

# BUILDING OUR ENVIRONMENT

## TOGETHER

SAINT-GOBAIN AND SUSTAINABLE DEVELOPMENT



  
**SAINT-GOBAIN**

# Contents

- 1• Message from the Chief Executive Officer: Meeting tomorrow's challenges
- 2• Our strategy and commitment for sustainable habitat and construction
- 4• The principles that bind us together

## **6 OUR BUSINESS**

### **SAVING ENERGY**

- 8• Insulation, the environment's best friend
- 12• Flat glass, invisible yet essential
- 14• Solar energy solutions

### **PROTECTING THE ENVIRONMENT**

- 16• More environmentally friendly solutions

### **TRAINING**

- 18• Saint-Gobain is actively involved in training to improve energy efficiency

### **PROMOTING GOOD PRACTICES AND ATTITUDES**

- 20• Saint-Gobain actively promotes energy efficiency in buildings
- 22• Awareness campaigns for young people

## **24 OUR COMMUNITY**

- 26• An employee-focused policy
- 30• A culture promoting health and safety for all
- 32• Lasting, transparent relations with our partners
- 34• Supporting our local communities

## **38 OUR ENVIRONMENT**

- 40• Promoting recycling
- 42• Reducing energy use and direct emissions
- 44• Reducing energy use and indirect CO<sub>2</sub> emissions
- 46• Preserving natural resources

- 50• Summary of social and EHS indicators

# Meeting tomorrow's challenges



## Building our environment together

In its more than 300 years of existence, Saint-Gobain has consistently adapted and evolved by focusing its business on people and making respect for people and the environment a fundamental value.

As the world leader in the habitat and construction markets, we fully intend to rise to the exciting challenge of inventing and building the home of the future. Buildings account for a quarter of today's CO<sub>2</sub> emissions. We already offer a wide range of innovative solutions and services to make buildings more energy efficient and environmentally friendly, while enhancing comfort and quality of life.

Saint-Gobain's strategic positioning in the habitat and construction markets means we must be exemplary when it comes to sustainable development. The building blocks of sustainable development are part of our core values, which are described in our Principles of Conduct and Action. Saint-Gobain is also a signatory of the United Nations' Global Compact. We are fully aware that the planet's future is in our hands. As a result, we are committed to limiting the environmental impact of our manufacturing processes, protecting our employees' health and safety and managing our business in a socially responsible manner. This is how Saint-Gobain plans to help build our environment together.

A handwritten signature in black ink, reading "P. de Chalendar". The signature is fluid and cursive.

Pierre-André de Chalendar  
Chief Executive Officer  
Compagnie de Saint-Gobain

# Our strategy and commitment for **sustainable habitat and construction**



## OUR COMMITMENT IN OUR BUSINESSES

### Objectives

Develop innovative, effective solutions to meet the challenge of protecting the environment.

### Resources

- Limit the environmental impact of buildings.
- Promote renewable energies.
- Develop low-energy solutions.
- Train main players and raise their awareness.



## OUR COMMITMENT TOWARDS OUR COMMUNITY

### Objectives

Strengthen and develop skills that meet the Group's needs, taking employee aspirations into account, and participate in host community development.

### Resources

- Make employees an integral part of the business.
- Comply with workplace health and safety guidelines.
- Forge lasting, transparent relations with our partners.
- Play an active role in our local communities



## OUR COMMITMENT TOWARDS OUR ENVIRONMENT

### Objectives

Factor the environment in from the drawing board to the production line to the point of sale.

### Resources

- Promote recycling.
- Reduce direct and indirect atmospheric emissions.
- Preserve natural resources, including water, wood and minerals.

# The principles

## that bind us together

### SAINT-GOBAIN'S PRINCIPLES OF CONDUCT AND ACTION

With a rich history stretching back more than three centuries, Saint-Gobain has based its development on a set of values that guide its daily actions. These values have been spelled out in our shared **Principles of Conduct and Action**, which all employees are expected to apply as members of our corporate community.

#### 5 principles governing individual conduct

The values of professional commitment, respect for others, integrity, loyalty and solidarity represent a unifying force and shape the conduct of each and every executive and employee of Saint-Gobain.

#### 4 principles guiding professional action

Respect for the law, caring for the environment, worker health and safety and employee rights guide the actions of all executives and employees in the performance of their duties.



Communications campaign on the Principles of Conduct and Action in India.



### SAINT-GOBAIN REAFFIRMS ITS SUPPORT FOR HUMAN RIGHTS

*“On the occasion of the 60th anniversary of the Universal Declaration of Human Rights, we, business leaders from all corners of the world, call on governments to implement fully their human rights obligations. We also reiterate our own commitment to respect and support human rights within our sphere of influence. Human rights are universal and an important business concern all over the globe.”*

**Pierre-André de Chalendar**, 2008

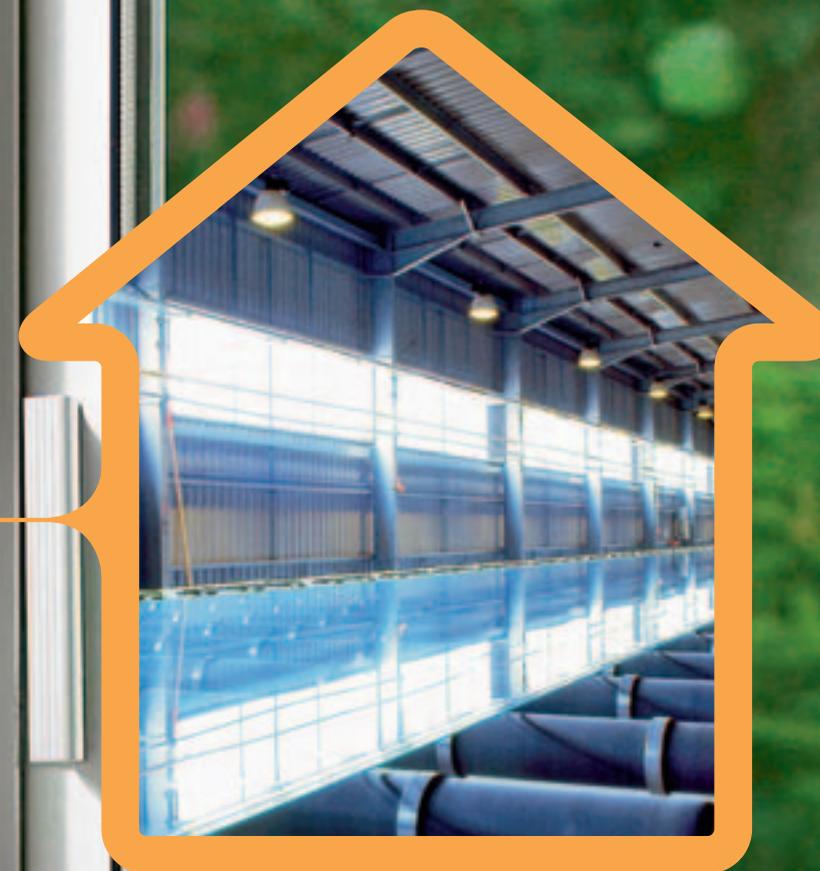
*(To date, more than 150 businesses have signed this statement)*

### SAINT-GOBAIN IS PART OF A GLOBAL COMMUNITY OF RESPONSIBLE CORPORATE CITIZENS



By joining the **United Nations Global Compact** in 2003, Saint-Gobain confirmed its commitment to responsible and sustainable development in line with its Principles of Conduct and Action. In January 2009, the Group took its commitment to the UN Global Compact one step further by endorsing the **Caring for Climate** statement and the **CEO Water Mandate** as part of the UN's Millennium Development Goals.

# OUR BUSINESS WELL-BEING



## ENERGY EFFICIENCY IS A REALITY AT SAINT-GOBAIN

We derive around 30% of our sales from products and solutions to save energy and protect the environment. Saint-Gobain designs, produces and distributes innovative solutions to make homes and buildings more energy efficient, comfortable and pleasant to live in.

This growth strategy is supported by an annual Research and Development budget of €400 million.

Saint-Gobain files more than 300 patents each year.

## SAVING ENERGY

# Insulation, the environment's best friend

By building its strategy around homes and buildings, Saint-Gobain anticipated the green revolution that is sweeping the building industry. Buildings account for 40% of energy consumption and 25% of CO<sub>2</sub> emissions in Europe. Most developed countries and a growing number of emerging countries have become aware of this situation and passed laws to make buildings more energy efficient, backed by quantified targets with set deadlines.

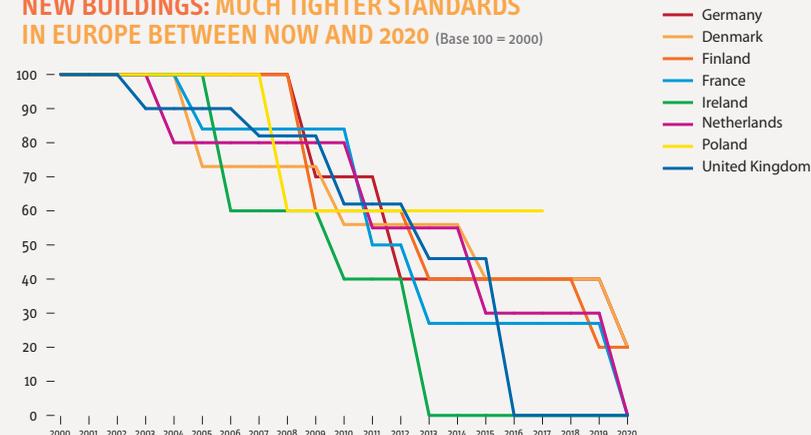
### BUILDINGS: TOP ENERGY CONSUMER



Non-existent or inefficient insulation is the main cause of excessive energy use in buildings. In Europe, heating accounts for 75% of domestic energy consumption. With its innovative solutions, Saint-Gobain is paving the way for the more energy efficient and pleasant buildings of tomorrow.

### NEW BUILDINGS: MUCH TIGHTER STANDARDS IN EUROPE BETWEEN NOW AND 2020

(Base 100 = 2000)



## GLASS WOOL

# PERFORMANCE WHERE IT COUNTS

Saint-Gobain is the **world leader in insulation**. Under the **Isover** and **CertainTeed** brand names, we offer specific insulation solutions for roofs, walls, partitions, floors, piping and ventilation ducts for single-family homes, apartment buildings and commercial buildings. Many of these solutions are based on **glass wool or rock wool**, two materials that offer a very good environmental performance over their lifecycles (production and transportation).

