



SOMFY FOR COMMERCIAL BUILDINGS



# Commercial Building Solutions

Improve building comfort and economic efficiency



# 100 MILLION MOTORS



Somfy is the leading global manufacturer of strong, quiet motors with electronic and app controls for interior and exterior window coverings. Over 270 million users worldwide enjoy the more than 150 million motors produced since 1980. For more than four decades, Somfy engineers have designed products for both the commercial and residential markets to motorize window coverings such as interior shades, wood blinds, draperies, awnings, rolling shutters, exterior solar screens and projection screens. Somfy motorization systems are easily integrated with security, HVAC and lighting systems, providing total home or building automation.

## Types of Somfy Motors



# INTRODUCTION

Somfy's Commercial Building Solutions offer a wide range of intelligent and quiet motors and controls that optimize the utilization of natural light in your commercial workspace. Our systems are calibrated to maximize occupant comfort while enhancing the visual environment, minimizing solar glare and heat gain, and providing UV protection. Somfy's natural light control automation systems are scalable in design, offered in low voltage, line voltage or WireFree™ options, and are perfect for projects of any size or budget.

In the coming pages, you will see how Somfy solutions will help you throughout the year in all climates to achieve maximum comfort and energy efficiency. Somfy strategies adjust to the needs of the occupant based on seasonal elements and our products are easily integrated depending on the systems utilized in a given building. You will see how our solutions are best integrated into the vertical markets, how we interact with artificial lighting systems to offer a system with superior energy efficiency, and innovative project examples.

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## AIA and USGBC Memberships



# THE CHALLENGES OF BIOCLIMATIC FAÇADES

Bioclimatic façades balance energy efficiency with the comfort of a building's occupants by utilizing the best elements of the outside climate along with internal systems. Somfy accomplishes the creation of a bioclimatic façade with a fully automated intelligent integrated system that reacts to outside elements in real time, maximizing energy efficiency while eliminating undesirable climatic influences. With our integrated approach, Somfy meets the challenges of today's commercial buildings:

## Meeting LEED and ASHRAE requirements



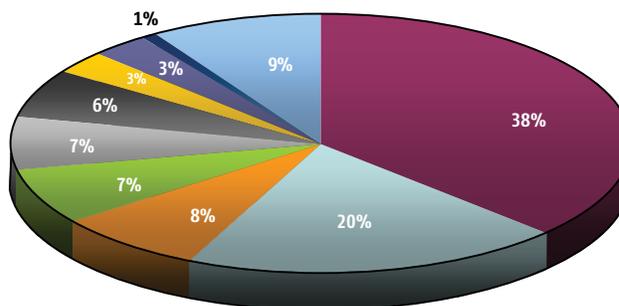
Somfy is one of your key partners for LEED certification. Somfy solutions for automated solar shading and natural ventilation devices create a bioclimatic façade by interacting with outside elements to optimize natural light and air while providing thermal and visual comfort. Somfy solutions contribute to energy savings, occupant comfort, design innovation and offer the opportunity to earn LEED points on new construction or renovation projects. Somfy also offers solutions that follow ASHRAE guidelines for enhancing the work environment by incorporating natural light to create favorable lighting and contrast, thermal comfort and proper ventilation.

“Optimizing the building envelope for the climate can substantially reduce the size of the mechanical systems.” *(ASHRAE Energy Design Guide for Small to Medium Office Buildings)*

## Meeting current environmental requirements

### Total Site ENERGY Consumption in Commercial Buildings

- Space Heating - 2,203 trillion Btu (38%)
- Lighting - 1,143 trillion Btu (20%)
- Water Heating - 449 trillion Btu (8%)
- Cooling - 431 trillion Btu (7%)
- Ventilation - 384 trillion Btu (7%)
- Refrigeration - 354 trillion Btu (6%)
- Cooking - 167 trillion Btu (3%)
- Personal Computers - 148 trillion Btu (3%)
- Office Equipment - 64 trillion Btu (1%)
- Other - 478 trillion Btu (9%)



US Energy Information Administration (USEIA) 2003 Study

Energy efficiency plays a vital role in new construction design and refurbishment of all commercial buildings today. With 72% of energy use in commercial buildings attributed to lighting and HVAC systems (USEIA 2003), there is an obvious push to reduce the energy consumption of these systems. Somfy solutions promote the use of natural energy sources such as sunshine, daylight and outside air. Automated solar shading and window opening devices integrated within the façade optimize the use of natural sources and contribute to increasing energy efficiency of buildings. When integrated with artificial lighting systems, maximum energy savings are realized by dimming artificial light while daylight is illuminating the space or by turning off lights when a space is unoccupied.



