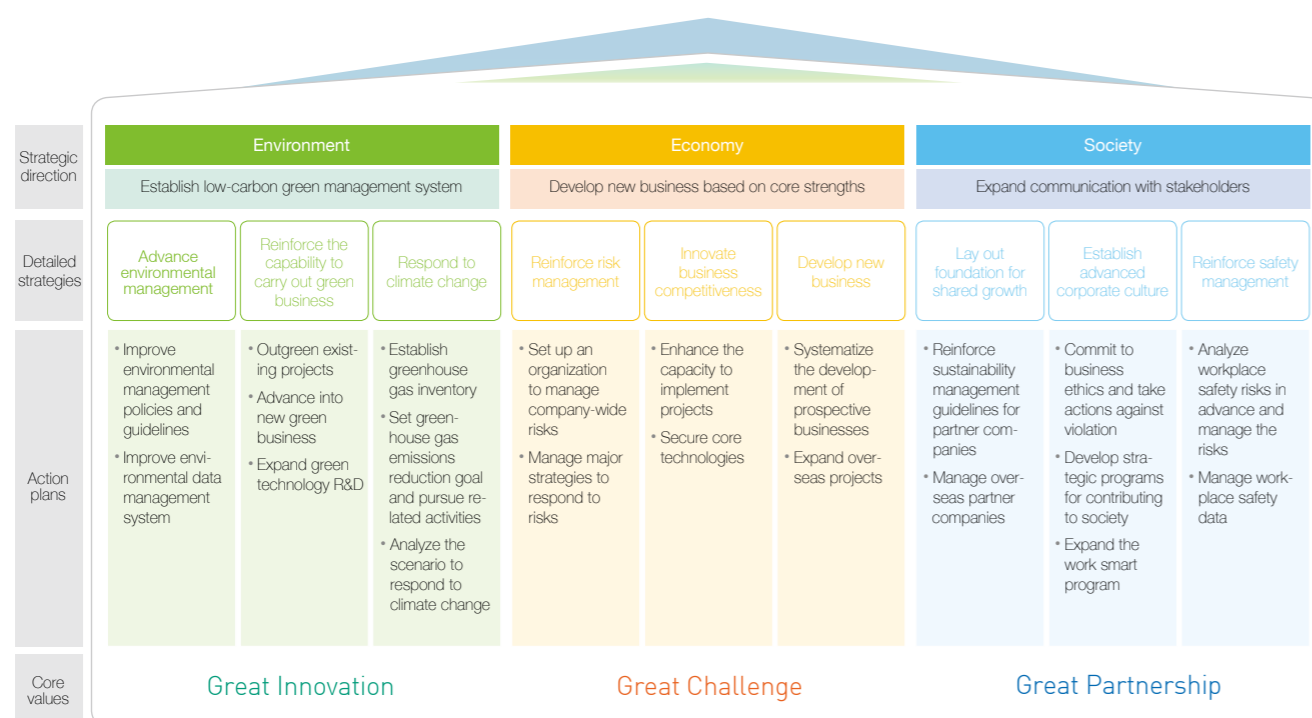
### Strategy

Taking sustainability management as a growth engine, GS E&C established strategy linked with its core values (Great Innovation for environment, Great Challenge for economy, and Great Partnership for society).

GS E&C is carrying out tasks based on strategic direction of establishing low-carbon green management system, developing new business based on core strengths, and expanding stakeholder communication. We will continuously educate our employees to increase their awareness.

## Sustainability management strategy

Strive for growth through sustainable value creation with stakeholders



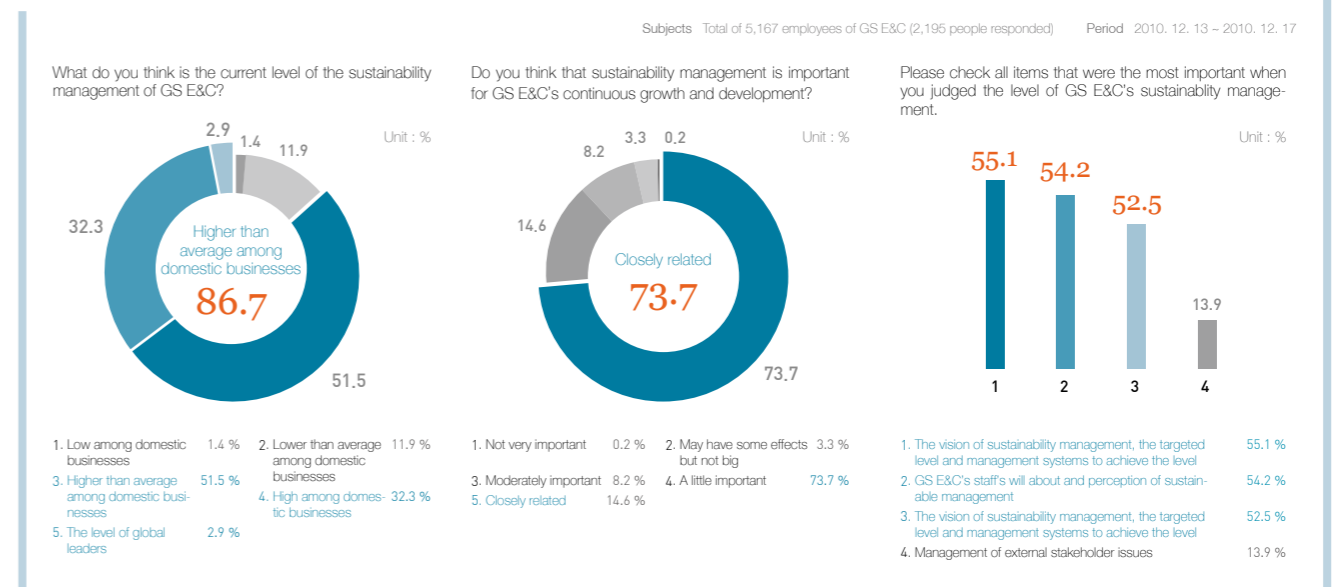
## Sustainability at GS E&C

## GS E&C's level of sustainability management

### Survey on internal awareness

For a business to achieve its sustainability objective, all employees should be fully aware of sustainability issues and participate in related activities with one accord. To examine the current state of internal awareness of sustainability management, GS E&C conducted a survey on the entire employees.

### Survey on GS E&C's employees' awareness of sustainability management



## External assessment

### Listed on DJSI World

DJSI (Dow Jones Sustainability Indexes) is one of the most globally recognized sustainability indices that comprehensively evaluates companies' economic, environmental, and social performance. GS E&C became the member of DJSI World, Asia-Pacific, and Korea in 2010.



### Selected as the Most Trusted Business for two consecutive years

The Most Trusted Business is awarded by the Korea CEO Association, whose judges include figures in academia, finance industry, and media. The prize recognizes businesses that have contributed to economic development and is highly trusted and loved by consumers. GS E&C was awarded as the Most Trusted Business for two consecutive years for the first time in the construction industry, as a result of its efforts for shared growth with partner companies.



### Received the Grand Prize at the 2010 Management Awards on the Principle of Consumer Interests First

The Management Awards on the Principle of Consumer Interests First is awarded to businesses that have demonstrated excellent examples of consumer-oriented management. GS E&C was recognized for its social contribution customized for the one-on-one sisterhood relationships and received the Grand Prize in the Socially Responsible Management category.

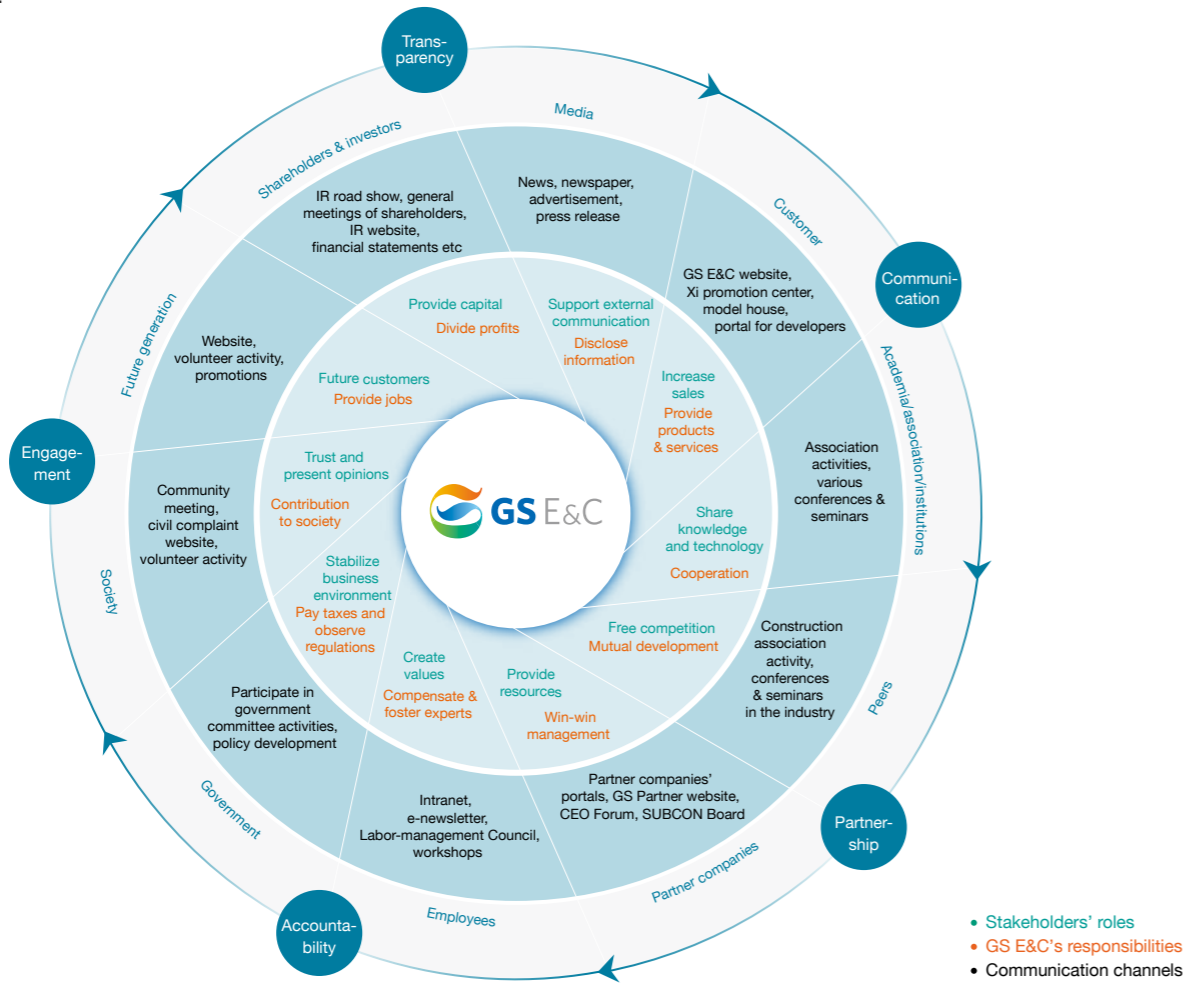




# Stakeholder engagement

## Definition of stakeholders

For sustainability management, steady and systematic communication with stakeholders is necessary; first, each stakeholder should be defined. GS E&C identified ten groups of stakeholders, identified influences exerted by stakeholders and GS E&C on each other, and summarized the mutual relationships with five keywords as follows: transparency, communication, partnership, accountability, and engagement.



Category	Definition
Shareholders & investors	They trust GS E&C's corporate value and provide economic capital so that larger added values can be created.
Customers	They trust and purchase GS E&C's products and services, providing GS E&C the opportunity to create a better future.
Partner companies	They grow together with GS E&C by providing resources and other means of assistance necessary for business operation.
Employees	They are the most valuable human resources that turn ideas into action and constitute the corporation.
Society	GS E&C shares values with the society and the society provides the business environment and resources for smooth operation.
Media	They inform the public about GS E&C's business activities and support communication with stakeholders.
Academia/association/institution	By establishing cooperative relationships with those who have diverse knowledge and experiences within the industry, GS E&C tries to enhance its competitiveness.
Peers	They inspire GS E&C to accelerate based on fair competition.
Government	GS E&C fulfills its obligation as a taxpayer and the government supports stable and smooth business activities.
Future generation	They are potential customers, employees, and other forms of stakeholders to be closely associated with GS E&C in the future.

## Dialogue with stakeholders

To set the direction of its sustainability management, GS E&C gathered diverse opinions and expectations through dialogue with stakeholders and analyzed the degrees of importance and influence.

### Internal discussion organized by the Sustainability Management Taskforce

To publish the Sustainability Report 2010, the Taskforce held an internal discussion with representatives from various teams and departments, through which diverse opinions and expectations of the employees were shared.

Major opinion	Reported section
Internal consensus on sustainability management is insufficient and should be improved through education.	Sustainability at GS E&C ●
Performance management through sustainability strategy and key performance indicators (KPIs) is necessary.	Sustainability at GS E&C ●
Recognizing the importance of stakeholder dialogue, ongoing and diverse communication channels should be developed.	Sustainability at GS E&C ●
Response to climate change and new business opportunity should follow green technology R&D.	Great Innovation ●
The dissemination of sustainability management should be supported by the guideline for partner companies.	Great Partnership ●
Horizontal communication and mutual consensus between the management and the employees should be reinforced.	Great Partnership ●

Internal discussion



**Date** December 9, 2010  
**Place** GS Yeokjeon Tower  
**Subject** 13 representatives of the departments related to sustainability management

### Interview with external stakeholders

GS E&C held interview with ten major stakeholders. Their opinions have been reflected in this report.

Major opinion	Reported section
Information should be fully disclosed while maintaining the readability.	Sustainability at GS E&C ●
Measures to utilize the Report for the employees must be drawn.	Sustainability at GS E&C ●
Eco-friendly image should be established through the acquisition of green certification and active public relations.	Great Innovation ●
Enhance corporate value through continuous development of future business opportunities.	Great Challenge ●
Increase investment in R&D associated with low-carbon green growth and overseas projects.	Great Challenge ●
Reinforce competitiveness through technologies customized to each client's needs.	Great Challenge ●
Provide prompt and kind responses to customer complaints.	Great Challenge ●
Continue shared growth activities unique to GS E&C.	Great Partnership ●
Gain trust through transparent responses to accidents and disputes.	Great Partnership ●

### Participants



- |   |   |   |   |    |
|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5  |
| 6 | 7 | 8 | 9 | 10 |

- Customers**
- Tae-Sung Jang, KHNP
  - Oh-Soo Ahn, KHNP
  - Byung-Bok Hwang, KRINA
  - Young-Ae Cho, XiEL (Xi housewives advisory committee)
- Academia/association/institution**
- Jae-Gyoon Choi, Construction Association of Korea
  - Goo-Sun Jeong, KBCSD
- Media**
- Gook-Sang Hwang, Money Today
- Shareholders & investors**
- Dae-Woong Lim, Eco-Frontier (CDP Technical Advisor)
- Society**
- Jong-Oh Lee, Kosif (NPO)
- Partner companies**
- Dong-Hack Yook, SPACEMAX

# Stakeholder engagement

## Materiality test

Global Reporting Initiative (GRI), which provides global guidelines for sustainability reports, recommends to disclose information that stakeholders consider material within sustainability reports and suggests the materiality test as an evaluation method.

Based on dialogue with internal/external stakeholders, GS E&C conducted materiality test to identify key issues and included related data and information in this report.

## Process

### Step 1. Develop the indicators

Based on the 79 GRI performance indicators, 27 materiality test indicators were selected and reconstructed to be appropriate for GS E&C's context and easily understood by stakeholder.

### Step 2. Conduct a survey

A survey was conducted on internal/external stakeholders for the materiality test and the respondents were asked to give scores to each indicator on a 5-point scale.

### Step 3. Analyze of the results

Results of the questionnaires for internal/external stakeholders were compared and reviewed to draw 12 indicators considered to be most important.

### Step 4. Select key issues to be reported

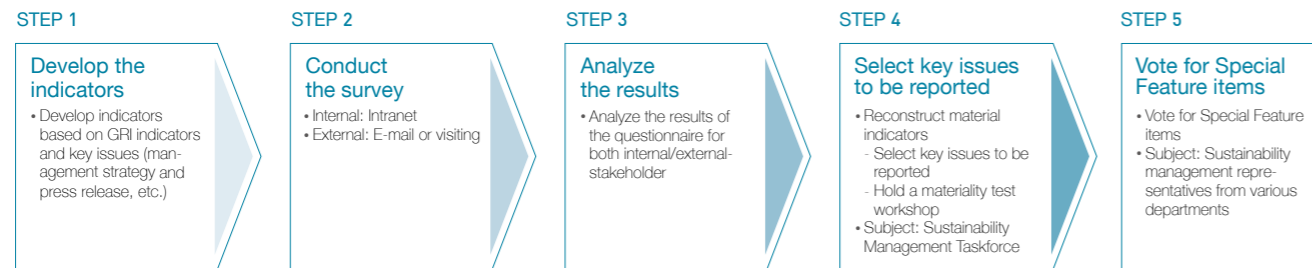
The 12 indicators selected were re-grouped as 9 key issues.

### Step 5. Vote for Special Feature items

Representatives from departments across the organization in charge of sustainability management voted for items to be emphasized in the Special Feature.

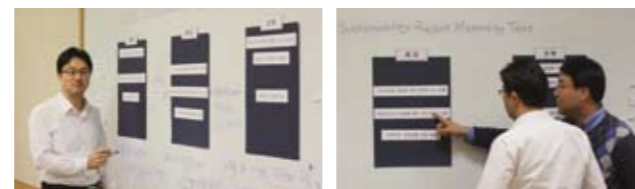
## Overview of the materiality test

<b>Subjects</b>	Internal employees: 2,195 External stakeholders: 36
<b>Period</b>	2010. 12. 13 ~ 2010. 12. 17
<b>Method</b>	IT survey system, e-mail, and visiting
<b>Utilization plan</b>	Issues identified as highly material are reflected in the Report



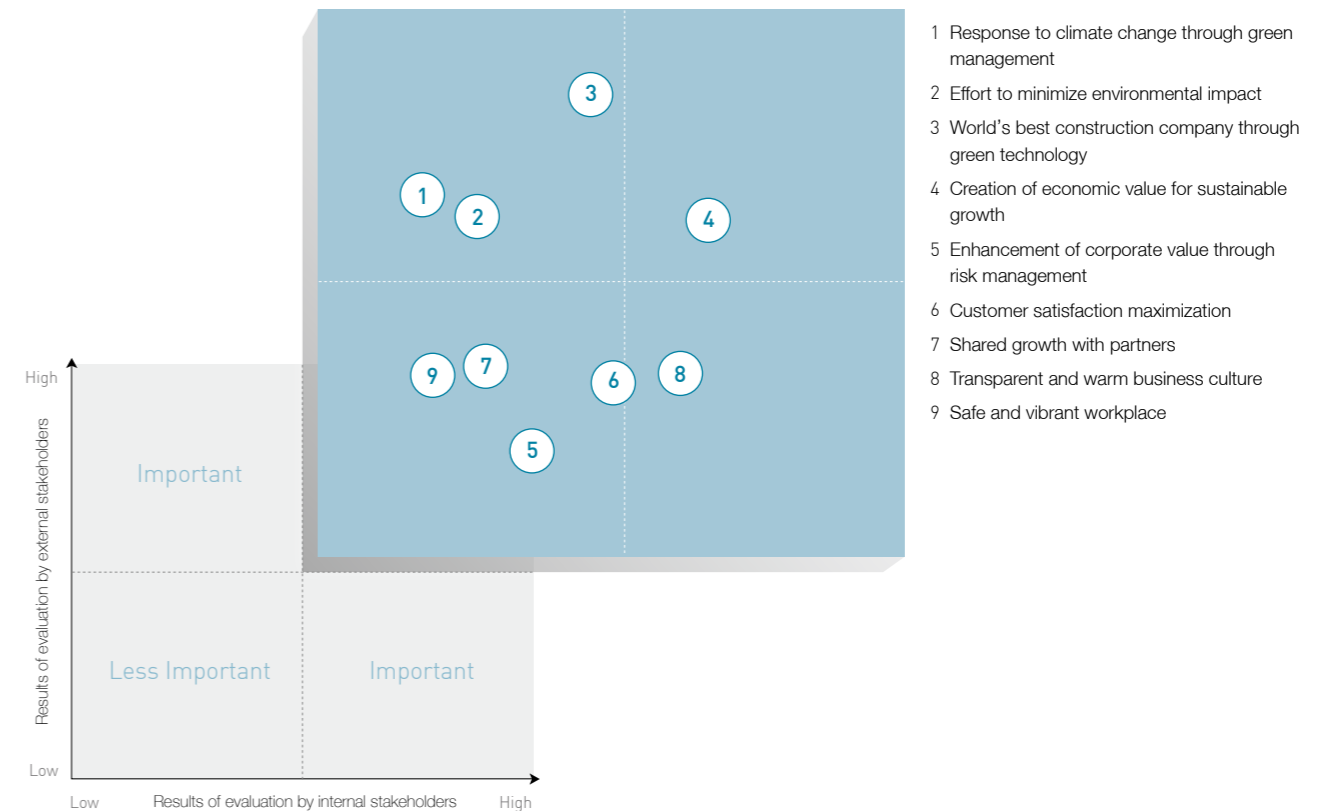
## Materiality test workshop

GS E&C held a workshop to share and analyze the results of the materiality test and select key issues to be reported. At this workshop, the Taskforce discussed GS E&C's activities and performance related to the key issues to be reported and linked individual issues with the three major core values of GS E&C. The attendees also reviewed internal/external stakeholders' opinions drawn from the interviews and discussed ways of improvement.



## Results

Through the materiality test, nine key issues were drawn and GS E&C classified the issues according to its core values of Great Innovation, Great Challenge, and Great Partnership. Other opinions and issues, which can be identified as material in the future, were also comprehensively addressed.



- 1 Response to climate change through green management
- 2 Effort to minimize environmental impact
- 3 World's best construction company through green technology
- 4 Creation of economic value for sustainable growth
- 5 Enhancement of corporate value through risk management
- 6 Customer satisfaction maximization
- 7 Shared growth with partners
- 8 Transparent and warm business culture
- 9 Safe and vibrant workplace

No.	Key issues	Contents
1	Response to climate change through green management	Climate change risks and opportunities, green management, energy savings (energy solution business, WBCSD EEB Manifesto), greenhouse gas emissions reduction (GHG inventory), etc.
2	Efforts to minimize environmental impact	Green information management system, green procurement, on-site environmental impact minimizing activities, efforts to minimize environmental accidents and disputes, material flow, etc.
3	World's best construction company through green technology	Green technology development, green concrete, water resource development, desalination plant, 3 Zero House, Green Building Certification, etc.
4	Creation of economic value for sustainable growth	Governance, shareholder rights, innovation management, knowledge management, creativity management (GS Research Institute and GS Research Institute of Construction & Economy), TPMS, direct/indirect economic effects, etc.
5	Enhancement of corporate value through risk management	Risk Management Team, risk management objective, risk mitigation measures, cash flow management, Manager Certification, etc.
6	Customer satisfaction maximization	Customer value management activities, customers complaint management, VOC (voice of customer) receipt, cultural programs for customers, customer satisfaction performance, etc.
7	Shared growth with partners	Shared Growth Committee, 3 guidelines for shared growth, quarterly evaluation of partner companies, financial support, education & training and enhanced communication, technological support, Green Management Dissemination Project for Partner Companies, etc.
8	Transparent and warm business culture	Ethical management organization, Ethical Management Guidebook, violation of business ethics and disciplinary actions, social contribution programs, etc.
9	Safe and vibrant workplace	SEQ Operation Committee, Safety Innovation School, data of workplace accidents, employee evaluation and compensation system, labor union and Labor-management Council, employee satisfaction, etc.

\*The issues are not listed in order of importance but in accordance with the table of contents.



SolBeam at Seogyo Xi Gallery

An outside environmental structure that produces electricity using solar panels to operate the clock and turn lights at night and reuses rainwater to water the plants

# great INNOVATION



GS E&C sees farther away.

With an active and creative green management strategy

Understanding the climate change, the environment, and people

We are working towards a sustainable, green growth.

Dreaming of green world and spreading green wisdom,

GS E&C is creating green future.

## Direction

Through active and creative changes, GS E&C is responding to environmental issues including climate change. By establishing low-carbon green management system and expanding green projects, GS E&C is planning to achieve sustainable development based on green growth.

## 2010 Achievement

GS E&C set green management strategy, established implementation system, and prepared green infrastructure such as GHG inventory, green information management system (called Green Solution), and green procurement system. In addition, GS E&C is actively developing green projects such as renewable energy (e.g. wind and tidal power), low-carbon traffic network, water reuse and desalination plants, waste-to-energy, nuclear power, smart grid, energy solutions, and Green Smart buildings. As for green technology, GS E&C is establishing a technology roadmap with a view of becoming a world-class business.

## Plan & Outlook

Under the green management system that has been already established, GS E&C plans to proactively pursue activities for reducing greenhouse gas emissions and energy consumption, minimizing environmental impact, and disseminating green management practices to partner companies. GS E&C will continuously expand green projects so as to foster them into main businesses in the future.

20 Special Feature. GS E&C's green business

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# GS E&C's green business



Youngheung Wind Farm

## Renewable energy

As issues of fossil fuel depletion and climate change have come forth along with rising energy demand, GS E&C has been promoting commercialization of renewable energy sources such as tidal, wind, and solar power generation that can effectively reduce dependence on fossil fuels.

GS E&C has successfully completed the first stage of the Youngheung Wind Farm project, part of the National Strategic Technology Development Agenda (managed by Korea South-East Power Co.), and secured technological strengths for offshore wind power generation through joint research with Ramboll Co. (Denmark), SINTEF Co. (Norway), and NGI Co. (Norway). In addition, GS E&C is preparing for the Incheon Bay Tidal Power Plant project, the largest scale (132 million kW) of its kind in the world, to produce unlimited, clean marine energy using the ebb and flow of the tide, while considering social acceptability and environmental risks.

## Water reuse and desalination



Osan Sewage Treatment Plant

Water risks and opportunities are emerging as issues of water shortage and disrupted hydrocycle from urbanization become imminent. In order to mitigate water risks, GS E&C has installed a gray-water recycling system to the head office building; GS E&C has constructed Osan Sewage Treatment Plant. Furthermore, through the development of desalination technology, GS E&C is reaching out to the water market in the Middle East.

## Waste-to-energy



Daegu MBT/RDF project

GS E&C is participating in waste-to-energy projects. It has applied its automatic waste collecting system, developed in-house, to the Yeongjong Sky City project and has also advanced into the field of MBT/RDF (mechanical biological treatment with refuse derived fuel), being selected as a preferential candidate of negotiation for Daegu SOC (social overhead capital) project.

## Low-carbon traffic network



GS E&C is carrying out a number of railway projects such as rapid transit railway, subway, and light rail transit to contribute to green growth through the establishment of low carbon traffic networks. GS E&C received the Yeongjongdo Magnetic Levitation Train Pilot Project in 2010 and is also carrying out a subway project in Singapore.

## CBM (coal bed methane)

CBM is methane gas in coal beds, a clean source of energy with higher efficiency and smaller amount of greenhouse gas emissions than coal. With increase of oil price and the development of capturing, concentrating, and purifying technologies, it is expected that CBM market will be expanded in the future. GS E&C is making efforts to secure technologies for all processes ranging from design and construction to operation through the CBM pilot project, jointly with Korea Gas Corporation.

## Nuclear power generation

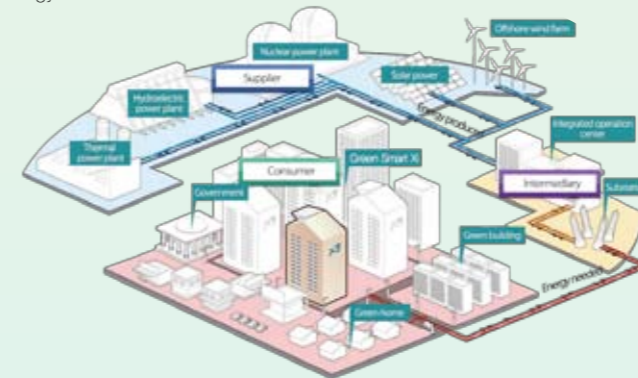


New Ulsin Nuclear Power Plants No. 1 & 2

As nuclear power plant construction plans are announced one after another in response to the rising energy demand and climate change regulations, there is an ongoing race between nations to pre-occupy overseas nuclear power plant market. GS E&C is currently constructing New Wolsung Plants No. 1 & 2 and New Ulsin Plants No. 1 & 2 and is planning to become an EPC contractor at the global top-tier level by expanding business areas and enhancing its business model.