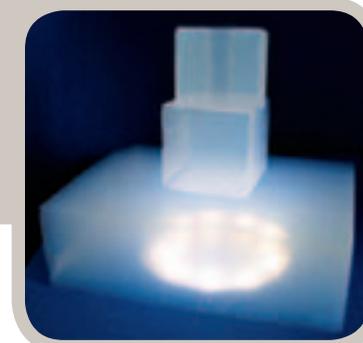


By reducing the amount of heating required in homes and buildings, glass wool "saves" up to 1,000 times the CO<sub>2</sub> emitted and energy used in its production.

## R&D

### INSULATION OF THE FUTURE

Saint-Gobain is conducting research on high-performance insulation to offer the broadest selection possible and meet customer needs as standards and regulations become increasingly stringent (required performance levels increase 15% every five years). The goal is to find new solutions, for example to reduce thermal bridges or renew flooring. Work is also being done on super-insulating mortars. Lastly, we are constantly improving the performance of our glass wool, made using the TEL process. A new generation of glass wool was launched in France in 2000, with a U value of 0.30 W/m<sup>2</sup>K.



A number of other Saint-Gobain products also contribute to improved building insulation, such as plasterboard laminates and expanded polystyrene from Saint-Gobain Gyproc, external thermal insulation systems from Saint-Gobain Weber, Saint-Gobain Isover and Saint-Gobain Technical Fabrics, windows from Lapeyre and thermal insulation products from Point.P, Jewson, Raab Karcher, SFIC and Minster.

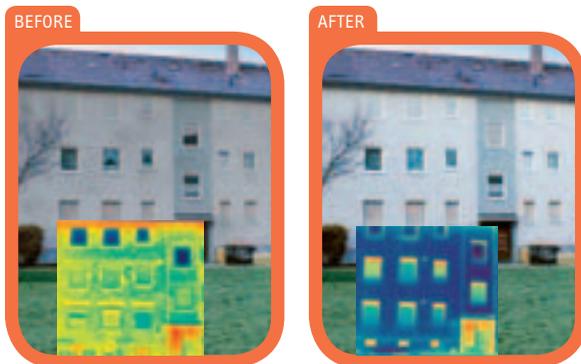


- 1 Glue
- 2 Insulation
- 3 Mechanical fixing device
- 4 Reinforcement
- 5 Base coat
- 6 Final coat

## FORWARD-LOOKING SOLUTIONS EXTERNAL INSULATION

One of the advantages of insulating from the outside is that it doesn't eat up living space. External solutions greatly reduce heat leakage through the walls, thereby delivering energy savings of up to 80% on the original heating bill in a very low-energy renovation. Expanded polystyrene foam (EPS), rock wool and glass wool are used for this type of application.

### EXTERNAL INSULATION GREATLY REDUCES HEAT LOSS THROUGH THE WALLS



The infrared photo reveals substantial, widespread heat loss due to inefficient insulation.

The infrared photo shows how heat loss can be limited by more efficient insulation.

## ETICS EXTERNAL INSULATION SOLUTIONS

Saint-Gobain has combined solutions from Isover and Weber to develop External Thermal Insulation Composite Systems (ETICS) that insulate, protect and decorate facades.

## INTERIOR AIR QUALITY

Insulation and ventilation need to be planned at the same time to obtain good air quality. Saint-Gobain has developed a photocatalytic air purification filter called Quartzel® PCO that eliminates organic matter to reduce odors, smoke and other nuisances. Other new products in the market include Ceilings Rigitone Air in Germany and Placo Activ'air in France.



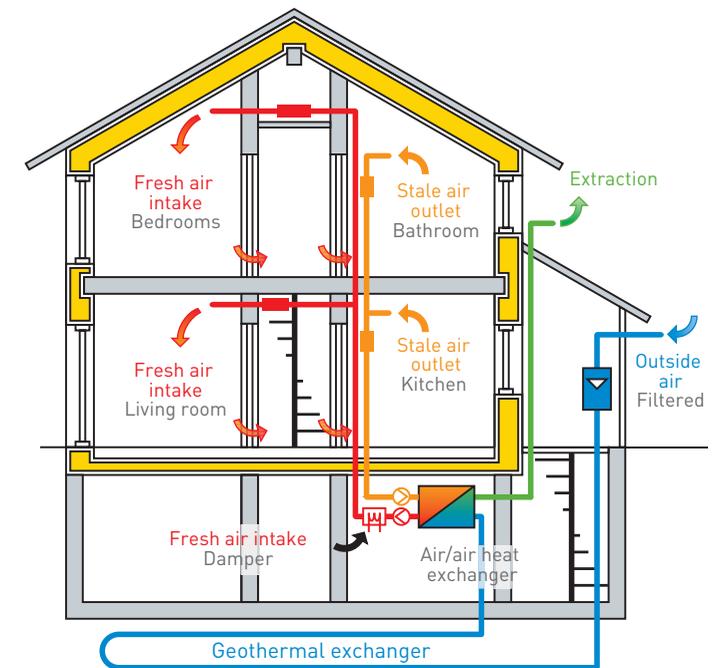
## ACOUSTIC COMFORT

Saint-Gobain also helps **improve acoustic performance** in homes, multiplex movie theaters, classrooms, multi-purpose community centers and other buildings with soundproof ceilings and sound absorbing panels like Saint-Gobain Ecophon and Saint-Gobain Eurocoustic; solutions such as Isover's Technostar and Optima systems; plasterboard or expanded polystyrene insulation from Saint-Gobain Gyproc (Soundbloc in the UK, Placophonique in France and Die Blaue in Germany).

SPOTLIGHT ON

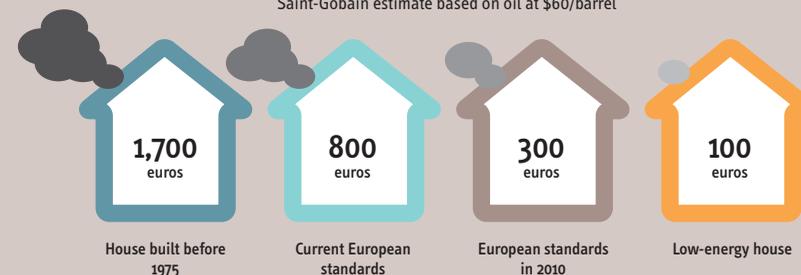
## Designing and building The Multi-Comfort House

Thanks to its high performance components—effective thermal insulation, super-insulated windows and a heat-recovery system—Saint-Gobain's Multi-Comfort House requires practically no active heating. Instead, the house is heated by the sun and recovered heat from recycled air, two natural sources of renewable, never-ending energy. As a result, the Multi-Comfort House uses just 1.5 liters of fuel per square meter per year for its heating needs. In comparison, older homes use around 20 liters per square meter per year and traditionally built new houses use 6 to 10 liters.

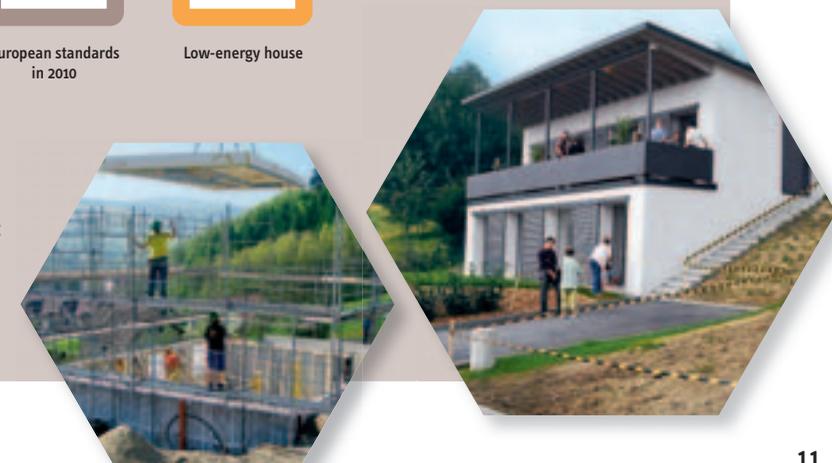


## A QUICK RETURN ON INVESTMENT ANNUAL HEATING BILL FOR 100 SQUARE METERS

Saint-Gobain estimate based on oil at \$60/barrel



Example of an eco-neighborhood:  
Multi-Comfort Houses  
in Lucens, Switzerland



## SAVING ENERGY

# Flat glass, invisible yet essential

Flat glass is a fundamental part of insulation. **As the world leader in coated glass,** Saint-Gobain is continuously improving its products' performance. The insulation qualities of double or triple glazing are comparable to those of protective walls. And because glass is transparent, it helps heat the house by letting in the sun. Solar control glass also helps to reduce energy consumption in air-conditioned buildings.



Double glazing made with advanced insulation sGG PLANITHERM ONE from Saint-Gobain Glass is three times more effective than standard double glazing and six times more effective than single glazing. Thanks to its low-emittance (Low-E) coating, sGG PLANITHERM ONE double glazing reflects 99% of interior heat back into the room. At the same time, it lets in 71% of visible light and 49% of solar heat, for the best energy efficiency performance in Europe.

A study by the Glass for Europe association underlines that replacing every window in the 27-member European Union with advanced, low-E double glazing would cut CO<sub>2</sub> emissions by up to 90 million metric tons annually—equivalent to one third of the European Union's greenhouse gas emissions target for buildings.

Over the past twenty years, Saint-Gobain has achieved a sixfold increase in the energy efficiency of its flat glass products, thanks to a significant investment in Research and Development.

# Bioclean

sGG Bioclean® self-cleaning glass from Saint-Gobain makes window washing easier and reduces water use. Depending on the type of house and number of windows, the water savings for a home equipped with sGG Bioclean® can range from 4,500 to 16,000 liters over an average 60-year lifetime. This corresponds to 30 to 100 days of drinking water for an average European.