## Improving the quality of indoor environments

On average, 80% of a company's operating costs are related to employees. Therefore, increasing productivity by only 1% would offset a company's energy costs for an entire year (REHVA Guidebook 2010). Thermal and visual comfort have a beneficial effect on the occupants' well-being. Working or living in a more pleasant, healthy environment leads to improved efficiency and productivity. Automated shading devices contribute to meeting two objectives:

- Maintaining comfortable indoor temperatures for a longer period of time
- Enabling continuous glare control

## Adding value and longevity to the investment

With the long-term reduction of energy related costs, the initial investment for integrated automated shading is returned after just a few years due to smaller HVAC installations resulting in lower energy bills. In renovation projects, the peak load can be substantially reduced. Automated shading also reduces the handling of shading devices by the building's occupants, extending the life of the shading devices and lowering maintenance costs.

## How SOMFY contributes to bioclimatic façades

For over 40 years, Somfy has been developing intelligent solutions for building openings using high-tech motorization and automation systems. Natural light management, dynamic insulation™ and natural ventilation are three of Somfy's unique areas of expertise dedicated to the development of bioclimatic façades.

## Importance of Automated Total Solar Management

animeo® IP is a hardware and software solution that combines configuration and control software in one comprehensive package. By managing a full range of intelligent motors from a single source, animeo® IP presents a stronger, more customizable solution that meets today's requirements for LEED certification while increasing occupant comfort.

animeo® IP performs in installations across all vertical market segments including Offices, Hospitality, Education and Healthcare.



Energy Efficiency



Visual & Thermal Comfort



Scalability & Flexibility



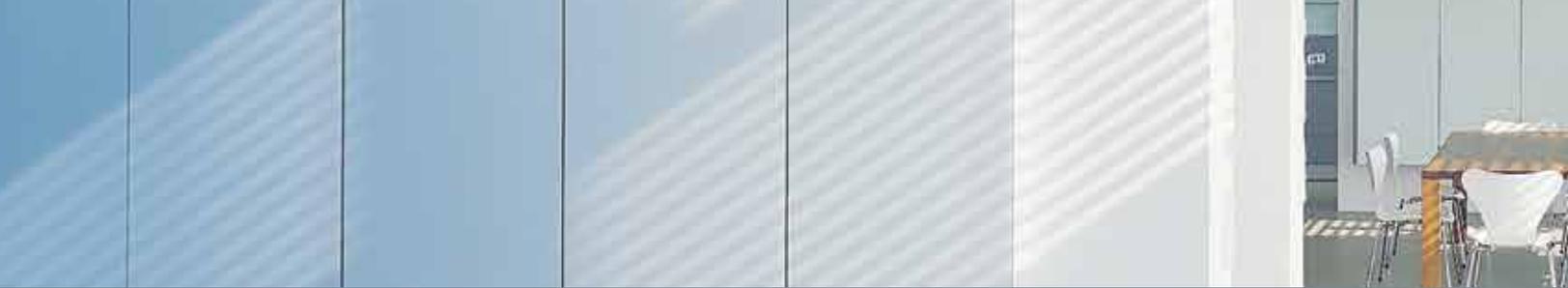
Simplicity



LEED Certification

“Exterior shading combined with a good glazing selection is the best window strategy. Interior shading options can also help control solar heat gain.”

*(Lawrence Berkley Labs Tips for Daylighting with Windows)*



# NATURAL LIGHT MANAGEMENT, DYNAMIC INSULATION™, NATURAL

## Natural Light Management

Effective natural light management improves the visual comfort, well-being, and productivity of a building's occupants while reducing the need for artificial lights. This provides visual comfort indoors while enabling occupants to see the outside.

### VISUAL COMFORT

Indoor visibility is a key factor for the occupants' sense of comfort. In order to maintain an optimal visual environment, automated solar shading systems take many parameters into account in order to provide occupants with natural light entrance while maintaining a view to the outside, optimal levels of luminosity according to the building's activities, a good contrast level, and elimination of glare.