## Smart grid

Smart grid is a next-generation electric power network developed by grafting information technology (IT) onto the existing power network. It enables power suppliers and consumers to exchange information real-time, in order to optimize energy efficiency. GS E&C participated in the Jeju Smart Grid Test-bed and applied renewable energy technologies such as cooling & heating system using seawater, photovoltaic, wind power, and fuel cells, as well as the smart electric home appliances onto 21 pension buildings, a lecture hall, and a central management building. GS E&C is also managing the Micro Grid Place project in which it applied an energy management system (EnMS) that can comprehensively manage electric power and heat for 23 buildings. In addition, in order to verify micro grid technology at the building level, GS E&C established a demonstration facility applied with BIPV, wind power, geothermal heat, and fuel cells at the residential hall of GS Technology Institute.



## Green Smart Xi Promotion Center

GS E&C opened the Green Smart Xi Promotion Center at Xi Gallery in Seogyo-dong in October 2009, which demonstrates all the Green Smart technologies in four spaces named Green Smart Gallery, Green Smart Garden, Green Smart Home, and Green Smart GS E&C. Visitors can experience diverse new energy saving technologies of GS E&C here.

The center is open to general public from 11:00 a.m. to 6:00 p.m. every day except for official holidays. To make a reservation, please visit [www.xi.co.kr/greensmart](http://www.xi.co.kr/greensmart).

Green Smart Garden

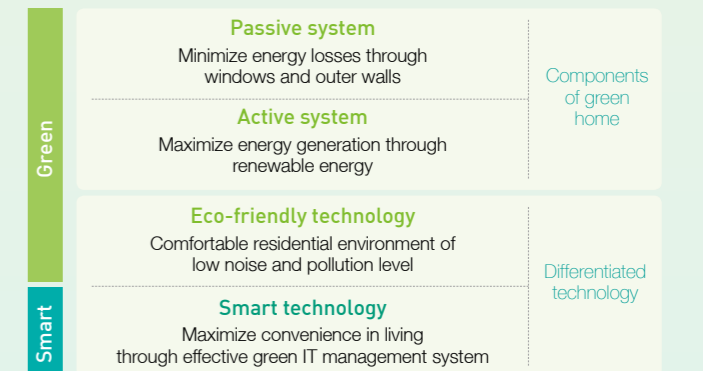
Green Smart Home



## Green Smart Xi

Green Smart Xi is an energy-saving housing model applied with green home components and differentiated smart technologies researched by GS E&C. We are accelerating the development of core technologies so that Green Smart Xi can ultimately progress into the form of 3 Zero House and settle as the best residential space where not only energy but also harmful substances and noise are radically eliminated.

Green Smart Xi prevents wasted energy by applying high efficiency materials, produces energy in-house through photovoltaic, geothermal heat, and wind power, and optimizes residents' energy consumption through Xi-EMS (Xi Energy Management System) applied with smart grid.



## Applying Green Smart Xi in real life – Cheongna Xi

GS E&C Cheongna Xi adopts geothermal system that retains temperature at 15°C year-round into the central heating, resulting in both greenhouse gas reduction and utilities cost savings. In addition, solar-powered Media Pagora (an entertainment zone) and solar-powered streetlights are installed in the central square for the residents to experience renewable energy technologies in everyday lives.

Solar-powered Media Pagora

Human energy play rides



# ISSUE 01

## Response to climate change through green management

### Climate change risks and opportunities

As climate change has become a global issue, it is greatly affecting the sustainability of countries, societies, and businesses. Since large amount of greenhouse gases are emitted in the processes of construction, use, and demolition, the construction industry is one of industries most closely linked to climate change. This means that the construction industry should make great efforts to respond to climate change. GS E&C is aware of risks and opportunities of climate change and is enhancing energy efficiency, reducing greenhouse gas emissions, and implementing renewable energy projects.

#### Risks

- Regulatory risk** As "Low Carbon, Green Growth" came into effect as a new national development paradigm in 2008, the introduction of carbon tax and the emissions trading scheme has been actively reviewed in order to achieve greenhouse gas emission goals. As a result, it is expected that costs to comply regulations in relation to climate change will be increased.
- Physical risk** Since GS E&C is a global business with operations in various countries around the world, problems may occur in some regions due to extreme weather events or rising sea levels. In this regard, measures to respond to various physical risks should be prepared.
- Other risks** As the perception of overall society has been changing due to climate change, consumers' demands in relation to environmental buildings are increasing. If consumers' demands are not satisfied, it will adversely affect the reputation of the company and its brand images.

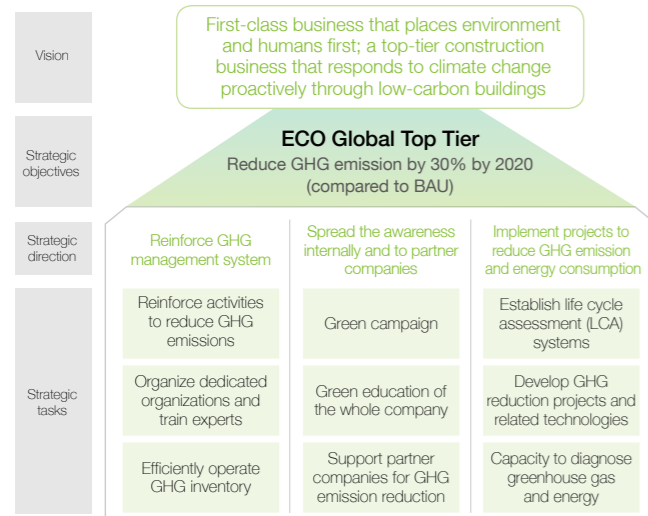
#### Opportunities

- Regulatory opportunity** After the announcement of the introduction of the FPS (Renewable Portfolio Standard) in 2012, GS E&C has been securing opportunities to grow through the establishment of renewable energy-based infrastructure including those for tidal and wind power. Furthermore, as regulations over building energy efficiency have been reinforced, GS E&C can enhance competitiveness through energy efficiency technologies.
- Physical opportunity** Due to the extreme weather conditions and water shortage resulting from climate change and aging social infrastructures, opportunities to increase infrastructure market shares are expected.
- Other opportunities** GS E&C is planning to secure core technologies in the areas of green traffic networks and carbon capture and storage (CCS) and link them with future businesses.

### Green management system

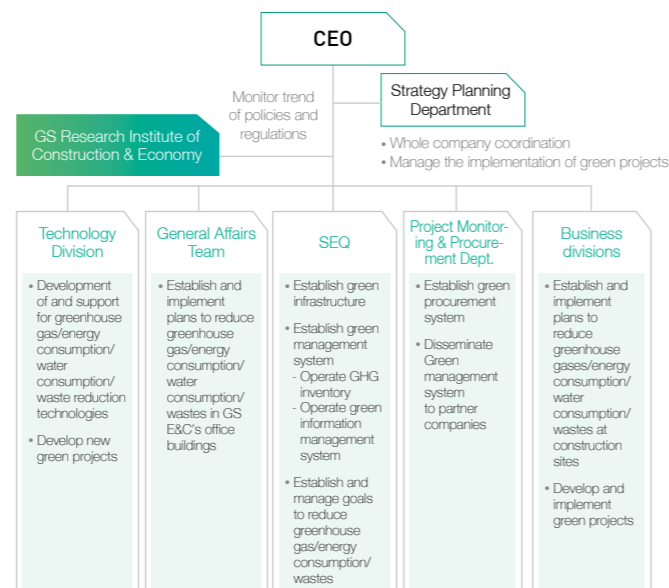
#### Strategy

GS E&C has set a green management goal of reducing greenhouse gas emission by 30% compared to BAU (business as usual) by 2020 and has established a green management system to achieve the goal. By implementing green management along the three major strategic directions of reinforcing carbon management system, spreading awareness throughout the whole company and partner companies, and implementing of GHG and energy reduction projects, GS E&C seeks to strengthen the basis to become a top-tier business that proactively responds to climate change through low carbon buildings.



#### Organization

At GS E&C, green management is carried under the control of Strategy Planning Department directly managed by the CEO. Programs and initiatives are overseen by the Safety/Environment/Quality Group as the main axis, with the assistance of the General Affairs Team, the Project Monitoring & Procurement Department, the Technology Division, and individual business divisions.



Great Innovation

### Efforts to reduce energy consumption

GS E&C is aggregating energy consumption data every year and is carrying out a campaign that promotes energy saving activities such as installing motion sensor lights and turning off lights.

#### Energy consumption level

GS E&C is summing up energy consumption level of the 10 buildings it owns, including the head office building, and all domestic construction sites. The entire energy consumption of GS E&C in 2010 was 2,684 TJ and the energy consumption by sales was 0.48 TJ/billion KRW, showing a slight upward trend compared to the previous year. This is the result of both an increase in civil engineering sites and ongoing implementation of reduction campaigns.

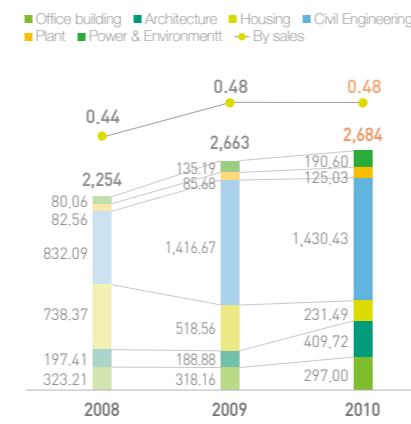
In preparation for carbon tax and the emission trading scheme, GS E&C is planning to systematically manage energy consumption through EnMS.

#### How much energy is GS E&C consuming?

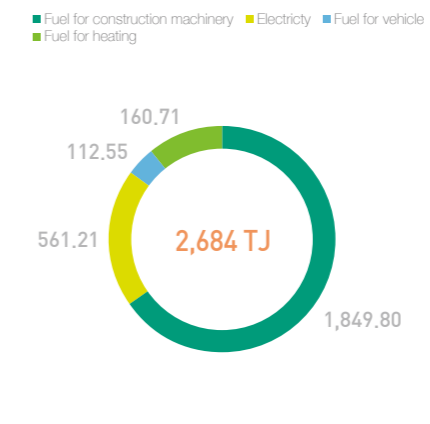
- Equal to the electricity consumption of approximately 85,000 households in one year, assuming that each household consumes 280 kWh per month.
- Equal to the amount of fuel required for 1,020,000 round-trips between Seoul and Busan by car, assuming the car's gas mileage of 11km/L.

※ Reference: Energy Savings Manual for Low Carbon, Green Growth (KEMCO, 2008)

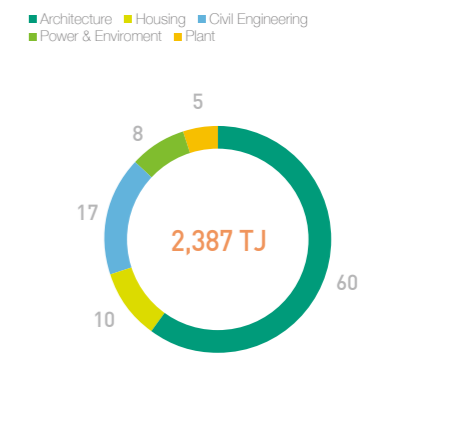
Energy consumption Unit: TJ, TJ/billion KRW



Consumption by energy use Unit: TJ



Site energy use ratio by business division Unit: %



※ Office building energy use is excluded

#### Building energy management system

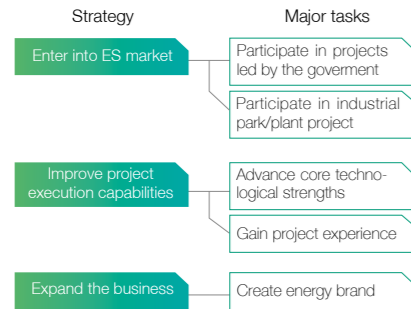
GS E&C is working on the introduction of building energy management system (hereinafter BEMS) that optimizes energy use through consumption trend analysis and control. In general, BEMS is expected to reduce energy consumption by approximately 10% annually and, in addition, results in other effects such as equipment maintenance cost savings and equipment lifetime extension.

GS E&C is planning to draw improvement measures for enhancing energy performance through energy diagnoses of the head office building and apply building modifications & repairs and BEMS in order to reinforce its technical capability for energy diagnosis and management.

# ISSUE 01

## Response to climate change through green management

### Energy solution business strategy



※ ES: Energy Service

### EEB Manifesto



### Energy solution business

Since the government decided to increase the 2011 investment funding in energy service companies (hereinafter ESCO) and implement the GHG Target Management, it has been expected that opportunities for ESCO business will increase. GS E&C established a foundation to carry out ESCO business in 2010 by acquiring the ESCO license, joining the ESCO Association, reinforcing its expertise, and setting strategies to enter the market through in-depth analysis of public and private sectors.

### Energy Efficiency in Building Manifesto

The World Business Council for Sustainable Development (hereinafter WBCSD) is promoting Energy Efficiency in Building (hereinafter EEB) Modelling Program in order to reduce energy consumption and greenhouse gas emissions by 60% by 2050. It is an integrated forecasting program intended to reduce building energy consumption, in which international organizations such as UNEP and IEA and many global businesses are participating. The WBCSD is promoting the Manifesto in order to encourage businesses' voluntary participation.

GS E&C signed on the EEB Manifesto and declared the implementation of five EEB action plans for the first time among construction companies in Korea. GS E&C plans to reduce energy consumption level by referring to the action plans in the future.

### 5 EEB Manifesto action plans

- To create a baseline of the company's commercial buildings and set time-based energy and/or CO<sub>2</sub> reduction targets in line with transformative change
- To publish a company policy for minimum energy performance levels in the company's commercial buildings
- To define and carry out the company's audit program and implementation strategy to meet energy targets for its commercial buildings
- To publish annually buildings' energy use, CO<sub>2</sub> emissions and progress against reduction targets, in the companies' respective CSR or other report
- To further promote building energy efficiency among suppliers, employees, and other stakeholders through advocacy, marketing activity, R&D, education and training

### Efforts to reduce greenhouse gas emissions

#### Establishment of greenhouse gas inventory

In 2010, GS E&C established a GHG inventory in order to quantitatively assess company-wide greenhouse gas emission level and prepare control measures to reduce emissions.

In order to consistently identify the sources of emission and calculate & control emissions, GS E&C established and distributed the Guideline for Greenhouse Gas Calculation and Control and designated a Climate Change Response Manager at the head office.

The calculated greenhouse gas inventory data (i.e. current level, forecasts, etc.) is shown on the system screen with various statistical graphs.

### GHG inventory section screen of the green information management system

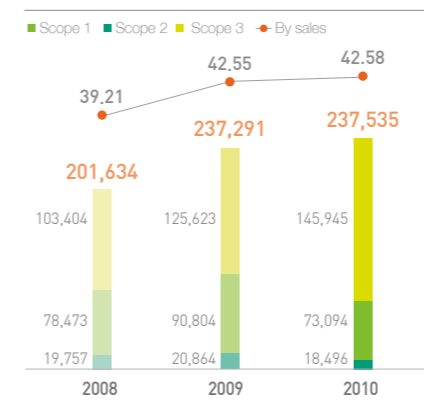


### Greenhouse gas emissions level

GS E&C's greenhouse gas emissions in 2010 was 237,535 tCO<sub>2</sub>-e while GHG emissions by sales was 42.58 tCO<sub>2</sub>-e/billion KRW.

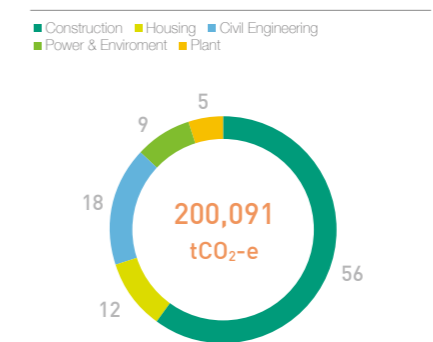
GS E&C is planning to adopt EnMS (Energy Management System) and expand company-wide greenhouse gas reduction campaigns in order to further raise the employees' awareness of climate change. In addition, greenhouse gas emission is being reduced not only at the head office but also at construction sites through the installation of power saving devices, replacement of lamps with halogen lamps in winter season, and use of high energy efficiency equipment.

### GHG emissions level



※ Scope 1: direct emissions, Scope 2: indirect emissions, Scope 3: other indirect emissions

### Emission ratios by division



※ Office building emission is excluded

### Greenhouse gas emissions reduction plan

Individual business divisions will establish plans to reduce greenhouse gas emission in areas ranging from design and construction to operation. Some of the measures currently under review are streetlight timer, power source breaker, high efficiency equipment, no unloaded vehicle operation at sites, LED lightings, and utilization of bicycles. At the head office, GHG emissions reduction activities such as maintaining appropriate indoor temperatures, encouraging the use of stairways, prohibiting the use of disposable cups, and turning the power of office equipment off when leaving work are being carried out.

### Company-wide greenhouse gas reduction campaign

GS E&C has been practicing office light management since 2007. This system allows employees to have office lights turned on only during working hours. If anybody has to work overtime, this system requires him/her to enter the code of the light to be turned on and the number of hours for use into the system.

In addition, GS E&C is encouraging its entire employee to practice efforts to save energy and reduce greenhouse gas emissions on an ongoing basis such as the use of public transportation and carpool.



### Methods used to calculate energy consumption and greenhouse gas emissions

#### 1. Energy consumption

Fossil fuels for room heating equipment such as boilers (diesel, lamp oil, city gas and LNG, etc.), fuels for vehicles (gasoline, diesel, etc.), and electricity were summed up based on the energy used by GS E&C. Fuels for construction equipment (diesel, etc.) were calculated using the construction equipment operation time specified in TPMS (data inputted from sites) and included the usage of partner companies, using fuel efficiency data for construction equipment under the Standard of Construction Estimated.

#### 2. Greenhouse gas emissions

Greenhouse gas emissions of fixed and mobile combustion sources were calculated by applying the low-heating values under Clause 1 of Article 5 of the Framework Act on Energy. Greenhouse gas emission coefficients by energy source were calculated by applying the emission coefficients under the IPCC (Intergovernmental Panel on Climate Change) 2006 Guideline.

### Streetlight timer



Nangang Dam Upstream Sewer site

### Bicycle riding at sites



Daesan NCC-II site

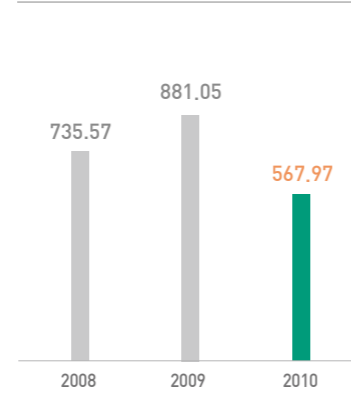
# ISSUE 02

## Efforts to minimize environmental impact

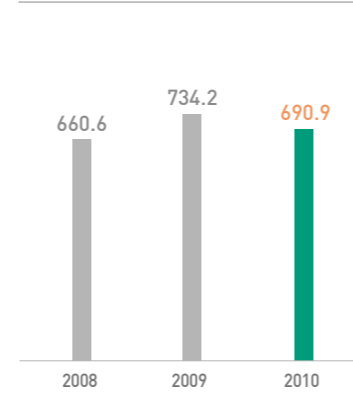
Input				
<b>Resource consumption</b>				
Category	Unit	2008	2009	2010
Ready-mixed concrete	m³	3,603,743	3,248,417	2,236,448
Cement	ton	338,087	327,029	183,778
Aggregate	m³	848,619	814,948	1,012,474
Asphalt concrete	ton	761,717	4,156,482	1,959,813
Sand	m³	554,916	236,859	1,517,745
Reinforcing bar	ton	546,923	460,914	395,044
Gypsum board	m²	5,425,316	6,591,191	3,324,068
<b>Recycled aggregate consumption</b> Unit: m³				
Category	2008	2009	2010	
Recycled aggregate	27,834	23,388	60,371	
<b>Energy use</b> Unit: TJ				
Category	2008	2009	2010	
LNG	23.26	21.24	25.49	
Propane	47.95	75.64	21.78	
Kerosene	65.53	65.50	58.61	
Diesel	1,479.43	1,766.14	1,977.27	
Gasoline	35.21	37.64	39.39	
Electricity	602.32	696.98	561.21	
Other	-	-	0.52	
<b>Total</b>	<b>2,253.70</b>	<b>2,663.14</b>	<b>2,684.27</b>	
<b>Water use</b> Unit: m³				
Category	2008	2009	2010	
Water supply (pipied)	663,030	545,764	590,157	
Groundwater	425,404	384,744	293,073	
River water	440,200	456,579	140,339	
<b>Total</b>	<b>1,528,634</b>	<b>1,387,087</b>	<b>1,023,569</b>	
<b>Manpower</b> Unit: Man-day				
Category	2008	2009	2010	
On-site manpower	11,465,231	11,308,461	10,505,275	



**Green procurement** Unit: 100 million KRW



**R&D investment** Unit: 100 million KRW

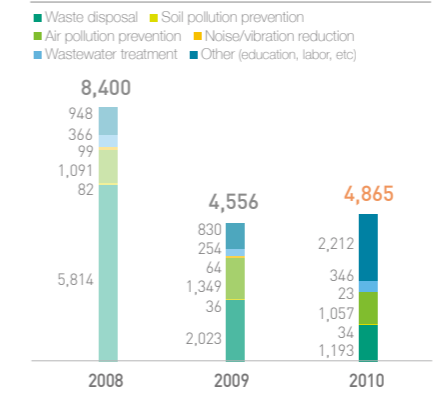


\* Green procurement: Expenses on materials that acquired green certification

GS E&C collected environmental data for 10 buildings it owns in Korea and 354 domestic sites operated during 2008~2010. GS E&C will continue to monitor environmental data through the green information management system (Green Solution) established in 2010. In addition, GS E&C established an automatic environmental management cost collection system to collect and manage costs spent for on-site environmental protection activities in linkage with the TPMS (refer to p. 29, 46) site detail and electric slip system.

Output			
<b>Greenhouse gas emissions</b> Unit: tCO <sub>2</sub> -e			
Category	2008	2009	2010
Scope 1	19,756.97	20,863.72	18,496.09
Scope 2	78,473.12	90,804.23	73,093.63
Scope 3	103,403.72	125,622.65	145,945.24
<b>Total</b>	<b>201,633.81</b>	<b>237,290.60</b>	<b>237,534.96</b>
* Scope 1: direct emissions, Scope 2: indirect emissions, Scope 3: other indirect emissions			
<b>Waste generation</b> Unit: ton			
Category	2008	2009	2010
Waste concrete	332,440	256,560	89,825
Waste asphalt concrete	62,211	34,203	13,742
Construction waste soil and stones	112,465	84,796	4,900
Mixed construction wastes	79,781	107,847	46,554
Waste synthetic resins	10,709	4,854	3,959
Waste wood	19,353	7,341	4,400
Construction sludge	411	1,157	230
<b>Total</b>	<b>617,371</b>	<b>496,758</b>	<b>163,610</b>
<b>Other discharge</b>			
Category	Unit	2010	
Asbestos	ton	200.8	
Wastewater	m³	753,380	
<b>Environmental disputes and accidents</b> Unit: Case, KRW			
Category	2008	2009	2010
Number of environmental disputes*	11	10	7
Number of environmental accident**	12	24	10
Grievance mediation cost	21	11.3	15
* Dispute: Number of cases of environmental dispute mediation and environmental civil complaint handling			
** Accident: Administrative dispositions and exposure to the press, etc.			

**Environmental management expenses** Unit: Million KRW



# ISSUE 02

## Efforts to minimize environmental impact

### Environmental management system

#### Strategy

GS E&C set its environmental vision to "secure environmental systems at the global top-tier level" and reestablished mid- to long-term environmental management strategies.

#### Organization

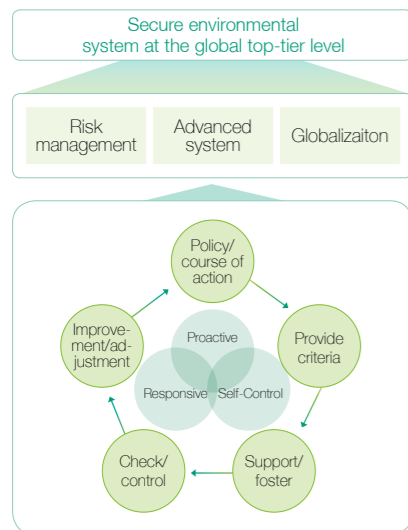
##### Company-wide

The Quality & Environment Team has oversight of company-wide environmental policies and practices; the Research Institute and Housing Research Team are developing environmental technologies and applying them onto business divisions; the Human Resources Development Team, Domestic & Overseas Subcontract Planning Team, SEQ Team, QA/HSSE Team, and Procurement Team each support works such as environmental education, support for partner companies, site environmental management and green material purchases.

##### On-site

From 2005, GS E&C has designated assistant managers at all sites as Environment Managers (mandatory concurrent position of assistant manager) to be comprehensively responsible for on-site environmental inspection and responses. Through this system, site workers have been enabled to implement divided environment works and thus the tasks could be autonomously managed. In 2011, activities intended to activate the R&R (roles & responsibilities) of the works of site staffs responsible for environments will be implemented.

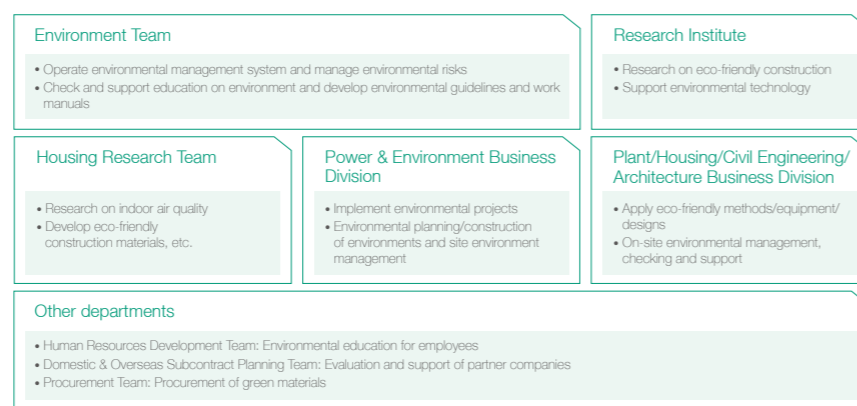
#### Vision for environmental management



#### 2011 environmental staffs' work R&R plan

- 1. Activate the application of R&R on site**
  - Improve perception and management capability of the site workers (remote education)
  - Complement details of inspection standards according to the division's characteristics
- 2. Improve environmental management capabilities of suppliers**
  - Establish environment task R&R for suppliers
  - Initiate environmental task delegation policy jointly between GS E&C and its suppliers
- 3. Carry out continuous monitoring and improvement activities**
  - Check for the status of R&R implementation during the site inspection of the Head SEQ Team
  - Conduct regular monitoring and spread best cases

#### Environmental management implementing organization and major work



#### Switching to video conferencing system to reduce GHG emissions from transport

GS E&C is operating a regional environmental committee to share environmental information and thereby conduct environments risk management and establish a cooperative system. In 2010, it has switched the face-to-face meeting to video conferencing so as to eliminate unnecessary transportation and save fuel. GHG emissions reduced from video conferencing system is being managed by the green information management system. GHG emissions reduction as a result in 2010 is 2.58 tCO<sub>2</sub>-e, which is equivalent to the reduction level achieved from planting 700 pine trees.