Triple glazing



R&D

## THE WINDOWS OF THE FUTURE

As the world leader in coated glass, Saint-Gobain is continuously working on more energy efficient products to deliver even better performance. To give an example, the triple glazing developed by our teams insulates seven times more efficiently than conventional double glazing and lets in the same amount of heat from the sun as advanced Low-E double glazing. At the same time, it lets in 74% of visible light for maximum clarity—almost the same amount as double glazing. Saint-Gobain has also developed electrochromic glass that actively adapts to seasonal changes. By limiting the sun's impact in the summer and maximizing it in the winter, this glass helps cut down on air conditioning and heating needs while delivering enhanced visual comfort and preserving the building's architectural style.

## PRODUCING ENERGY

# Solar energy solutions

Backed by more than 300 years of experience in glass technology, Saint-Gobain is deploying across the entire solar energy value chain.

### SOLAR ENERGY

## A PROMISING MARKET FOR SAINT-GOBAIN



Inauguration of a plant to produce glass for photovoltaic systems in Nanjing, China.



sgg Albarino extra-clear glass.

### SAINT-GOBAIN IS A MAJOR SUPPLIER OF PRODUCTS AND SOLUTIONS FOR THE PHOTOVOLTAIC INDUSTRY.

We currently supply around a fifth of the world's glass for photovoltaic (PV) systems and hold half of the market in Europe, thanks in particular to our sgg Albarino and sgg Diamant ranges and our expertise in coated glass. We also offer quartz crucibles for smelting silicon slabs, engineered abrasive grains for cutting them and fluoropolymer films for encapsulating photovoltaic panels.



Inauguration of Avancis

### SAINT-GOBAIN INNOVATES AND PRODUCES PHOTOVOLTAIC PANELS.

In late 2008, we inaugurated a joint venture with Shell called Avancis that produces photovoltaic panels using an innovative technology based on depositing a thin coat of copper-indium-selenium on a glass substrate. The panels, which perform well in overcast conditions, are cost competitive and attractive, making them easy to install on all types of buildings.



### SAINT-GOBAIN MAKES SOLAR CONCENTRATOR MIRRORS.

Backed by our experience in manufacturing extra-clear glass and curved glass for the automobile industry, we have expanded our plant in Covilis, Portugal to create the world's largest production unit for parabolic cylindrical mirrors used in solar power plants and to supply the Iberian Peninsula.



SAINT-GOBAIN OFFERS PHOTOVOLTAIC PANELS in its specialist renewable energy banners, especially in Germany and the UK with Greenworks. In France, Point.P sells a range of equipment that uses renewable energies, including PV panels, solar water heaters, heat pumps and condensing boilers. In Norway, Dahl supplies small-scale hydraulic power plants. Saint-Gobain Solar installs photovoltaic modules on roofs, facades and windows.

R&D

## THE SOLAR SOLUTIONS OF THE FUTURE

Saint-Gobain is conducting broad research into ways to incorporate solar panels more effectively in buildings, on roofs, facades and verandas. In the United States, CertainTeed and Energy Conversion Devices, the world's leading provider of thin-film solar laminates, have reached an agreement to develop photovoltaic roofing products for the residential market. These products should be available commercially in 2010. Saint-Gobain is also working with a number of start-ups through its NOVA external venturing program.

THE FLAT GLASS DIVISION IS DEVOTING **30%** OF ITS RESEARCH AND DEVELOPMENT BUDGET TO SOLAR SOLUTIONS IN 2009.

## PROTECTING THE ENVIRONMENT

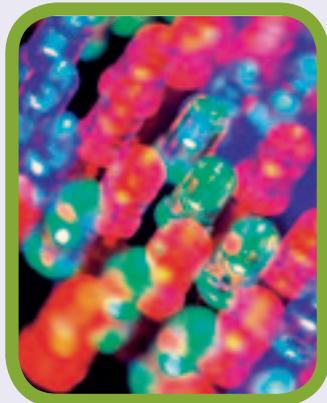
# More environmentally friendly solutions

### LIGHTING AND HEATING BUILDINGS



#### MORE ENERGY EFFICIENT LIGHTING

Saint-Gobain supplies sapphire substrates and gallium nitride for light-emitting diodes (LEDs). LEDs are likely to replace traditional incandescent bulbs over time, since they consume five times less electricity, last a hundred times longer and offer a spectrum similar to daylight.



#### ADJUSTING TEMPERATURE NATURALLY

Saint-Gobain PAM provides cast-iron pipes to create underground heat exchangers. These devices can modify the temperature of incoming air passively by circulating air in pipes buried one or two meters underground. Inside the pipes, the temperature of outdoor air is raised or lowered to that of the ground (between 10°C and 18°C in temperate climates). As a result, the air entering the home is heated in winter and cooled in summer, thereby reducing heating or air conditioning needs and related CO<sub>2</sub> emissions.

R&D

### PHASE CHANGE MATERIALS

Maxit clima is a single layer interior plaster that can regulate a room's temperature and reduce the need for air conditioning. It is made of gypsum, mineral aggregates and phase change material (PCM), which acts as a latent heat accumulator. By assimilating and dispersing excess ambient heat, the PCM can offset rising temperatures above 26°C. Thanks to its properties, maxit clima can absorb 4.5 times as much heat as a traditional coating.

## AUTOMOBILES MORE ENVIRONMENTALLY FRIENDLY VEHICLES



Compared to traditional automotive glazing, Saint-Gobain Sekurit's heat-resistant solutions significantly reduce the need for air conditioning, leading to improved fuel efficiency. For example, optimally combining a heat-reflective windshield with extra-tinted heat-absorbing glass for the rear and rear side windows cuts fuel consumption by 2.4% per 100 km and CO<sub>2</sub> emissions by 5 g/km, at speeds of 90 kph.

Saint-Gobain's silicon carbide particulate filters reduce an engine's CO<sub>2</sub> emissions. CERACLEAN® for diesel engines filters out 99.9% of particulates, down to the very finest.

### WATER TRANSPORT SOLUTIONS



Saint-Gobain PAM is the world leader in piping systems for the entire water cycle. Supplying tap water and collecting and treating wastewater are global challenges that require the best available technologies.

The intrinsic properties of cast iron—the main material used in our piping systems—offer a positive solution to the issues of water preservation and quality. Naturally watertight cast iron pipes guarantee that drinking water remains potable and prevent any leakage. Also used for collecting wastewater, cast iron pipes avoid groundwater pollution and ensure that a maximum volume of wastewater is treated and recycled.

Access to clean drinking water is a vital need for people in emerging economies. To meet this need, Saint-Gobain is developing new high performance ranges of small- and large-diameter ductile cast iron pipes. Coatings offering advanced corrosion resistance have been added to enhance durability. In addition, the use of simplified cross connections facilitates pipe-laying and new centrifuging techniques have made it possible to optimize thickness and reduce pipe weight while conserving mechanical performance.

In the residential segment, Saint-Gobain supplies transparent quartz tubes for UV treatment of wastewater, drinking water and swimming pool water. These tubes destroy bacteria without any environmentally hazardous chemical additives.

In addition to pipe transport, the Pipe Division offers financial engineering services to local authorities, aiding them in their efforts to obtain project financing from banks, insurance companies and other financial organizations.



#### Contract in Mauritania

**Ductile cast iron pipe for water supply in Nouakchott**  
Saint-Gobain PAM has signed a contract to provide ductile cast iron piping systems to supply drinking water to Nouakchott. The project will require 170 km of DN 1400 cast iron pipe, plus connections. Of this, 85 km will be coated with polyurethane to protect the pipe from corrosion in a particularly aggressive environment. The national water company's goal is to expand coverage of the capital city's drinking water needs with water pumped from the Senegal river.

## TRAINING

# Saint-Gobain is actively involved in training to improve energy efficiency

The home of the future will be built in partnership with the entire construction industry, led by a new generation of contractors skilled in energy-efficient construction techniques. To help customers and partners embrace green principles, a broad-based program has been introduced to train builders in emerging energy-saving techniques and solutions.

According to the European Trade Union Confederation, an ambitious policy to **reduce CO<sub>2</sub> emissions by 30%** by 2030 would create **2.5** million jobs in the European building industry.



### FRANCE

**FIVE PLACO-ISOVER TRAINING CENTERS** were opened in 2008 and 2009. Saint-Gobain hopes to train 5,000 contractors per year by 2010 in energy-efficient solutions with a new set of courses focused on newbuilding and renovation.

### SAINT-GOBAIN PAM'S SCHOOL FOR CUSTOMERS

Since 1974, Saint-Gobain PAM's school for customers has provided training for installers, wholesalers and municipal staff. In all, 180 customers participated in training sessions in 2008.



### SOUTH AFRICA

In South Africa, one of the Group's more recent host countries, the Saint-Gobain Training Academy teaches building techniques to local contractors.



### UNITED KINGDOM

**GREENWORKS** in the United Kingdom advises and assists its specifier customers, notably on how to implement the country's New Code for Sustainable Homes, introduced in 2007 and mandatory for all newbuilds.



### UNITED STATES

#### CERTAINTEED TRAINING SESSIONS FOR ARCHITECTS

In the United States, architects are required to continuously refresh their skills to maintain their certification. CertainTeed has developed four programs for architects on sustainable design in new and renovated homes. These programs have been approved by the American Institute of Architects.



### GERMANY

More than 600 contractors from all of Germany attended the third Holzrahmenbautag organized by **SAINT-GOBAIN BUILDING DISTRIBUTION DEUTSCHLAND** on building techniques for wood frame houses. Information was provided on the latest techniques, innovations and directives covering wood frame newbuilds and renovations. The Saint-Gobain Building Distribution Deutschland Academy set up a training session for employees in partnership with several skills centers specialized in wood and roofing.

## PROMOTING GOOD PRACTICES AND ATTITUDES

# Saint-Gobain actively promotes energy efficiency in buildings

Saint-Gobain has lobbied public authorities to establish clear, precise standards for environmental protection and energy efficiency in buildings. These standards need to take effect in the medium and long term so that all industry professionals can prepare and implement the most efficient solutions.