### RESULTS

#### A more comfortable workspace

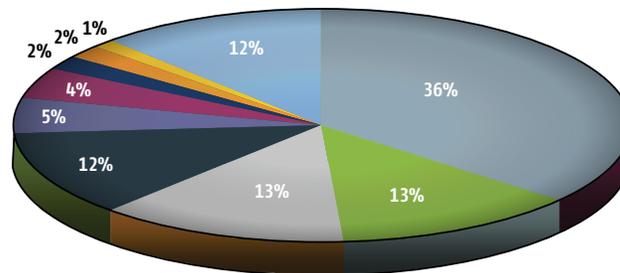
With automated solar shading devices, building occupants benefit from more natural light without the associated disadvantages. The ideal levels of contrast and brightness are maintained at all times and excessive glare is eliminated.

#### Energy savings on artificial light

Lighting accounts for a significant portion of a building's total electricity consumption and energy costs (36% on average based on USEIA study). With automated solar shading devices, this cost can be reduced significantly, yet users are able to retain their individual preferences.

### Total Site ELECTRICAL Consumption in Commercial Buildings

- Lighting - 1,143 trillion Btu (36%)
- Cooling - 397 trillion Btu (13%)
- Ventilation - 384 trillion Btu (13%)
- Refrigeration - 354 trillion Btu (12%)
- Personal Computers - 148 trillion Btu (5%)
- Space Heating - 115 trillion Btu (4%)
- Office Equipment - 64 million Btu (2%)
- Water Heating - 52 trillion Btu (2%)
- Cooking - 22 trillion Btu (1%)
- Other - 357 trillion Btu (12%)



US Energy Information Administration 2003 Study of Energy Savings (USEIA) on Artificial Light



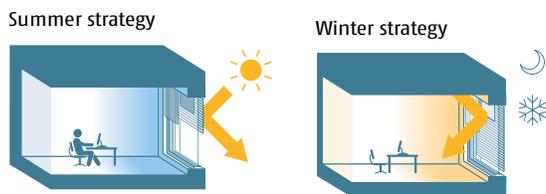
# VENTILATION

## Dynamic Insulation™

Windows are the main interface between the interior and exterior of a building. A façade with automated solar shading devices installed can provide precise control over these exchanges, influencing the way in which heat enters and leaves the building, keeping the inside cool in warm climates or optimizing solar gain in cool climates. During winter, solar devices can be programmed to close in the evening in order to avoid heat loss, whereas in the summer, they can be automatically lowered based on the orientation of the sun to limit the green house effect.

### THE PRINCIPLE

Automated solar shading devices are raised or lowered according to changes in outdoor weather conditions and indoor comfort needs. They react to commands from weather sensors (temperature and sunlight) or control algorithms, according to the occupancy and vacancy periods in the building.



### RESULTS

#### Thermal comfort and an improved indoor environment

With Dynamic Insulation™, the building's occupants are no longer subject to sudden variations in temperature. Constant thermal comfort helps to improve day-to-day well-being.

#### Improved energy performance

All cooling, heating, lighting, and shading management systems are fully integrated and communicate with each other to maximize energy efficiency.

