

# SUSTAINABLE DEVELOPMENT REPORT 2014

Bobst Group SA





*The restaurant at the Mex, Switzerland site was built on the principles of sustainable development.*

The pressure that consumers, regulatory bodies and brand owners are increasingly demanding and require better performance to reduce the environmental impact of packaging of all kind. This has a direct impact on BOBST, as machines and services supplier.

The BOBST response to this is two-fold. Firstly, the company continually looks for opportunities to develop and help the technologies evolve with more safety and with constant reduction of the environmental impact. It ensures minimizing waste, ink loss during washing, reduction in energy consumption and improved management of lubrication oils to reduce environmental risks in case of intensive use of its machines.

Secondly, BOBST runs multiple initiatives throughout its own production facilities. It works to reduce its own energy consumption, as well as the carbon footprint related to the transport of components used in its assembly lines. In its plants, the Group is also working to remove chemicals and hazardous processes, in order to create a work environment that is as safe as possible.

This twin pronged approach helps to continuously improve the environment which our employees, customers and suppliers/partners work and live.



Building evacuation exercise



Assembly points

**Safety exercises**

*Bobst Group*

In the event of a major disaster (fire, explosion, natural disaster, etc.) requiring the evacuation of a site, it is imperative that staff are aware of evacuation routes and assembly points, and that they adopt safe behavior when leaving the site. Exercises are organized to familiarize employees on the route to take in case of danger, to identify any gaps in alarm installations, and also to train the intervention team according to protocols established in advance. Regulatory and mandatory, these exercises are planned with a view to minimizing their impact on site productivity.

**Proven Results**

In April 2014, all the buildings at the Lyon site in France were evacuated during unannounced exercises organized by the site’s Safety and Environment Department. An emergency team, composed of guides and controllers, supervised employees and made sure they all left the premises. The time required for this operation was less than six minutes for each building. The full exercise lasted less than twenty minutes.

In May, another emergency training exercise took place at the kindergarten of the Mex site in Switzerland. With some of the children not yet being old enough to walk, special supervision measures were taken to help and reassure them throughout the exercise, particularly because of the loud noise created by the alarm system.

Thanks to the excellent performance of the

teachers and the commitment of the site’s emergency firefighting team, the whole operation took place peacefully and without incident. The children reached the assembly point in less than five minutes.

One last unannounced evacuation exercise was orchestrated in October covering all the buildings of the Mex, Switzerland, site. Its goal was to optimize the time required by the emergency team to take control of the premises. Everyone present on the site (over 1 000 persons) left the buildings in less than seven minutes. The total duration of the exercise, from the triggering of the alarm up until the return of all employees to their workplaces, required just thirty five minutes. This was a very good performance, taking into account the distances involved on site.

**Energy performance Network**

*Lyon site, France*

In order to optimize its performance in the Demand Control Energy (Maîtrise de la Demande Energétique, or MDE) and to reduce greenhouse gas emissions (Gaz à Effet de Serre, or GES), the site in Lyon, France, participates in an energy performance network, in partnership with Electricité de France (EDF). In the frame of this three-year program, BOBST will receive advice and recommendations to help it improve the operation of its facilities and to reduce operating costs. The first year will be dedicated to an analysis of workshop lighting. A review of air treatment facilities and the size of installed power systems will be realized over the subsequent two years.

### Lighting Workshops

The European standard for «lighting in workplaces», in force in France since June 2003, sets out the amount of light to be maintained in working areas. It defines the conditions for an optimal light environment which allows employees to carry out their activities in an efficient, safe and comfortable way.

Within machining and assembly halls, lighting is set at 500 lux (lumen per square meter) and is to be maintained at 300 lux in storage areas.

As part of the recommendations for the Lyon site, EDF has modeled each hall and created two installation simulations:

- The first uses lamps equipped with T5 fluorescent tubes,
- The second type operates with LED type lamps.

The main advantages of these solutions are:

- More effective illumination than conventional tubes,
- Very low light loss compared to conventional tubes,
- More intensive light (luminance) from the tube, due to its small surface,
- A longer operating life,
- Improved environmental outcomes: less energy consumption, fewer bulbs to recycle and optimized maintenance costs.