Video conference (2010. 12. 08)

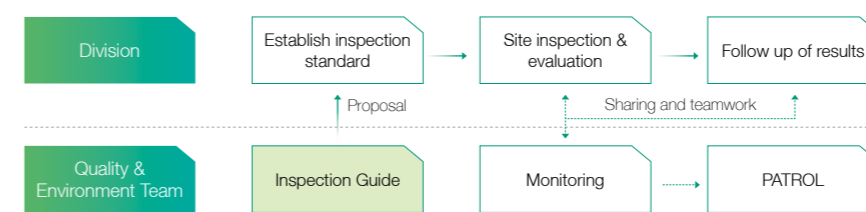
### Great Innovation

### TPMS environmental management system

#### Environmental inspection

In order to minimize environmental impact of construction, GS E&C divides environmental activities that must be managed at individual stages ranging from pre-construction to completion by type of work and time. The results of environmental inspection and response are shared online in real-time.

#### Environmental inspection process



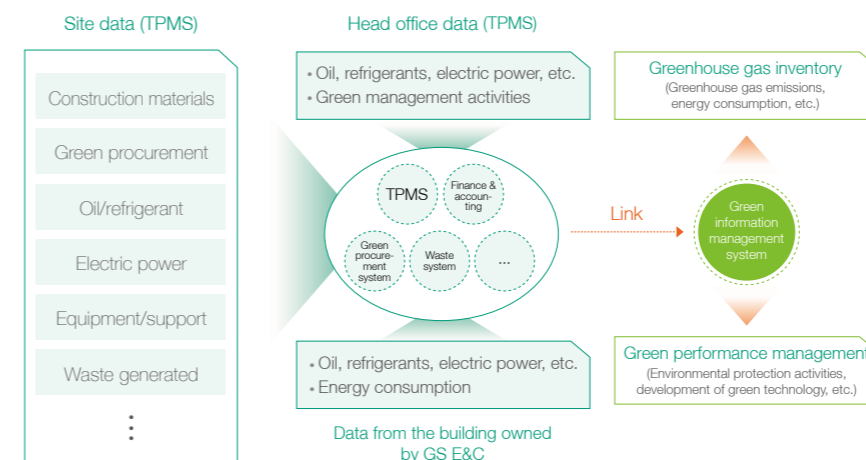
#### Environmental information system

To support site environmental management work, GS E&C is operating an environmental information system consisting of environmental information by type of work, a KM (knowledge management) environmental work manual, and a site environmental work guide. In particular, the system containing environmental information by type of work provides core information (in one page) closely related to site activities such as procedures, standards, cases, checklists, and education customized to each site. Its excellence was recognized and GS E&C received the Grand Prize at the 2006 Construction Environment Best Case Competition from the Ministry of Environment.

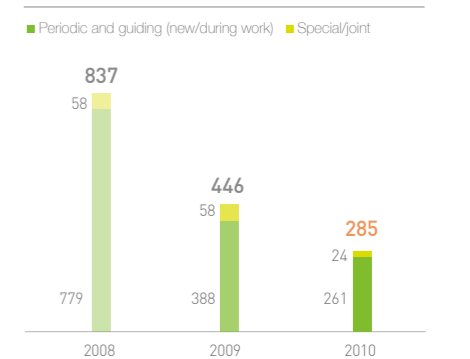
#### Green information management system (Green Solution)

GS E&C has developed a green information management system and is utilizing it for collecting and analyzing performance data necessary for external information disclosure, greenhouse gas emissions calculation, and company-wide green management KPI management.

#### Conceptual diagram of the green information management system



#### Results of environmental inspection



※ The number of inspections decreased as a result of integrating support and inspection procedures for work efficiency

#### Provision screen of environment information by type of work



※ Environmental information and the inspection checklist related to the site work procedures are demonstrated in a pop-up screen

#### Main screen of Green Solution





# ISSUE 02

## Efforts to minimize environmental impact

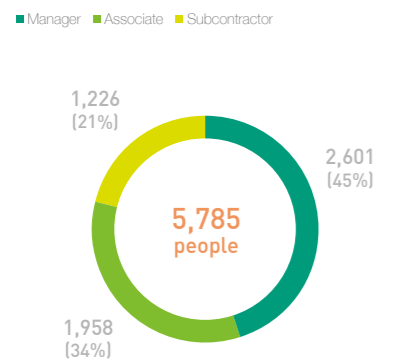
### Industry-wide Voluntary Agreement for Green Procurement



### Industry-wide Voluntary Agreement for Green Procurement ceremony



### Environment education completed in 2010



### Construction Environment Best Case Competition

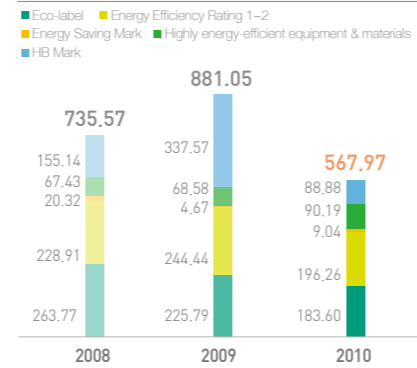


### Green procurement

In order to contribute to the government's policy to disseminate green products, GS E&C signed on the Industry-wide Voluntary Agreement for Green Procurement in 2010 and established a green procurement guideline in order to commit to the agreement. In addition, GS E&C is closely monitoring the records of green procurement through computerized system.

GS E&C will support partner companies' establishment of green procurement systems and continuously pursue programs such as fostering of green material producers to expand green procurement practices across the industry.

### Records of green procurement by certification



※ A decline in housing sites, where most of the "green products" are used, led to a decrease in green procurement expenses

### Environmental management education

GS E&C composed environment education programs by position and job group; in 2010, 5,125 site workers and subcontractors (cumulative) as well as 660 head office employees (cumulative) completed the programs.

#### Environmental education program

Subject	Time	Content
Site environmental manager	Once a year (February)	Share environmental trends and guidelines and draw directions to improve
Newly appointed site manager	When appointed	Share key environmental management points
All employee (First School)	Cyber SEQ basic education	Site key environmental work education
New/experienced employee	When employed	Our company's environmental policy and environmental management basic education
Management group	Twice a year	Environmental management cost and waste related practical work education
Public affairs group	Twice a year	Government relations and site environmental work education
Head office environmental staff	Twice a year	Share environmental issues and education to cultivate experts in environment
Site worker	When new sites are opened	Site worker and supplier worker education

### Environmental management certification

Since acquiring ISO14001 certification in 1996, GS E&C has been systematically reducing environmental impact and managing operations through a company-wide environmental manual.



ISO14001 certification examination in 2010

### External environment activities

GS E&C is actively securing leadership in the area of construction industry's environmental management. GS E&C is a member of the Construction Association of Korea and the Construction Environment Association and participates in the Regulation Rationalization Subcommittee of the Ministry of Environment. In addition, GS E&C supports the Green Management Dissemination Project for Partner Companies and suggests opinions on government policies.

### Eco-friendly construction practices

GS E&C shares the Environmental Management Guidebook through Intranet to utilize it as a reference for preventing and inspecting pollution around sites. To minimize environmental impacts on the surrounding areas and the local residents, GS E&C is making efforts such as saving resources, controlling environmental contaminants, and protecting biodiversity.

### Water use

GS E&C uses water to operate sprinklers to reduce scattering dust generated at work sites. The total amount of water used in 2010 was 1,023,569m<sup>3</sup>, a decrease of approximately 26% compared to the previous year, as a result of various activities to improve water efficiency. Although some sites are using water supplied from local water basins, it was assessed that there was no significant effect.

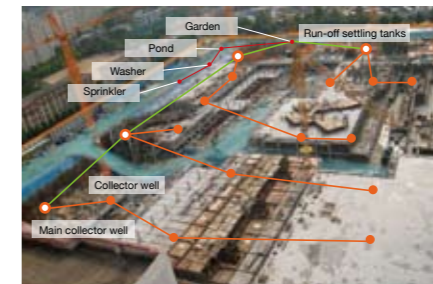
### Water quality management

In order to minimize damage to environment by the wastewater and effluents generated during construction, GS E&C has prepared a water quality management guideline and requires site environmental managers to follow it. Standard procedures and manuals are also distributed to overseas sites to monitor water quality standards by country and manage water quality data.

Furthermore, GS E&C is planning to consider water risk and opportunity factors as part of the site environmental management.

### Measures to recycle groundwater and rainwater utilizing run-off settling tanks

In order to reduce water use and wastewater discharge, GS E&C collects the groundwater and rainwater generated during work to settling tanks to remove suspended matter and reuse the water for environmental facilities on sites. Compared to the existing method of simply discharge groundwater and rainwater to sewer pipes, this method not only is more efficient but also reduces cost. When this method was applied onto the Chulsan Jugong reconstruction site, around 50 million KRW of water utilities expense was saved.



Chulsan Jugong reconstruction site

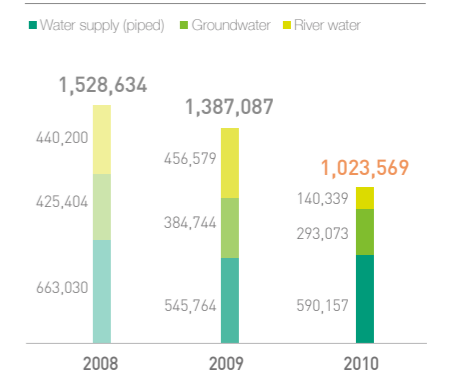
#### Groundwater and rainwater recycling process



### Air quality improvement

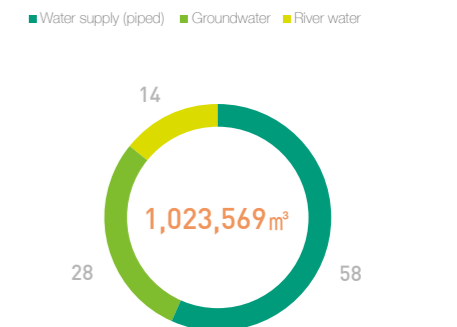
To prevent air pollutants such as scattering dust from occurring at sites during construction, GS E&C installs dustproof nets/covers and operates sprinklers and sprinkler trucks while arranging vacuum cleaning cars and road cleaning workers in roads through which many construction vehicles come into and go out to control soil and sand from being discharged to the outside. Furthermore, to suppress air pollution in advance, exhaust gas-reducing devices are installed on diesel vehicles at sites and this will be continuously expanded.

### Water use



※ The amount of water supply used was converted based on the average utility cost in Incheon (a region where the largest number of sites are located).

### Ratio of water used by source in 2010



# ISSUE 02

## Efforts to minimize environmental impact

### Waste management

As reconstruction, redevelopment, and remodeling projects continue, construction waste generation have rapidly increased to account for 51.2% of the entire wastes generated in Korea (based on 2009 data).

GS E&C has distributed a waste management guideline to all sites and is operating an in-house construction waste management handling system linked with the government's waste handling system (called Olbaro) on real-time.

In addition, through the expansion of separate ordering of construction wastes in civil engineering sites, a decrease in housing redevelopment/reconstruction sites, and the increased use of recycled aggregate, GS E&C reduced the waste generation by 65% in 2010 compared to the previous year.

Furthermore, GS E&C is maintaining waste recycling ratio of at least 90% through waste reducing and separating activities at sites.

#### Waste generation

Unit: ton

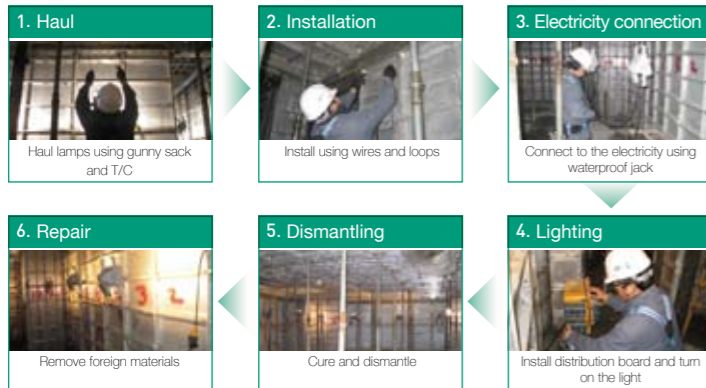
Category	2008	2009	2010
Waste concrete	332,440	256,560	89,825
Waste asphalt concrete	62,211	34,203	13,742
Construction waste soil and stones	112,465	84,796	4,900
Mixed construction wastes	79,781	107,847	46,554
Waste synthetic resins	10,709	4,854	3,959
Waste wood	19,353	7,341	4,400
Construction sludge	411	1,157	230
<b>Total</b>	<b>617,371</b>	<b>496,758</b>	<b>163,610</b>

#### Recycled aggregate consumption

Unit: m<sup>3</sup>

Category	2008	2009	2010
Recycled aggregate used	27,834	23,388	60,371

### ● Killing two birds with one stone – “zero waste and CO<sub>2</sub>” concrete curing method



The brown coal heaters and hot-air blowers generally used during winter works at sites not only make big temperature differences and are carbon intensive but also emit large amounts of toxic gases and wastes. In this respect, GS E&C has developed a winter concrete curing method that uses incandescent lamps (halogen lamps) instead of brown coal so that noise, toxic gases or wastes are not generated and the lamps can be reused in other sites. Furthermore, workplace accidents that might occur and the risk of fire at work site could be removed altogether.

GS E&C applied for a patent for this method jointly with Alto in June 2009 and this curing method is being applied onto many other sites including housing sites and civil engineering sites. GS E&C applied this method to Ilsan Xi site to achieve an outcome of reducing CO<sub>2</sub> emission by 94.7% compared to brown coal heaters and making zero waste generation.

### Soil pollution prevention

To prevent soil pollution in advance that may occur due to damage of oil pipelines or leakages from oil storage facilities that may occur during bed excavation and digging works, GS E&C is strictly monitoring facilities and treating any polluted soil generated during works with the support of Technology Division.

Based on these experiences in soil pollution treatment, GS E&C has been participating in the project to clear environmental pollution in the returned US army base from 2008. GS E&C is planning planning for city redevelopment project through linking soil remediation projects.



Soil pollution analysis Removal of polluted soil

### Noise & vibration minimization

To minimize the effects of noise and vibration that unavoidably occur during construction, GS E&C installs soundproof walls before commencing works and makes it mandatory to measure, record, and control noise level at relevant sites. Furthermore, GS E&C prohibits the use of equipments that generate noise during works on weekends and at night and when works with loud noises such as blasts, concrete placing, crushing, drilling or breaking are implemented, mobile soundproof walls/covers are installed to prevent noise in advance.



On-site noise level measuring board Air soundproof wall

### Great Innovation

### Asbestos abatement

Asbestos had been used frequently as construction materials for non-flammability, insulating properties, durability, and electric insulating properties; but due to its risk of triggering fatal diseases such as lung cancer, malignant mesothelioma, and asbestosis pulmonom, the manufacturing and use of materials containing asbestos are currently prohibited in Korea.

To protect workers and residents living in the vicinity when dismantling asbestos structures, GS E&C has developed the “Asbestos Abatement Manual” in compliance with the Industrial Safety and Health Act of Korea and EPA (Environmental Protection Agency) standards of the United States to appropriately remove asbestos. Furthermore, GS E&C has composed an asbestos abatement data room in TPMS to share information on asbestos dismantling facilities and worker protection equipment.



Asbestos abatement work Asbestos Abatement Manual

### ● The Prize of the Minister of Environment for Building Asbestos Control

In 2010, GS E&C participated in Voluntary Agreement for Building Asbestos Control managed by the Ministry of Environment and participated by 10 major construction companies in Korea. GS E&C has made efforts in training asbestos control supervisors, analyzing the present state of building asbestos disposal, and developing asbestos control systems in order to faithfully perform the agreement. As a result, GS E&C was recognized of its excellence in environmental management and was selected as a Business Excellence in Asbestos Control in 2010 to win the Prize of the Minister of the Ministry of Environment.



### Protection of biodiversity

To minimize the effects of the execution of projects on surrounding ecosystems, GS E&C is monitoring the present state of ecosystems in relevant regions throughout the life cycle of construction projects.

Since there are diverse animals and plants including natural monuments such as otters, mandarin ducks, and goshawks, which inhabit at the swamp and waterside ecosystems around Zone 6 of Kum River Restoration project, special efforts are needed to protect them. In this respect, GS E&C is appropriately forming hiding places and laying places such as piles of stones and natural caves in the work section and when any habitat of animals or plants to be conserved is found, GS E&C determines it as an environment conservation area and installs sign boards and protecting/warning fences to prohibit damage as well as educating workers in the relevant site on the importance of the conservation of ecosystems.



Protection boundary fence



On-site environmental protection activity

### Effort to minimize environmental accidents and disputes

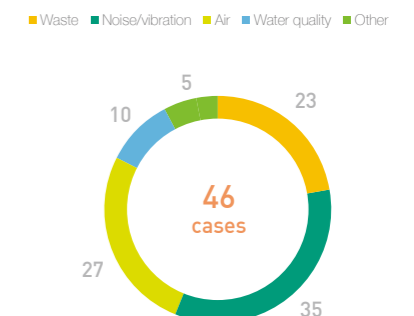
Most environmental accidents occur in sites are disputes due to noise and poor facility management. To mitigate this, GS E&C developed the Environmental Dispute Forecasting Program in 2005 for the first time among domestic construction companies and has been applying the program to sites where noise damage is expected. This program forecasts the level of noise by engineering methods, finds causes in advance, and calculates the expected costs needed to support the settlement of the dispute within a short time.



Environmental Dispute Forecasting Program

### Environmental accidents\* by type (2008 ~ 2010)

Unit: %



\* Accident: Administrative disposition and exposure to the press, etc.

# ISSUE 03

## World's best construction company through green technology

### Green technology development

To advance towards a sustainable society, GS E&C is concentrating its energy on developing and commercializing core technologies.

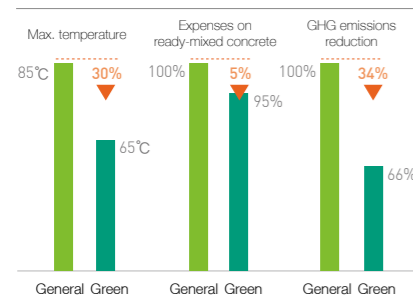
Category	Product name	Overview	Outcome in 2010
Green technology	3 Zero House	Eco-friendly residence model that minimizes energy, noise, and air pollution	<ul style="list-style-type: none"> <li>Passive house verification</li> <li>Designed combining renewable energy sources</li> <li>New IAQ sensor environment technology/green technology certification</li> </ul>
	GS (Green Smart) Building	A business model combining cutting-edge technologies such as green building that can lead future construction markets, intelligent building and specialized designs	<ul style="list-style-type: none"> <li>Designed with an optimal combination of heat source facilities and renewable energy</li> <li>Green building commercialization models have been developed and integrated solutions have been made into packages</li> </ul>
	Seawater desalination plant	The construction model of seawater desalination plant with large capacity and low energy	<ul style="list-style-type: none"> <li>A pilot seawater desalination plant was installed and operated</li> <li>Three international joint studies were conducted</li> </ul>
	Water reuse system	MBR (membrane bio-reactor) and water reuse technologies were made into brands and zero discharge systems were developed	<ul style="list-style-type: none"> <li>GS-MBR and GS-Water Reuse Pilot</li> <li>Technology to convert sludge into resources was developed</li> </ul>
	Waste-to-energy	A business model to implement all processes ranging from waste collection to final disposal in optimized methods and turn wastes into resources	<ul style="list-style-type: none"> <li>Automatic waste collection systems were developed</li> <li>Optimum MBT/RDF design programs were developed</li> <li>GS Brand incineration system development</li> </ul>
	Smart grid	Next generation intelligent electric power networks that grafts information technology (IT) on existing electric power networks so that power suppliers and consumers can bi-directionally communicate in real time to optimize energy efficiency	<ul style="list-style-type: none"> <li>Participated in the Jeju Smart Grid Test-bed</li> <li>Carried out K-MEG (Korea Micro Energy Grid), a national policy project</li> </ul>
	Green materials	Technology to make those construction materials (e.g. cement) that emit the largest amount of greenhouse gases in the construction industry into green materials	<ul style="list-style-type: none"> <li>Green concrete was proven in field application</li> </ul>

### Green concrete

By the nature of the construction industry, most of greenhouse gas emission occurs during construction material production. Production of cement that becomes the primary material of concrete is a highly carbon-intensive process to the extent that this process accounts for around 7% of the entire greenhouse gas emissions in the world. GS E&C has developed a green concrete that reduced the use of cement by utilizing specified byproducts and secured necessary strength and quality together through establishing Pre Mix facilities.

The green concrete developed in 2010 uses around 20% of cement compared to existing concrete to reduce GHG emission by 34% and reduce materials costs by 5%.

#### Results of site applicability assessment



Great Innovation

### Sustainable water resource development

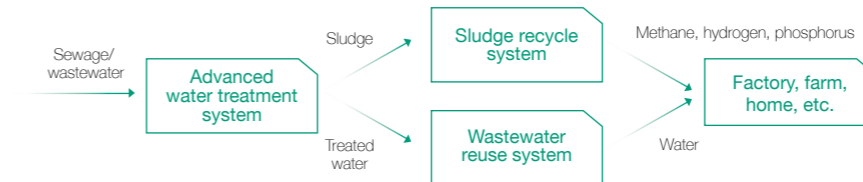
Water markets throughout the world are expanding as water shortage intensifies due to global warming, increasing population, industrialization, and aging infrastructure. To minimize risks related with water that is also called "blue gold" due to its scarcity and link related opportunities with commercialization plans, GS E&C is implementing the development of technologies for water reuse systems, seawater desalination, and integrated water management service.

#### Water reuse system

GS E&C's water reuse system is composed of advanced wastewater treatment, sewage reuse, and sludge-to-resources. This system has a benefit of recycling water with high efficiency at 20% lower production costs compared to existing methods. In addition, the sludge treatment with the recycled resource is possible.

Since GS Lyso sludge reduction technology – an advanced sewage treatment technology to reduce sewage sludge using microorganisms that secrete the enzyme Lysozyme (GS Lyso strain) – is applied to the Songdo Public Sewage Treatment Facility that is under construction now, it is expected that a sludge solidification efficiency of 30% and a sludge solubilization ratio of 70% will be achieved. In addition, it is expected that high-treated water quality will be achieved and a cost saving of around one billion KRW will be possible compared to competing technologies; thus, this technology will contribute to the expansion of the project as a specialized technology item.

#### Conceptual diagram of the water reuse system



### Seawater desalination plants

GS E&C's seawater desalination plants are aimed at developing high efficiency, low energy technologies and securing the technical capability to plan, design, and operate large capacity plants.

In 2010, through seawater desalination pilot plant research, GS E&C developed core technologies for low energy desalination and applied for 6 patents. GS E&C established a research institute in KAUST in Saudi Arabia and began joint research. In addition, GS E&C conducted a feasibility study for Long An Province in Vietnam to develop projects and establish capabilities for optimum designs while securing an opportunity to receive order for a public desalination plant for the first time in our company. In 2011, GS E&C is planning to develop next generation desalination processes.

#### Desalination system



### Daegu Sewage Sludge Treatment Facility



The Daegu Sewage Sludge Facility being constructed by GS E&C from 2007 is equipped with both sludge drying and solidification facilities as the only case in Korea and can treat 300 tons of sludge per day, the largest capacity in the world. Unlike existing sewage sludge that has been disposed into the ocean or buried, the sludge that has been dried up to the state where its moisture content is 45% can be reutilized as cover materials in hygienic landfills. The Daegu Sewage Sludge Treatment Facility will be completed in 2012.

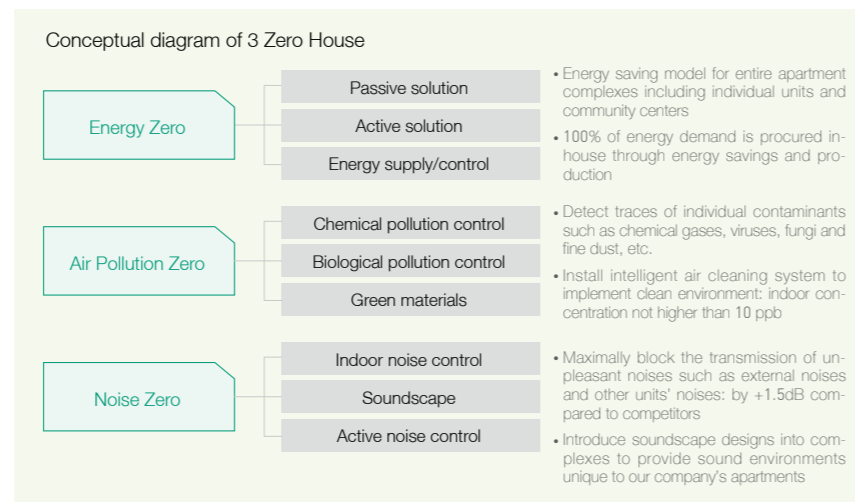
# ISSUE 03

## World's best construction company through green technology

### Green buildings

#### 3 Zero House

Going further from the development of energy-saving housing in the past, GS E&C is developing 3 Zero House, an eco-friendly residence model that reduces energy consumption, noise, and indoor air pollution. GS E&C's 3 Zero House is a prospective housing model where Energy Zero, Air Pollution Zero and Noise Zero can be realized.



#### In-house experiments



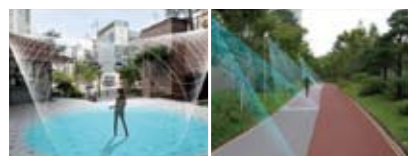
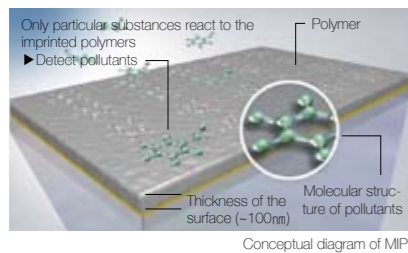
Exterior insulation

Radiant cooling/heating floor system



Vacuum glazed glass

BIPV pent roof



Noise-masking of the entrance/exit area

Noise-masking of the promenade

#### Energy Zero

In 2010, GS E&C analyzed the energy saving-effect and economic efficiency of a passive solution (saves energy without any external power source) and drew the optimum combination of technological elements by energy reduction stage. Based on the results of in-house experiments, GS E&C harvested an outcome of reducing building energy loads by 50% with a building skin design applied with passive technological elements such as highly airtight windows and vacuum insulation materials and the verified technology to reduce room cooling/heating energy by 50% has been applied to our company's housing project energy saving model which will be commercialized soon. GS E&C also established an energy zero apartment concept plan to be implemented through the introduction of an active solution (improves energy efficiency by utilizing external power sources) and is reviewing the effect of it when it is applied to renewable energy and possib of combinations.

#### Air Pollution Zero

In order to actively respond to consumers' requirements for the formation of clean indoor air environments, GS E&C has developed an indoor air quality sensor at the world highest level. This sensor is applied with molecular imprinted polymers (MIP) that react to only the molecular structures of certain materials and thus it can detect traces of chemical pollutants such as formaldehyde and toluene in indoor in real-time.

GS E&C will additionally develop smart air cleaning system combining home network and air cleaning devices as well as cutting-edge sensors dedicated to clean rooms.

#### Noise Zero

GS E&C has developed drywalls with grade 1 (64dB) sound insulation between units to make residential environment liberated from noise and produced Xi apartment logo sounds and information sounds to provide unique soundscape.

### Great Innovation

### Green building certification

GS E&C applies diverse green technologies to construct green buildings and these efforts are proved by many green building certifications. Based on buildings completed by 2010, GS E&C acquired preliminary or main certifications for a total of 21 buildings and in 2011, GS E&C will acquire green building certifications for at least 6 apartments in Korea (under construction or to be sold). Furthermore, GS E&C will acquire LEED (Leadership in Energy and Environmental Design), which is a US green building certification for IFC Seoul and Songdo Xi Harbor View.