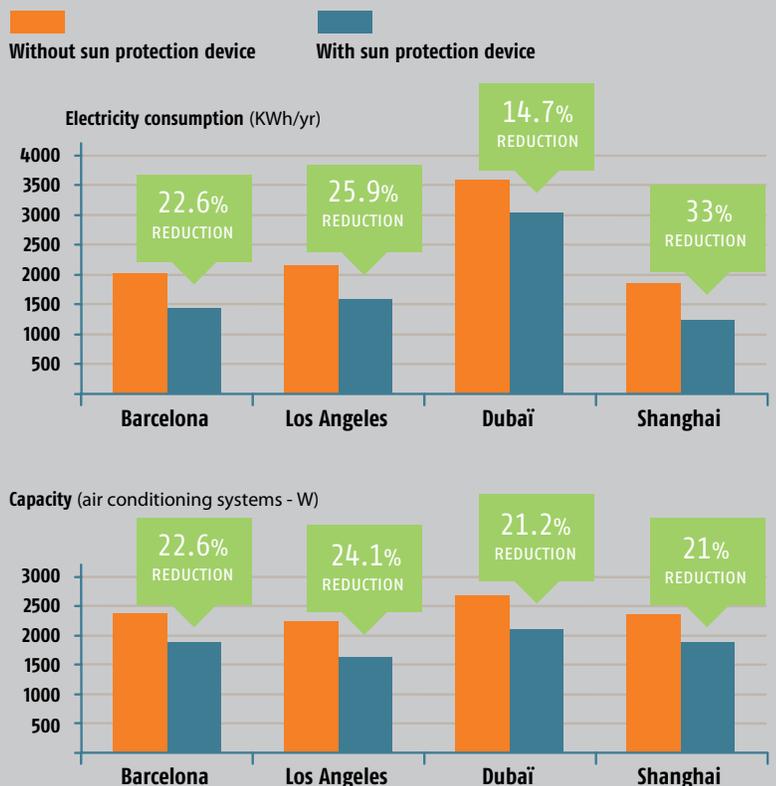
## Natural Ventilation

Natural ventilation is a cost-effective way of improving air quality in a building and cooling during the night, especially during summer months. Automating windows during the hours when a building is unoccupied means that a controlled flow of fresh air can pass through the façade, significantly reducing the accumulated temperature of the building mass and improving the quality of the indoor environment the following day.

Somfy solutions for natural ventilation include our line of window actuators that are linked to our Somfy Digital Network™ RS485 (SDN) which automates the process to ensure a fresh air flow and heat dissipation during the summer months.

### Impact of automated sun protection devices on energy consumption (operational costs) and air conditioning system capacity (investment) in a hotel room.

Simulation carried out using the Somfy DISC tool, under the following conditions: Room measuring 425ft<sup>2</sup>, with a double-glazed window measuring 67ft<sup>2</sup> (U = 0.27W/ft<sup>2</sup>). White PVC blind. The blind is lowered when the light level measured outside is above 15 Klux.



# VERTICAL MARKET SEGMENTS

There are many reasons for which commercial buildings are built or renovated. Buildings are needed for education, for work, for healing, and for relaxation. Somfy offers a wide array of solutions for any type of building, delivering benefits that are universally desirable for any functionality.

- Increased **thermal and visual comfort** aids the learning rate of students, creates a productive atmosphere for workers, provides comfort to customers and fosters the well-being of patients. Everyone wants to benefit from as much natural light as possible while at the same time avoiding glare and reflections.
- Optimized **energy performance** provides substantial energy savings and meets new environmental regulations by consuming less energy and natural resources. Saving money and protecting the environment are positives for any building owner and occupant to consider.
- **Natural ventilation control** provides fresh air which is conducive to good health and reduces the demand on HVAC which saves energy.
- Rapid **return on investment** as a result of energy savings, reduced maintenance and operational costs.

"Natural light, proper ventilation, appropriate temperature and humidity ranges, or even localized controls lead to healthier environments." *(Miller et al. 2009)*

## Somfy Solutions For Your Projects

Somfy has developed intelligent solutions for the operation of building facades using solar shading solutions. 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.

### ➤ Bioclimatic façades

- **The façade** is the building's envelope, and acts as the interface between interior and exterior, and between the natural and artificial 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.



### PIMCO Corporate Office Tower

650 Newport Center Drive, Newport Beach, CA

Application: New Construction  
 Sector: Office  
 Structural Type: 20 Story, 398,846 sq.ft.  
 Developer: Irvine Company  
 Architect: Gensler  
 Shade Manufacturer: Skyco Shading Systems  
 Dealer: Philips Drapery  
 Motors & Qty: 220 Somfy Sonesse® 50/ Sonesse® 30  
 Completed: March 2014



### Shangri-La Tower

188 University Ave, Toronto, ON M5H 0A3, Canada.

Application: New Construction  
 Sector: Hospitality  
 Structural Type: 65-story, 873,270 sq.ft. · 220 bedrooms & 353 apartments  
 Developer: Westbank Projects  
 Architect: James K.M. Cheng Architects  
 Shade Manufacturer: Solarfective  
 Motors & Qty: 680 Glydea® drapery motors, 150 Sonesse® 50 ILT2 motors  
 Completed: 2012



### John E. Jaqua Academic Center

Eugene, OR 97403

Application: New Construction  
 Sector: Education  
 Structural Type: 3-story, 40,000 sq.ft.  
 Developer: University of Oregon  
 Architect: ZGF Architects LLP  
 Contractor: Hoffman Construction Company  
 Shade Manufacturer: Draper Inc.  
 Motors & Qty: 138 Somfy Sonesse® 50 ILT2  
 Controls: Somfy Digital Network™ RS485  
 Completed: January 2010