The results obtained following the introduction of these measures will be analyzed at the end of 2015.

### Renovation of the building G01

*Site of Mex, Switzerland*

Built in the 1970s, the G01 building, today renamed Bobst Campus, underwent a major renovation in 2014. The thermal insulation of all façades, the installation of triple glazed windows, and the bringing of the construction into compliance with today's legal requirements, will create a reduction of nearly 55% in the energy needed to heat the building.

### A historic building

The first building to be constructed on the Mex site, the G01 building was built from 1976 to 1982 in three stages, following a modular architecture scheme widespread in western Switzerland at that time. Called CROCS (Centre de rationalisation et d'organisation des constructions scolaires),

this construction system was developed in Lausanne in the 1960s. It allowed for quick and economical construction using a metal frame. Many municipalities adopted this method to build schools and so meet their significant need for school buildings. All these buildings are recognizable by their very typical look: plenty of glass façades, a metal structure and their square shape.

### Investments needed

Like most CROCS buildings, the G01 building quickly showed insulation and sealing defects. The new materials used at its time of construction have deteriorated, requiring a major renovation. In order to estimate the amount of investment related to this work, a study project was conducted in November 2013 and highlighted the following potential benefits of refurbishment:

- A contribution by BOBST to reducing its CO<sub>2</sub> emissions as part of the agreement signed in 2013 with the national agency of energy for the economy (Agence de l'Energie pour l'Economie, or AEnEC). The Swiss Confederation provides this agreement to companies with annual energy fees exceeding half a million Swiss francs.
- Increased comfort for the building's occupants:
  - Owens-Illinois (OI), the world leader in glass packaging, which has established its European headquarters in Mex,
  - The Romande Association for operating agents (ARAE),
  - The BOBST Training Centre,
  - The Vaudois Training Centre for Industry (CFVI).
- Strengthening the health and safety of the building in its compliance with new legal standards (protective measures against asbestos, seismic resistance, safety of electrical installations, thermal efficiency, among others).
- Refurbishment and insulation of interior and exterior façades.
- Modernization of the architectural expression of the building.
- Integration of the building with the other units on the site for more efficient maintenance.

**Ten months of work**

The renovation of the G01 building began in March 2014 and lasted ten months. A very short time, considering two major constraints: first, maintaining the heat distribution system, a Sani-Wind coil type, which provides heating. Then, the

implementation of technical solutions to avoid breaking through the walls while refurbishing and insulating the façades. The occupants were able to remain in the building during the entire construction period.

**Building before renovation**



Carried out in three stages, the G01 building was built first in the form of an «L» and then of a «U»

and finally as a perfect square. 55 meter long façades surround an interior courtyard.

**Building after renovation**



The renovation project focused on two main areas: the thermal insulation of the building and the interior renovation of the second and third floors of the building. The moving in of the new tenant Owens-Illinois (OI) created an opportunity to modernize part of the second

floor and the entire third floor, where LED lights have been installed. The choice of this type of lighting helps to substantially reduce electricity consumption. The building is now equipped with sunblinds on the East, South and West façades.

**Technical information**

Floor Area:

- 7 700 m<sup>2</sup> on floors 1, 2 and 3,
- 3 086 m<sup>2</sup> on the ground floor.

Façade surface:

- 1 220 m<sup>2</sup> facing the courtyard,
- 3 236 m<sup>2</sup> outside.

Exterior façades of the building:

- Removal and disposal of concrete walkways (built along the façades to allow technicians to service the outside of the building) which was necessary to increase the thickness of the front curtain wall. Maintain steel and vertical carriers that support the entire structure consoles;
- Maintenance of chassis frames and existing sill elements (boxes under the windows inside the premises housing the convector fan, power and cabling);
- Removal and disposal of sunblinds, guide arms and valances (protective boxes for blinds);
- Implementation of a new anodized aluminum glazing frame;
- New windows with reflective triple glazing U 0.6 W/m<sup>2</sup>K;
- Dampened, inward opening, French casement windows (the mobile parts of the window frame) opening over their entire height to 40% open;
- Additional mineral wool insulation with a thickness of 160 mm in the existing sills;
- New front facing (the visible part of the façade) made with an aluminum frame and a wall of sheet aluminum profile;
- Installation of freestanding walkways (along the façade on the outside of the building) in linear perforated steel profile, hot-dip galvanized;
- Removal of existing panels fitted with opening sash and trim embrasures (window surrounds) with aluminum profile.