Category	Building name	Type of certification	Date of certification
Office building	LIG Insurance Daegu Office Building	Certification	2010. 02
	Gyeongbang K-Project	Certification	2009. 09
	Sacheon City Hall	Certification	2007. 07
	Seoul Central Post Office	Certification	2007. 06
	The City Seven	Certification	2006. 05
	LIG Insurance Gangnam Office Building	Certification	2006. 03
	Aegyeong Gateway Plaza	Certification	2004. 09
	NC Soft Pangyo R&D Center	Pre-certification	2010. 06
	Seoul International Finance Center	Pre-certification	2010. 05
	Gyoha Complex Community Center A1	Pre-certification	2009. 12
	National Ecology Center	Pre-certification	2009. 11
	GS Square Anyang Store	Pre-certification	2009. 09
	LIG Insurance Sacheon Training Institute	Pre-certification	2008. 12
	Ferum Tower	Pre-certification	2008. 04
Apartment building	Muk-dong Xi	Certification	2010. 12
	Isu Xi	Certification	2010. 12
	Poil Xi	Certification	2009. 11
	Yoido Xi	Certification	2008. 03
	Guro Xi	Certification	2007. 03
	Gwanggyo Jayeon & Xi	Pre-certification	2010. 02
	Cheongdam Xi	Pre-certification	2008. 09

### Waste-to-energy

Wastes that have been generated at home and industrial sites can become good resources if they are utilized well. GS E&C has established a business model to treat wastes and make them into resources by using optimized methods in all processes ranging from collection to final disposal and is making efforts to develop technologies to provide total solutions for waste to energy.

GS E&C has applied an automatic collection technology to the Yeongjong Sky City in Incheon in 2010 and designed MBT/RDF technology to the Daegu green energy SOC business.

#### Concept of waste-to-energy technology



#### LEED Core & Shell Silver - International Finance Centre Seoul



IFCS is a building to be certified for the LEED C&S Silver grade where energy efficiency has been maximized and environmental impacts have been minimized by introducing cogeneration systems, ice thermal storage, gray water/rainwater treatment systems, and solar heat hot water supply systems.

#### LEED NC Certified - Songdo Xi Harbor View



Songdo Xi Harbor View is a building to be certified for the LEED NC Certified grade where energy efficiency was enhanced by introducing water cooling air conditioners and securing air-tightness performance for building shells and unit households. In addition, greenhouse gas emissions are reduced by using solar heat.



# great CHALLENGE



GS E&C thinks higher up.  
To stabilize the foundation and to create higher value,  
We enhance core capabilities and plan for new growth.  
Not being afraid of challenge, we want to let the joy of great leap known.  
Planning and acting responsibly,  
GS E&C is moving towards the center of the world.

## Direction

GS E&C is planning to create highest economic value with a challenging spirit and a sense of responsibility. GS E&C is planning to enhance its core capabilities, comprehensively control risks, and continuously grow by fostering new businesses and expanding global business.

## 2010 Achievement

GS E&C has achieved the best financial performance including order backlogs amounting 14.1 trillion KRW, sales amounting 7.9 trillion KRW, and operating profits amounting 520 billion KRW. Not settling on these records, GS E&C established new business to prepare for the future and developed new projects. Global business has also been continuously expanding to the extent that overseas projects account for around 50% of the total amount of order backlogs. In particular, GS E&C has established an integrated risk management system in order to prevent various risks in advance.

## Plan & Outlook

GS E&C is planning to become the Global Top Tier through balanced development of core capabilities and growth with the risk management and new business that have already been established.

40 Special Feature. GS E&C's growth through new business and expansion of overseas markets

42 Issue 4. Creation of economic value for sustainable growth

48 Issue 5. Enhancement of corporate value through risk management

50 Issue 6. Customer satisfaction maximization

Oman Sohar Aromatics Plant

Plant facilities that can produce 1 million tons of BTW per year, located in Sohar, Oman

# GS E&C's growth through new business and expansion of overseas markets

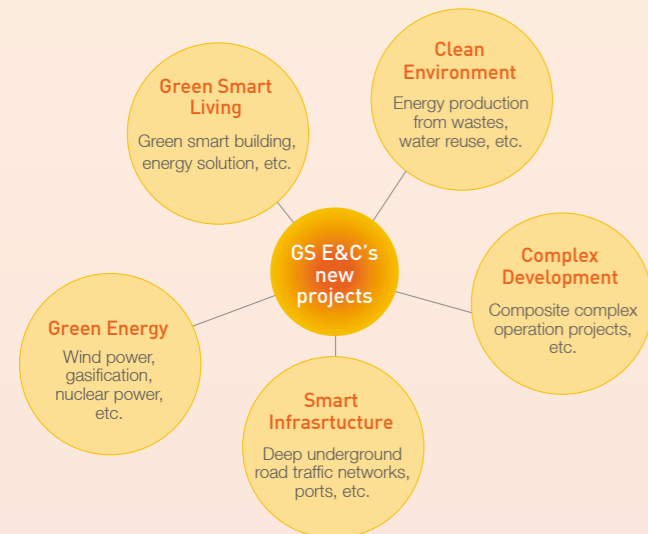
## Development of new business for future growth

GS E&C is focusing on new businesses to secure leadership and prepare a basis for sustainable growth, while keeping pace with the changing environment of the construction industry.



## Diversification of business portfolio

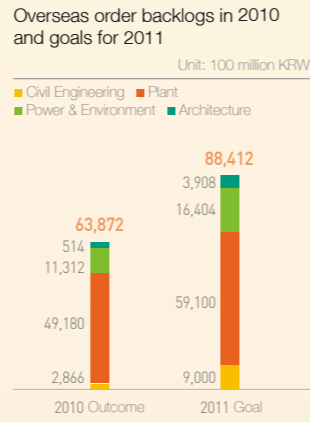
GS E&C is strengthening resources and capabilities in 23 projects in five main areas – Green Smart Living, Clean Environment, Complex Development, Smart Infrastructure, and Green Energy – of which the market is expected to expand.



## Expansion of overseas markets

Since it is expected that the construction business recovery will continue along with the overcoming of the global economic crisis, economic progress of the emerging markets, and increasing demand for the infrastructure development from developing countries, the expansion of overseas market is essentially required for growth. In 2010, GS E&C received large overseas project orders such as Canadian Oil Sand, Australian fertilizer production facility construction project, and Barka 3 & Sohar 2 in Oman, all of which is worth approximately 6.4 trillion KRW.

In 2011, GS E&C is planning to raise the proportion of new overseas projects to at least 50% of sales while reinforcing competitiveness in the existing markets and expanding global network.



## UAE Ruwais Industrial Complex Green Diesel project

UAE Ruwais Industrial Complex Green Diesel project is a plant construction project received in 2007 from Takreer, a subsidiary company of Abu Dhabi National Oil Company (ADNOC). The diesel produced in this plant is an eco-friendly type with a sulfur content of less than 10ppm; it is considered a resource with high future-growth potential, particularly in response to climate change.



Clients who have seen the successful implementation of the UAE Green Diesel project came to recognize the competitiveness of GS E&C and this turned out to be an opportunity for GS E&C to receive additional large orders in the region. Consequently, GS E&C received new orders amounting around 4.5 billion USD during the year 2009, which amounts to almost half of the total orders (10 billion USD) received by all of Korean construction companies in Abu Dhabi.

environmental impact from oil sand development, we are putting utmost efforts to develop eco-friendly and highly efficient production technologies.

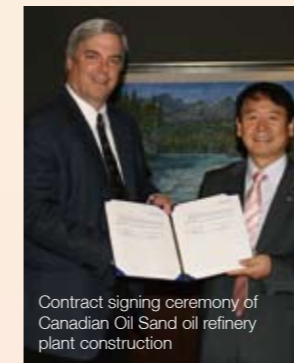
## Establishment of a research institute at KAUST in Saudi Arabia for advancing into overseas freshwater market

GS E&C established a research institute for seawater desalination together with KAUST (King Abdula Scientific Technology University) in Saudi Arabia in 2010. Also referred to as the "MIT of the Middle East," KAUST has partnerships with prestigious universities around the world and global businesses; GS E&C is the first Korean company to form an industry-academic partnership with the University.

The joint research is aimed to utilize seawater as an alternative source of freshwater, which is an emerging business area. When the research on desalination system with low energy requirement and high rate of return is completed, it is expected that 25% of desalination plant construction costs and 20% of maintenance costs will be saved.

The Middle East region accounts for approximately 50% of the world's desalination market. Through this industry-academic partnership, GS E&C has established a network to prepare a foundation for advancement into seawater desalination business.

## Canadian Oil Sand project



By receiving the oil refinery plant construction order in Black Gold, Alberta, worth approximately 350 billion KRW in 2010, GS E&C became the first Korean construction company to advance into Canadian oil sand (sand or sandstone containing crude bitumen; it can be refined into various oil products). This project enabled GS E&C to further diversify its plant business portfolio.

As the oil sand proves to be profitable as a result of rise in international oil price and a decline in oil production cost from technological development, its prospect such non-conventional is increasingly emphasized. In particular, Canadian oil sands have great market potential, considering its geographic proximity to the United States, world's second largest consumer of oil; in this regard, the project is expected to serve a great role for sustainable growth of GS E&C in the future.

However, there are environmental concerns associated with oil sands such as greenhouse gas emissions and large water use, all of which are part of the current crude oil production process. These are issues that GS E&C must address. In order to minimize



# ISSUE 04

## Creation of economic value for sustainable growth

### Corporate governance grade

2008	2009	2010
Very good	Very good	Good

### Sustainable governance

GS E&C's Board of Directors makes key business decisions in all areas – economic, environmental, and social – of the company. GS E&C intends to reinforce managerial transparency and accountability so as to gain trust from diverse stakeholders. As a result of its effort to maintain transparent governance, GS E&C is receiving better evaluation than most Korean construction companies from the Korea Corporate Governance Service (KCGS) every year.

### Board composition

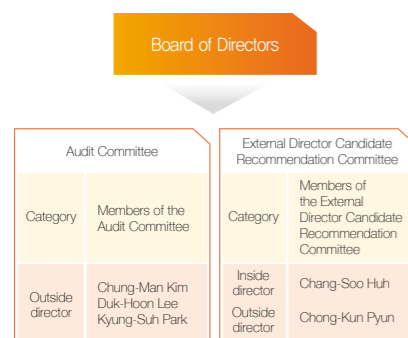
GS E&C's Board of Directors consists of four executive and five outside directors, complying with the internal policy that the number of external directors should account for more than half of the total number of directors, and is chaired by the Chairman of GS E&C in order to assume corporate accountability.

#### GS E&C Board members



- |  |  |  |   |  |
|--|--|--|---|--|
| <b>1. Chang-Soo Huh</b><br>Chairman of the Board<br>Presently Chairman of GS E&C<br>Presently Chairman of GS Holdings<br>Chairman of LS Cable (former LG Cable)              | <b>2. Myung-Soo Huh</b><br>Presently President & CEO of GS E&C<br>COO of GS E&C<br>CFO of GS E&C<br>Senior Vice President of LG Electronics                                      | <b>3. Sang-Ryong Woo</b><br>Presently President & COO of GS E&C<br>Head of Plant Business Division<br>Senior Executive Vice President of GS Caltex | <b>4. Hwi-Sung Lee</b><br>Presently Senior Executive Vice President of GS E&C<br>Presently Head of Domestic Business Division<br>Presently CSO of GS E&C<br>Head of Civil Engineering Business Division |  |
| <b>5. Chung-Man Kim</b><br>Outside Director<br>Presently Full-time Counselor of LS Industrial System<br>Vice Chairman of LS Industrial System<br>CEO of LS Industrial System | <b>6. Duk-Hoon Lee</b><br>Outside Director<br>Presently In-house Advisor of Professional Law Firm Youngjin<br>President of the Woori Bank<br>Member of Monetary Policy Committee | <b>7. Chong-Kun Pyun</b><br>Outside Director<br>Presently Professor of Myongji University<br>Chairman of Korean Society of Civil Engineering       | <b>8. Kyung-Suh Park</b><br>Outside Director<br>Presently Professor of Korea University<br>Vice Chairman of Korean Finance Association  | <b>9. Seong-Woo Moon</b><br>Outside Director<br>Presently Attorney at Law Firm Barun<br>Korea's 51 <sup>st</sup> Deputy Attorney General |

### Organizational structure of subcommittees under the Board



### Committees under the Board

#### Audit Committee

To ensure accounting and business transparency and independence, GS E&C is operating an Audit Committee consisting of three outside directors. The Committee has the right to request business information that they deem necessary and to examine the company's work and financial data at any given time.

#### External Director Candidate Recommendation Committee

GS E&C's External Director Candidate Recommendation Committee serves the role of recommending appropriate candidates to the general meeting of shareholders when new outside directors are appointed. Only those with expertise and acquired level of experience are provided candidacy and those who have any special stake in GS E&C are excluded.

### Roles and activities of the Board

The Board has an oversight of major investment decisions, management plan, key financial information, and the executive appointment right. Seven regular board meetings are held every year and special board meetings are summoned when key issues arise. In 2010, a total of 11 board meetings were held to examine 18 subject matters and the average rate of attendance of external directors was 87%.

#### Key resolutions in 2010

Date	Resolution	Outside director attendance rate (%)
2010. 02. 04	Approval of the 41 <sup>st</sup> period financial statements and business report	60
2010. 02. 18	Calling of the 41 <sup>st</sup> period annual meeting of shareholders and approval of the agenda 2009 internal accounting management system operating state assessment report	80
2010. 03. 09	Revision of some items in the agenda for the 41 <sup>st</sup> annual meeting of shareholders	60
2010. 03. 19	Approval of selected members of committees in the board Approval of determination and execution of compensations for directors Approval of revisions in executive officer management regulations Approval of the limit of daily transactions with the largest shareholder for the year 2010	100
2010. 05. 13	Approval of revisions in Audit Committee operation regulations Approval of revisions in External Director Candidate Recommendation Committee operation regulations 2010 1 <sup>st</sup> quarter management record report	100
2010. 06. 28	Approval of Egypt ERC Project related manufacturing financing borrowing limit Approval of executive officer management	60
2010. 07. 22	Approval of revisions in executive officer employee management regulations 2010 1 <sup>st</sup> half management record report	100
2010. 09. 28	Approval of UAE oil pipeline construction project agreement execution	100
2010. 11. 05	2010 3 <sup>rd</sup> quarter management record report PTT LNG construction work state report	100
2010. 11. 15	Approval of urea fertilizer factory construction in Australia agreement execution	100
2010. 12. 07	Approval of 2011 large scale internal transaction limit of affiliated companies Approval of 2011 company bond issue plan Approval of executive officer management Approval of a change in compensation for the representative director	100

### Shareholder rights

Reflecting the Capital Market and Construction Industry Act and the public disclosure regulation of the Korea Stock Exchange, GS E&C respects shareholder rights to be accurately and promptly informed of key management issues through various communication channels such as business reports (annual, semi-annual, and quarterly), general meetings of shareholders, and IR website.

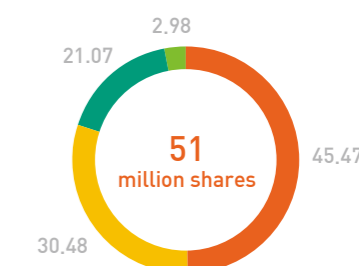
In compliance with the Commercial Act and the articles of incorporation of GS E&C, even those with minority equity can, if they have 0.5% or more shares, make resolution at general meetings and exercise other rights such as requesting for accounting book reading, calling of special shareholder meetings, and dismissal of directors.

### Shareholder composition

As of December 2010, GS E&C's major shareholders include foreign investors who have 45.47% of share, followed by Huh Family, domestic institutions and individual investors, and treasury stocks, each having 30.48%, 21.07%, and 2.98% of share, respectively.

#### Shareholder composition Unit: %

- Foreign investors
- Huh Family
- Domestic institutions and individual investors
- Treasury stock



# ISSUE 04

## Creation of economic value for sustainable growth

### Enhancement of internal capabilities

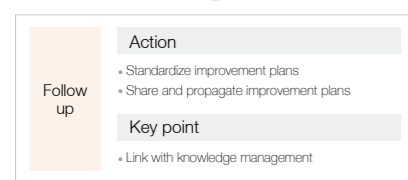
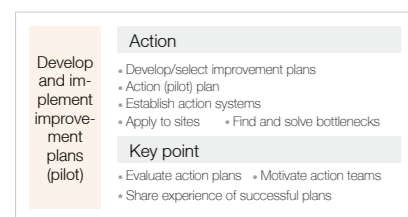
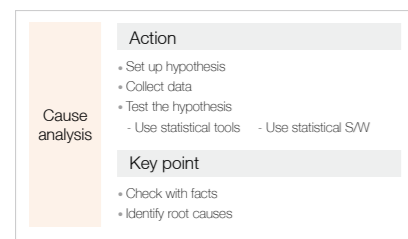
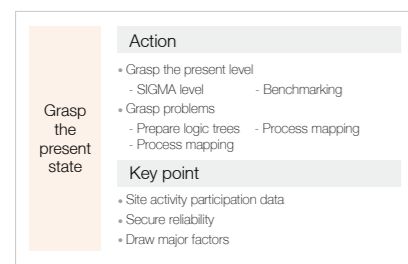
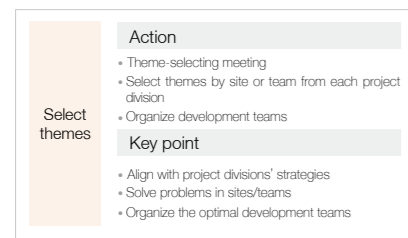
#### Innovation management

Management innovation refers to activities aimed at solving priority issues mainly occurred in construction sites, and the results are applied to other projects.

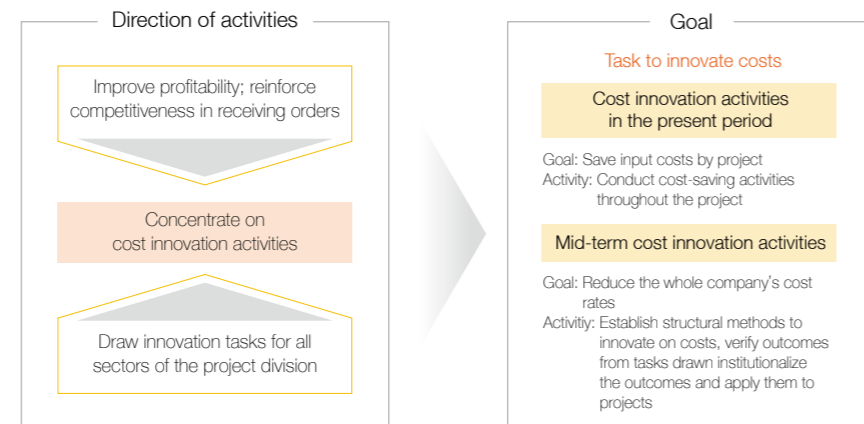
Through management innovation activities, GS E&C has been able to solve problems that occur during projects and to secure core capabilities for both individuals and the organization.

As a result of pursuing cost innovation as the key management innovation task in 2010, GS E&C was able to reduce cost ratio in various projects.

#### Management innovation process



#### Direction of 2010 management innovation task



#### Knowledge management

In order to enhance the strategic linkage between experience accumulated through field activities and current work and to manage information that can be used real-time at sites, GS E&C is carrying out knowledge management (KM) activities. KM activities are largely categorized into Core Knowledge Package, Quick-win Tasks, and Lessons Learned.

The Core Knowledge Package integrates experiences and knowledge gained from both within and outside of the company; it is systematically organized and shared through company-wide Intranet so as to improve the degree of utilization. GS E&C is continuously maintaining and managing the Core Knowledge Package to advance them into valuable organizational asset.

Quick-win Tasks refer to simple yet highly practical tasks, which can be easily applied at sites; GS E&C is mainly collecting smaller pieces of current work-oriented information. Lessons Learned is an organized, user-oriented form of various experiences and know-how accumulated through the implementation of diverse projects. By sharing the details of failure and success cases, GS E&C is minimizing costs that may occur in the process of trial and error and is optimizing productivity.

#### Knowledge management



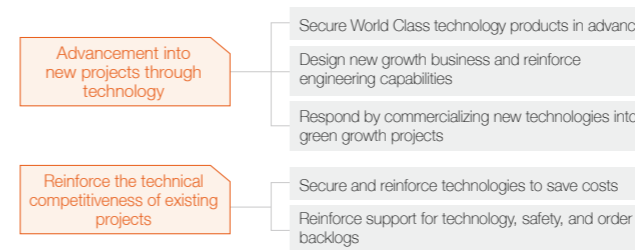
### Great Challenge

### Creativity management

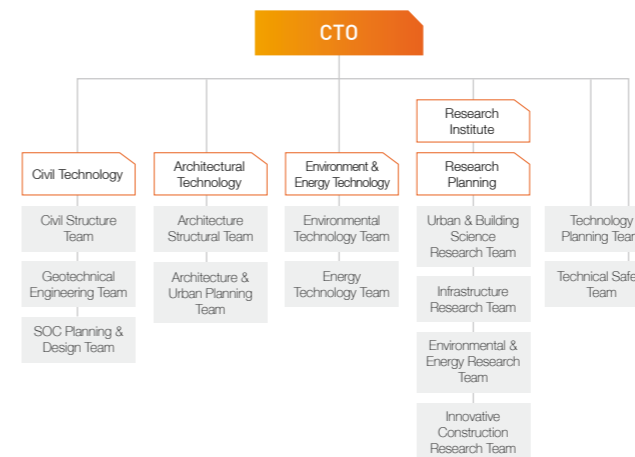
#### Technology R&D

With the Technology Division (which includes the Research Institute), GS E&C is accumulating differentiated technological competitiveness. As a result of continuously expanding R&D investment, GS E&C carried out 78 researches in 2010 and applied 38 technologies onto 168 sites, achieving the commercialization outcome of approximately 7.6 billion KRW.

#### Mid- to long-term strategy



#### Organizational structure



#### Source of GS E&C's core technologies - Research Institute

Equipped with the latest research facilities and global-level talents, the Research Institute consists of Urban & Building Science Research Team, Infrastructure Research Team, Environmental & Energy Research Team, and Innovative Construction Research Team.



Through innovative R&D, it leads domestic construction technologies and provides core technologies to individual business divisions. In particular, in order to secure capabilities for prospective businesses, it has selected and is concentrating on World Class technologies.

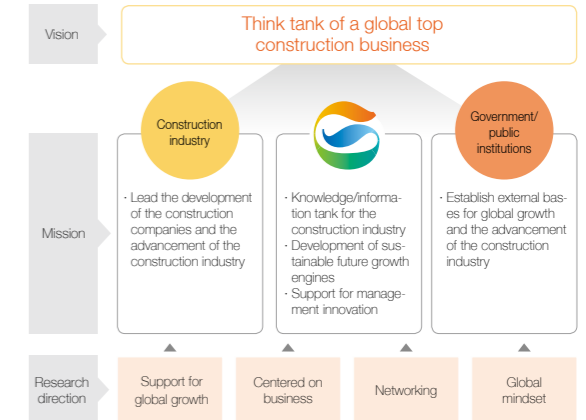
### Economic research

In order to respond to rapidly changing management environment and identify business opportunities, GS E&C has established and is operating the Economic Institute in 2008 for the first time among Korean construction companies.

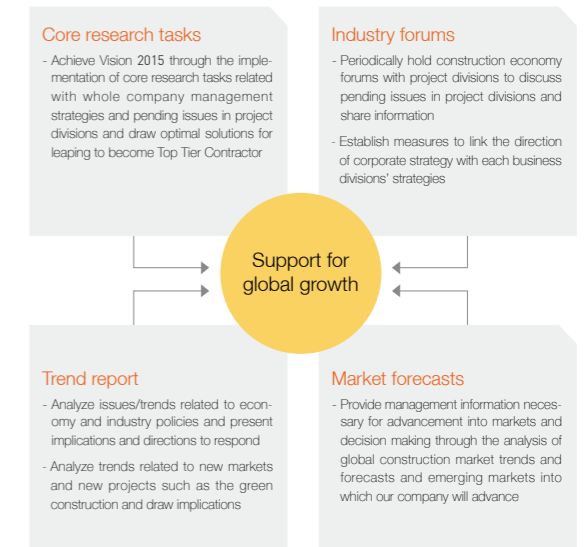
#### GS E&C's think tank - Research Institute of Construction & Economy

The Institute aims to become a knowledge and information think tank of the construction industry. It reports on the trends related to macro-economy and various policies, provides key market information, holds construction economy forums, carries out research related to company-wide strategies and pending issues of business divisions, and supports GS E&C's global growth while contributing to the development of the construction industry in general.

#### Vision



#### Research area





# ISSUE 04

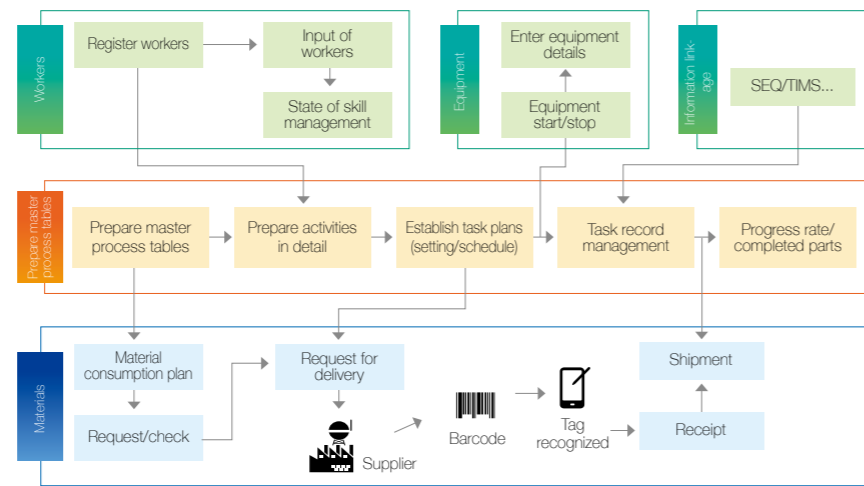
## Creation of economic value for sustainable growth

### TPMS (Total Project Management System)

TPMS is a site-oriented system where the concepts of task-unit process management and on-time resource inputs are applied to the existing PMS (Project Management System), which comprehensively manages processes and profits & losses, in all business areas of GS E&C.

Through the TPMS, information necessary for work such as manpower, material, technology, and knowledge can be tracked in real-time and shared with partner companies. As a result, project transparency and the trust with external stakeholders are enhanced.

#### TPMS framework



#### Best case of TPMS: GS-BAS (GS Bar-bending Automation System)



GS-BAS is an exemplary material procurement system that utilizes TPMS to calculate the volume of processed reinforcing bars required for construction and to send orders to reinforcing bar-processing facilities. After the processing is complete, bar code containing information on task areas, sub-materials, and shapes get attached to the reinforcing bars, which are then delivered on the requested date. Upon warehousing, the person in charge identifies bar code with a PDA phone containing a bar code reader so that the received reinforcing bars can be automatically registered at sites. Introduction of GS-BAS remarkably reduced surplus and shortened the term of works through on-time delivery of materials.

#### Daily work management

Daily work management and check-up are main roles of TPMS. All information necessary for projects such as manpower, materials, technology, and knowledge are linked to daily works for efficient management.

#### Material management

Efficient material management is a key component for successful project implementation. In order to remove fiddle factors that may occur during procurement, GS E&C has established procurement management system for each of the major materials.

Through the TPMS, GS E&C is identifying materials necessary for the given day's work at sites and controlling the inflow and the outflow of materials based on the bar code input systems.

#### Manpower management

At some sites, RFID (radio-frequency identification) technology is applied to the TPMS to identify the manpower involved and to eliminate safety risk factors at construction sites in advance. Furthermore, the TPMS is linked with mobile devices for productivity management and work distribution.

#### Cooperation management

The TPMS makes information sharing and communication more convenient and provides information useful for the development of websites customized to users, thereby forming cohesion and trust among diverse stakeholders related to the project, such as customers, partner companies, and site supervisors.

### Creation of economic values

In order to grow as a sustainable business even in rapidly changing global economy and uncertain construction business market conditions, GS E&C is concentrating its efforts on securing financial stability.

GS E&C received large overseas orders including the Australian Collie Urea project, the UAE Gas Pipeline project, and the Oman Power Plant to achieve the total backlogs of 14.1 trillion KRW and sales of 7.9 trillion KRW.