### THE FRENCH PRESIDENT VISITS A SAINT-GOBAIN SITE

On November 4, 2008, French President Nicolas Sarkozy visited the Placoplatre® site in Vaujours, near Paris. During a roundtable discussion on implementing the medium-term decisions made at the Grenelle Environment Round Table, Saint-Gobain CEO Pierre-André de Chalendar noted: “*The Round Table opens up opportunities for Saint-Gobain in building.*” President Sarkozy reiterated that the Round Table measures represented a “*fantastic source of growth.*”



### THE UK GREEN BUILDING COUNCIL

In 2008, Saint-Gobain joined the UK Green Building Council, a British trade association that promotes sustainable construction. Thanks to this partnership, Saint-Gobain will gain the opportunity to share its expertise in environmental quality with other businesses and encourage best practices in the building industry. A driving force in the development of sustainable construction in the United Kingdom, the UK Green Building Council plays a key role in defining new building standards. The organization has developed an environmental quality code for buildings to allow manufacturers, their customers and government policymakers to participate in the sustainable construction campaign.



ISOLONS  
LA TERRE  
CONTRE  
LE CO<sub>2</sub>.

For the past several years, Saint-Gobain has introduced a number of initiatives to raise awareness among building industry professionals, public officials and the public about the impact of CO<sub>2</sub> emissions from buildings. In 2003, the Group helped create an association in France called *Isolons la Terre Contre le CO<sub>2</sub>* (or Insulate the Earth from CO<sub>2</sub>). Similar groups sprouted up across Europe, including *Isoterra* in Belgium, *Spaar het klimaat* in the Netherlands, *CO<sub>2</sub>NTRA* in Germany and *Isolando* in Italy. The Group is also involved in many other associations, such as *Club de l'Amélioration de l'Habitat* and *Promodul*.



### CITIZENS' CONFERENCE ON BUILDING INSULATION

In 2008, Saint-Gobain Iover France introduced the Citizens' Conference to bring ordinary people into an innovative discussion process. Taking a page from Denmark's consensus conferences, a group of non-specialists drew up recommendations after receiving basic training on the issue. A steering committee comprising representatives from environmental and energy efficiency organizations supervised the discussions. At the end of a public debate, the citizens on the panel issued ten recommendations for manufacturers and public officials.



### EFFINERGIE

In 2006, *Isolons la Terre* helped create the Effinergie low energy label for new buildings in France. The label is supported by all building industry professionals, public officials, local authorities and French banks. With this initiative, Saint-Gobain has helped to spur regulatory progress in favor of more energy-efficient buildings—including both newbuilds and renovations—by introducing an energy performance diagnostics system. The banking industry's participation is providing the necessary financing for this system.

## PROMOTING GOOD PRACTICES AND ATTITUDES

# Awareness campaigns for young people

The young people of today will drive change in the future, which is why Saint-Gobain is committed to raising their awareness of the environmental challenges we face. The Packaging Sector, for example, educates young consumers about glass container recycling and its environmental benefits. The other Sectors invest in a range of areas to involve young people and students in sustainable development.



## RAISING AWARENESS ABOUT THE CHALLENGES OF GLASS RECYCLING

In 2008, the Italian glass makers' association *Assovetro* met with students to explain the challenges of waste sorting during the 12th *Ecomondo* international trade fair of recycling and energy saving and sustainable development.



## BILIBOIS FRIEND OF THE FOREST

Lapeyre has launched several campaigns at its sales outlets featuring the "Bilibois" cartoon character to raise awareness about wood and forests among children and parents alike. These campaigns encourage customers to change the way they look at forests, with the goal of promoting forest appreciation and preservation.

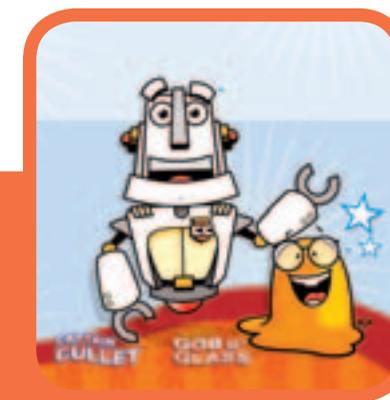
## ARCHITECTURE COMPETITION

For the past five years, the Insulation Division has organized a competition for architecture students on thermal and sound insulation, energy efficiency and building comfort solutions. In 2008, contestants were asked to design a Multi Comfort school that combined passive building techniques and excellent acoustics. Three prizes were awarded in each of the 13 participating countries, primarily located in Eastern Europe.

[www.isover-students.com](http://www.isover-students.com)

## CAPTAIN CULLET AND LIL' GOB

In the United States, Saint-Gobain Containers produced an animated film to mark Recycle Glass Day entitled "The Adventures of Captain Cullet and The Little Gob o' Glass: A Story of Hope and Recycling." The film was shown to more than 1,000 students in 12 Indiana schools.



## URBAN DENSITY AND QUALITY OF LIFE

In France, Saint-Gobain is a member of the non-profit organization *Entreprises pour l'Environnement* and is serving as the lead sponsor for its 2009 student prize, awarded in partnership with the free newspaper, Metro. Students from all fields, from engineering and business to the humanities, have been invited to reflect on the topic "Urban density and quality of life: How can we do better?" The winner will receive a €5,000 prize for his or her contribution to the debate on making urban areas more appealing.



# OUR COMMUNITY RESPECT

## RESPECT FOR PEOPLE IS ONE OF OUR CORE VALUES

Respect for people is the cornerstone of Saint-Gobain's core values. Rooted in a long tradition of employee dialogue and support, it guides our day-to-day approach to relationships with employees, customers, partners and local communities. Our employees' deep commitment clearly attests to the quality of these relationships, and both confirms and drives our sustainable development policy.

# An employee-focused policy

Saint-Gobain has built a successful, sustainable business on a **deep tradition** of human relations that continues to nourish our dealings with employees even today. Human resources management is broadly **decentralized**, with representatives acting at the local level to promote a decisively **multicultural, international** approach.

SPOTLIGHT ON

## SAINT-GOBAIN'S COMMUNITY IN FIGURES:

(Employee data at December 31, 2008)

**209,175** people, of which:

- 35% in Building Distribution,
- 33% in Innovative Materials,
- 24% in Construction Products,
- 7% in Packaging.

Breakdown by category:

- Managers (12 %)
- Administrative employees, technicians and supervisors (40,5 %)
- Operators (47,3 %)



## INTEGRITY AND RESPECT FOR PEOPLE AS THE BASIS FOR GOOD CONDUCT

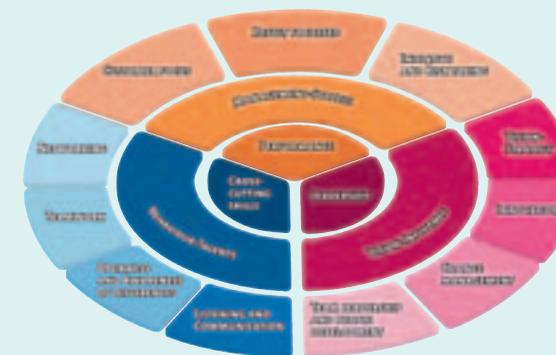
Respect for diversity and opposition to any form of discrimination are enshrined in the Group Principles of Conduct and Action. We signed France's Diversity Charter in 2006 to demonstrate our commitment to fostering diversity in hiring and career management. Initiatives are encouraged at the local level to address the specific needs of each community. At Group level, our commitment mainly drives us to:

- Foster gender balance. Senior management has implemented actions to increase the proportion of women managers and help the best female talent advance more quickly through the ranks across the organization. In 2008, 17% of managers were women, versus 10% in 1997.
- Support inclusion of the disabled in hiring and subcontracting. In France, our subsidiaries are encouraged to use sheltered workshops.
- Support older employees by recognizing the value of their experience, developing tutoring programs and providing access to skills reviews.

Temporary employees and subcontractors working at Saint-Gobain sites enjoy the same benefits as Group employees.

## MANAGERIAL SKILLS SCORECARD

The Group has drawn up a scorecard describing the eleven key attributes required of all managers, in three categories: Performance, Leadership and Behavior. The scorecard is used worldwide for the purpose of recruiting, training and evaluating managers.



1665

Founding of the **Royal Mirror Glass Works**.

1700s

Saint-Gobain provides a certain amount of **job security** by granting weekly salaries to skilled workers.

1725 / 1730

**Access to health care** is provided at the glass works, with an on-site surgeon able to step in the event of an accident or illness.

1775

Saint-Gobain becomes **one of the pioneer companies to provide worker housing** along with many benefits in kind, such as firewood, candles and worker gardens.

1800s

**Saint-Gobain trains its employees** in glass techniques.

1853

Saint-Gobain sets up business in Germany and **exports its worker housing model**.

Early 1900s

The Pont-à-Mousson site **broadens hiring in France to include Romanian, Italian, Polish and other immigrants**.

1920 / 1960

A worker housing compound is built alongside each new plant. **At retirement, workers can buy their homes** from the company.

# An employee-focused policy

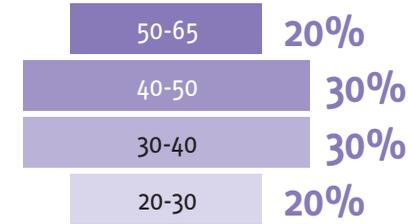
## SUSTAINABLE EMPLOYEE RELATIONS

At Saint-Gobain, we manage employee careers over the long term. That means providing a broad range of training opportunities that support our strategy and strengthen our corporate culture. In 2008, 66% of our employees and 77% of our managers attended at least one training course. Special attention is paid to emerging countries. In 2008, the Group's School of Management trained 220 people from emerging countries compared to 15 in 2001.

In addition, employees have many opportunities for internal mobility thanks to the Group's numerous businesses and locations. Each year, there are some 5,000 internal job transfers among managers (for a total of 22,500 positions), corresponding to a yearly average of one manager in four. In all, 1,400 managers work outside their home countries.

## POINT.P SCHOOL

The Point.P School provides multi-skills training for employees in a dozen different positions, such as stockroom attendant, salesperson and site manager. More than 2,000 employees have successfully completed certification since training began in 2004.



THE AGE PYRAMID REVEALS A HEALTHY GENERATIONAL BALANCE



## FIRST SKILLS MANAGEMENT AGREEMENT SIGNED IN FRANCE

The Forward Management of Jobs and Skills agreement (GPEC) was signed on March 19, 2008 by Chief Executive Officer Pierre-André de Chalendar and four French unions. The CEO noted that it was the Group's first such agreement in France.

## GIVING EMPLOYEES A STAKE IN THE GROUP'S SUCCESS

The Group Savings Plan is a key feature of the social contract and represents an excellent mean of giving employees a stake in the Group's success. Created more than 20 years ago, the plan now covers 80% of Saint-Gobain employees in 40 countries. The plan's quality was officially recognized in 2007, when it obtained first prize from the French Federation of Employee Shareholder Associations.

