Making the working environment in **offices** more comfortable
Offices are now places where most employees spend the majority of their working hours. So it is essential that they are designed and built to provide maximum comfort for their occupants: visual comfort, thermal comfort and quality indoor air.

**New requirements for office buildings**

From small office blocks to major business centers, all office buildings must meet a whole range of requirements.

- **Visual comfort** at all times, as everyone wants to benefit from as much natural light as possible, while at the same time avoiding glare and reflections.
- **Constant thermal comfort** by keeping the temperature at a comfortable level at all times.
- **Air quality** that is conducive to good health.
- Optimized **energy performance** that meets new environmental regulations, and allows substantial savings while preserving natural resources.
- **A rapid return on investment** as a result of energy savings and reduced operational costs.
Somfy solutions for your projects

Somfy has developed intelligent solutions for the operation of building openings and sun protection devices. These systems improve comfort for occupants while also reducing energy costs.

In this way, Somfy contributes to the development of bioclimatic façades for all types of buildings, regardless of function or architecture.

- **The façade** is the building’s envelope, and acts as the interface between interior and exterior, and between the natural and built environments.

- **Outside**, climate conditions vary according to the seasons, the weather and changes in daylight hours.

- **Inside**, conditions must remain as stable and as comfortable as possible for all occupants, based on their activities, needs and preferences.

- The bioclimatic façade is a living membrane that continuously adapts to changes in the weather, and to occupants’ changing needs.

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1. **ABU DHABI FINANCIAL CENTRE**
   - **Client**: Mubadala
   - **Architect / interior designer**: Goettsch Partners
   - **Date**: 2010

2. **PETROBRAS VITÓRIA**
   - **Client**: Petrobras
   - **Architect / interior designer**: Sidonio Porto
   - **Date**: 2010

3. **SAN'TOS PLACE**
   - **Client**: Neilsen properties
   - **Architect / interior designer**: Donovan Hill
   - **Date**: 2009

4. **TELUS TOWER**
   - **Client**: Menkes Union Tower Ltd
   - **Architect / interior designer**: Adamson Architects Sweeny Sterling Finlayson & Company
   - **Date**: 2009

5. **FERRUM TOWER**
   - **Client**: Dongkuk Steel
   - **Architect / interior designer**: Gansam Partners
   - **Date**: 2010
Optimizing comfort in the workplace at all times

“Companies that have invested in natural lighting retrofit to existing facilities have seen worker productivity jump between 13% and 16%”

("Greening the Building and the Bottom Line", Rocky Mountain Institute, 2009.)

Improve thermal comfort

- Sudden variations in temperature are disruptive and tiring. Benefiting from constant thermal comfort, improves personal well-being and productivity.
- By combining presence detectors and temperature sensors, Somfy’s intelligent systems raise or lower blinds automatically, so that occupants benefit from a pleasant indoor temperature all year round without having to intervene in any way:
  > In summer, the goal is to reduce solar gains.
  > In winter, the aim is to capture free energy.

Improve visual comfort

- Meeting rooms, open-plan offices, individual offices... Each type of space requires its own type of lighting. This ensures visual comfort, which in turn optimizes occupant visual comfort, reduces fatigue levels and employee absenteeism.
- By combining weather sensors, timers, centralized controls and individual controls, Somfy solutions can be used to:
  > Let natural light in and make savings by using less artificial lighting.
  > Filter brightness levels when using PCs, laptop computers, tablet computers, videoconference screens, etc.

Improve ventilation

- Air quality, like temperature and light levels, is an essential component for comfort. It must be monitored in order to help provide the best possible working conditions for occupants while also ensuring their good health.
- With Somfy’s automatic systems, adapting the ventilation of a meeting room on a conference hall couldn’t be simpler.

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The 1/3/10 rule

The difference in brightness between what the eye sees (30° angle) and a visual task (e.g. a sheet of paper) must be no more than a ratio of 1:3. The ratio is 1:10 for the difference between total perceived light (90° angle) and surfaces located within the field of vision (e.g. a window).

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Preservation of the temperature

When it is hot...

【Sun】

When it is cold...

【Sun】

Air renewal

Ventilate...

for better air quality.
Optimizing building’s performance

“Gurtekin, Hartkopf and Loftness of Carnegie Mellon University reported average energy savings of 52% thanks to the use of high-performance daylighting systems.” (Carnegie Mellon University - 2004)

Save energy
- Somfy offers Dynamic Insulation™ solutions, so that you no longer have to choose between comfort and energy savings.
- The sensors and automatic devices used in Somfy solutions reduce energy consumption:
  > By prioritizing the use of natural light.
  > By reducing the solar gains in summer.
  > By adapting building openings to actual occupancy periods (taking account of variable working hours, weekends, etc.).

Make the most of your investments
- Ensure profitability is an essential requirement for office buildings. These facilities must therefore be designed and built in such a way as to extend their lifetime.
- Somfy’s centralized automation solutions are easy to integrate and operate, and help reduce running costs:
  > By reducing energy consumption (with savings of up to 10% on heating in winter, and indoor cooling gains of up to 9°C in summer).
  > By protecting external blinds from bad weather.