In particular, the orders of the Power and Environment business was greatly increased, which reflect GS E&C's strong will for new, green projects.

#### Summary of balance sheet

Unit: Billion KRW

Item	2008	2009	2010
Cash and bank deposit	781	1,445	1,377
Accounts receivable	2,242	2,429	2,963
Current assets	4,471	5,465	6,262
Inventories	457	429	290
Investment assets	1,385	1,254	893
Tangible assets	1,412	1,422	1,449
Non-current assets	3,254	3,052	2,786
<b>Total assets</b>	<b>8,182</b>	<b>8,946</b>	<b>9,338</b>
Accounts payable	1,483	1,366	1,595
Short-term debt	260	200	494
Advances from customers	1,084	1,929	1,708
Current portion of long-term debt	-	150	161
Current liabilities	3,789	4,194	4,588
Corporate bonds	500	610	299
Long-term debt	12	12	12
Non-current liabilities	1,358	1,453	1,165
<b>Total liabilities</b>	<b>5,147</b>	<b>5,647</b>	<b>5,752</b>
Equity	255	255	255
<b>Total shareholders' equity</b>	<b>3,035</b>	<b>3,299</b>	<b>3,586</b>

#### Summary of income statement

Unit: Billion KRW

Item	2008	2009	2010
Sales	6,866	7,377	7,893
Cost of sales	5,953	6,422	6,882
Gross profit	913	955	1,011
Selling and administrative expenses	435	387	490
Operating profit	478	568	521
Non-operating revenues	1,200	557	494
Interest revenue	60	72	50
Non-operating expenses	1,129	617	489
Interest expense	30	57	60
Pre-tax profit	549	508	525
Corporate tax	167	125	118
<b>Net income</b>	<b>382</b>	<b>383</b>	<b>407</b>

### Economic value distribution

GS E&C strives to contribute to the increase of stakeholders' benefits by distributing economic value to diverse stakeholders including shareholders, employees, society, partner companies, and the government.

Shareholders	Employees	Partner companies
Dividends <b>49.5 billion KRW</b>	Salaries+benefits <b>477.2 billion KRW</b>	Green procurement+ support program expenses <b>78.4 billion KRW</b>
Society	Government	Future generation
Social contribution <b>9.4 billion KRW</b>	Corporate tax <b>117.9 billion KRW</b>	Environmental management expenses <b>4.9 billion KRW</b>

#### Direct and indirect economic effects

Unit: Billion KRW

Category	2010
Shareholders	Dividends 49.48
Employees	Salaries 432.24
	Other employee benefits 44.96
Partner companies	Green procurement 56.80
	Support program expenses 21.56
Society	Social contribution 9.40
Government	Corporate tax 117.93
Future generation	Environmental management expenses 4.87

# ISSUE 05

## Enhancement of corporate value through risk management

### Risk management

Various risks such as global economic crisis, resource depletion, exchange rate fluctuation, climate change, and water shortage are rapidly changing management environment while affecting the sustainability of businesses. Recognizing the importance of risk management, GS E&C is operating advanced risk management system and a company-wide organization.

#### Regular and proactive management

##### Operation of RM (Risk Management) Team

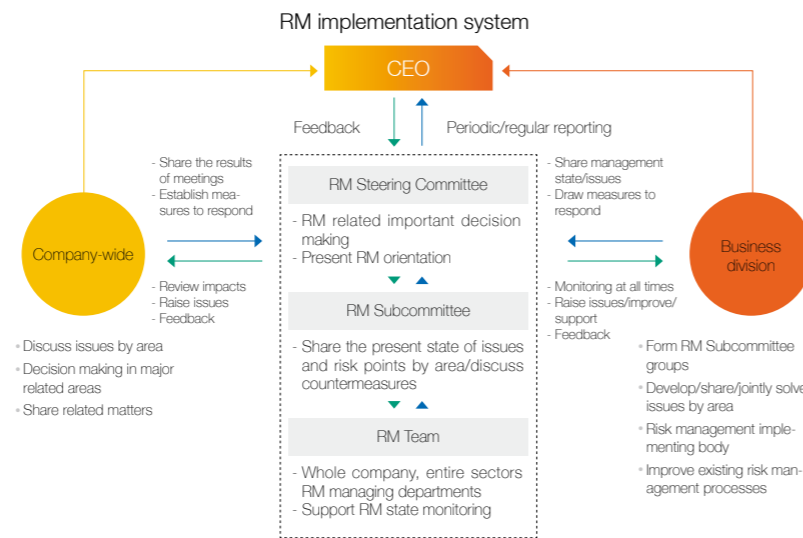
The integrated RM Team has oversight of company-wide risks and closely monitors potential risk factors. GS E&C has established an early warning system and is sharing individual risk factors across the company through close communication between business divisions and managing departments.

##### Establishment of risk management objective

GS E&C has developed risk management indicators to be managed by each of the division heads. In addition, GS E&C ensure that its corporate culture sticks to the basics and principles so that all the employees are empowered as risk managers.

##### Strategic utilization of risk management

GS E&C has established risk mitigation measures to each of the financial and non-financial risks that affect business; through scenario management of key risk factors, GS E&C is enhancing the degree of strategic utilization of risk management.



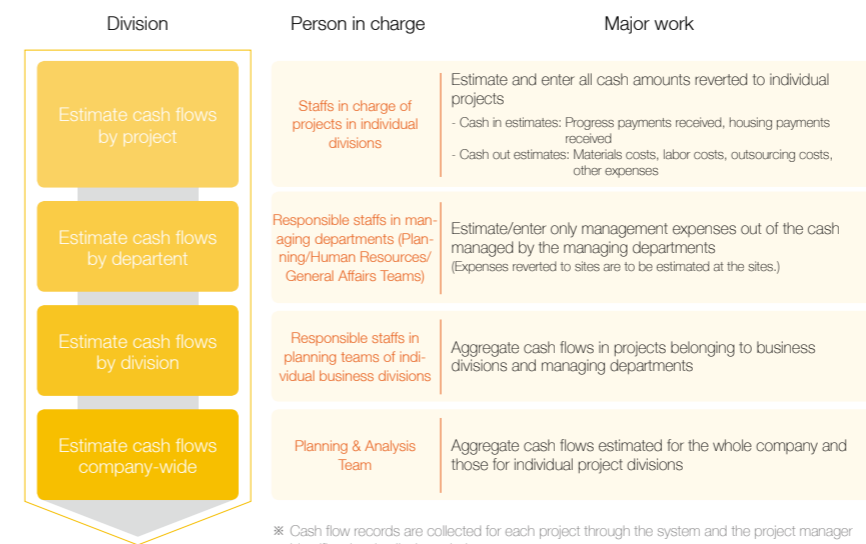
Key risks	Risk factors	Risk mitigation measures
Market risk	<ul style="list-style-type: none"> <li>Global business fluctuations</li> <li>Price competition</li> </ul>	<ul style="list-style-type: none"> <li>Forecast demand based on changes in international economy; secure price competitiveness through cost innovation</li> <li>Continuously monitor changes in customer needs; pursue differentiated customer satisfaction activities</li> </ul>
Product risk	<ul style="list-style-type: none"> <li>Product quality deterioration</li> <li>Changes in customers' expectations</li> </ul>	<ul style="list-style-type: none"> <li>Ensure product quality through periodic inspection</li> <li>Frequently check PR and marketing strategies; reinforce communication with customers</li> </ul>
Technological risk	<ul style="list-style-type: none"> <li>Advent of new technologies</li> </ul>	<ul style="list-style-type: none"> <li>Identify technological trends; participate in government projects; in-house/joint technology research</li> </ul>
Regulatory risk	<ul style="list-style-type: none"> <li>Carbon regulation</li> <li>Local laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>Establish GHG inventory and GHG emissions reduction goals; external certification and information disclosure</li> <li>Utilize legal consultants when carrying out projects</li> </ul>
Resource risk	<ul style="list-style-type: none"> <li>Price increase of raw materials</li> <li>Water shortage</li> </ul>	<ul style="list-style-type: none"> <li>Continuously monitor price of raw materials and hold periodic procurement strategy meetings</li> <li>Undergo pre-assessment of environmental impact and identify water sources in advance</li> </ul>
Operational risk	<ul style="list-style-type: none"> <li>Work accident</li> <li>Conflicts with the union</li> </ul>	<ul style="list-style-type: none"> <li>Provide safety education, work injuries control through strict safety management</li> <li>Establish win-win business culture and transparent business management</li> </ul>
Community risk	<ul style="list-style-type: none"> <li>Conflict with communities</li> <li>Aging population</li> </ul>	<ul style="list-style-type: none"> <li>Practice contribution to society and conduct environmental management; secure green technologies; establish prompt reporting system to relieve conflicts</li> <li>Develop technologies or projects in response to aging population; advance into overseas markets</li> </ul>
Environmental risk	<ul style="list-style-type: none"> <li>Environmental pollution</li> <li>Climate changes</li> </ul>	<ul style="list-style-type: none"> <li>Observe regulations on pollutant emissions at work sites; pursue company-wide environmental risk prevention activities; appoint R&amp;R to on-site environmental managers</li> <li>Establish GHG inventory; carry out GHG/energy reduction activities; develop green technologies</li> </ul>
Project risk	<ul style="list-style-type: none"> <li>Project profitability/stability</li> <li>Accidents, claim, defects</li> </ul>	<ul style="list-style-type: none"> <li>Operate a project feasibility review committee using checklists</li> <li>Reinforce safety management, quality management, process management, project organization management functions</li> </ul>
Liquidity/exchange risk	<ul style="list-style-type: none"> <li>Stability of fund operation</li> <li>Situations of contingent liabilities</li> <li>Losses from exchange rate fluctuation</li> </ul>	<ul style="list-style-type: none"> <li>Monitor domestic/international interest rates and financial market</li> <li>Establish and manage daily/monthly cash operation plans; establish and operate contingent liability guidelines; manage daily/monthly contingent liability states</li> <li>Get insured for USD/KRW exchange rate fluctuation; reflect reserve funds to respond to risks arising from changes in exchange rates of different currencies (EUR, YEN)</li> </ul>

### Cash flow-oriented management

Recently, there is a trend in the construction industry to switch from being a simple contractor to a project developer, which involves large sum of prior investment. In particular, the necessity of liquidity management is rising due to the global economic crisis in 2008. In this respect, GS E&C introduced liquidity as an additional performance indicator and established a cash flow system in order support this.

Through this system, GS E&C is preventing liquidity risks and is able to rationally distribute usable cash assets.

#### Cash flow estimating process



### Manager Certification

In order to ensure accounting transparency, GS E&C introduced the Manager Certification system, where the executive management takes full legal responsibility for the credibility of externally disclosed corporate information. Through this system, GS E&C is increasing the accuracy of public disclosure and monitoring legal and regulatory compliances.

Main screen of the Manager Certification system



#### Manager Certification system

<b>Summary</b>	The manager's act to certify taking legal responsibility that financial information provided to the outside is reliable information that has been prepared accurately through proper work procedures	
<b>Purpose</b>	Secure the accuracy of announced data	<ul style="list-style-type: none"> <li>Prevent fabrications of or errors in financial information through the operation of manager certification systems</li> <li>Secure the reliability of data to be externally announced</li> </ul>
	Prove the performance of legal obligations	<ul style="list-style-type: none"> <li>Accumulate objective data regarding legal responsibilities</li> <li>Report quarterly results of certification to the Audit Committee</li> <li>Announce the results of internal control by external auditors</li> </ul>
	Monitor management efficiency and the observance of regulations	<ul style="list-style-type: none"> <li>Monitor improving activities in order to efficiently achieve the purpose of management</li> <li>Monitor where internal/external regulations are observed</li> </ul>

# ISSUE 06

## Customer satisfaction maximization

### Customer value management

**Customer complaint management**

- Make customer complaint receiving channels simple and efficient
- Implement customer-oriented complaint handling policies
- Establish and manage policies for consumer safety and health

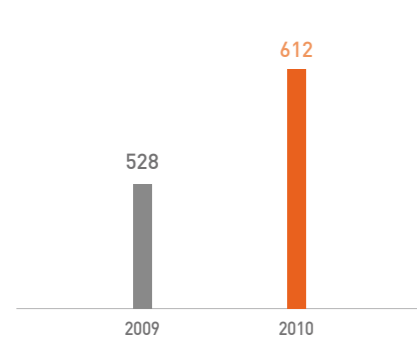
**Increase user benefits**

- Xi Resident Service
- Xian Lounge
- Xian Manager

**Cultural programs for customers**

- Gaga Xi magazine
- Xi Gallery: Cultural sessions, cultural exhibitions, etc.
- Xi Event: Cultural classes, family events, etc.

Number of VOC receipts by year Unit: Case



### Enhance customer satisfaction

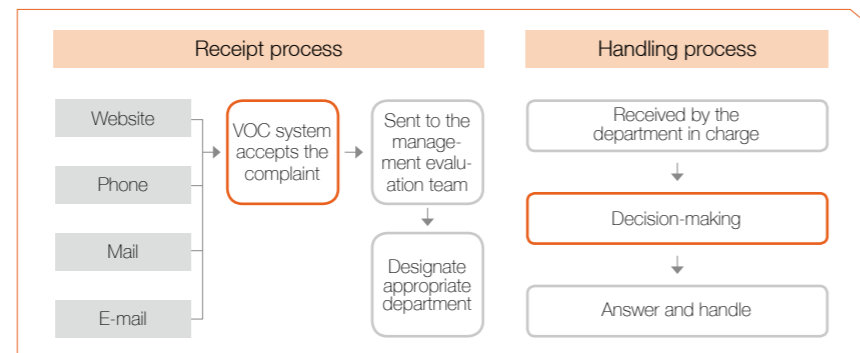
Keeping with the management philosophy to “think and act at the standpoint of customers and be always close to customers,” GS E&C has selected and is implementing the three major customer value management activities: customer complaint management, increasing user benefits, and cultural programs for customers.

### Listening to customers' voice

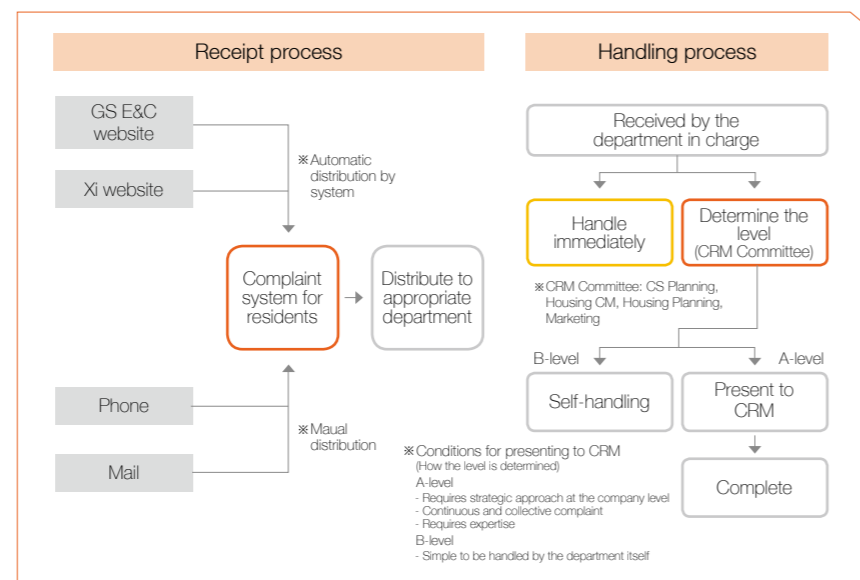
GS E&C is operating the company-wide VOC (voice of customer) system and the residents' complaint handling system, both of which are communication channels for customers. The VOC system is organized to receive diverse customers' opinions including complaints and feedback and to promptly deliver them to corresponding departments for handling.

Complaints received through the housing customer complaint handling system are to be handled immediately in principle; however, depending on the degree of materiality, they are submitted to the CRM Committee and handled based on their grades.

### Company-wide VOC system



### Residents' complaint handling system



Great Challenge

### Increasing user benefits and cultural programs for customers

GS E&C provides a number of customer-oriented services and differentiated programs that accommodate diverse customers' wants and needs.



#### 1. Xi Resident Service

Xi residents' complaints are received real-time and handled under the principle of "visiting in ten minutes, handling in one hour."

#### 2. Xian Lounge

The existing A/S center has been upgraded to the Xian Lounge, which now serves as a luxurious resting space for residents to conveniently visit and consult.

#### 3. Xian Manager

Xian Managers check quality and consider Xi residents' convenience on the move-in day. They continue to provide assistance and become the contact points for relieving any inconvenience that the residents may experience.

#### 4. Xi Plus One Service

We provide added service for Xi residents such as house cleaning, kitchen equipment sharpening, and the landscape architecture maintenance, thereby increasing the level of customer satisfaction and pride.

#### 5. Gaga Xi magazine

Contents of Gaga Xi include global cultural trends and news collected through channels such as resident-engaging columns and a Xi correspondent system. Gaga Xi is distributed to residents, contractors, and association members on a quarterly basis.

#### 6. Cultural class

We encourage Xi residents' cultural and entertainment activities by providing cultural classes such as yoga, beads art, and "Open Kitchen" (cooking class) as well as "Xi Special Lecture" involving an expert in particular area.

#### 7. Xi Gallery

It is both a luxurious cultural space where a number of cultural classes are held and a communication channel for Xi residents.

#### 8. Xian Center

(Community center for the residents)  
We operate an indoor driving range, fitness center, cafeteria, sauna, and library to enhance residents' convenience and satisfaction.

### Survey result of customer satisfaction

As a result of GS E&C's diverse activities on customer satisfaction, its signature apartment brand "Xi" was ranked the number one in the Global Customer Satisfaction Index (GCSI) surveys conducted by the Japan Management Association for six consecutive years from 2005 to 2010.

### Result of customer satisfaction

Brand name	2008	2009	2010
Xi	70.41 (1 <sup>st</sup> Place)	71.68 (1 <sup>st</sup> Place)	71.40 (1 <sup>st</sup> Place)

### Cooking class for housewarming party at Ilsan Xi

GS E&C prepared a cooking class for housewarming party residents during the month of November 2010. For the event, we invited celebrity chefs as instructors to add quality and fun. Moreover, each resident was allowed to bring a friend to the event. Best of all, catering service for housewarming parties was provided for four households by draw, receiving enthusiastic responses from the participants.





# great PARTNERSHIP



GS E&C makes a warmer approach.  
Through sincere communication and collaboration,  
We become "one" with stakeholders and employees.  
We think as "one" and strive towards the same goal.  
Approaching closer and spreading happiness to far places,  
GS E&C grows with the world.

## Direction

GS E&C intends to gain stakeholders' trust and achieve shared growth with stakeholders through mutual respect, communication, and win-win cooperation.

## 2010 Achievement

GS E&C has re-established its core values – Great Innovation, Great Challenge, and Great Partnership – and is continuously carrying out corporate culture innovation activities. GS E&C has introduced the Shared Growth Committee, set social contribution strategies, published the Ethical Management Guidebook, and ethical management ethics education to all employees. In addition, GS E&C is reinforcing safety management and workplace safety education.

## Plan & Outlook

GS E&C will expand communication with stakeholders based on trust and collect their opinions with respect to become a business that fulfills its social responsibility.

# GS E&C's corporate culture

## Corporate culture innovation

GS E&C recognizes that cultural process composed of core values, practice, and behavior based on trust between employees is just as important as strategic processes for sustainable growth; thus, GS E&C has set corporate culture innovation as the main task in 2010 and carried out related activities.

### Kick-off ceremony

Commencing its commitment to innovate the uniform, top-down culture unique to the construction industry into a creative, horizontal culture, GS E&C held a kick-off ceremony for the formation of the Corporate Culture Innovation Organization in January 2010. At the ceremony, CEO and the top executives, division heads, team leaders, and Change Agents (a group that serves as the focal point of horizontal/vertical communication across GS E&C by propagating the strategic direction and tasks related to the company-wide corporate culture innovation and establishing the strategies of individual divisions and departments) participated to share the implementation plan and announce a pledge for corporate culture innovation.



### Dissemination of core values

Core values gives an identity to the business and its employees even in rapidly changing management environment and unites

#### Core values

	Name & definition	Sub Keyword		
		Our mindset	Our action	Our goal
Attitude of responding to the environment	<b>Great Innovation</b>	Diversity	Creativity	Change
Mindset of achieving goals	<b>Great Challenge</b>	Pioneership	Initiative	Excellence
Way of communicating with others	<b>Great Partnership</b>	Respect	Cooperation	Win-win

them to move in one direction under the shared belief. In order to realize the vision of becoming a global top-tier contractor, GS E&C re-established its core values.

### Declaration ceremony of core values and G-Spirit workshop

GS E&C announced its commitment to implement the re-established core values through the declaration ceremony held in May. During the months of June and July, a total of 30 G-Spirit workshops took place for one night two days, for the entire employees to share the core values.

The G-Spirit workshop broke away from the existing lecture-type education; it combined theoretical education, outdoor activities, and quiz games so that the employees could have better understanding on the core values through teamwork.



### Great Innovation! Great Challenge! Great Partnership!

I attended the G-spirit workshop in June. Although the subject seemed a bit stiff at first, the program was not at all boring, with fresh materials of the Change Agents and inspiring words. While I participated in the Golden Bell Challenge, team spirit greatly enhanced. I also had a great time and shared diverse opinions about the core values with team members during the team mission at Anseong Playground and witnessed firsthand that everyone was trying to move in a positive direction. Although it is difficult to expect rapid changes at the beginning stage, I am excited to see the employees' enthusiasm about the changing organization and I expect more to come in future. Everyone at GS E&C! Let's innovate ourselves first, become the best, and be trusted by stakeholders.



Suk-Jin Lee  
Assistant Manager,  
Civil Planning Team

## Great workplace – Work Smart

GS E&C aims to create an environment where the employees enjoy fulfilling work and thereby maintain a balance between work and life. The Work Smart program emphasizes working efficiently while taking enough rest when needed.

### Meeting 3 ONEs

To create efficient work environment and improve productivity through the innovation of meeting and reporting cultures, GS E&C has adopted the Meeting 3 ONEs, a company-wide meeting operation policy. In addition, a sandglass is placed in each meeting room so that meeting time can be shortened and meetings can be finished within defined time.

**MEETING 3 ONES**

- Member** (Only relevant attendees)
- Essential** (Only required meetings)
- Etiquette** (Mutual respect)
- Time** (Be on time)
- Information** (Share the subject matter before/after the meeting)
- No Meeting** (Meeting free day)
- Goal** (Goal-oriented)
- 3 ONEs** (Observe 1-1-1)
  - Distribute the materials at least 1 day in advance
  - Do not hold a meeting for over 1 hour
  - Share the minutes within 1 day

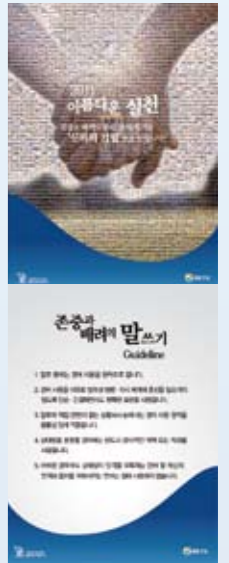
GS 건설

MEETING 3 ONES principles

### Using Words of Respect and Consideration campaign

In order to change the passive and strict corporate culture into one that is flexible and creative where employees respect each other and encourage two-way communication, GS E&C is promoting the Using Words of Respect and Consideration campaign and the greeting unique to GS E&C, "Be the best!"

"Be the best!" signifies GS E&C's commitment to achieve its vision of becoming the best.



### Vacation for work & life balance

GS E&C is improving its vacation policy to enhance the quality of life of its employees. Following the CEO's statement, "Construction business requires creativity. Since resting and playing can also be one's competitiveness, senior executives should take the lead by going on a two-week vacation first so that employees can go along without feeling constraint," GS E&C has introduced the long-term summer vacation program for the first time among Korean construction companies.

In addition, GS E&C has introduced a customized vacation program such as sabbatical and winter vacation, reflecting individuals' work style.

### GS Yeokjeon Tower Child Care

In order to create a workplace that encourages female employment, GS E&C opened an in-house child care in December 2010 for the first time among Korean construction companies. The child care in GS Yeokjeon Tower operates during working hours of the company. Its program is structured to optimize children's inquisitiveness and is customized to their age and individual characteristics.



# ISSUE 07

## Shared growth with partners

### Shared growth

**Evaluation and management**

- Partner company management guidelines
- Partner company selection process
- Electronic bidding and contract system
- Quarterly evaluation of partner companies

**Support and development**

- Financial support
- Education & training and enhanced communication
- Technological support
- Management support

### Quarterly evaluation: Environmental indicators

- Environmental management organization
- Appropriate operation of environmental facilities
- Environmental management plan execution for each tasks
- ISO14001 certification
- Emergency action plans against environmental accidents for each tasks
- Violation of environment laws and regulations
- In-house environment education and inspection
- Noise reduction efforts
- Separate waste collection
- Fulfillment of environmental indications and orders
- Maintaining clean, organized sites

### GS Partner



GS E&C is operating the GS Partner website (www.gspartner.co.kr) to share information with partner companies and make their work more convenient. Partner companies use the GS Partner for bidding, contracting, various information checks, and issuance of certificates.

### Shared growth

Considering the nature of the construction industry that is highly dependent on partner companies, it is essential to strategically foster the capability of the partner companies. GS E&C has established transparent and win-win cooperation throughout selection, bidding, and process control. For global expansion accompanying partner companies and capability development, GS E&C is planning to serve as a mentor to partner companies' advancement into overseas markets.

GS E&C has organized the Shared Growth Committee in line with the GS Group-level shared growth policy and is planning to expand related activities.

### The three guidelines for shared growth

GS E&C has established guidelines on selection & operation, contract agreement, and installation & operation of the Subcontract Deliberation Committee to provide equal opportunities to partner companies. In addition, through the observance of the Monopoly Regulation and Fair Trade Act and the execution of Agreement for Win-win Cooperation between Large Corporations and SMEs and Fair Trade, GS E&C is preventing risks arising from fraud transactions, establishing fair trade practices, and forming a basis for shared growth.

### Selection process

In order to select companies most suitable for projects, GS E&C has established an objective and quantitative selection system so that partner companies can fairly participate in bidding.

### Evaluation items for selection

Item	Purpose
Frequency of selection	To provide equal opportunities to registered companies and secure opportunities for new companies to participate
General evaluation	To benefit companies with excellent quality, safety, and financial capabilities
Site evaluation	To provide opportunities by evaluating construction sites in the relevant quarter
Same region	To give preference to locally based partner companies in order to increase indirect economic effects in the region

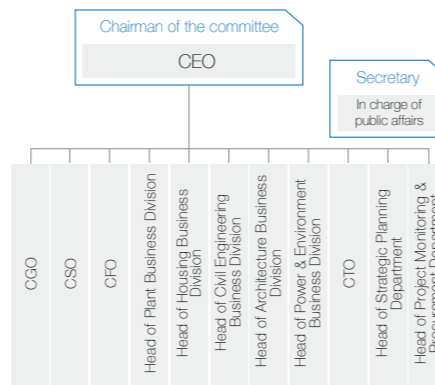
### Management and evaluation

In order to improve partner companies' ability to pursue sustainability management, GS E&C is operating a quarterly evaluation system to examine their project management skill and quality, environmental, and safety standards by site on a quarterly basis. Unlike other companies' evaluation process carried out in private, the results of GS E&C's evaluation are transparently disclosed to partner companies and shared company-wide so as to secure fairness in its management procedure. In addition, general evaluation is conducted once a year based on the results of the quarterly evaluation, the results of which are utilized as basic data for re-registration, selection, and development of partner companies in the future.

### Quarterly supplier evaluation items

TPMS (20)		Site evaluation (80)				
Monthly progress rate (10)	Observance rate of work instruction (10)	+	Safety (30)	Environment (10)	Quality (15)	Project management (25)

### Shared Growth Committee



### Shared growth programs

Through systematic shared growth programs in four areas of financial support, education & training and enhanced communication, technological support, and management support, GS E&C is assisting partner companies to secure competitiveness.