Exterior sunblinds:

- Installation of sunblinds equipped with a fixed upper part and a movable middle part driven by an electromechanical cell that is controlled automatically via a weather station and a sun sensor placed on the roof.

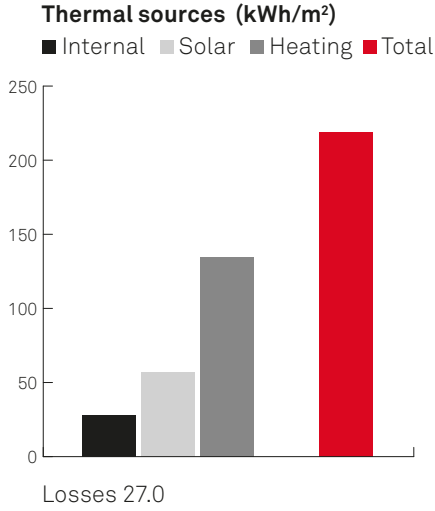
Façades of the courtyard inside the building:

- Maintenance of the existing frames and sills;
- Removal of aluminum siding (visible parts of the façade), sunblinds and guide arms;
- Installation of a new anodized aluminum glazing frame;
- New windows with triple glazing U 0.6 W/m<sup>2</sup>K;
- Dampened, inward opening, French casement windows (the mobile parts of the window frame) opening over their entire height to 40% open;
- Additional insulation mineral wool with a thickness of 160 mm in the existing sills;
- New front facing (visible part of the façade) in surface anodized sheet aluminum;
- Removal of existing panels fitted with opening sash and trim embrasures (window surrounds) with aluminum profile.

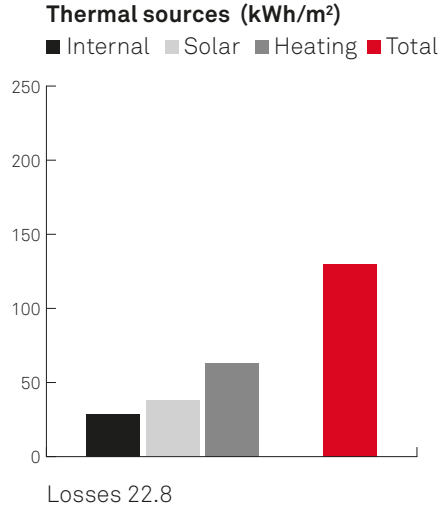
Courtyard blinds:

- Installation of new blinds, operated by an autopilot system.

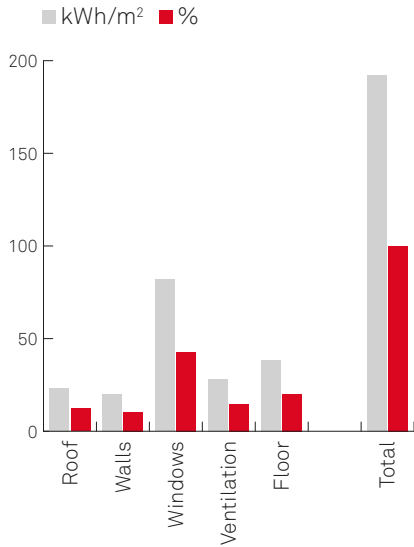
**THERMAL BALANCE BEFORE RENOVATION**



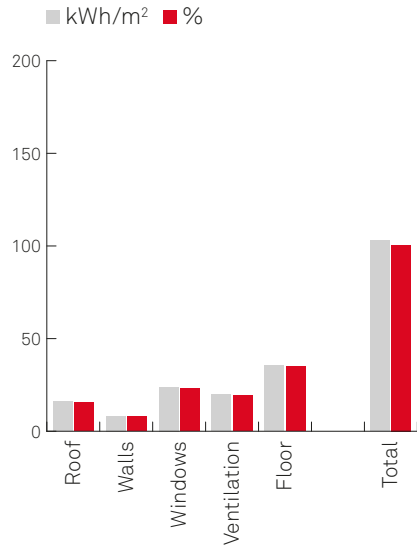
**HEAT BALANCE AFTER RENOVATION**



**Thermal losses (Before renovation)**



**Thermal losses (After renovation)**



Including thermal bridges: 0  
 Including thermal bridges (lossless ventilation): 0