## HONEST AND PRAGMATIC SOCIAL DIALOGUE

To support the Group's very decentralized structure, social dialogue is conducted first and foremost at the company and site level to take into account local employee issues and identify appropriate solutions. The European Social Dialogue Convention introduced in 1988 helps to enhance this process. By facilitating the exchange of information, the agreement supports both local negotiations with employee representatives and the Group's Europe-wide employee relations initiatives.

## EMERGING MARKETS FOCUSING ON LOCAL MANAGEMENT

In emerging markets, we are increasingly emphasizing local managerial talent.

- **Central and Eastern Europe**  
85% in Russia and 97% in the Czech Republic.
- **Brazil**  
99% of Brazilian managers.
- **China**  
91% of local management.
- **India**  
100% of local management (photo).



## SAINT-GOBAIN AMONG THE BEST EMPLOYERS IN GERMANY

According to a study by "Handelsblatt Junge Karriere" and the Corporate Research Foundation (CRF), university students and young employees rank Saint-Gobain in Germany, through three of its companies, the 15th best employer. Saint-Gobain was included among the 88 companies for which upcoming young Germans managers would like to work for.

1971

Founding of the **School of Management**, which provides training for managers.

1988

Creation of the **Group Savings Plan**.

1988

Creation of the **European Social Dialogue Convention**.

1990

Launch of the **Safety Diamonds Awards**, which recognize the sites with the best safety performance.

2003

Drafting of the Group's **Principles of Conduct and Action**.

2004

First observance of **International Health and Safety Day**.

2006

Saint-Gobain signs France's **Diversity Charter**.

2008

The first Group-wide **human resources planning and development agreement** is signed in France.

# A culture promoting health and safety for all

Respect for people, their health and their safety is an integral part of our daily approach to managing manufacturing and distribution operations.

*“Safety within the Group has been a priority; it is now becoming a value.”*

**Pierre-André de Chalendar**

Chief Executive Officer of Saint-Gobain on International Environment, Health and Safety Day, May 2008.

## SAFETY

### OBJECTIVE: ZERO WORK-RELATED ACCIDENTS

Employee safety is an important strategic focus in all our host countries. By deploying effective resources and standards, we have significantly reduced the frequency of work-related accidents, in terms of both the lost-time incident rate (LTIR) and the total recordable incident rate (TRIR). Since 1991, the number of industrial Sectors workers has risen by more than 28%, whereas the LTIR has been reduced by a factor of 15. In January 2009, new safety standards were introduced concerning work at height, the management of outside contractors working on-site, work permits and commissioning/decommissioning procedures. These standards come on top of those concerning risk evaluation and accident analysis.



Poster created by Marek Turek, operator at the Saint-Gobain Glass Polska plant and winner of the EHS category of the 2006 Stars of Communication competition.



## WHAT IS SMAT?

SMAT (Safety & Senior Management Audit Tool) is a system for observing safety practices in the field. The goal is to promote positive, interactive dialogue on safety among managers and operators, encourage best practices and at the same time identify risks. Corrective action is defined and carried out swiftly in follow-up to each SMAT audit, mainly with a focus on changing behaviors. In 2008, nearly 12,670 employees with direct supervisory responsibilities and more than 2,300 managers and members of executive committees were trained in the system.



## SAFETY CONCERNS EVERYONE

All our team members, including temporary employees, are concerned by our health and safety policy. For this policy to be effective, appropriate training for new hires is essential. That is why a training checklist has been drawn up in France for deployment across Group sites starting in 2009. In addition, in compliance with the Principles of Conduct and Action, our health and safety policy is extended to all subcontractor employees working at Group sites. To ensure the safety of our subcontractors and suppliers, we have introduced a standard for all jobs performed by outside companies.

## HEALTH

### OBJECTIVE: ZERO OCCUPATIONAL ILLNESSES

Saint-Gobain has developed mandatory standards on noise and toxic substances to reduce exposure and attenuate risks. To anticipate potential risks, the Group has set up a **rigorous system that all sites are required to implement**. In addition, as part of the Toxic Agent Standard (TAS), the toxic substance inventory required in Europe under REACH (Registration, Evaluation and Authorization of CHEmicals) regulations is being rolled out to all countries and Divisions as of 2009.

In the area of ergonomics, we have developed a method for identifying risks related to handling, lifting and workstation posture and produced a training kit. In the Building Distribution Sector, for example, musculoskeletal disorders represent a major health risk for employees due to the handling activities their work entails. At Point.P, all newly hired warehouse employees attend mandatory training in proper motion and posture. At Lapeyre, a film on handling has been made and broadcast in all stores. In all, 115 people have been trained so that they may in turn regularly train their employees and new hires.

## NANOPARTICLES



Although Saint-Gobain is not a major user of nanoparticles, some of the Group's R&D projects require their utilization. Consequently, we have developed an R&D code of conduct both to limit the use of such particles to certain authorized sites—equipped with special systems for protecting personnel—and to identify proper handling procedures.



Brazil International EHS Day 2008

## EHS POLICY DEPLOYED WORLDWIDE

Zero work-related accidents, zero occupational illnesses and zero non-recovered waste: these are the three ambitious objectives of our Environment, Health and Safety (EHS) policy, which is based on respect for people and their environment. These objectives are described in our EHS charter distributed in 36 languages. Every two years since 2004, we have organized an International EHS Day that provides a unique opportunity for all our employees around the world to reflect together on our core values.



Poland Fire Extinction



Brazil First Aid



France Safety Training

# Lasting, transparent relations with our partners

## CHOOSING SUPPLIERS AND SUBCONTRACTORS ALIGNED WITH OUR PRINCIPLES

With operations in 59 countries and a decentralized organizational structure, Saint-Gobain has had to establish clear guidelines to shape its responsible purchasing policy. A “Purchasing Charter” incorporating the Group’s Principles of Conduct and Action was defined in 2006 and signed by all buyers. These principles are taken into account when specifications are being drawn up, and outside service providers are selected based on the strength of their commitment to environmental, health and safety issues in the workplace.

Our chosen suppliers and subcontractors are required to disclose any potential environmental risks related to the procedures and products they use for their own operational purposes and for work they perform at Group sites. Furthermore, a “Suppliers’ Charter” governing requests for proposals has recently been created and is being distributed to our partner service providers and outside contractors.

## RESPECTING AND LISTENING TO OUR CUSTOMERS

By positioning ourselves in the habitat and construction markets, we have shifted from a supply-oriented culture to a demand-oriented culture based on providing innovative solutions to our customers. Understanding market needs is a central concern. Fortunately, the Group has both a solid industrial base and a vast distribution network, which is a reliable barometer of demand.

We support our customers through partnerships that enable us to tailor increasingly innovative, easy-to-install solutions to their needs. Our teams ensure that environmental protection and user health concerns are addressed when products are in the design phase. **By 2010, all building product ranges will have undergone life cycle analyses.** Furthermore, in 2008, an EHS risk assessment form was incorporated into the risk monitoring process to help manage Group Research and Development projects.



**New Weber technology** almost entirely eliminates dust generated during mortar handling.

## RESPONSIBLE TIMBER DISTRIBUTION

As part of its environmental commitment, the Saint-Gobain Building Distribution Sector has a policy of not selling timber from countries such as Liberia, Myanmar and Papua New Guinea that do not comply with international agreements or fundamental good forestry practices. The policy includes not selling certain endangered wood species such as merbau, bitangor, moabi and wenge.

The Sector has joined the European Commission and NGOs such as Greenpeace and the WWF in officially embracing the Forest Law Enforcement, Governance and Trade (FLEGT) process. Meetings are held regularly with these organizations to share information and to promote the Sector’s environmentally friendly timber policy.



## IMPROVED RISK PREVENTION

Strict application of the Principles of Conduct and Action helps to anticipate risks related to employee behavior, particularly with respect to antitrust law. In 2007, senior management introduced a Competition Plan requiring all Group Divisions to comply with competition law in every host country. Under the plan, competition law training is mandatory for Group executives and managers—15,000 employees had been trained as of end-2008—and outside law firms are authorized to conduct spot audits of subsidiaries, with 45 sites in 14 countries audited to date. In 2008, a Practical Guide to Competition Compliance was prepared in 12 languages and sent to 22,000 people.

## ANTITRUST ZERO TOLERANCE

In November 2008, the European Commission fined Saint-Gobain €896 million over claims of automotive glass price-fixing in Europe between 1998 and 2003. Considering the fine excessive and disproportionate, the Group filed an appeal with the Luxembourg Court of First Instance. Since learning of the fine, the Group has taken a series of strict measures, guided by a **zero tolerance** policy. It has reaffirmed that **everyone in the corporate community, without exception,** is held to the Principles of Conduct and Action.



Shareholders’ general meeting

## SAINT-GOBAIN IS ONE OF THE WORLD’S 100 MOST SUSTAINABLE CORPORATIONS



Saint-Gobain is included in the Global 100 most sustainable corporations in the world. Global 100 is a list of companies included in MSCI World—a global stock market index maintained by Morgan Stanley Capital International—that are evaluated according to how effectively they manage environmental, social and governance risks and opportunities, relative to their industry peers.

The Global 100 is based on research analytics provided by Innovest Strategic Value Advisors, an American firm of investment advisors specialized in managing non-traditional risks.

## MAINTAINING OUR SHAREHOLDERS’ TRUST

At Saint-Gobain, we maintain relationships of trust with our shareholders and regularly inform them of the Group’s results and decisions. Through our website, newsletters, shareholders’ guide and regular meetings with shareholders in France and the world’s main financial centers, we are able to dialogue with our shareholders on a consistent basis.

Saint-Gobain is included in the FTSE4Good and ASPI Eurozone® indexes, which are independent benchmarks of performance in sustainable, responsible development. Companies are selected for inclusion in the index based on their environmental and human rights record, as well as their corporate governance policies, stakeholder relations and overall commitment to building a sustainable future for the planet.

# Supporting our local communities



## SAINT-GOBAIN INITIATIVES FOUNDATION

The Saint-Gobain Initiatives Foundation, with an annual budget of €1 million, supports projects proposed by Group employees in three key areas:

- Preparing young people for jobs in the habitat and construction industry.
- Building, improving and renovating social housing, to support local communities.
- Improving the energy efficiency and environmental performance of social housing.