### Financial support

Through financial support including management grants and the Win-win Cooperation Deposit, GS E&C is supporting partner companies to be equipped with a more stable financial environment and feel less economic burden so that they can concentrate on developing competitiveness.

### Agreement for GS E&C's financial support for partner companies



In 2010, GS E&C made a financial support agreement with Shinhan Bank and Hana Bank to create loans of up to 40 billion KRW and preferential interest rate for construction SMEs. GS E&C is to deposit money in the Win-win Cooperation Deposit (fixed) and the banks are to provide funding (from the Deposit) to GS E&C's partner companies that are experiencing temporary difficulties from insufficient liquidity.

### Technological support

In order to encourage partner companies to invest in technological R&D and support them to secure technological competitiveness, GS E&C has programs such as project incentive system, patent application support, the Technology Contest, and seminars in place.

### Technology Contest



Since 2008, GS E&C has been holding the annual Technology Contest, which provides monetary prize and project incentives (i.e. in bidding process) to partner companies. Occasionally, GS E&C conducts joint research on the winning technology with partner companies and applies the patented and/or certified technologies onto the actual construction sites.

### Education & training and enhanced communication

Some of the programs that GS E&C is operating include education for partner companies' next CEOs, the Xi CEO Forum, mentorship, and the SUBCON Board. The SUBCON Board is an official gathering of partner companies where they can discuss project difficulties and other opinions and receive feedback. The resolutions are thoroughly reviewed and reflected on the future policy improvement and the results of the SUBCON Board are shared with partner companies and GS E&C employees. Through such programs and smooth communication, GS E&C and partner companies are achieving common goals.

### Xi CEO Forum



Since 2005, GS E&C has been holding the Xi CEO Forum, which involves GS E&C's executives and approximately 150 CEOs of major partner companies, on a semi-annual basis. At the Forum, sessions led by distinguished speakers and mentoring activities between the participants are held to inspire the CEOs and to strengthen relationship.

### Management support

In order to support partner companies' management, GS E&C is operating Shared Growth Committee and participating in the Management Doctor and the Green Management Dissemination Project for Partner Companies.

### Green Management Dissemination Project for Partner Companies



GS E&C is participating in the Green Management Dissemination Project for Partner Companies with 10 partner companies. Through this 3-year project, GS E&C plans to support them establish green management strategies and systems, improve resource and energy efficiency, reduce environmental pollution, fulfill their social and ethical responsibilities, be designated as green businesses, receive Green Building Certification, publish environmental reports, and foster experts in green management.

# ISSUE 07

## Shared growth with partners

### Shared growth programs in 2010

Category	Program	Contents	Achievements
Financial support	Management grants	· Provide an advance upon request · Scale of up to 15 billion KRW per year	· 10.38 billion KRW was provided
	Win-win Cooperation Deposit	· Created the Win-win Cooperation Deposit amounting 40 billion KRW to support loans (loan interest reduction by 1%)	· 10.44 billion KRW was supported
	Network Loan	· Recommend partner companies 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	-
	Improvement of payment conditions	· Improve cash payment ratio · Maintain cash equivalent payment ratio at 100% · Shorten the payment card transaction period	· Improvement rate: 6% ▶ 48% · Number of days shortened: 15 days ▶ 10 days
	Exemption of bid bond	· Exempt excellent/meritorious partner companies from bid/warranty bond to reduce their cost burden	· Reduced 580 million KRW in relation to bid bond and 1.58 billion KRW in relation to warranty bond
Education & training and enhanced communication	Education for partner companies' next CEOs	· Provide opportunities to foster the next CEOs' management capabilities	· Completed by 30 people
	Education for partner companies' site supervisors	· Improve site supervisors' work competency	· Completed by 90 people
	Safety Innovation School	· Experiential learning of workplace safety	· Completed by 385 people
	Cyber education	· On-line education on the subject of construction safety	· Completed by 120 people
	Xi CEO Forum	· Invite distinguished speakers and recognize excellent/meritorious partner companies	· Held twice (approximately 150 companies were represented each time)
Technological support	SUBCON Board	· Gatherings to collect partner companies' opinions	· Held three times
	Joint development of new technology	· Undertake joint development of the new technology selected from the public subscription	· Provided 690 million KRW to 12 companies
	Workshop/seminar	· Organize workshops/seminars to raise technological competitiveness	· Held 24 times (two times each for 12 tasks)
Management support	Technology Contest	· Award partner companies with excellent technologies and adopt those onto the construction sites	· 1 Grand Prize, 3 Excellence Prizes and 5 Encouraging Prizes were awarded (worth a total of 50 million KRW)
	GS Group Shared Growth Council	· A Group-level council for pursuing shared growth · Members include CEOs	· Held once (2010. 10. 29)
	GS E&C Shared Growth Committee	· Review the existing shared growth programs and discuss about additional programs	· Held once (2010. 10. 25)
	Management Doctor	· Support the Management Doctor operated by the Federation of the Korean Industries	· Supported 3 companies
Management support	Employment fair	· Support partner companies' participation in the employment fair managed by the Federation of the Korean Industries	· Supported 11 companies

### Introduction and expansion plans for shared growth programs in 2011

Category	Program	Contents	Plans
Education & training and enhanced communication	Safety Innovation School	· To increase the number of participants in the education on safety awareness	· To be completed by 2,100 people
	Education for partner companies' the site supervisors	· Provide education for the next site supervisors	-
	Great Partnership Shared Growth Council	· Establish a council of major partner companies' CEOs in order to reinforce communication	-
Management support	Green Management Dissemination Project for Partner Companies	· A green management dissemination support project is being implemented	· Support 10 companies

# ISSUE 08

## Transparent and warm business culture

### Direction of ethical management

Ethical management (EM) regards not only the performance of businesses' economic and legal responsibilities but also the observance of business ethics generally expected by the society. It is an essential part of sustainability management.

To completely settle ethical management within the organization, GS E&C has set four directions to implement ethical management and is expanding its scope to include partner companies

- ① Being aware of unethical deeds and establishing strong countermeasures
- ② Setting a system to eradicate corruption and reforming institutions
- ③ Reforming consciousness of employees and business partners and promoting public relations and education
- ④ Strengthening auditing & monitoring activities and building a corporate culture of high liability

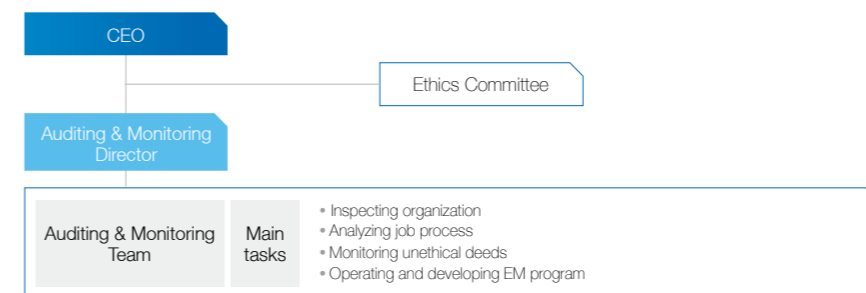
### Code of Ethics

Since its inception in 1994, the Code of Ethics has been the standard of all employees' actions and decisions. GS E&C is practicing business ethics based on the Code to become a company that customers can trust.

### Ethical management implementing organization

GS E&C is making efforts to find fast and reasonable countermeasures to pending ethical conflicts through the operation of the Ethics Committee. The Committee is composed of 13 members from different departments and serves the role of assisting the top management's ethical decision making and checking company-wide ethical management activities.

In principle, the Ethics Committee is held on a quarterly basis; however, it holds additional meetings when urgent matters arise.



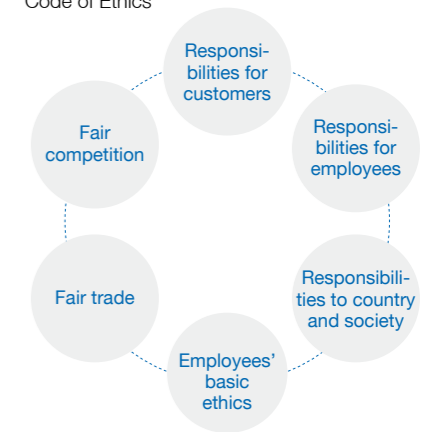
### Ethical Management Guidebook

In 2010, GS E&C published the Ethical Management Guidebook and distributed it to all the employees, in order to allow them to check their own actions, establish the standard of decision making, and internalize the consciousness for ethical management. The Guidebook covers case studies of ethical disputes with diverse stakeholders including customers, shareholders, employees, and partner companies. The cases, introduced by Areum, the character representing GS E&C's core values, are presented in a way that the employees can easily relate to and thus find better solutions.

### Ethical management vision



### Code of Ethics



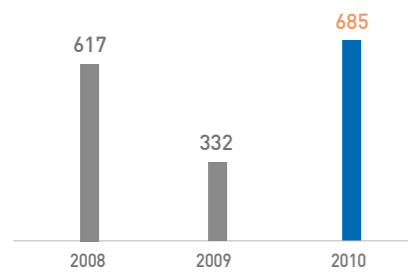
### Ethical Management Guidebook



# ISSUE 08

## Transparent and warm business culture

Numbers of participants who completed ethical management education (off-line) Unit: People



\* Introductory course and job education for new/experienced employees were carried out.

EM education (on-line) in 2010 Unit: People, %

Category	Attended	Completed	Percentage of completion
Outcome	5,226	5,139	98.3

\* Condition for the completion: Test after 100% progress  
 \*\* If on-line education is not accessible due to the problems in Internet connection (overseas), the education may be replaced by watching videos

Composition of the on-line education



Violation of in EM in 2010 Unit: Case

Category	Total number reported	False charge	Fact
No. of cases	16	12	4

Disciplinary actions taken against violation in 2010 Unit: Case, %

Category	Disciplinary dismissal	Suspension	Wage cut	Reprimand	Warning	Total
No. of cases	-	-	4	1	-	5
Ratio	-	-	80	20	-	100

### Ethical management programs

#### 01. Website

As part of the efforts to participate in EM activities with the customers, GS E&C has been operating the EM website introducing EM activities and getting reports of any violations to the Code of Ethics by employees.

#### 02. Education

GS E&C has provided education for all employees on how to implement EM by explaining actual examples and related theories.

#### 03. Ethics pledge

GS E&C has employees take a written oath in which they express their commitment to implement EM and to create ethical corporate culture. In this way, they can voluntarily participate in EM.

#### 04. Campaign

GS E&C has been campaigning not to take or give any gifts to establish the mind of clean corporate culture since 2003, strictly prohibiting employees from taking gifts or money from anyone involved in their job.

#### 05. Report and reward

GS E&C has been implementing a system for employees, business partners, and even the public to earn reward by reporting any corruption such as committing bribery or embezzlement of the corporate funds.

#### 06. Joint liability

GS E&C has been running a joint liability system in which not just the one who violated ethical terms but also his supervisors and related team are assumed joint liabilities by reducing their performance related bonus.

#### 07. Management of partner companies involved in corruption

GS E&C disqualifies business partners when they offer money or equivalent gifts to employees. On the other hand, GS E&C offers favors and awards to them reporting any request of money or gifts by its employees.

#### 08. Prohibiting possession of partner companies' shares

GS E&C prohibits all employees from acquiring any of listed or unlisted shares of business partners.

### Violation of ethical management and disciplinary actions

GS E&C is receiving reports on cases of violation of ethical management through diverse channels including the ethical management website, hotline, e-mail, and mails. The results of investigations are notified to the reporters through hotline or e-mail and the reporters' identification is protected with strict confidentiality. Depending on the seriousness of unethical behaviors, the violators are strictly disciplined in accordance with the company regulation.

Through these internal/external reports and periodic diagnosis, five disciplinary actions were carried out in 2010, a far lower figure than the 25 cases in 2009. GS E&C will continue to carry out activities to eradicate unethical behaviors.

### Social contribution

Based on the belief that it should fulfill its social roles and responsibilities as a corporate citizen, GS E&C realize common values through the expansion of social investment and participations in public policies.

#### Strategy

Through the social contribution strategy established in 2010, GS E&C selected core social contribution programs with strategic implications, such as constructing study rooms in houses of children in low income class and installing safe playgrounds at welfare facilities, while improving operational system to increase employees' participation to make social contribution programs more practical.

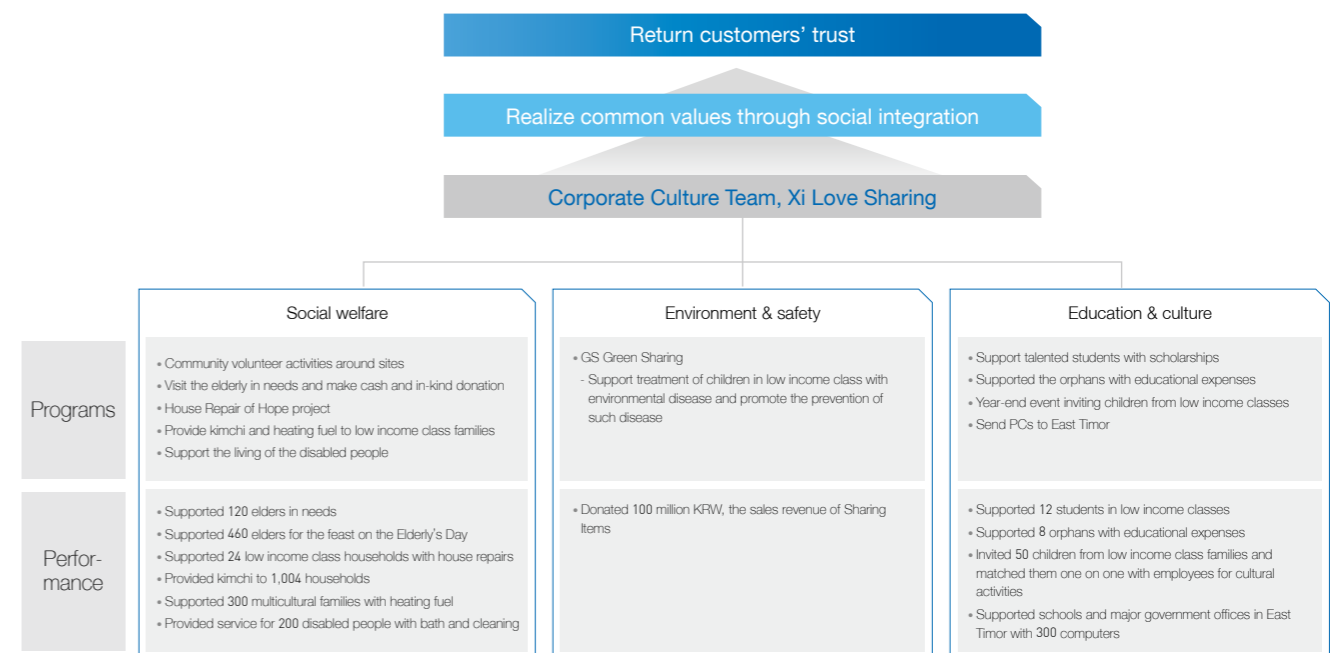
GS E&C plans to carry out social contribution programs in three core areas of social welfare, environment & safety, and education & culture in partnership with NGOs and NPOs.

#### Organization

Since establishing the Xi Love Sharing (a group of volunteers) in February 2006, GS E&C has been carrying out approximately 400 cases of volunteer activities per year, executed by 120 sub-groups in the head office and construction sites.

In 2010, GS E&C set up an organization dedicated to social contribution under the Corporate Culture Team, established related strategies, and developed core programs in order to reinforce the expertise in social contribution programs and actively pursue corporate social responsibilities.

#### Social contribution strategy



### Grand Prize at the 2010 Forbes Social Contribution Award

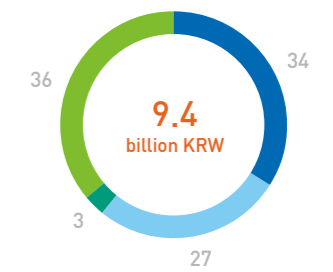


In 2010, GS E&C received the Grand Prize at the 1st Forbes Social Contribution Award, jointly established by Forbes Korea and the Chamber of Commerce of Korea.

### Social contribution expense

Unit: %

- Gallery events/operation
- Sports grants
- Volunteer activities
- Donations





# ISSUE 08

## Clean and warm business culture

### Social contribution programs

GS E&C has been carrying out a variety of social contribution programs in the areas of social welfare, environment & safety, and education & culture. In 2010, a total of 1,457 employees participated in the programs for a total of 6,135 hours.



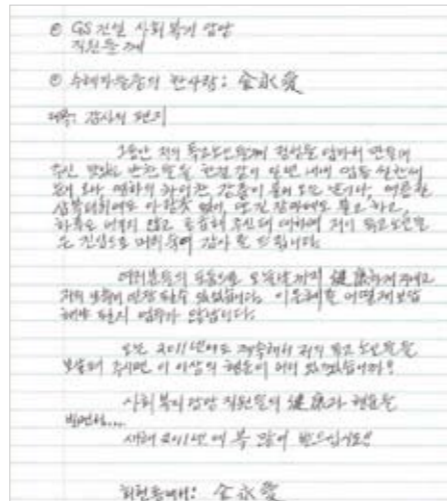
#### Experiential learning of sites for children

This program takes children on a field study of construction site and provide them opportunities to gain understanding of regional economic activities.



#### House Repair of Hope project

This program incorporates GS E&C's construction technology into social contribution; the employees provide house repair services for those in need.



#### Food delivery to the elderly in needs

Since the introduction of this program in 2006, GS E&C is supporting the food deliveries to the elderly on every Wednesdays.



#### Making kimchi

GS E&C's employees make kimchi firsthand and deliver it to those in need, including the elderly in needs, child headed families, and the disabled people.



#### Xi Design Fiesta

This annual event, held since 2007, aims to encourage design activities of students in construction and design-related universities and graduate schools.



#### Caring for the elderly in needs

GS E&C's employees visit the houses of elders living alone to take care of them. This program has been established in partnership with Jung-gu District Office.



#### Annual event for children of low income class

This program was founded in 2008 jointly with Namchon Foundation. Children of low income class families are invited and spend fun time with GS E&C employees.

# ISSUE 09

## Safe and vibrant workplace

### Safety management

#### Safety & health management system

GS E&C ensures that safety & health management activities are improved through P-D-C-A cycle. We establish action plans (Plan), execute & operate the plans (Do), monitor & take corrective actions (Check), and review & provide feedback on the results (Action).

As a result of these company-wide efforts to enhance the level of safety & health, GS E&C acquired safety & health management certifications KOSHA18001 and OHSAS18001 in 2005 and 2009, respectively.

#### Strategy

Under the cardinal rules, "observance of the basics and principles of safety management," GS E&C will continue to concentrate on advanced safety management and site-oriented safety management to ultimately achieve "zero serious accident."

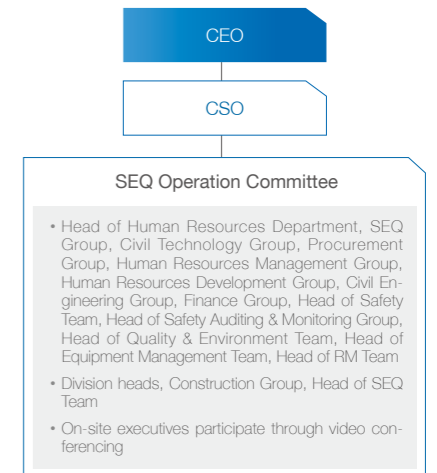
#### Organization

GS E&C is operating the SEQ (safety, environment, and quality) Operation Committee in order to raise safety-related consciousness and enhance safety management activities. The SEQ Operation Committee operates at a company-wide scale, headed by the Chief Safety Officer (hereinafter CSO) and attended by the heads of all business divisions. The Committee shares the company's major safety issues and report the results of discussion to the Management Committee to prepare response measures.

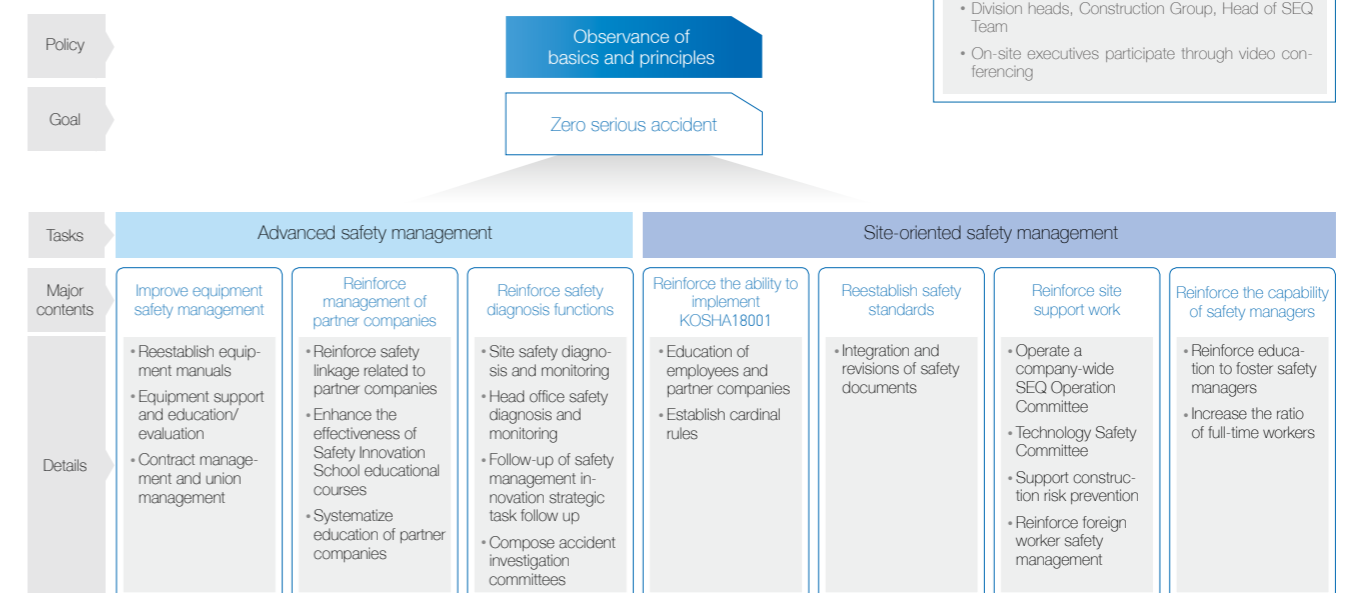
In addition, GS E&C encourages the expansion of accident prevention activities, raises awareness between company-wide safety organizations through Technology Safety Committee, and continuously prepares and manages mitigation measures on potential risks factors at construction sites.



#### Organizational structure of the SEQ Operation Committee



#### Safety management strategy system



# ISSUE 09

## Safe and vibrant workplace

### Safety management activities

#### Safety management guidelines

Construction work involves transporting and loading heavy materials, operating large construction equipments, and driving vehicles. GS E&C has established explicit safety management guidelines and is applying them to actual construction sites, in order to be aware of potential safety issues in advance to prevent accidents from occurring.

#### Accident prevention activities

##### Pre-construction meeting (PCM)

GS E&C is identifying risk factors in advance to prevent accidents through pre-construction meetings between construction site staffs, the head office, and technology experts before commencing construction work.

##### Near miss discovery

In order to raise safety consciousness and create work environment in which the workers look out for each other, GS E&C is operating a near miss discovery system. Through near miss discovery activities such as new worker management, designation of "safe area" that individuals take charge of, examination of alcohol level, and the use of automatic safety belts, GS E&C is preventing potential risk factors such as unsafe behaviors and conditions from developing into serious accidents.

##### Happy 365 campaign

GS E&C is carrying out the Happy 365 campaign, which promotes that "safety and zero disaster will make you, your family, and the company happy throughout 365 days of the year."

Hearty Safety Management	"Emotional safety management" based on family love
Autonomic Safety Management	"Autonomic safety management" participated by site staffs and partner companies
Planned Safety Management	"Planned safety management" to manage risks in advance
Professional Safety Management	"Professional safety management" to carryout risk-free works
Yes 365 Safety Management	365 days "happy safety management" through positive thinking

#### Accident prevention case

At around 2:00 p.m. on October 29, 2010, an excessive displacement occurred during steel support material installing work at the zone 917 of the 2nd stage of Seoul Subway line 9. Emergency recovery was taken and measures were established through close cooperation between the head office and the operation to completely recover the site. Potential accident was prevented through continuous management and cooperation. If a large collapse occurred in the tunnel, the surface of the entrance road of Jamsil Baseball Stadium, which was a major facility during the G20 (November 11<sup>th</sup> and 12<sup>th</sup>, 2010), might have sunken and buried.



Near miss discovery



Checking the gondola for installing outside structure

#### Female safety patrol staff



There is a female safety patrol staff at GS E&C's Gwonseon the 1<sup>st</sup> and 3<sup>rd</sup> reconstruction sites in Suwon. The female safety patrol staff provides strict site safety management with their unique delicacy and meticulousness. As such, GS E&C is providing equal work opportunities while enhancing safety management at the same time.

#### Overseas site safety management



GS E&C's safety management is also applied to overseas sites. For instance, at the LNG plant site in Thailand, safety consciousness is shared through measures such as work permission system, work safety analysis, Cold Eye Review, and a safety resolution bulletin board and all safety education materials are distributed in English. In particular, GS E&C held the Safety Prayer Ceremony, accommodating the local culture of Thailand, where Buddhism is a national religion, to draw active participations and attention of workers.

### Safety education

By nature of the industry, most construction site workers frequently and irregularly move to different work sites and thus have relatively insufficient awareness of safety. In order to fundamentally prevent accidents that may occur at construction sites, GS E&C is implementing site safety education on all workers and staffs in construction sites. In addition, GS E&C is providing diverse methods of education such as experiential learning of accident cases, practice training by work type, and audiovisual materials.

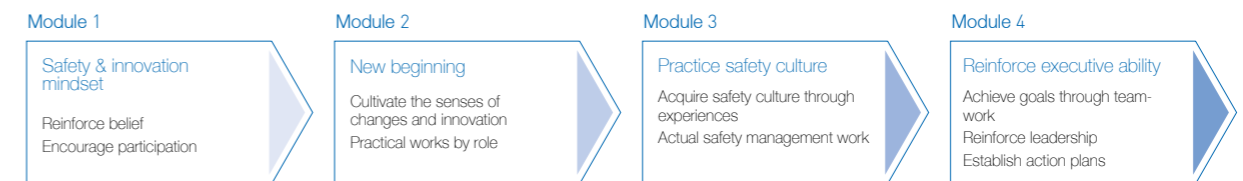


Drop experience

#### Safety Innovation School

In March 2006, GS E&C opened the Safety Innovation School for the first time among Korean construction companies. The Safety Innovation School consists of one residence, two lecture halls, and six training facilities and provides courses to not only GS E&C employees but also partner companies, domestic/foreign clients, and university students. Through the Safety Innovation School, GS E&C is operating programs such as construction safety practice & experience, construction safety accident experience, virtual safety experience, emergency action training, and night teamwork-reinforcing training. A total of 5,367 employees and partner companies' workers have completed these courses. The survey on the level of satisfaction with the education resulted in 4.6 points on a 5.0-point scale, demonstrating the quality of the courses.