Including thermal bridges: 2.7  
 Including thermal bridges (lossless ventilation): 3.4

**Energy needed for heating 134.5 (kWh/m<sup>2</sup>) (Before renovation)**

The energy requirements for heating the G01 building was approximately 1 300 000 kWh per year, equivalent to the total annual energy consumption of about thirty five households.

**Energy needed for heating 61.0 (kWh/m<sup>2</sup>) (After renovation)**

**Savings of almost 55% in energy consumption will be achieved in heating building G01. The annual consumption, calculated on the basis of the thermal insulation work on the façades of the building, will be approximately 590 000 kWh.**

**Apprentices study abroad**

*Mex site, Lausanne*

For the past four years BOBST has participated in the Leonardo da Vinci apprenticeship mobility program launched by the European Union. Because of its international presence, the Group can open up internship positions in several of its European local entities each year. Since 2011, ten automation apprentices from the Mex site have taken part in this project. Discovering a new branch of the company, improving language skills and getting to know other cultures are important experiences that the Mex site wanted to integrate into the basic training of its young professionals.

**The Leonardo da Vinci program**

As part of this European exchange program, between two and four apprentices leave the Mex site each fall for a stay of nine months (39 weeks) in one of the Group’s branches in Germany, Italy

or the United Kingdom. Open only to automation apprentices, this exchange takes place during the third year of their training. Alongside their work in a company, apprentices continue their academic courses through distance education units set by CPNV, the Centre Professionnel du Nord Vaudois (the professional center for vocational training in north Vaud). The apprentices log on every week via Skype to a virtual classroom led by their teachers at CPNV in Yverdon-les-Bains, Switzerland. Following this year of internship, they resume their studies and complete their training in their fourth year along with their peers. Registration and management of the Leonardo da Vinci program are provided by the BOBST Training Centre in Mex. To finance their stay, candidates receive a scholarship from La Fondation ch pour la collaboration confédérale, the ch Foundation for Federal Cooperation. During their training, trainees also continue to be paid by the company.



*Going abroad as part of a training. A dream that came true for Guy-Nicolas Rossier, 20, and Kim Fischer, 19. As third-year automation they left in the fall of 2013 for a nine-month stay in Bielefeld, a branch BOBST in the north of Germany. On their return they resumed their work in Mex and began their final year of training. Guy-Nicolas wants to continue his education and become a technician in industrial systems. Kim, meanwhile, wants to travel. Once he has his CFC (the Swiss federal certificate signifying completion of his training), he will join the BOBST external assembly team.*

## DASHBOARDS

### CO<sub>2</sub> Emissions

The massive drop in CO<sub>2</sub> emissions (-30%) is primarily due to particularly mild weather conditions in Europe during 2014. In Switzerland, for example, the average annual temperature in Mex increased 1.5°C between 2013 and 2014. We have also made several improvements at the San Giorgio site in Italy to reduce gas consumption: changing windows, replacing old water heaters with newer, condensing models, etc.

### Waste

Total waste production decreased by over 17%, and fell around 20% relative to gross value added (GVA). Better use of materials and stocks helped to limit waste volumes. In 2013, the amount of waste increased, mainly because of the TEAM project which, between August 2011 and March 2013 delivered the consolidation of two sites into one at BOBST Mex. About three-quarters of the waste generated in 2014 were recycled (metals 58%, paper and cardboard 16%).

### Electric Power

The power consumption per million gross value added (GVA) dropped about 11%. This encouraging result is mainly due to optimization measures implemented over several Group site in the areas of, for example, lighting, and in educating staff on good behavior in the use of energy. Steadily declining for more than five years, the power consumption per employee is at 5398 kWh.