Other regional and local initiatives are taken by the Group itself.



## A PROJECT TO IMPROVE HOUSING

Saint-Gobain is working in partnership with South Africa's Department of Housing on the *Breaking New Ground* project to improve the quality of housing. The Group has donated ceilings and insulation materials to build dust- and sand-proof housing with improved insulation, energy savings and health benefits.



## SAINT-GOBAIN ISOVER SUPPORTS HABITAT ET HUMANISME INITIATIVES

Saint-Gobain Isover has pledged its support to *Habitat et Humanisme*, a French non-profit association that helps families and people in difficult situations obtain access to decent, affordable housing. The company provides financial assistance, donates insulation materials and extends its expertise on energy saving techniques.

## FOSTERING LOCAL ECONOMIC DEVELOPMENT

Group companies contribute to the development of the employment hubs in which they are based, thereby promoting economic conditions in which local communities can thrive. The responsibility of the sites to the regions in which they operate is commensurate with the wide-ranging economic impact of their presence.

Saint-Gobain Développement was founded in France in 1982 to support local development and revitalize employment catchment areas in the Group's local communities. It provides its expertise to small- and medium-sized enterprises (SMEs), 54 of which benefited from its services in 2008. Saint-Gobain Développement has extended its work outside France through its *Partenariat France initiative*, which supported the import/export projects of three SMEs in the Czech Republic, China and Belgium in 2008. Thanks to the Group's extensive presence in these countries, local operations were able to provide assistance and house students who have signed a Volunteer for International Experience (VIE) program.

## SAINT-GOBAIN DÉVELOPPEMENT HELPS A NON-PROFIT ASSOCIATION BECOME A PROFITABLE ENTERPRISE

At the end of 2008, Saint-Gobain Développement helped the French non-profit organization Recycl'Aisne develop a for-profit business plan. The organization employs disabled workers at its site in Soissons to dismantle electronic equipment such as computers and scanners for recycling or reconditioning. Its objective in converting to a for-profit company was to obtain financial independence from local government authorities.



**SUPPORTING  
EDUCATION AND TRAINING**

The Group pursues initiatives across the education spectrum, providing ad hoc equipment aid, arranging site visits, participating in national programs and supporting technical training.



**BRAZIL**

**INCOME CREATION PROJECT**

Thanks to the Income Creation project, the wives and mothers of Saint-Gobain Canalização employees received training in employment and income creation. By building a database of résumés targeting the region’s employment agencies, Saint-Gobain helped a number of these women enter the workforce.



**UNITED STATES**

**SKILLS FOR LIFE**

One of the Saint-Gobain Corporation Foundation’s flagship initiatives, the *Skills for Life* learning laboratory was established in 1989 to improve students’ skills in math and English (written and spoken). Every year, more than 180 students participate in the program in several regions of the United States. The latest school to host the learning laboratory is in Louisiana, where the Foundation installed 30 computers and teaching equipment and helped bring in assistants. The school was chosen because it is in one of the areas worst affected by Hurricane Katrina.

**SUPPORTING COMMUNITY  
AND CULTURE THROUGH  
CORPORATE SPONSORSHIP**

The Group’s corporate sponsorship program actively supports many initiatives in the areas of health, human services, culture and research by directly involving employees or providing funding for charitable causes.



**MALAYSIA**

AT THE END OF 2008, SAINT-GOBAIN MALAYSIA DEDICATED HALF A DAY TO HELPING DISABLED CHILDREN.



**MEXICO**

**FLOOD RELIEF**

In Mexico, Saint-Gobain Gypsum donated construction materials to a community located near a gypsum plant that was hit by a devastating flood in July 2008. The material damage from the flood was substantial.



**FRANCE**

THE CORPORATE TEAMS PARTICIPATED IN A CHALLENGE ORGANIZED BY ACTION AGAINST HUNGER.



SAINT-GOBAIN’S PIPE BUSINESS SUPPORTS “MUSIC IN SCHOOLS” PROJECT TO GIVE CHILDREN AN OPPORTUNITY TO LEARN ABOUT MUSIC.

**UNITED KINGDOM**

**TOGETHER**

Since 2002, the Building Distribution Sector’s various businesses have participated in charitable undertakings in the UK in support of non-profit organizations such as Cancer Research UK and the British Heart Foundation. Employees, suppliers and customers organize numerous events including athletic challenges, dinners and walks to raise money for these causes.





# OUR ENVIRONMENT PROTECTION

## RESPECT FOR THE ENVIRONMENT IS A KEY PRINCIPLE DRIVING OUR ACTION

Saint-Gobain's manufacturing processes involve relatively little technological risk, as they mostly use mineral raw materials and very few environmentally hazardous substances. The main concern for Saint-Gobain, as for many other manufacturers, is carbon dioxide (CO<sub>2</sub>) emissions. The Group has set ambitious targets for CO<sub>2</sub> emissions at sites with a significant environmental impact. It has accelerated its ISO 14001 certification process to obtain accreditation for more than 80% of these sites. In 2008, 46% were already certified.

These sites are also being called on to reduce their CO<sub>2</sub> emissions, landfilled waste and water withdrawals by 6% between 2007 and 2010. In 2008, the Group had already cut its CO<sub>2</sub> emissions by 2% and water withdrawals by 4%.

# Promoting recycling

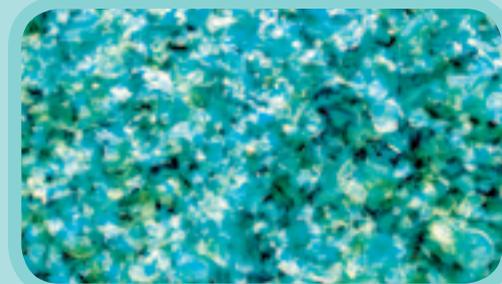
The three main materials processed by Saint-Gobain—glass, cast iron and gypsum—can be recycled over and over again. The Group extensively promotes their recycling. This offers a double advantage for the environment as recycling reduces both waste volumes and consumption of raw materials.

THE THREE MAIN MATERIALS PROCESSED BY SAINT-GOBAIN CAN BE RECYCLED OVER AND OVER AGAIN.

“OBJECTIVE ZERO NON-RECOVERED WASTE”



## GLASS



At the glass manufacturing sites, each metric ton of cullet used in the melting process avoids 255 to 300 kg of CO<sub>2</sub> emissions.

In 2008, the percentage of recycled material in most of our glass furnaces was above 35%. The proportion is particularly high for glass wool and container glass. Saint-Gobain Packaging recycles 100% of collected glass and is stepping up collection so as to increase the percentage of recycled glass in its furnaces around the world. In the Flat Glass business, the volume of cullet recovered externally from processing plants rose by 3% between 2007 and 2008 thanks to sorting practices and logistical solutions now in place—including the installation of cullet bins, operator training in sorting procedures and deployment of the necessary systems and equipment.



### SORTING TECHNIQUE WINS AWARD

In 2008, French glass industry spokesgroup *Verre Avenir* won an award for developing a technique to sort recovered glass for recycling. The optical sorting system separates white from colored cullet to be melted in light-tint batches. Saint-Gobain Packaging and VOA, both members of *Verre Avenir*, are playing an active role in this program. Effective sorting makes it possible for everyone in the recycling chain to improve the quality and quantity of collected glass.

## CAST IRON



Cast iron can be made from iron ore or from scrap metal and recovered cast iron when a large scrap metal market is located nearby. In 2008, recycled materials went into 47.8% of the metric tons of finished product at concerned sites.



## GYPSUM



The conversion of gypsum into plaster is an age-old process. Plaster is very environmentally friendly because it requires very little energy to be produced and can be recycled indefinitely. Saint-Gobain Gyproc is a pioneer in recycling. In 2008, at the concerned sites within the Gypsum Division, 25.4% of finished gypsum was produced from recycled materials. Waste recycling facilities have been established in several countries. In the United Kingdom, for example, a comprehensive service is provided that spans from on-site collection to gypsum reuse and mechanical sorting to separate paper from other waste components. In southeastern France, Placoplatre® has set up a dedicated collection network for plaster waste among its three production sites in Chambéry, Cognac and Vaujourns, with 18 partner organizations that collect plaster waste and recycling workshops. The service is projected to save over 1,000 metric tons of natural resources per month in 2009 and eliminate the need to landfill an equivalent volume of waste.

# Reducing energy use and direct emissions

Saint-Gobain is constantly improving its manufacturing processes to limit air pollution. Reducing carbon dioxide (CO<sub>2</sub>) emissions is a priority focus of the Group's environmental policy.

In 2008, the concerned sites emitted 13.5 million metric tons of CO<sub>2</sub> compared with 13.8 million metric tons in 2007, for comparable output. Saint-Gobain is a marginal producer of CO<sub>2</sub> emissions; 83 of our units are concerned by the European Directive on CO<sub>2</sub> emission quotas (2008-2012), representing together less than 0.3% of the total quotas allocated in Europe.



## WORLDWIDE PATENT FOR HEAT RECOVERY

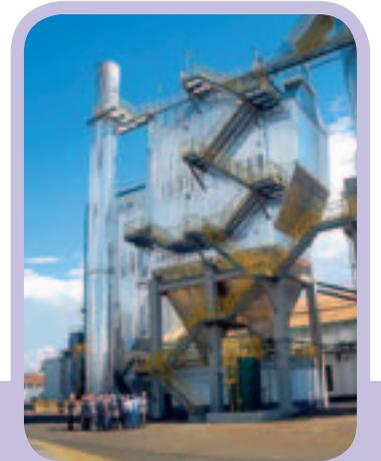
Saint-Gobain Isover Benelux B.V. has developed an innovative system at Etten-Leur in the Netherlands to reduce its energy consumption and CO<sub>2</sub> emissions. A huge gas-fired steam boiler weighing some one hundred metric tons was installed at the production site in 2008 to re-use the residual heat (550°C) produced by gas combustion during the glass wool manufacturing process. The system will save some 1.5 million cubic meters of natural gas each year and avoid 2,500 metric tons of CO<sub>2</sub> emissions. Thanks to a new innovation, the boiler is cleaned automatically so that particles do not build up (500 kg every 24 hours) and block the heat transfer. Saint-Gobain has filed a worldwide patent for this invention.