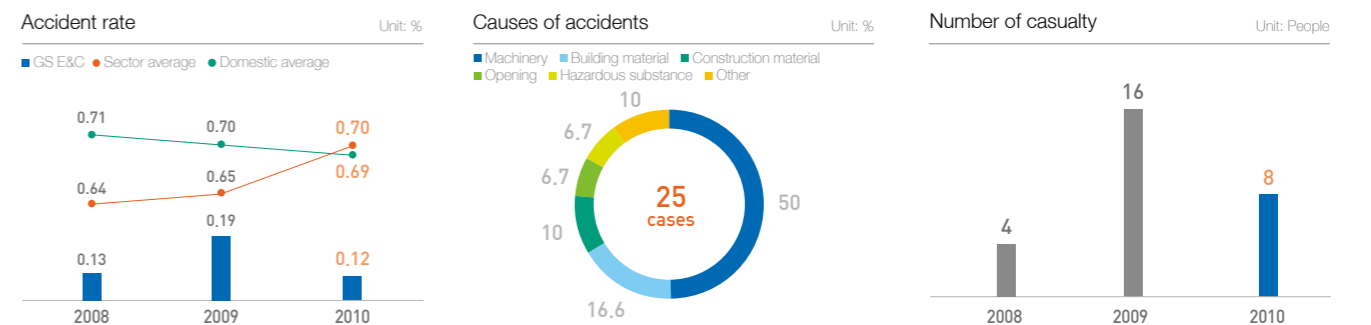
##### Curriculum



Courses by position	Period	Course description
Executive safety innovation	1 night 2 days	Instill the executives to re-examine their role of leading the company-wide safety management practices
Leader safety innovation	2 nights 3 days	Enhance on-site managers' leadership capability to settle safety culture
Construction worker safety innovation	3 nights 4 days	Establish safety management R&R and reinforce the ability to identify safety risks
Management staff safety innovation	2 nights 3 days	Enhance practical work capability for safety management as manager
Partner company safety innovation	1 night 2 days	Enhance practical work capability for safety management as partner company worker
Equipment operator safety innovation	1 day	Enhance practical work capability for safety management as equipment operator
New/experienced employee safety innovation	2 nights 3 days	Enhance practical work capability for safety management as GS E&C employee

### Industrial accident

From 2008 to 2010, there were 25 cases of serious accidents and 28 workers died due to those accidents. As for the cause of accidents, machinery showed the highest frequency at 15 casualties, followed by building materials, construction materials, opening, and hazardous substance. Due to these accidents, there were two cases of violation of the Industrial Safety & Health Act in 2010. GS E&C recognized the seriousness of accidents due to machinery and thus established the Equipment Management Team. GS E&C will put utmost efforts to reduce the occurrence of disasters through intensive management.

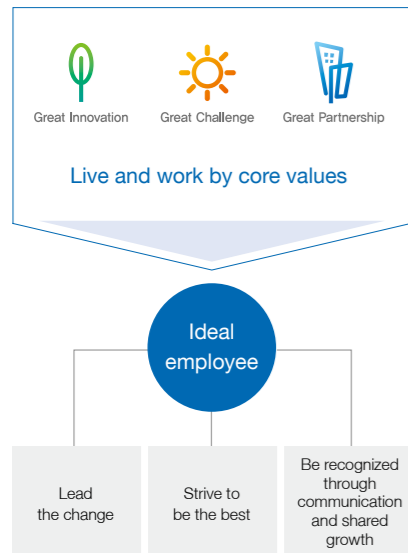


\*Data source of construction industry and domestic average: <http://www.kosha.or.kr/board>  
 #GS E&C's data is converted accident rate  
 #2010 data of GS E&C accident rate is an estimate (official data to be released in June 2011)

# ISSUE 09

## Safe and vibrant workplace

### GS E&C's ideal employee

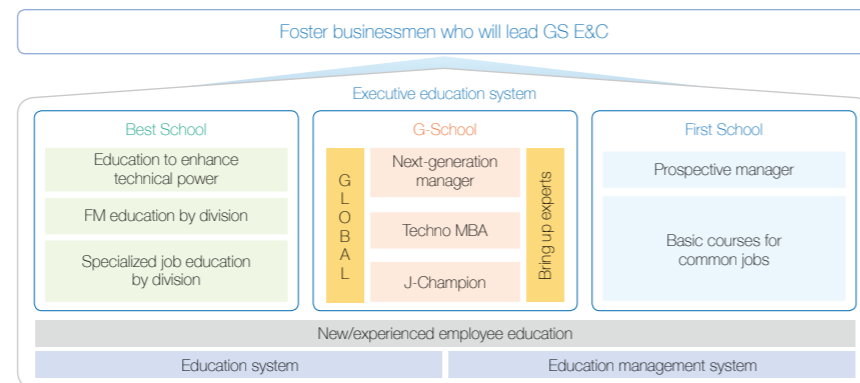


### Employee satisfaction

GS E&C is making efforts to create a great workplace based on a human resources development system and a fair performance evaluation system. Furthermore, GS E&C is enhancing employees' satisfaction based on internal guidelines on protection of human rights and equal opportunities.

### Human resources (HR) development

GS E&C's ideal employee "leads the change, pursues the best, and is recognized through communication and shared growth." GS E&C has established a human resources development system and is fostering employees who could lead GS E&C with creative entrepreneurship.



### Protection of human rights

GS E&C supports the Labor Standard Act, the International Labor Organization (ILO) standards, and the United Nations Global Compact (UNGC) principles. We strictly prohibit forced & compulsory labor and child labor. We respect individuals' personality, prohibit discrimination in education opportunity, placement, and dismissal, and provide equal opportunities based on individuals' abilities.

To prevent discrimination and human rights violations, GS E&C is providing 1-hour sexual harassment prevention session once a year and the 20-hour cross-cultural management course.

### Composition of employees (as of December 2010)

#### Employee composition

Unit: People

■ Full-time ■ Part-time ■ Male ■ Female

※ Part-time employees: Temporary site workers, PJT, part-time employees  
※ Only full-time employees are categorized by gender

#### Employees with disability

Unit: %

Category	2008	2009	2010
Ratio of employees with disability	0.52	0.62	0.69

#### Female managers

Unit: %

Category	2008	2009	2010
Ratio of female managers	1.12	1.26	1.90

※ Female manager: Class 2 manager or higher

#### Voluntary retirement

Unit: People, %

Category	2008	2009	2010	
Number of retirees	Full-time workers	146	91	132
	Part-time workers	99	110	69
	Total	245	201	201
Voluntary retirement rate	4.63	4.06	3.60	

※ The present state of retirement refers to natural retirements and reasons for retirements include job transfer and personal reasons and thus the retirement rate includes the turnover rate

### HR development programs

Under the belief that individuals' growth directly leads to the company's growth, GS E&C is providing a diverse range of education programs consisting of management, practical work, global, IT, and others so that all employees can grow to become global talents.

In 2010, we spent a total of 5.3 billion KRW to support employee education and education hours per person was 124 hours, an increase of 16 hours compared to the previous year.

### Repository of global talent development – Namchon Leadership Center

Namchon Leadership Center was founded under the will of the late Joon-Koo Huh, the Honorary Chairman, to return business profits to society by investing 50 billion KRW for contribution to the community and fostering of GS E&C's global talents.

GS E&C's is utilizing Namchon Leadership Center in a number of ways, one of which is to provide intensive foreign language training for 10 weeks to employees. During this period, employees can concentrate on foreign language education only.

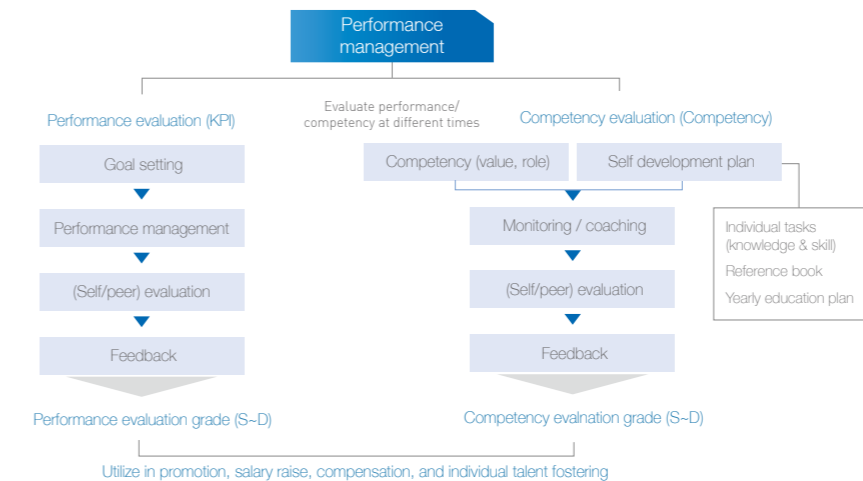


### Evaluation and compensation

To provide fair compensation for individuals' capabilities and performance, GS E&C is implementing a multi-dimensional evaluation process following three basic directions: performance-oriented evaluation, reinforcement of employee communication, and devising measures to foster talents.

Employees are compensated based on the performance evaluation and the executives receive comprehensive compensations combining basic annual salaries and bonuses linked with management performance. The level of salary for new employees (fresh out of university) is around 370% of legal minimum wage and there is no discrimination by gender.

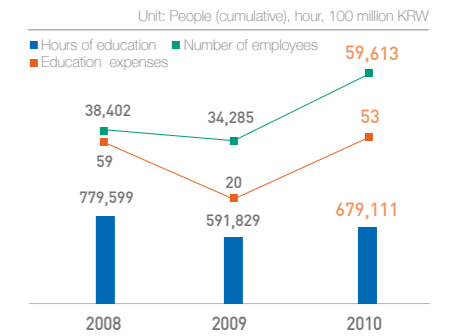
### Performance management system



### Employee benefits

GS E&C operates diverse welfare programs to support employees' health, leisure life, and events for congratulations or condolences to form a vibrant workplace where employees can pursue balance between work and life.

### Employee education performance



### Education programs

Category	Content
G-School	<ul style="list-style-type: none"> <li>Executive education (top manager course, etc.)</li> <li>Core talent course (preliminary/next generation manager courses, etc.)</li> <li>Various foreign language education</li> </ul>
Best School	<ul style="list-style-type: none"> <li>PM/CM fostering course</li> <li>FM courses by division</li> <li>Construction work capability enhancing course</li> <li>Specialized job education by division</li> </ul>
First School	<ul style="list-style-type: none"> <li>Basic course for construction sales</li> <li>Work management education</li> <li>Basic course for accounting and tax</li> <li>Job decision making education</li> <li>Negotiation skill education</li> <li>Business presentation, writing, strategy &amp; planning courses, etc.</li> </ul>
General	<ul style="list-style-type: none"> <li>Management policy practice course</li> <li>Sexual harassment prevention session</li> <li>Ethical management, etc.</li> </ul>
Other	<ul style="list-style-type: none"> <li>LEED AP acquisition support education</li> <li>Safety innovation course, etc.</li> </ul>

### Employee benefits

Category	Content
Health examination	All employees take general health examinations once a year; 40-year-old or older employees and their spouses take comprehensive health examinations once a year; 35-year-old or older employees and their spouses take comprehensive health examinations once every two years
Medical expense support	Support medical expenses for treatment
Mortgage fund	Financial support for employees to buy or lease a house
Selective welfare	Support cultural activities, personal development, and hobbies
School expenses	Support with registration fees and tuition fees of employees' children
Club activity	Support in-house club activities
Recreational facilities	Provide membership discounts at Harihwa, Daemyeong, Keumho, and Elysian Condo (resorts)
Congratulations & condolences	When events for congratulations or condolences occur, provide monetary support, wreaths, condolence flowers, lead cars, and condolence articles

# ISSUE 09

## Safe and vibrant workplace

### Internal communication channels

VOE bulletin board	Make suggestions
Online community	Share employees' news
CEO Daily	Site management and external activities New Year's address/ morning assembly address Press release, etc.
GS E&C Webzine	Share news on GS E&C and employees

### Employee communication

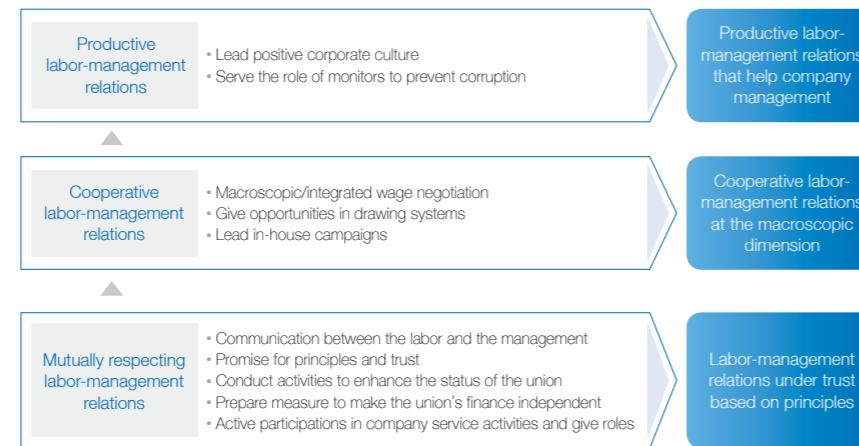
GS E&C is creating communal labor-management relations that contributes to the society's overall development, based on the expansion of communication channels and mutual trust.

### Internal communication channels

GS E&C operates diverse in-house communication channels and is expanding real-time dialogue between employees using Intranet.

### Labor-management relations

GS E&C recognizes that the relationship between the company and the employees must be based on mutual respect at equal standpoints. GS E&C is making cooperative and productive labor-management relations keeping with the principle.



### Union membership Unit: People, %

Position	Manager	Assistant manager	Staff
Members	360	204	307
Rate based on the subjects of joining	33	30	52

\* As of December 2010

### Labor union

GS E&C's labor union comprises of 871 full-time workers (36.9% of the subjects of joining) and excludes management positions. GS E&C has made a collective agreement with the union to respect employees' right of collective bargaining and notifies important changes in business immediately. At GS E&C, the two groups participates in joint programs such as blood donation, volunteer activities, education programs, and site visiting meetings and frequently communicate with each other.

### Labor-management Council

Based on mutual respect, faith, and sincerity, the Labor-management Council discusses issues of common interest such as labor conditions, wage agreements, and healthy and safe of workplace and comes up with resolutions for employees' predicament. By hearing difficulties felt by employees such as employment security, wages, education, positioning, retirement & dismissal, and maternity leaves, the Council is creating a work environment that allows employees to concentrate on their job, thereby increasing employees' satisfaction.

### Employee satisfaction

GS E&C surveys employee satisfaction every year, the questionnaire of which consists of 9 categories including work process, compensation & recognition, and values & culture. The positive response rate was 60% in 2010, which was the same as that of the previous year. GS E&C will keep making efforts to enhance employee satisfaction by sharing core values, improving organizational structure, and expanding communication.

### Employee satisfaction level Unit: %

Category	2008	2009	2010
Positive response	61	61	60

# APPENDIX

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## GS E&C's sustainability performance

### Economic performance

Indicator	Unit	2008	2009	2010
Sales	Billion KRW	6,866	7,377	7,893
Plant	Billion KRW	652	833	1,074
Housing	Billion KRW	2,082	2,341	2,567
Civil Engineering	Billion KRW	391	495	546
Architecture	Billion KRW	1,265	1,180	1,438
Power & Environment	Billion KRW	2,423	2,528	2,268
Order backlogs	Billion KRW	12,231	12,862	14,105
Plant	Billion KRW	1,130	2,547	1,107
Housing	Billion KRW	5,330	6,087	5,789
Civil Engineering	Billion KRW	403	531	2,008
Architecture	Billion KRW	1,071	1,284	2,198
Power & Environment	Billion KRW	4,297	2,413	3,003
Net income	Billion KRW	382	383	407
Total assets	Billion KRW	8,182	8,946	9,338
Dividends	Billion KRW	24.74	49.48	49.48
Corporate tax	Billion KRW	167	125	118

### Social performance

Indicator	Unit	2008	2009	2010
Number of employees	Number of people	6,435	5,803	5,483
Full-time	Number of people	4,351	4,248	4,549
Part-time	Number of people	2,084	1,555	934
Voluntary retirement rate	%	4.63	4.06	3.60
Employment rate of people with disability	%	0.52	0.62	0.69
Percentage of female managers	%	1.12	1.26	1.90
Accident rate	%	0.13	0.19	0.12
Time spent on education and training for employees	Hours	779,599	591,829	679,111
Amount of education and training expense	0.1 billion KRW	59	20	53
Employee benefits	0.1 billion KRW	395.09	437.74	449.61
Members of labor union	Number of people	750	762	871
Employee satisfaction level	Points (out of 100)	61	61	60
Customer satisfaction level	Points (out of 100)	70.41	71.68	71.41
Disciplinary actions against violation of business ethics	Number of cases	10	25	5
Social contribution expense	0.1 billion KRW	-	75.61	94.03
R&D investment	0.1 billion KRW	660.6	734.2	690.9
Number of valid patents	-	101	124	146
Number of researches carried out	-	51	66	78
Number of new technologies	-	6	9	8

### Environmental performance

Indicator	Unit	2008	2009	2010
Resource consumption	-	-	-	-
Ready-mixed concrete	m <sup>3</sup>	3,603,743	3,248,417	2,236,448
Cement	ton	338,087	327,029	183,778
Aggregate	m <sup>3</sup>	848,619	814,948	1,012,474
Asphalt concrete	ton	761,717	4,156,482	1,959,813
Sand	m <sup>3</sup>	554,916	236,859	1,517,745
Reinforcing bar	ton	546,923	460,914	395,044
Gypsum board	m <sup>2</sup>	5,425,316	6,591,191	3,324,068
Recycled aggregate consumption	m <sup>3</sup>	27,834	23,388	60,371
Water use	m <sup>3</sup>	1,528,634	1,387,087	1,023,569
Water supply (piped)	m <sup>3</sup>	663,030	545,764	590,157
Groundwater	m <sup>3</sup>	425,404	384,744	293,073
River water	m <sup>3</sup>	440,200	456,579	140,339
Energy use	TJ	2,253.70	2,663.14	2,684.27
LNG	TJ	23.26	21.24	25.49
Propane	TJ	47.95	75.64	21.78
Kerosene	TJ	65.53	65.50	58.61
Diesel	TJ	1,479.43	1,766.14	1,977.27
Gasoline	TJ	35.21	37.64	39.39
Electricity	TJ	602.32	696.98	561.21
Other	TJ	-	-	0.52
Waste generated	ton	617,371	496,758	163,610
Waste concrete	ton	332,440	256,560	89,825
Waste asphalt concrete	ton	62,211	34,203	13,742
Construction waste soil and stones	ton	112,465	84,796	4,900
Mixed construction waste	ton	79,781	107,847	46,554
Waste synthetic resin	ton	10,709	4,854	3,959
Waste wood	ton	19,353	7,341	4,400
Construction sludge	ton	411	1,157	230
Asbestos emission	ton	-	-	200.8
Wastewater discharged	m <sup>3</sup>	-	-	753,380
Greenhouse gas emission	tCO <sub>2</sub> -e	201,633.81	237,290.60	237,534.96
Scope 1	tCO <sub>2</sub> -e	19,756.97	20,863.72	18,496.09
Scope 2	tCO <sub>2</sub> -e	78,473.12	90,804.23	73,093.63
Scope 3	tCO <sub>2</sub> -e	103,403.72	125,622.65	145,945.24
Environmental control cost	Million KRW	8,400	4,556	4,865
Green procurement cost	0.1 billion KRW	735.57	881.05	567.97
Environmental dispute	Number of cases	11	10	7
Environmental accident	Number of cases	12	24	10
Grievance mediation cost	0.1 billion KRW	21	11.3	15
Environmental education completed	Number of people	-	-	5,785

## Third party assurance statement on the sustainability report

**Introduction** Det Norske Veritas Certification Ltd. (hereinafter referred to as "DNV") has been commissioned by the management of GS Engineering and Construction Co., Ltd. (hereinafter referred to as "GS E&C") to carry out an assurance engagement on GS E&C's Sustainability Report 2010 (hereinafter referred to as 'the Report') and its contents against the Global Reporting Initiative (GRI) 2006 Sustainability Reporting Guidelines (G3). GS E&C is responsible for the collection, analysis, aggregation and presentation of information within the Report. Our responsibility in performing this work is in accordance with terms of reference agreed. The assurance engagement is based on the assumption that the data and information provided to us is complete and true.

**Scope of Assurance** The scope of work agreed upon includes the following:

- Report coverage Social, environmental and economic indicators for Year 2010 as included in the printed Report. Verification of baseline data was not included in the scope.
- Report period January to December 2010.
- Reporting boundaries include the head-office in Seoul, Korea and project sites in Korea operated by 5 business divisions\* in 2010.
- Confirmation of adherence to the requirements for GRI Application Level "A";
- The verification was conducted by DNV during January - March 2011.

**Verification Methodology** Our verification approach and performance follows the DNV Protocol for Verification of Sustainability Reporting. ([http://www.dnv.com/services/assessment/corporate\\_responsibility/services\\_solutions/sustainabilityreporting/order/](http://www.dnv.com/services/assessment/corporate_responsibility/services_solutions/sustainabilityreporting/order/))

In that respect, the Report has been evaluated against the following criteria:

- Adherence to the principles of Materiality, Completeness, Neutrality, Reliability, Responsiveness and Stakeholder Inclusiveness as set out in the DNV Protocol and
- GRI G3 indicators and Application Levels.

As part of the verification DNV has challenged that sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls. For example, we have:

- Examined and reviewed documents, data and other information made available to DNV by GS E&C;
- Visited the head-office and 6 project sites located in Korea;
- Conducted interviews with representatives (including data owners and decision-makers from different divisions and functions) of GS E&C;
- Performed sample-based audits of the processes and mechanisms for implementing GS E&C's own sustainability-related policies, as described in the Report, and for determining material issues to be included in the Report;
- Performed sample-based checks of the processes for generating, gathering and managing the quantitative data and qualitative information included in the Report;
- Reviewed the process of acquiring information and economic data from the 2010 certified financial statements.

**Conclusions** Based on the assurance engagement performed, we believe that the Sustainability Report 2010 is a fair representation of GS E&C's sustainability strategy, management systems and performance in 2010.

We have evaluated the Report's adherence to the following principles on a scale of 'Good', 'Acceptable' and 'Needs'.

**Materiality** Acceptable. The Report presents fairly the activities and performances with regard to material issues derived from stakeholder engagement. However, it is recommended that a formalised process for determining material issues with a wide range of internal and external inputs should be established and used to decide on reporting topics and their relative priority.

**Conclusions**

**Completeness** Good. The reporting scope and boundary defined by GS E&C generally covers the relevant issues including material information that would influence stakeholders' decisions.

**Neutrality** Good. We consider the Report to be generally neutral and balanced.

**Reliability** Acceptable. We conclude that the data and information presented in the report are generally reliable. Data control processes have been adequately demonstrated to DNV. Internal regular evaluation should be improved to ensure improved reliability.

**Responsiveness** Acceptable. GS E&C responds to stakeholders' expectations on managing sustainability risks through implementing certified management systems in support of the core business strategy.

**Stakeholder Inclusiveness** Acceptable. GS E&C engages with major stakeholders to identify their expectations. However, more systematic approaches should be taken to select stakeholders and to document and manage the concerns they raise in an effective way.

We also confirm that the Report meets the content requirements of the GRI Application Level "A".

**Opportunities for Improvement** The following is an excerpt from the observations and opportunities reported back to GS E&C's management. However, these do not affect our conclusions on the Report, and they are indeed generally consistent with the management objectives already in place.

- To manage systematically key process for producing the sustainability Report, from data gathering, analysis and reporting (for example documented procedures).
- To establish a formal mechanism for evaluating issues to ensure that the sustainability report addresses those identified as material and specify related targets.
- To conduct, in line with existing management systems, internal audit on all data and information to be disclosed to ensure its accuracy and reliability.
- To establish a formal process to integrate the deployment of responses to stakeholders' concerns with corporate strategy and objectives.
- To expand the sustainability strategy to overseas operation.
- To report sustainability performance of the whole sites including overseas project site.
- To engage the international stakeholders as the overseas business groups.

**DNV's Independence** DNV did not provide any services to GS E&C during 2010~2011 that conflict with the independence of our work. DNV was not involved in the preparation of any information in the Report. DNV expressly disclaim any liability or co-responsibility for any decision a person or entity may make based on this Assurance Statement.



Seoul, Korea  
March 2011

Antonio Astone  
Global Service Responsible,  
CR Report Verification  
DNV Business Assurance AS

Seung Hyun Kwak  
CR Lead Verifier  
DNV Certification Ltd.

In Kyoon Ahn  
Country Manager  
DNV Certification Ltd.

## Third party assurance statement on the GHG emissions

**Introduction** DNV Certification Ltd. (hereinafter referred to as "DNV") was commissioned by GS E&C Corporation (hereinafter referred to as "GS E&C") to verify GS E&C's greenhouse gas emissions during 2007~2010, based on a limited level of assurance. GS E&C is responsible for the preparation of the GHG inventory report (hereinafter referred to as "the Report") in accordance with the principles set out in ISO14064-1: 2006 and the WRI/WBCSD GHG Protocol: 2004. Our responsibility in conducting the work is to the management of GS E&C only. DNV expressly disclaims any liability or responsibility for any decisions taken by other parties on the basis of this assurance statement.

**Scope of Assurance** The emissions data covered by our examination are calculated with the activity data gathered on 'Green Information Management System'<sup>1</sup> of GS E&C. GHG emissions comprise direct emissions (scope 1 emissions), energy indirect emissions (scope 2) and other indirect emissions<sup>2</sup> (scope 3) at the following scope as provided in the Report:

- Reporting period: Calendar year 2007, 2008, 2009 and 2010
- Reporting scope:
  - Emissions from GS E&C head office building and 9 buildings owned or leased
  - Emissions from project activities in Korea during 2007~2010. (As for joint venture, the projects led by GS E&C were only considered.)

**Verification Methodology** The verification carried out by DNV from January through March 2011 and conducted in accordance with the verification principles and tasks outlined in ISO14064-3: 2006. DNV planned and performed the verification work to obtain all the information deemed necessary to provide us with sufficient evidence so that verification opinion can be concluded regarding the completeness of the GHG inventory and the reported emission figures in ton CO<sub>2</sub> equivalent. The followings were reviewed as part of the verification;

- GS E&C's 'Green Information System'
- GHG Inventory Report dated on 10<sup>th</sup> March 2011
- Process to generate, aggregate and report the emissions data

The verification team carried out the desk review on the report as well as the relevant evidences and conducted the site visits on 3 buildings<sup>3</sup> including head office and 6 project sites<sup>4</sup> which were randomly sampled as part of the verification activities.

**Conclusions** Based on the works described above, nothing has come to our attention that would cause us to believe that the GHG emissions asserted by GS E&C as below are not fairly stated.

Unit: tCO<sub>2</sub>e

Operational boundary	Yr. 2007	Yr. 2008	Yr. 2009	Yr. 2010
Direct emission (scope 1)	19,660	19,757	20,864	18,496
Energy indirect emission (scope 2)	61,051	78,473	90,804	73,094
Other indirect emission (scope 3)	222,734	103,404	125,623	145,945
Emissions total	303,445	201,634	237,291	237,535



Seoul, Korea  
March 2011

Seung Hyun Kwak  
CR Lead Verifier  
DNV Certification Ltd.

In Kyoon Ahn  
Country Manager  
DNV Certification Ltd.