*Thanks to Dynamic Insulation™ by Somfy, sun protection devices react automatically to outdoor climate conditions in order to reduce energy consumption and enable occupants to gain maximum benefit from the sun’s natural light and heat.

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### Energy savings with automated sun protection devices

According to simulation tool created by Lund University in Sweden, an investment of 1% to 2% of the total cost of the building results in energy savings of 20% to 40% (see table below).

<table>
<thead>
<tr>
<th>Location</th>
<th>Electricity consumption (annual)</th>
<th>Cooling load (Reduction in Watt)</th>
<th>Total savings on consumption (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENEVA (Switzerland)</td>
<td>Reduced by 32,81% (1,315 kWh compare to 1,063 kWh)</td>
<td>Reduced by 40,28% (1,344 W compare to 2,273 W)</td>
<td>At price of CHF 0,19 kWh: CHF 122,36</td>
</tr>
<tr>
<td>NEW YORK (USA)</td>
<td>Reduced by 32,12% (2,712 kWh compare to 2,522 kWh)</td>
<td>Reduced by 39,84% (1,720 W compare to 3,057 W)</td>
<td>At price of US$ 0,129 kWh: US$ 104,49</td>
</tr>
<tr>
<td>NEW DELHI (India)</td>
<td>Reduced by 42,93% (5,611 kWh compare to 5,953 kWh)</td>
<td>Reduced by 49,64% (1,698 W compare to 3,372 W)</td>
<td>At price of INR 0,19 kWh: INR 444,6</td>
</tr>
<tr>
<td>SHANGHAI (China)</td>
<td>Reduced by 33,86% (7,713 kWh compare to 2,087 kWh)</td>
<td>Reduced by 40,29% (1,602 W compare to 2,683 W)</td>
<td>At price of RMB 0,48 kWh: RMB 420,48</td>
</tr>
</tbody>
</table>

Simulation definition: A 18 m² office room, with 4 m² window plus (double glazing Low-e except for New Delhi and Shanghai Double glazing, façade wall U-Value: 0.3 W/m²K, representing 70% of the room façade section, south oriented. Sun protection device is an internal grey PV.

The comparison is made between sun protection device and no sun protection device, depending on light level considering 2 persons occupying the room, equipped with 180 W artificial lighting (detailed analysis available on demand).

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**LEED CERTIFICATION**

Somfy solutions can contribute up to 20% obtaining LEED certification (approximately 20 out of 110 points and 10 criteria). They are also conducive to achieving the higher classification levels (Silver, Gold or Platinum). Somfy’s responsible, economical and environmentally friendly solutions are often sought for use in LEED buildings.
A solution adapted to each project

Flexible to install, easy to use and compatible with most protocols and control units on the market... All Somfy solutions are a perfect match for the needs and restrictions of the office sector.

You can anticipate requirements using timer programs, delegate to automatic sensors or let occupants make the decisions using wall-mounted control units or remote controls. Whether you want to equip a whole floor of offices, shared spaces (corridors, cafeteria, etc.), an entrance hall or a façade, your choice will depend on a number of criteria: the number of sun protection devices to be controlled (or the number of zones to be managed), the type of management or maintenance system, the desired functions and the price.

**Building management system**

Sun-protection management systems with the animeo range (available in LON, KNX, Premium)
Sensor parameters, zone-based control, supervision, etc.

Meeting room

Outdoor sun protection: Screen
• Motor: Altea
• Local control: Smoove

Indoor sun protection: Curtain
• Motor: Glydea
• Local control: Smoove

+ RS485 transmitter control (touch panel: to control lighting, projection screen, blinds, air conditioning, etc.)
+ Projection screen (Sonesse motor).

Outdoor sun protection: External Venetian blind
• Motor: J4
• Local control: Telis Modulis

Outdoor sun protection: Screen
• Motor: Altea
• Local control: Smoove

Window: Opening
• Motor: Linkeo
• Local control: Smoove
**Individual office**

Outdoor sun protection:
- **External Venetian blind**
  - Motor: J4
  - Local control: Telis Modulis

Indoor sun protection:
- **Pleated**
  - Motor: Sonesse
  - Local control: Smoove

**Entrance hall / Building foyer**

Indoor sun protection:
- **Large screen**
  - Motor: FTS
  - Local control: Smoove

**Open-plan office**

Outdoor sun protection:
- **Exterior screen**
  - Motor: Altea
  - Local control: Smoove

Window:
- **Opening**
  - Motor: Linkeo
  - Local control: Smoove

Indoor sun protection:
- **Roller blind**
  - Motor: Sonesse
  - Local control: Smoove

**Indoor sun protection**

- **Roller blind**
  - Motor: Sonesse
  - Local control: Smoove

- **Curtain**
  - Motor: Glydea
  - Local control: Smoove

- **Large screen**
  - Motor: FTS
  - Local control: Smoove
Somfy operates in 54 countries, with 68 subsidiaries, 51 offices and branches spread across 5 continents.

With 7 production centers, Somfy has effective, responsive manufacturing facilities.

Thanks to its strict quality standards, Somfy is able to satisfy the needs of 270 million users and 32,000 business clients worldwide.