## DUST

Saint-Gobain takes an active approach to managing dust emissions. As part of this approach, we continue to invest in electrostatic precipitators and bag filters. In addition, filtration dust is increasingly recycled at the plants themselves or utilized through special processes.

The glass melting process, pipe production and the manufacture of certain industrial ceramics can release pollutants like nitrogen oxides (NO<sub>x</sub>) and sulfur oxides (SO<sub>x</sub>) into the atmosphere. Saint-Gobain has focused on reducing these emissions for many years by:

- Using higher-quality fuel oil or coal slack, lowering energy consumption and introducing desulfurization processes.
- Taking primary measures to avoid or attenuate NO<sub>x</sub> at the source. The Flat Glass site in Calarasi, Romania, for example, is equipped with an efficient gas combustion pilot furnace that limits the concentration of NO<sub>x</sub> in stack gas to less than 800 mg/Nm<sup>3</sup>.



## SAINT-GOBAIN EMBALAGENS INSTALLS AN ELECTROSTATIC PRECIPITATOR

Saint-Gobain Embalagens has installed an electrostatic precipitator in its Porto Ferreira, Brazil plant to reduce dust emissions. The plant also has a dedicated unit to treat wastewater and process water. All waste is sorted at the plant and, for the most part, returned to the production cycle. Cullet represents more than 60% of the furnace's feedstock. Although this percentage is currently limited by the availability of cullet in the market, the plant intends to ultimately raise the proportion to 80%.



## THE HOOSICK FALLS PLANT REDUCES ITS ENERGY BILL BY \$1 MILLION

In the United States, the Saint-Gobain Performance Plastics facility in Hoosick Falls, New York, has acquired a more effective system for capping its emissions. The new regenerative thermal oxidizer (RTO) captures seven times the energy of the previous system, thereby slashing nearly a million dollars from the site's propane costs each year and reducing its annual greenhouse gas emissions by several thousand metric tons.

# Reducing energy use and indirect CO<sub>2</sub> emissions

## OUR BUILDINGS

The energy efficiency of buildings in use plays an extremely important role in any strategy for reducing greenhouse gas (GHG) emissions. That is why Saint-Gobain has committed to reducing the energy consumption and GHG emissions of its service buildings by a factor of four before 2040 under the Care:4™ project. The goal is to bring each building's thermal performance into line with the most stringent national standard, such as PassivHaus and Effnergie, or, if no national standard exists, the highest efficiency value for the local climate. The campaign extends to any heated or air-conditioned workplace owned by the Group, with the exception of production shops and warehouses. Energy consumption for all new offices, training centers and other buildings apart from production shops, warehouses and depots must now be less than 80 or 120 kWh/m<sup>2</sup>, depending on the country.



**CARE:4**  
Company Action for the Reduction of Energy by 4

## OUR TRANSPORTATION RESOURCES

Our businesses give rise to transportation-related CO<sub>2</sub> emissions, particularly in the Building Distribution Sector when products are shipped to sales outlets. As part of its Responsible Procurement initiative—a chief goal of which is to reduce CO<sub>2</sub> emissions—the Building Distribution Sector is taking steps to improve its fleets' emissions performance. A number of banners are also deploying effective solutions to reduce fuel consumption and develop alternatives to trucking.

Lapeyre products arriving by ship at the port of Le Havre, France are now being transported by river to the logistics platform in Les Mureaux outside Paris, via the Port of Limay. This has enabled Lapeyre to replace over 1,300 trucks with 65 barges and, in the process, reduce its CO<sub>2</sub> emissions, since transporting a container by barge generates half the carbon dioxide of overland vehicles.

In 2009, *Bilan Carbone™* emissions assessments will be performed for French subsidiaries, creating an assessment base for the French scope, with the aim of extending the process to the entire Group.

Mpro develops inland waterway transport in Belgium



Measures are also being taken in manufacturing. For example, some 40% of Saint-Gobain PAM products are shipped to their destination entirely via sea, river and/or rail links. The Gypsum Division also makes extensive use of rail for transporting gypsum between production sites.

To optimize shipping and limit CO<sub>2</sub> emissions, certain businesses have developed innovative processes. The Insulation business, for example, now compresses glass wool. Thanks to their elasticity, glass wool products can be compressed up to ten times when packaged into rolls and palletized.

Lastly, Saint-Gobain's purchasing department now uses CO<sub>2</sub> emissions as a criterion when selecting vehicles for long-term lease in France, and is a member of the Transport taskforce at *Entreprises pour l'Environnement*, a non-profit organization of which the Group is a member.



Placoplatre® chooses rail in France

## RESPONSIBLE DRIVING

All drivers and delivery people at Point.P and Saint-Gobain Building Distribution Deutschland GmbH are trained to maximize their vehicles' fuel efficiency and, consequently, reduce their CO<sub>2</sub> emissions. The results have been encouraging, with fuel consumption declining by up to 15%. The truck and car fleet is regularly renewed to take advantage of the latest, most environmentally friendly technologies. To cut down on driving distances between supplier plants and customer worksites, the supply chain has been optimized at the national level. In particular, this has meant redefining supply depots, improving inventories and re-mapping delivery routes.



## BRITISH GYPSUM SIGNS CONTRACT WITH RAIL FREIGHT HAULER

On June 20, 2008, British Gypsum signed a five-year contract with rail freight hauler First GBRf to transport gypsum to its production sites in Kirkby Thore, East Leake and Robertsbridge. From now on, 80% of the sites' gypsum supplies will be shipped by rail rather than by road. This decision came on the heels of a similar contract signed in 2007 for the delivery of finished products from the Kirkby Thore site to its Scottish customers that cut trucking trips by nearly 3 million kilometers.

# Preserving natural resources

Preserving biodiversity is a key concern at Saint-Gobain because we use natural raw materials in most of our products.

## WATER

Water is used in only a few of our manufacturing processes, for example to cool installations that operate at high temperatures. Saint-Gobain has taken measures to reduce its withdrawals, notably by extending the use of closed-circuit facilities. In 2008, concerned sites withdrew 89.7 million cubic meters of water, compared with 93.5 million in 2007 based on comparable output and scope of consolidation.



Wastewater treatment unit installed by the Construction Products Sector in Thailand.

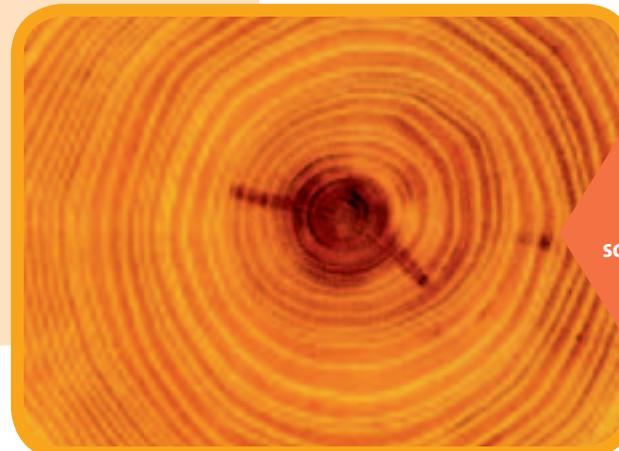
## WOOD

From flooring to shutters to windows, numerous products made or distributed by the Building Distribution Sector contain wood. For that reason, the Sector is committed to protecting the biodiversity of forestlands by carefully monitoring the origin of the species it distributes. In 2007, it launched a rigorous wood policy defining the requirements of responsible buying and selling:

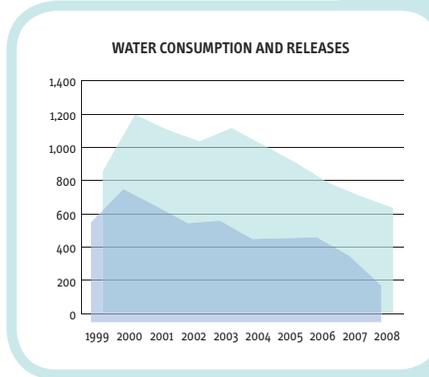
- Responsible buying practices are designed to protect endangered species, ensure that all

the wood procured by the Group is legally sourced, and promote sustainable forest management through the use of wood that is certified by the Forest Stewardship Council (FSC) and the Program for the Endorsement of Forest Certification schemes (PEFC).

- Responsible selling means training salespeople and informing customers about woods' environmental advantages and product traceability (species, country of origin, certification, etc.).



Objective: 80% of incoming wood sourced from certified forests by 2010.



### FRANCE

#### ISOVER MEETS THE WATER CHALLENGE IN ORANGE, FRANCE

Isover's plant in Orange, France has reduced its releases and improved their quality through a wide range of actions taken as part of its ISO 14001 approach to environmental management. These included installing a confined disposal facility and meters; upgrading the raw water, fire protection water, drinking water and other networks to enhance their reliability; optimizing the manufacturing process and raising employee awareness. Over the past five years, the resulting water savings have totaled one million cubic meters—equivalent to the annual consumption of a city of 20,000—while output has increased by 25%. Substantial technical and organizational modifications will be required to recycle the 300,000 cubic meters released annually so that the plant can achieve its objective of zero releases in the next three years.

# MINERALS

The Group operates 145 underground and open-cast quarries worldwide, mainly to extract gypsum. During the extraction period, the effects on local residents and on the environment are reduced as much as possible. When extraction is complete, sites are systematically reclaimed and restored.

With open-cast quarries, the Group's aim is to return the land as nearly as possible to its original contours.