1. IT system developed by GS E&C  
2. The quantification methodology for emissions from construction equipments operated by subcontractors is developed by GS E&C, based on '2010 Standard estimation of manpower and material for unit construction work'  
3. Buildings visited: GS Yeokjeon Tower, Namchon Leadership Center, Eysian Gangchon Resort  
4. Project sites visited: Seoul District Family Court Building project, Songdo Municipal Wastewater Treatment Facility Expansion project, Yeongjong Haneul City #3 project, Daesan LPG Terminal project, Seogyo Xi project, Taebaek line Jecheon-Ssangyong #1 Railway project

# Indices

## GRI Index

● - fully reported, ◐ - partially reported, ○ - not reported

GRI indicator	Description	Level of disclosure	Page
<b>Strategy and Analysis</b>			
1.1	Statement from the most senior decision-maker of the organization	●	4-5
1.2	Description of key impacts, risks, and opportunities	◐	4-5, 12
<b>Organizational Profile</b>			
2.1	Name of the organization	●	8
2.2	Primary brands, products, and/or services	●	9
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	●	8
2.4	Location of organization's headquarters	●	8
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	●	9
2.6	Nature of ownership and legal form	●	8, 43
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries)	◐	9
2.8	Scale of the reporting organization	◐	8, 47, 70
2.9	Significant changes during the reporting period regarding size, structure, or ownership	●	–
2.10	Awards received in the reporting period	●	Back cover
<b>Report Parameters</b>			
3.1	Reporting period (e.g., fiscal/calendar year) for information provided	●	2
3.2	Date of most recent previous report (if any)	●	–
3.3	Reporting cycle (annual, biennial, etc.)	●	2
3.4	Contact point for questions	●	Back cover
3.5	Process for defining report content	●	16-17
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance	●	2
3.7	State any specific limitations on the scope or boundary of the report (see Completeness Principle for explanation of scope)	◐	2
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	●	2
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the indicators and other information in the report	◐	2
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods)	●	–
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	●	–
3.12	Table identifying the location of the Standard Disclosures in the report	●	76-78
3.13	Policy and current practice with regard to seeking external assurance for the report	◐	72-75
<b>Governance, Commitments, and Engagement</b>			
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight	●	42-43
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	●	42
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members	●	42
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	◐	43
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives	●	67
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	●	42
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	●	42
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation	◐	12, 22, 56, 59, 61
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	◐	48
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance	●	43
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	●	48-49
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	◐	24, 30, 66, 84
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations	●	Back cover
4.14	List of stakeholder groups engaged by the organization	●	15
4.15	Basis for identification and selection of stakeholders with whom to engage	◐	14
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	◐	15
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, including through its reporting	●	15

GRI indicator	Description	Reference	Level of disclosure	Page
<b>Economic</b>				
<i>Disclosure on Management Approach</i>				
EC1	Direct economic value generated and distributed	Economic value creation (direct and indirect)	●	47
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Climate change risks and opportunities; exact financial implication is not available at the moment	◐	22
EC3	Coverage of the organization's defined benefit plan obligations	Employee benefits package, except for retirement plan	○	67
EC4	Significant financial assistance received from government	Zero	●	–
EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation	370%	●	67
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	Provide higher points to local suppliers	◐	56
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	We commonly hire local workers	◐	–
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	SOC businesses and social contribution activities	◐	20, 35, 37, 61-62
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts	Economic value distribution (direct and indirect)	◐	47
<b>Environmental</b>				
<i>Disclosure on Management Approach</i>				
EN1	Materials used by weight or volume	Resource consumption	●	26
EN2	Percentage of materials used that are recycled input materials	Recycled resource consumption; data not in percentage	○	27, 32
EN3	Direct energy consumption by primary energy source	Direct energy use	●	23, 26
EN4	Indirect energy consumption by primary source	Indirect energy use	●	23, 26
EN5	Energy saved due to conservation and efficiency improvements	Process innovation, energy savings campaign, etc.	○	23, 25, 32
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	Renewable energy projects such as wind, solar, etc.	◐	20-21, 36-37
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	Fuel savings from transitioning to video conferencing system	◐	28
EN8	Total water withdrawal by source	Water use; we are enhancing analysis on each source	◐	26, 31
EN9	Water sources significantly affected by withdrawal of water	No significantly affected water source	○	31
EN10	Percentage and total volume of water recycled and reused	Groundwater and rainwater reuse at sites	○	31
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity protection at Geumgang site; we are planning to provide more data (i.e. size, etc.) in the future	◐	33
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	Various environmental impact from construction	●	33
EN13	Habitats protected or restored	Biodiversity protection at Geumgang site	◐	33
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	Provide passages and shelter to the habitat; provide biodiversity education session to employees, etc.	◐	30, 33
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	A number of protected habitats live in the area	●	33
EN16	Total direct and indirect greenhouse gas emissions by weight	Direct and indirect GHG emission	●	25, 27
EN17	Other relevant indirect greenhouse gas emissions by weight	Other relevant GHG emission	●	25, 27
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	Renewable energy projects such as wind, solar, etc.	◐	20-21, 36-37
EN19	Emissions of ozone-depleting substances by weight	Planning to monitor quantitative data in the future	○	–
EN20	NOx, SOx, and other significant air emissions by type and weight	Efforts to reduce fugitive dust	●	31
EN21	Total water discharge by quality and destination	Water quality management; all wastewater is discharged directly to sewage system	◐	27, 31
EN22	Total weight of waste by type and disposal method	Amount of wastewater discharged is being monitored; we are planning to disclose disposal method in the future	◐	27, 32
EN23	Total number and volume of significant spills	No spill occurred	●	27, 32-33
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	No hazardous waste exported; asbestos abatement	●	33
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	No significant affect on water bodies or habitats	○	31, 33
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	3 Zero House, green concrete, etc.	●	34, 36
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	Considered 100% due to the industry characteristics (buildings are "reused" for a long period of time)	●	–
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Efforts to minimize environmental dispute	●	27, 33
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	Efforts to reduce noise and vibration	◐	32
EN30	Total environmental protection expenditures and investments by type	Environmental protection expense, green procurement expense, etc.	●	26-27, 30



GRI Indicator	Description	Reference	Level of disclosure	Page
<b>Social: Labor Practices and Decent Work</b>				
Disclosure on Management Approach				
LA1	Total workforce by employment type, employment contract, and region	Status of employment	●	53
LA2	Total number and rate of employee turnover by age group, gender, and region	Voluntary retirement rate is provided only by the form of contract at the moment	●	66
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	Provide a number of benefits to all full-time employees	●	67
LA4	Percentage of employees covered by collective bargaining agreements	Labor union membership status	●	68
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	Written document states to notify "as soon as possible" but we will disclose the exact period in the future	●	68
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	The matter is discussed through Labor-management Council that represents 100% of the employees	●	68
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	Injury rate in 2010 is estimated to be 0.12%; other data are not calculated at the moment	●	65
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	Provides safety education and training session, medical insurance, etc.	●	33 64-65, 67
LA9	Health and safety topics covered in formal agreements with trade unions	Represented by Labor-management Council	●	68
LA10	Average hours of training per year per employee by employee category	124 hours in 2010	●	67
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	Provide a number of programs (all benefits are for full-time employees only)	●	67
LA12	Percentage of employees receiving regular performance and career development reviews	100% of the employees go through performance evaluation	●	67
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	Status of employment and BoD composition by gender; we will disclose other indicators of diversity in the future	●	42, 66
LA14	Ratio of basic salary of men to women by employee category	Strictly prohibits any form of gender discrimination	●	66
<b>Social: Human Rights</b>				
Disclosure on Management Approach				
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	Planning to implement it in the future	●	-
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	Planning to implement it in the future	●	-
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 (1-2 hours per year) and cross-cultural management session (20 hours per year) for all employees	●	66
HR4	Total number of incidents of discrimination and actions taken	No such incidents occurred	●	66
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	Domestic operations	●	68
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor	No operations identified as having significant risk of child labor	●	66, 84
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	No operations identified as having significant risk of forced or compulsory labor	●	66, 84
HR8	Percentage of security employee trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	Planning to implement it in the future	●	-
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	Zero incidents	●	-
<b>Social: Society</b>				
Disclosure on Management Approach				
SO1	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 and the environmental dispute forecasting program	●	33, 48
SO2	Percentage and total number of business units analyzed for risks related to corruption	100% of units carry out EM programs	●	59-60
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures	Number of employees who completed on-/off-line ethics education sessions	●	60
SO4	Actions taken in response to incidents of corruption	5 cases of actions taken in 2010	●	60
SO5	Public policy positions and participation in public policy development and lobbying	Participate in the development of environmental regulations	●	30
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	Not applicable	●	-
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	No such incidents	●	-
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	2 cases of violation of workplace safety regulations	●	65
<b>Social: Product Responsibility</b>				
Disclosure on Management Approach				
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	Asbestos abatement and 3 Zero House	●	33, 36
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	No such incident	●	-
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	●	37
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 incident	●	-
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	Customer satisfaction programs and survey	●	50-51
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	Code of Conduct states that "We only tell truth to our customers and we keep promises made with them"	●	59
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 incident	●	-
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	No such complaint	●	-
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	No such incident	●	-



## Statement GRI Application Level Check

GRI hereby states that **GS Engineering & Construction** has presented its report "GS E&C Sustainability Report 2010" to GRI's Report Services which have concluded that the report fulfills the requirements of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

29 March 2011, Amsterdam

Nelmara Arbex  
Deputy Chief Executive  
Global Reporting Initiative



The "+" has been added to this Application Level because GS Engineering & Construction has submitted (part of) this report for external assurance. GRI accepts the reporter's own judgment for choosing its assurance Provider and for deciding the scope of the assurance.

*The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. [www.globalreporting.org](http://www.globalreporting.org)*

**Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 18 March 2011. GRI explicitly excludes the statement being applied to any later changes to such material.

# Indices

## ISO26000

As sustainable development arises as a result of industrialization, globalization, and economic development and leading global corporations cause numerous scandals in the early 21st century, the concept of corporate social responsibility became an important factor of corporate valuation and investment decisions. Along with this movement, ISO (International Organization for Standardization) developed ISO26000, a guidance for corporations seeking to implement socially responsible practices.

ISO26000 comprises of 7 core subjects of organizational governance, human rights, labor practices, 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 or regulatory or contractual use; nonetheless, GS E&C seeks to treat it as a guidance for strengthening the company's sustainability management.

Core subject	Issue	Related activities	Page
Organizational governance		Governance structure centered on the Board of Directors; operation of Audit Committee and Outside Director Candidate Recommendation Committee	42
Human rights	Due diligence	Establish human rights due diligence structure through operation of Audit Committee and risk management	42, 48
	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, labor union, and Labor-management Council	68
	Discrimination and vulnerable groups	Provide equal opportunities in compensation, education and training, placement, and layout, regardless of gender and whether he/she has disability	66
	Civil and political rights	Provide great workplace ('using words of respect and consideration' campaign, two-week vacation policy, etc.); freedom to exchange information and ideas through company-wide communication channels such as on-line community	55, 68
	Economic, social and cultural rights	Against reckless extraction of resources (e.g. water); operate of an in-house child care; offer employee training and education programs; hold Xi Gallery culture classes; support company-wide club activities for employees	31, 51, 55, 67
	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	66, 68
Labor practices	Employment and employment relationships	Respect for employees; comply with the ILO	66, 68
	Conditions of work and social protection	Operate a number of employee benefit programs that respect work-life balance as well as an in-house child care	55, 67
	Social dialogue	Continuous dialogue through various employee communication channels, operation of labor union and the Labor-management Council, and joint volunteer activities between labor and the management	68
	Health and safety at work	Pursue a number of safety management activities under the safety management guideline and the goal of "zero serious accidents"	63-65
	Human development and training in the workplace	Operate education and training program fitted with talent development system; provide foreign language courses through Namchon Leadership Center	66-67
Environment	Prevention of pollution	Prevent water pollution by utilizing water quality management guidelines; activities to prevent scattering dust and soil erosion; install air pollution-reduction devices on construction equipments; appropriate treatment of waste by type following waste management guidelines	31-32
	Sustainable resource use	Efficient use of resources and reuse technologies; carry out energy savings campaign; develop and apply building energy management system (BEMS); recycle water resources	23, 31-32, 35

Core subject	Issue	Related activities	Page
Environment	Climate change mitigation and adaptation	Greenhouse gas inventory; carry out greenhouse gas reduction activities; activate video conferencing system; develop energy management system (EnMS); develop smart grid technology; construct renewable energy infrastructure	21-25, 28, 36
	Protection of the environment, biodiversity and restoration of natural habitats	Carry out biodiversity protection activities around construction sites	33
Fair operating practices	Anti-corruption	Establish ethics management system; implement a number of anti-corruption activities such as taking joint liability for unethical behavior	59-60
	Responsible political involvement	Participate in development of public environmental policies; support a number of industry-based initiatives	30
	Fair competition	Take an oath to engage in fair competition (as part of Code of Ethics); comply with the Monopoly Regulation and Fair Trade Act	56, 59
	Promoting social responsibility in the value chain	Comply with Agreement for Win-win Cooperation between Large Corporations and SMEs and Fair Trade and implement shared growth activities in 4 areas of financial support, education & training and enhanced communication, technological support, and management support	56-58
	Respect for property rights	Not applicable	-
Consumer issues	Fair marketing, factual and unbiased information and fair contractual practices	Not applicable	-
	Protecting consumers' health and safety	Develop an indoor air quality sensor that detects chemical pollutants harmful to human body; provide cleaning service to housing customers	36, 51
	Sustainable consumption	Develop a number of Green Smart technologies that saves consumers' energy and water use	21
	Consumer service, support, and complaint and dispute resolution	Make customer complaint-receiving channels simple and efficient; implement customer-oriented complaint handling policies; operate CRM Committee	50-51
	Consumer data protection and privacy	Comply with laws and regulations related to consumer protection	-
	Access to essential services	Not applicable	-
	Education and awareness	Active exchange of information through Gaga Xi, Xi Gallery, etc.	51
	Community involvement	Carry out a number of social contribution activities to realize joint value as a corporate citizen	61-62
Community involvement and development	Education and culture	Support the talented with scholarship; support orphans with educational expenses; hold year-end event that invite children from low-income class; send PCs to East Timor; operate Xi Gallery culture classes	51, 61-62
	Employment creation and skills development	Provide indirect job opportunities in the local community by giving more weights to the local suppliers	56
	Technology development and access	Skill development classes specifically for the locals are not available	-
	Wealth and income creation	Provide more weights to the local suppliers when choosing a supplier	56
	Health	Operate employee benefit programs related to health, such as health examination and support with medical expenses	67
	Social investment	Social contribution activities such as House Repair of Hope project; construct social infrastructures such as railway and water treatment facilities	20, 35, 61-62

# Indices

## Green Management System

As laws and regulations aimed at improving corporations' management of environmental impact and sustainability and economic development policies that consider 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 is currently carrying out the green management system construction and going through the certification process by the second-half of 2011. GS E&C aims to become the leader in green management through continuous improvement.

Clause	Requirements	Related activities	Page
4.1	General requirement	Establish green management/environmental management systems and corresponding vision, objective, and strategy	22, 28
4.2	Green management policy	Commit to continuous improvement through CEO Message and Disclosure on Management Approach	4-5, 19
4.3	Planning		
4.3.1	Green management aspect	Conduct environmental impact assessment before construction begins, run the environmental dispute forecasting program as to respond to environmental requirements in advance	29, 31, 33, 48
4.3.2	Regulation and other requirements	Distribute the environmental management guidebook to all sites and lay out environmental regulations and standards related to each construction process	29, 31
4.3.3	Objective, detailed objectives and action plan	Establish green management/environmental management systems and corresponding objective, detailed objectives and action plans; Documentation through environmental report and sustainability report	22, 28
4.4	Implementation		
4.4.1	Resource, role, responsibility, authority	Report the performance by green management/environmental management organizations to the top executives	22
4.4.2	Conformity, education and training, perception	Conduct environmental education sessions for employees and subcontractors at both headquarter and sites	30
4.4.3	Communication	Communicate with stakeholders through environmental report, project site website, information session for local residents, etc.	33
4.4.4	Documentation	Document environmental data and information through TPMS	29
4.4.5	Document management	Manage documents such as environmental guidelines for each process through TPMS	29
4.4.6	Operational management	Indicate operational standards within the green management/environmental management procedures	29, 31
4.4.6.1	Planning and developmental activities	Consider and apply environmental performance improvement factors during planning and development	29, 34
4.4.6.2	Procurement activities	Plan to expand green procurement; consider environmental aspect when evaluating suppliers	26, 30, 56
4.4.7	Preparation for and response to emergency situations	Conduct environmental impact assessment and run the environmental dispute forecasting program; prepare for and respond to emergency situations by distributing case-based guidebook	29, 31, 33, 48
4.5	Inspection		
4.5.1	Monitoring and evaluation	Monitor and evaluate environmental impact through the environmental checking system by process and period	29
4.5.2	Evaluation of compliance	Evaluate the degree of compliance with environmental regulations and other requirements through the environmental checking system	29, 33
4.5.3	Non-conformity, corrective action, preventive measure	Correct any potential non-conformity and conduct preventive measures by running the Environmental Dispute Forecasting System and through regular communication	33
4.5.4	Record management	Manage records on green management/environmental management performances by utilizing TPMS	29
4.5.5	Internal examination	Regularly examine whether it is complying with environmental management certification such as ISO140001	30
4.6	Management review	Review the achievement status of green management/environmental management organizations' performance indicators	28

Clause	Performance indicators	Related activities	Page
General mandatory management performance indicators (MPI)			
M1-1-1	Establishment of green objective	Reduce 30% of GHG emission by 2030 and establish global top-tier environmental management system	22, 28
M1-1-2	Achievement of green objective	Difficult to measure number of achievements as quantitative performance indicators are being set	-
M1-2-1	Green procurement of MRO products	Expense on green procurement in 2010 is 56.8 billion KRW; planning to increase the expenditure	26, 30
M1-3-1	Green procurement of raw materials	Expense on green procurement in 2010 is 56.8 billion KRW; planning to increase the expenditure	26, 30
M1-4-1	Investment in green products	Continue to invest in R&D of green construction and materials	34, 36
M1-5-1	Number of green products	Difficult to define green product due to the industry characteristics	-
M1-6-1	Sales of green products	Data not available as it is difficult to define green product due to the industry characteristics	-
M1-7-1	Hours spent on education and training	Provide environmental education sessions	30
M1-8-1	Opinions and complaints	Data not available	-
M1-9-1	Legal compliance	Number of environmental disputes and accidents in 2010 is 17 cases; the figure is on a downward trend	27, 33
M1-10-1	Compliance with laws related to products	Data is included in the total number of environmental disputes and accidents	27, 33
M1-11-1	Publication cycle of green management report	Yearly publication	2
Sector-specific mandatory management performance indicators (MPI)			
M2-1-1	Scale of investment on green process	Continue to expand investment in R&D of green construction and process	34, 36
General mandatory operation performance indicators (OPI)			
O1-1-1	Energy use	2,684.27 TJ	23, 26
O1-1-2	Energy use by sales	0.48 TJ/billion KRW	23
O1-2-1	Direct GHG emission	18,496.09 tCO <sub>2</sub>	25, 27
O1-2-2	Direct GHG emission by sales	3.32 tCO <sub>2</sub> /billion KRW	-
O1-3-1	Indirect GHG emission	219,038.87 tCO <sub>2</sub>	25, 27
O1-3-2	Indirect GHG emission by sales	39.26 tCO <sub>2</sub> /billion KRW	-
O1-4-1	Water use	1,023,568.80 m <sup>3</sup>	26, 31
O1-4-2	Water use by sales	183.47 m <sup>3</sup> /billion KRW	-
Sector-specific mandatory operation performance indicators (OPI)			
O2-1-1	Resource consumption improvement rate by sales	Unable to determine the improvement rate as the standard of data collection has changed in 2010 and thus comparability is low	26
O2-3-1	Recycling rate	90% on average	32
O2-6-1	Hazardous chemical substance use by sales	Asbestos abatement	33

# Indices



## Joined the United Nations Global Compact (UNGC)

### 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 green 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.

### The 10 Principles of UNGC and GS E&C's Activities

Area	Principle	Related Activities	GRI	Page
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights; and	<ul style="list-style-type: none"> <li>Comply with UNGC and ILO</li> <li>Hold sexual harassment prevention session (1-2 hours per year) and cross-cultural management session (20 hours per year) for all employees</li> </ul>	HR1 HR2 HR3 HR4 HR5 HR6 HR7 HR8 HR9	66
	2. Make sure that they are not complicit in human rights abuses.		HR1 HR2 HR8	
Labor	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	<ul style="list-style-type: none"> <li>Operate the labor union</li> <li>Operate the Labor-management Council</li> </ul>	HR5 LA4 LA5	68
	4. The elimination of all forms of forced and compulsory labour;	<ul style="list-style-type: none"> <li>Comply with UNGC and ILO</li> </ul>	HR7	66
	5. The effective abolition of child labour; and		HR6	66
	6. The elimination of discrimination in respect of employment and occupation.	<ul style="list-style-type: none"> <li>Set internal policy against any form of discrimination</li> </ul>	HR4 LA2 LA10 LA13 LA14	66
Environment	7. Businesses should support a precautionary approach to environmental challenges;	<ul style="list-style-type: none"> <li>Comply with the regulation regarding emissions on site</li> <li>Conduct company-wide environmental risk mitigation activities and carry out on-site environmental task R&amp;R</li> <li>Systemize greenhouse gas inventory</li> <li>Save energy and reduce GHG emissions</li> <li>Develop eco-friendly technologies</li> </ul>	4.11	23-25, 28, 31, 34, 48
	8. Undertake initiatives to promote greater environmental responsibility; and	<ul style="list-style-type: none"> <li>Set an objective to reduce 30% GHG emissions by 2010</li> <li>Sign the EEB Manifesto</li> <li>Sign the Industry-wide Voluntary Agreement for Green Procurement and construct a guideline on green procurement</li> <li>Build and operate environmental monitoring system</li> <li>Eco-friendly construction</li> </ul>	EN5 EN6 EN7 EN10 EN14 EN18 EN26 EN27	22, 24, 26, 28-35
	9. Encourage the development and diffusion of environmentally friendly technologies.	<ul style="list-style-type: none"> <li>Expand renewable energy business such as wind and tidal power</li> <li>Pursue the introduction of building energy management system (BEMS)</li> <li>Systemize the greenhouse gas inventory</li> <li>R&amp;D of the 10 World Class technologies</li> <li>Develop 3 Zero House, an eco-friendly housing model</li> <li>Develop green concrete, an eco-friendly construction material</li> <li>Participate in the Green Management Dissemination Project for Partner Companies</li> </ul>	EN2 EN5 EN6 EN7 EN10 EN18 EN26 EN27	20-21, 23-24, 34-37, 57
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	<ul style="list-style-type: none"> <li>Operate the Ethics Committee</li> <li>Publish the Ethical Management Guidebook</li> <li>Promote employees' ethics-centered mindset through education and training on business ethics</li> <li>Establish and implement ethics management policy</li> <li>Run whistle-blowing program to eliminate anti-corruption</li> </ul>	SO2 SO3 SO4	59-60

# Reader's voice



We would love to hear your thoughts and expectations about GS E&C Sustainability Report 2010 in order to create a more meaningful report in the future. Please provide your much valued opinion.

### 1. Which stakeholder group do you belong to?

- |   |   |  |   |
|---|---|--|---|
| <input type="checkbox"/> Shareholders/investors | <input type="checkbox"/> Financial institutions | <input type="checkbox"/> Xi residents      | <input type="checkbox"/> Project developers (clients) |
| <input type="checkbox"/> Partner companies      | <input type="checkbox"/> Employees              | <input type="checkbox"/> Local communities | <input type="checkbox"/> NGO/NPO                      |
| <input type="checkbox"/> Academia               | <input type="checkbox"/> Government             | <input type="checkbox"/> Media             | <input type="checkbox"/> Competitors                  |
| <input type="checkbox"/> Students               | <input type="checkbox"/> Others                 |  |   |

### 2. For what purpose do you use this report? (e.g. investment information, corporate evaluation, job search, academic research, etc.)

### 3. Which part of the report were you most interest in? (multiple answers are allowed)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> CEO Message     | <input type="checkbox"/> Sustainability at GS E&C | <input type="checkbox"/> Great Innovation |
| <input type="checkbox"/> Great Challenge | <input type="checkbox"/> Great Partnership        |   |

### 4. Please rate each of the following areas of GS E&C's sustainability management.

Area	1	2	3	4	5
Response to climate change					
Minimization of environmental impact					
Green technology development					
Creation of economic value					
Risk management					
Customer satisfaction maximization					
Shared growth					
Ethical management and social contribution					
Safety management and great workplace					

### 5. Please rate GS E&C Sustainability Report 2010 regarding following criteria.

Criteria	1	2	3	4	5
The report is well designed and easy to read (Readability)					
The data provided can be trusted (Trustworthiness)					
There is enough disclosure on material issues (Materiality)					
Sentence structure is appropriate and easy to understand (Clarity)					

### 6. Please feel free to comment on areas of improvement regarding this report and/or make suggestions on GS E&C's sustainability management in general.

## Membership

Category	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
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
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
Architecture	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
Power & 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
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
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

## Awards

Year	Description
2010	Hangang Bamsom Xi receives Excellence Prize at the 6 <sup>th</sup> Korea Civil Engineering & Construction Technology Award
	Grand Prize in the Plant category at 2010 Asia Construction Award 2010
	Grand Prize at Money Today 2010 Korea Apartment Brand Award
	Xi receives Grand Prize in the High-class Apartment category at 2010 Korea Prestigious Brand Award
	Excellence Prize in the Plant category at 2010 Overseas Construction Award
	Xi receives Grand Prize for five consecutive years at 2010 First Brand Award
	Ilisan Xi receives Excellence Prize at the 1st Green Space Award
	Minister of Land, Transport and Maritime Award at 2010 Green Housing Award
	Ilisan Xi receives Minister of Knowledge Economy Award (Grand Prize) in the Outside Color Design at 2010 Korea Color Award
	Ilisan Xi wins the Joint Housing category at the 2 <sup>nd</sup> Asia Today Green Construction Award
2009	Ilisan Xi receives Grand Prize at 2010 Green Construction Industry Award
	Hangang Bamsom Xi wins the Environmental Friendliness category at 2010 (second-half) Housing Culture Award
	Awarded IF, Red dot, and IDEA (the three most prestigious design awards in the world)
	Grand Prize in the Socially Responsible Management category at 2010 Management Awards of the Principle of Consumer Interests First
	Ilisan Xi receives Grand Prize in the Customer Satisfaction category at 2010 (second-half) Hankyung Housing Culture Award
	Grand Prize in the Social Contribution category at 2010 Forbes Social Contribution Award
	"Most Trusted Company" designation at 2010 Korea's Most Admired Businesspeople & Most Respected Companies for two consecutive years
	Xi receives Minister of Land, Transport and Maritime Award at 2010 Korea Housing Service Award
	Times Square General Contractor Prize at 5 <sup>th</sup> Korea Civil Engineering & Architectural Awards
	Grand Prize in the Brand category at 2009 Well-being Apartment Award
2008	Boutique Monaco receives Grand Prize in the Private Sector category at 2009 Korea Construction Culture Award
	President's Prize for Banpo Xi at 13 <sup>th</sup> Excellent Apartment Awards
	Gold Prize in the Technological Innovation category at the 4 <sup>th</sup> Construction Company Creativity & Innovation Best Case Competition
	Poil Xi receives Grand Prize in the Beautiful Scenery Category at 2009 Green Housing Award
	Grand Prize in the Environmentally Friendly Plant category at 2009 Korea Environmental Friendliness Award
	Excellence & Good Prize at the 5 <sup>th</sup> Construction Environmental Management Best Case Competition
	Awarded IF and Red dot (two of the three most prestigious design awards in the world)
	Grand Prize in the Overseas Construction category at 2009 Hankyung Housing Culture Award
	Grand Prize for Customer Satisfaction Management at Global Management Awards
	Grand Prize in CSR category at 1 <sup>st</sup> Asia Today Green Construction Awards
2007	Grand Prize in the Overseas Construction category at Korea's Signature Apartment Award
	The Korea IR Award is received at the 8 <sup>th</sup> Annual IR Conference & Area IR Awards
	Egypt LAB Project site receives Grand Prize at 2008 Asia Construction Overall Award
	Grand Prize in the Construction & Plant category at the 1 <sup>st</sup> Korea Construction Quality Management Award
	The 100 billion KRW Taxpayers' Tower is received on the 42 <sup>nd</sup> Annual Taxpayers' Day
	"Xi" wins 2008 First Brand Award for three consecutive years
	Banpo Xi receives Excellence Award in the Well-managed Construction Site category at the City of Seoul Construction Award
	Grand Prize is received in the Green Management category at the 2008 Global Green Management Awards
	Grand Prize in the Design category at the 10 <sup>th</sup> Hankyung Marketing Award
	Awarded IF, Red dot, and IDEA (the three most prestigious design awards in the world)
2006	Xi receives Grand Prize in the Living Prestigious Apartment category at 2008 World's Most Prestigious Brand Selected by Consumers Award

# Green smart

We create green world with smart technologies.

This report is about the nine key sustainability issues of GS E&C. We align them with the three core values of Great Innovation, an attitude that we respond to the environment; Great Challenge, a mindset that we have to achieve our goals; and Great Partnership, the way we communicate with others.

We aim to completely internalize sustainability management by integrating the core values, which are foundations of any organization's strategy, and sustainability management practices.



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