### Cooks Children's Medical Center

801 7th Ave, Fort Worth, TX 76104

Application: New Construction  
 Structural Type: 6 floors, 314,000 sq.ft.  
 Developer: Cooks Children's  
 Architect: HKS – Dallas, TX  
 Contractor: Linbeck Construction – Fort Worth, TX  
 Shade Manufacturer: SWFcontract  
 Dealer: Quiltcraft  
 Motors & Qty: 220 Somfy Sonesse® 50 ILT2  
 Controls: Somfy – animeo® IP  
 Status: Completed June 2014

# OFFICES

## 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 *SOMFY CAN!*

**Solution:** By combining occupancy 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.

**Benefit:** Sudden variations in temperature are disruptive and tiring. Benefiting from constant thermal comfort improves personal well-being and productivity.

### Improve Visual Comfort *SOMFY CAN!*

**Solution:** By combining weather sensors, timers, centralized and individual controls, Somfy solutions can be used to:

- > Let natural light in and create savings by using less artificial lighting.
- > Filter brightness levels when using personal computers, laptops, tablets, video conference screens, etc.

**Benefits:** Meeting rooms, open-plane offices and 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.

### Improve Ventilation *SOMFY CAN!*

**Solution:** With Somfy's automatic systems, adapting the ventilation of a meeting room or a conference hall couldn't be simpler.

**Benefit:** Air quality, like temperature and light levels, is an essential component for comfort. It is monitored in order to help provide the best possible working conditions for occupants while also promoting their good health.

#### Preservation of the temperature

When it is hot...



When it is cold...



#### The 1/3/10 rule

With sun protection



Without sun protection



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).

#### 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)

### Make the Most of Your Investments *SOMFY CAN!*

**Solution:** 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 16° F in summer).
- > By protecting external blinds from bad weather.
- > By ensuring all sun protection devices operate with gentle movements that extend their life spans.
- > By reducing the number of manual operations required and therefore also the building's running costs.

**Benefits:** Ensuring 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. The high-quality design and manufacturing of Somfy solutions mean that buildings fitted with these solutions are assured optimum sustainability:

- > The bioclimatic façades enable architectural creativity that gives the building all its value.
- > The automatic systems can be used to align all sun protection devices, ensuring design of the façade.
- > The centralization systems are upgradeable, so they can be easily adapted to a change of activity within the building or complying with changes in energy regulations.

### Save Energy *SOMFY CAN!*

**Solution:** 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.).

**Benefit:** Somfy offers Dynamic Insulation™ solutions, so you no longer have to choose between comfort and energy savings.

### Energy savings with automated sun protection devices

According to a 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).

 LUND UNIVERSITY	Electricity consumption (annual)	Cooling load reduction (in Watt)	Total savings on consumption (annual)
<b>GENEVA</b> (Switzerland)	Reduced by 32.81% (1.319 kWh compare to 1.963 kWh)	Reduced by 40.28% (1.644 W compare to 2.753 W)	At price of CHF 0,19 kWh: CHF 122,36
<b>NEW YORK</b> (USA)	Reduced by 32.12% (1.712 kWh compare to 2.522 kWh)	Reduced by 39.84% (1.720 W compare to 3.859 W)	At price of US\$ 0.129 kWh: US\$ 104,49
<b>NEW DELHI</b> (India)	Reduced by 42.93% (3.111 kWh compare to 5.451 kWh)	Reduced by 49.64% (1.698 W compare to 3.372 W)	At price of INR 0,19 kWh: INR 444,6
<b>SHANGHAI</b> (China)	Reduced by 33.86% (1.711 kWh compare to 2.587 kWh)	Reduced by 40.29% (1.602 W compare to 2.683 W)	At price of RMB 0,48 kWh: RMB 420,48

**Simulation definition:** A 18 m<sup>2</sup> office room, with 4 m<sup>2</sup> window glass (double glazing low-E except for New Delhi and Shanghai Double glazing, Façade wall U-Value: 0,33 W/m<sup>2</sup>K), representing 70% of the room façade section, south oriented. Sun protection device is an internal grey PVC. 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).