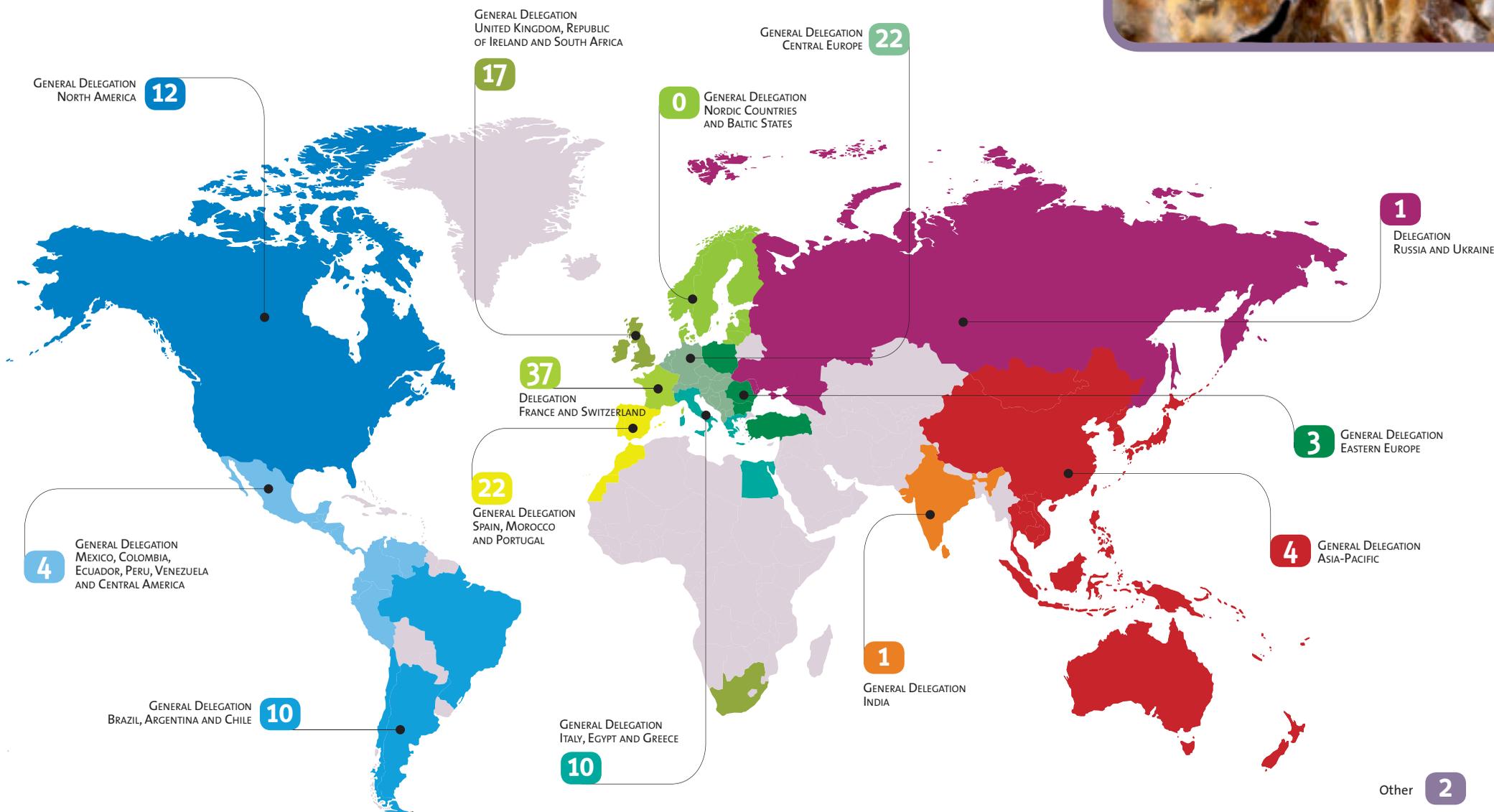
The entire area is then replanted, with high-density wooded areas composed of a variety of species, coupled with woodlands, meadows and ponds, to foster biodiversity. Since the early 1990s, the Gypsum Division in France has redeveloped more than 200 hectares (495 acres) of open-cast quarries in the greater Paris region and planted over 190,000 trees.



Restoration of the Weber Quartzolit site in São Gonçalo, Brazil.



## NUMBER OF QUARRIES BY GENERAL DELEGATION



## BRAZIL INITIATIVES AT WEBER QUARTZOLIT'S SITE IN BOFETE

Brazil's Bofete region is home to a 630 hectare (1,557 acre) facility that extracts and processes industrial sand. With a monthly production capacity of 35,000 metric tons, the site supplies Quartzolit's Jandira plant, the world's largest industrial mortar facility. As part of an overall strategy to promote sustainable development, the site is involved in a 30-year program to restore deteriorated areas. This entails filling trenches with clay to recreate the area's original contours. To level the ground, the company also adds mineral-rich soil and plants fast-growing pine and eucalyptus trees. In all, 300 hectares (741 acres) have been fully preserved. In addition, Weber Quartzolit has planted 100 indigenous species to enrich the area's forestlands and conducted a study on local fauna, which includes endangered species.

# Summary of social and EHS indicators

(2008 Annual Report)

## SOCIAL INDICATORS

INDICATOR	2008
Number of millionaire sites (sites that have clocked up over one million incident-free hours of work and/or over five years' work without any lost-time incidents)	107
Lost-time incident rate (LTIR - more than 24 hours' lost time) - Group	4.8
Severity rate - Group	0.22
Lost-time incident rate (LTIR - more than 24 hours' lost time) - Building Distribution Sector	8.7
Total recordable incident rate (TRIR) - industrial Sectors	11
Number of workplace fatalities - Saint-Gobain employees	8
Number of Health & Safety-certified sites - comparable scope	197
Total headcount	209,175 employees
Departure rate	18.3%
Resignation rate	7.1%
Termination rate	5.8%
Recruitment rate	16%
Percentage of temporary workers	6.5%
Percentage of fixed-term employment contracts	4%
Percentage of fixed-term employment contracts transformed into permanent contracts	48.5%
Training expenditure as a percentage of total payroll	2.5%
Percentage of employees who took at least one training course during the year	66.4%
Number of training hours per employee	24
Percentage of training hours dedicated to technical training and EHS	Technical training: 48.8% EHS training: 24.6%
Percentage of female employees	20.1%
Percentage of white-collar workers among female employees	75.3%
Female managers as a % of total employees	16.6%
Percentage of disabled employees in France	3.6%

INDICATOR	2008
Percentage of employees with employee representation	63.4%
Number of agreements signed with employee representatives	1,479
Percentage of employees covered by a collective bargaining agreement	Group: 62.7% France: 99.4%
Percentage of employees in France covered by the discretionary profit-sharing scheme	96.1% (€63.6M)
Percentage of shares held by Group employees	7.8%
Number of countries covered by the Group Savings Plan	40
Sickness absence rate	4%
Percentage of employees performing shift work	31.7%
Overtime rate	4.1%
Percentage of part-time employees	3.2%
Percentage of executives and managers	12.3%
Percentage of administrative employees, technicians and supervisors	40.5%
Percentage of blue-collar workers	47.3%
Percentage of managers who had a performance review	76.5%
Percentage of employees in France taken on under a youth employment scheme	2.2%

## DEVELOPMENT OF LOCAL COMMUNITIES INDICATOR

INDICATOR	2008
Group community development spending	Approximately €3m
Number of jobs created outside the Group in France with the support of Saint-Gobain Développement	482 jobs (through 127 SME support agreements representing over €1M)

## ENVIRONMENTAL INDICATORS

INDICATOR	2008
Number of quality-certified sites - comparable scope	678
Percentage of concerned sites that are environmentally-certified	46%
Number of Seveso-classified sites	6
<b>Total environmental expenditure</b>	<b>€100M</b>
• Salaries and other payroll expenses for environmental officers	€22.3M
• ISO 14001 and EMAS environmental certification and renewal costs	€1.7M
• Environmental taxes	€4.8M
• Insurance and warranties	€4.5M
• Environmental fines	€0.3M
• Cost of environmental incidents	€2M
• Cost of technical measures	€6.2M
• Environmental R&D budget	€41.5M
• Soil decontamination, site remediation and other clean-up costs	€16.7M
Capital expenditure on environmental protection measures	€94.5M
Provisions for environmental risks	€158M
Quantity of production waste - concerned sites (based on 2007 production output)	3.5Mt
Consumption of primary raw materials in glass furnaces - concerned sites	13.2Mt
Consumption of cullet in glass furnaces - concerned sites	2.8Mt internally sourced; 4.4Mt externally sourced
Percentage of cullet in each ton of finished product of glass wool produced - concerned sites	18.9% internally sourced; 40.9% externally sourced
Percentage of cullet in each ton of finished product of container glass produced - concerned sites	17% internally sourced; 40% externally sourced
Percentage of cullet in each ton of finished product of flat glass produced - concerned sites	23.4% internally sourced; 11.4% externally sourced
Percentage of tons of finished products from primary melt - concerned sites	71.9%
Percentage of recycled materials in each ton of finished product of cast-iron produced - concerned sites	47.8%

INDICATOR	2008
Percentage of recycled materials in each ton of finished product of gypsum quarried - concerned sites	25.4%
Percentage of waste generated by the processing of recycled stack gas in Saint-Gobain Glass furnaces - concerned sites	62.7%
CO <sub>2</sub> emissions, based on 2007 production output - concerned sites	13.5Mt
CO <sub>2</sub> emissions - Group, based on a comparable scope	14.3Mt
Number of facilities concerned by the EU greenhouse gas emission allowance trading scheme	83
CO <sub>2</sub> emissions concerned by greenhouse gas emission allowances	6.5Mt (i.e. less than 0.3% of allocated allowances)
Group energy expenditure	€2 billion
Fossil fuel purchases as a percentage of total energy expenditure	62%
Energy use	61.1TWh
SO <sub>2</sub> emissions per ton of finished product of glass produced - concerned sites	2.46kg
SO <sub>2</sub> emissions per ton of finished product of cast-iron produced - concerned sites	1.01kg
SO <sub>2</sub> emissions by the Pipe Division and the glass businesses - concerned sites	38,094 tons
NO <sub>x</sub> emissions per ton of finished product of glass produced - concerned sites	2.61kg
NO <sub>x</sub> emissions per ton of finished product of cast iron produced - concerned sites	1.31kg
NO <sub>x</sub> emissions - concerned Pipe and glass sites	40,944 tons
Particulate emissions per ton of finished product of glass produced - concerned sites	0.36kg
Captured particulate emissions per ton of finished product of cast-iron produced - concerned sites	1.03kg
Water withdrawals, based on 2007 production output - concerned sites	89.7 million cu.m
Water withdrawals - Group, based on a comparable scope	101.7 million cu.m

For a description of our reporting methodology, read the 2008 Annual Report at [www.saint-gobain.com](http://www.saint-gobain.com)





*This is a free translation into English of Saint-Gobain's building our environment together brochure issued in French and is provided solely for the convenience of English speaking readers.*

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