### Occupational accidents

The severity rate is a very sensitive indicator. It measures the magnitude of accidents by the number of hours lost per employee and can be significantly influenced by a small number of incidents. Thus, in 2014, the increase of 10.8% is mainly attributable to a serious accident that occurred to a collaborator on the way to work. During the same period, the number of occupational accidents per 1 000 employees fell by 14.1%.

### Water consumption

Water consumption per person has remained stable compared to 2013. The actual reduction is proportional to the decrease in the number of employees at a Group level.

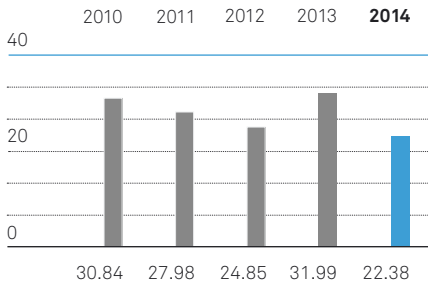
## OBJECTIVES

In 2015, we will continue the project of developing and deploying our energy strategy. In a highly competitive economic environment, it will reduce our environmental impact and anticipate the challenges of energy transition.

For any questions about sustainable development, e-mail: [sustainable-development@bobst.com](mailto:sustainable-development@bobst.com).

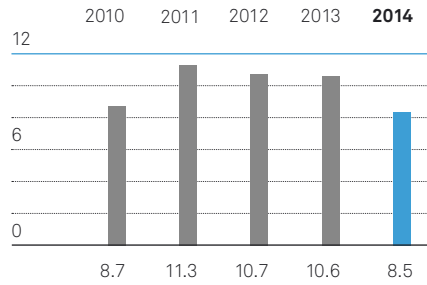
# DASHBOARDS

## CO<sub>2</sub> energy emissions



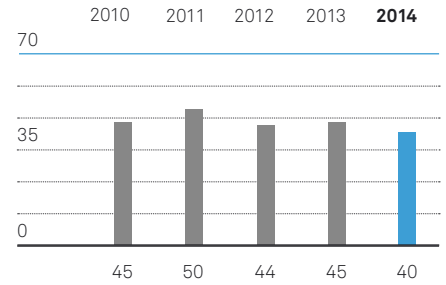
kg CO<sub>2</sub> per m<sup>2</sup> ground surface

## Waste



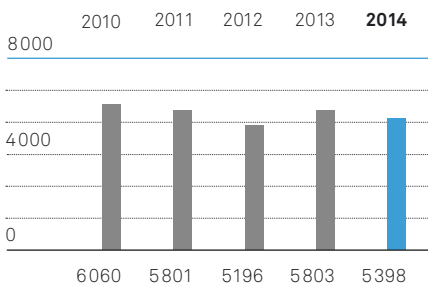
tons per mio GAV\*.

## Electrical energy



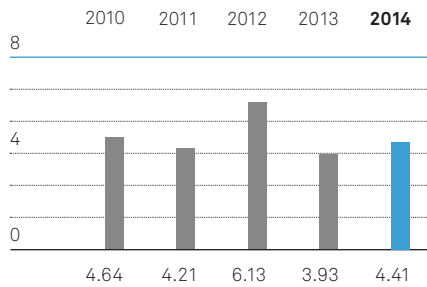
MWh per mio GAV\*.

## Electrical energy per employee



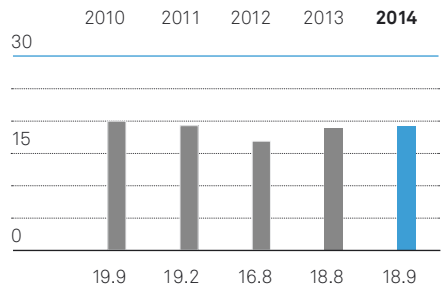
kWh per employee.

## Injury at work



lost hours per employee.

## Water consumption



m<sup>3</sup> per person.

\* GAV (Gross Added Value).

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**Website links**

<http://investors.bobst.com/documents> –  
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the Organization Regulations of Bobst Group SA,  
the Worldwide code of employee and business conduct,  
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