# HOSPITALITY

## Providing New Services

"In our 300 rooms, motorized curtains produce savings on maintenance and cleaning, operational costs – due to remote control – and personnel (less time spent in the room), not forgetting the look of the place as they require less manual intervention." *(Hotel chain development manager)*

### Improved Thermal and Visual Comfort

**SOMFY CAN!**

**Solution:** With Somfy control units and devices, it is possible to:

- > Automate curtains to keep a cool interior.
- > Filter natural light to rest or work in the room.
- > Block light out completely (night blackout curtain).

**Benefit:** In rooms, reception or meeting areas, keeping the temperature at a constant level and controlling natural light are key factors in perceived comfort.

### Offer More Privacy and New Aesthetic Atmospheres

**SOMFY CAN!**

**Solution:** Integral and invisible components of the design, Somfy solutions give everyone the possibility of protecting privacy, creating new atmospheres and designing the hotel's living areas:

- > Perfectly protect private space by controlling motorized blinds and/or curtains.
- > Alter a room's atmosphere by changing the angle of slats on Venetian blinds.
- > Partition off a room by opening and closing interior curtains.

**Benefit:** Far removed from old-fashioned decoration, the hotel is now a "living organism" delivering new emotions.

### Offer Personalized Services

**SOMFY CAN!**

**Solution:** With automated and remote controlled solutions, everyone can take advantage of the benefits of technology and complete freedom. Occupants live at their own pace; they adapt the hotel's structure to their desires through simple control.

**Benefit:** Your clients are unique, and as such, their preferences are also unique.

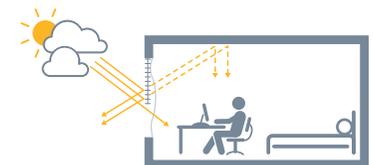
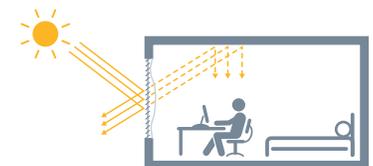
#### Thermal and visual comfort



Managed locally by occupant via a remote control.



#### Automated Draperies



Somfy's system can raise or lower blinds automatically so that occupants benefit from a pleasant indoor temperature.



## Improving The Building's Energy Performance

"Electricity use accounts for 60-70 % of the utility costs of a typical hotel. Energy-efficient lighting can reduce electricity use up to 75 %." (Source California Hotel & Lodging Association)

### Save Energy SOMFY CAN!

**Solution:** The sensors and automatic devices used in Somfy solutions reduce energy consumption:

- > By prioritizing the use of natural light.
- > By reducing solar gains in the summer.
- > By adapting building openings to actual occupancy periods (tourist season, seminar times, etc.).

**Benefit:** Somfy offers Dynamic Insulation™ solutions so that you no longer have to choose between comfort offered to customers and energy savings.

### Make The Most of Your Investments SOMFY CAN!

**Solution:** Somfy's centralized automation solutions are easy to integrate and operate and help reduce running costs:

- > By limiting energy consumption and savings of up to 10% on heating in winter time and indoor cooling gains of up to 16° F in summer.
- > By protecting external blinds from bad weather.
- > By reducing manual intervention on curtains and sun protections, extending their life spans.
- > By reducing the number of manual operation required and therefore also room services running costs.

**Benefit:** Ensuring profitability is a major requirement for the luxury hospitality sector. Buildings should be designed and built to reduce their operating cost and lengthen their lifespan.

### Expand Building Life Spans SOMFY CAN!

**Solution:** Somfy solutions provide a bioclimatic design that will enhance the life span of a building by providing sustainable solutions:

- > The bioclimatic façades enable architectural creativity that gives the building all its value.
- > Automatic devices perfectly align sun protections to guarantee the façade's aesthetic appeal.
- > Centralization systems can be easily adapted to changes in activities or in energy regulations.
- > The solutions are easily integrated into renovation projects (meeting and conference rooms, etc.).

