BUILDING AND ENERGY

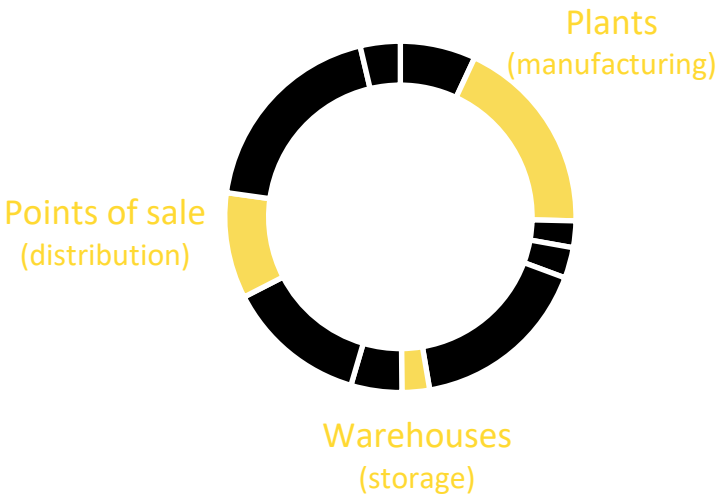
THE CHALLENGES

IN THE WORLD

The building sector is responsible for 38% of energy-related CO2 emissions worldwide[1], and its impact can be broken down into two phases: construction and operation.
The construction phase puts a great deal of pressure on resources (sand and water in particular): for example, it is responsible for 2/3 of total sand consumption. It is also a source of chemical and noise pollution, and accounts for more than 1/3 of all waste produced in the EU.
During the operating phase, energy consumption (mainly heating, followed by electricity) and water consumption will be high.

FOR THE OPTICAL SECTOR

The construction and operation of buildings (offices, factories, and points of sale) are included in the manufacturing, storage and distribution stages of the life cycle analysis of a pair of glasses[2], and represent a significant part of the environmental impact of the product.



[1] Building sector emissions hit record high, UN
[2] LCA (Life Cycle Analysis) carried out by Ace & Tate on a pair of acetate glasses.

See the "CSR, what is it about?" sheet.

WHAT DOES THE LAW SAY?

WITHIN EUROPE

The Energy Performance of Buildings Directive (EPBD), which was revised at the end of 2023, sets minimum requirements in terms of energy performance, energy certification of buildings and the promotion of near-zero energy buildings.
The Energy Efficiency Directive (EED), which was also revised at the end of 2023, requires medium-sized and large companies to install an energy management system, carry out an energy audit and draw up action plans based on the audit. In France, these directives are transposed by the “Décret Tertiaire” (tertiary sector decree).
As far as waste is concerned, the Waste Framework Directive is the central piece of European legislation in this area. Its implementation is left to the discretion of the Member States. In France, the “5 flux” decree requires companies to separate waste into five distinct categories (paper/cardboard, metal, plastic, glass, wood), and soon eight categories (including textiles) by 2025.

IN THE UNITED STATES

States and local governments may decide to adopt one of the standard federal energy codes. These codes set minimum requirements for the design and construction of new buildings and for renovations in line with energy efficiency principles. They also target the energy consumption of buildings and the emissions they generate throughout their life cycle.
There are also two main federal 'model' codes governing energy consumption in buildings: the IECC and ASHRAE Standard 90.1. Most states have adopted them.

IN CHINA

While the design standard for public buildings relating to energy efficiency applies only to the public sector, there are also incentives for more responsible construction, such as subsidies for very low-energy buildings or for integrating renewable energy into the building.

WHERE TO START?

CONSTRUCTION/DESIGN

Choice of buildings
Where possible, renovation of existing buildings or extensions on land that has already been developed should be favoured over new construction.

Insulation

Manufacturing materials
Opt for materials with a low environmental impact (recycled, eco-designed, local, etc.) and encourage re-use.

Carry out thermal insulation work (walls, roofs, windows) to reduce energy consumption.

Renewable energy sources
If possible, install photovoltaic panels on the roofs of buildings, including outdoor car parks (providing shade for vehicles), and opt for a green energy contract.

Biodiversity
Limit the artificialisation of land by maximising the amount of vegetation (leaving as much fallow land as possible), and give preference to endemic species.

OPERATION

Energy consumption
Carry out an energy audit and apply the recommendations (installation of LEDs, presence detectors, connected and/or intelligent radiator valves, etc.).
Separate offices from storage areas so as not to heat them unnecessarily, and limit the heating of occupied rooms to 19°C in winter.

Water consumption
Install water-saving devices (flow reducers, etc.).
Set up monthly monitoring of water consumption, together with an appropriate action plan.

Furniture
Favour second-hand furniture. If this is not possible, favour furniture made from recycled/certified materials (FSC for wood, for example).
Give furniture a second life: resell it, reuse it, donate it.

Consumables
Raise staff awareness of the need to reduce paper use, particularly for printing.

Waste management
Use appropriate sorting bins for the relevant streams.
Monitor waste volumes and set reduction targets with associated action plans.
At the point of sale, do not systematically distribute bags or packaging to customers.

Green space management
Implement ecological management of green spaces around buildings.

CERTIFICATIONS
BREEAM (Europe) and LEED (North America) are the main certifications for the environmental performance of buildings. They take into account energy performance, use of resources (water in particular), greenhouse gas emissions, use of sustainable materials, waste management, etc. These labels offer several levels of certification to reflect different degrees of environmental compliance of buildings.

THEY DID IT

ACTIONS RESULTING FROM APPLICATIONS FOR THE SILMO 2023 CSR PRIZE

CONSTRUCTION/DESIGN

- Refurbishment of an existing building - NAONED EYEWEAR

- Offices located in a shared building, in which various improvements have been made (natural light, rainwater recovery with treatment circuit, insulation, use of solar energy and the sea for the heat pump, etc.) - FRIENDLY FRENCHY

OPERATION

- Support in 2021 by an expert as part of ADEME's Diag Eco Flux scheme (France), following which energy consumption management and monitoring tools were introduced (LEDs, insulation work on the roof, zoning of the warehouse to insulate and optimise heated areas with a high human presence, etc.). The result: energy savings of 22% (gas) and 15% (electricity) between 2021 and 2022. – OPAL DEMETZ

- Implementation of endemic species for green spaces – NEUBAUs EYEWEAR

- Supplying the workshop with green energy (100% hydroelectric) – SI INTERNATIONAL