### 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).

LUND UNIVERSITY	Electricity consumption (annual)	Cooling load reduction (in Watt)	Total savings on consumption (annual)
BARCELONA (Spain)	reduced by 22.6% (1446 kWh compare 2006 kWh)	reduced by 22.6% (1884 W compare 2435 W)	at a price of € 0,16 / kWh : € 89,6
LOS ANGELES (USA)	reduced by 25.9% (1594 kWh compare 2151 kWh)	reduced by 24.1% (1678 W compare 2212 W)	at a price of US\$ 0.11 / kWh : US\$ 61
DUBAI (United Arab Emirates)	reduced by 14.7% (3038 kWh compare 3560 kWh)	reduced by 21.2% (2124 W compare 2694 W)	at a price of AED 0,3 / kWh : AED 156,6
SHANGAI (China)	reduced by 33% (1220 kWh compare 1830 kWh)	reduced by 21% (1876 W compare 2373 W)	at a price of Yuan 0,65 / kWh : Yuan 396,5

Simulation conditions: hotel room measuring 39.5 m<sup>2</sup>, with a 6.2 m<sup>2</sup> window (double glazing, U: 2.88 W/m<sup>2</sup>Kg: 0.77), white PVC sun protection awning and comparison with automatic sun protection or not, depending on the luminosity (details of the analysis available on demand).

## Making Everyone's Working Environment More Comfortable

"In a study performed over the course of an academic year in San Juan Capistrano, California, students who benefited from more natural lighting in their classrooms achieved scores that were 20% higher in mathematics tests and 26% higher in reading tests than students whose classrooms had less natural light." *(David Hobstetter – "Daylighting and productivity: a study of the effects of the indoor environment on human function" – 2007)*

### Improve Thermal Comfort *SOMFY CAN!*

**Solution:** With Somfy, sun protection devices are automatically activated:

- > When it's hot, in order to protect the classroom from the sun's rays.
- > When it's cold, in order to keep heat in the building when it's empty.
- > These automatic devices can also be managed locally by occupants via a remote control.

**Benefit:** Classrooms that are too hot or too cold impact concentration and prevent effective teaching.

### Improve Visual Comfort *SOMFY CAN!*

**Solution:** By combining weather sensors, timers, and centralized controls, Somfy solutions can be used to:

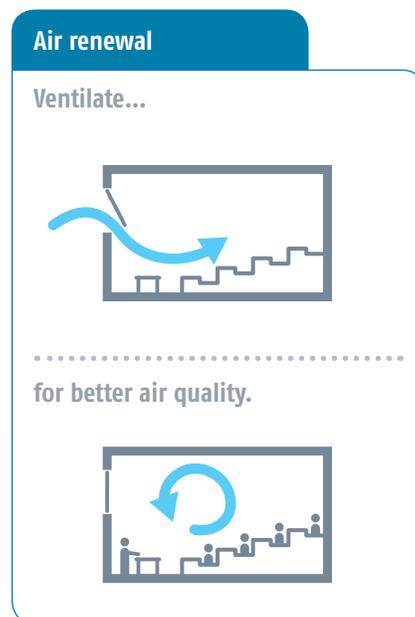
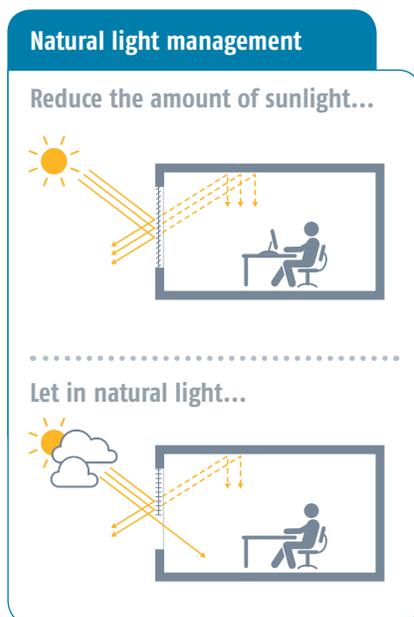
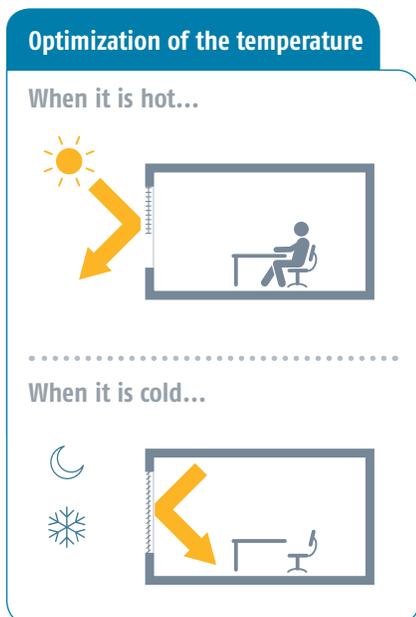
- > Limit the amount of sunlight entering rooms where monitors are used.
- > Let in the right amount of natural light during lessons.
- > Filter brightness levels according to the sun's position.

**Benefit:** Classrooms, lecture halls, laboratories...Each type of space requires its own type of lighting in order to optimize occupant comfort according to their activities.

### Improve Ventilation *SOMFY CAN!*

**Solution:** With Somfy's automatic systems, adapting the ventilation of a conference hall according to the number of occupants or venting a gymnasium couldn't be simpler.

**Benefit:** Air quality, like temperature and light levels, is an essential component for comfort. It is monitored in order to help occupants achieve the best possible results.





## Improving Build Performance

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

### Save Energy *SOMFY CAN!*

**Solution:** The sensors and automatic devices used in Somfy solutions reduce energy consumption:

- > By prioritizing the use of natural light.
- > By reducing solar gains in summer.
- > By adapting building openings to occupancy periods (variable lesson times, holidays, etc.).

**Benefit:** Today, thanks to Dynamic Insulation™ we can create energy savings without compromising occupants' comfort.

### Maximize Return On Investment *SOMFY CAN!*

**Solution:** Somfy centralized automation solutions are easy to integrate and operate and help decrease operating costs:

- > By reducing energy consumption.
- > By reducing the number of manual interventions required.
- > By improving security and reducing damage and vandalism.

**Benefit:** The investments made in the construction of educational buildings are often significant. These facilities must therefore be designed and built in such a way as to extend their lifetime.

### Expand Building Life Spans *SOMFY CAN!*

**Solution:** Somfy solutions provide a bioclimatic design that will enhance the life span of a building by providing sustainable solutions:

- > Weather sensors automatically retract awnings in order to protect them from storms, reducing maintenance costs.
- > The motors installed ensure gentle movements that extend the life of blinds.
- > Centralization systems can be easily adapted to meet changes in regulations.

**Benefit:** The high-quality design and manufacturing of Somfy solutions mean that buildings fitted with these solutions ensure years of efficient service.

### 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).

LUND UNIVERSITY	Electricity consumption (annual)	Cooling load reduction (in Watt)	Total savings on consumption (annual)
NICE (France)	reduced by 22.6% (1446 kWh compare 2006 kWh)	reduced by 28.3% (7.796 W compare to 10.872 W)	At price of €0,11 / kWh: €301,4
SAN DIEGO (USA)	reduced by 25.9% (1594 kWh compare 2151 kWh)	reduced by 42.76% (7.890 W compare to 10.841 W)	At price of US\$ 0.129 / kWh: US\$ 374.35.
ABU DHABI (UAE)	reduced by 14.7% (3038 kWh compare 3560 kWh)	reduced by 33.46% (7.631 W compare to 11.468 W)	At price of AED 0,11/kWh: AED 556,16
SHANGHAI (China)	reduced by 33% (1220 kWh compare 1830 kWh)	reduced by 26.9% (7.244 W compare to 9.909 W)	At price of RMB 0,48/kWh: RMB 1091,04

**Simulation definition:** A 86,4m<sup>2</sup> school room, with 18,52 m<sup>2</sup> window glass (double glazing Low-E except for Abu Dhabi and Shanghai Double glazing, Façade wall U-Value: 0,33 W/m<sup>2</sup>K), representing 60% of the room façade section, south oriented. Sun protection device is an internal grey PVC. The comparison is made between sun protection device and no sun protection device, depending on light level considering 35 persons occupying the room, equipped with 864 W artificial lighting (detailed analysis available on demand).

## Taking Care of Everyone's Well-Being

"Natural lighting reduces depression among patients and improves sleep and heart rhythm, which in turn reduces restlessness, relieves pain and improves working conditions for staff."

*(Doctor Anjali Joseph, Center for Health Design, 2008)*

### Adapt To Meet Individual Needs

**SOMFY CAN!**

**Solution:** Sun protection devices, managed by Somfy control systems, work to adapt the building to the activities of each of its occupants.

**Benefit:** Patients and healthcare personnel alike benefit from better conditions.

### Improve Thermal and Visual Comfort for Patients

**SOMFY CAN!**

**Solution:** By using Somfy control systems, patients can manage their own sun protection devices without moving from their bed and without disturbing anyone else in order to:

- > Control natural light.
- > Protect their privacy.
- > Stay in control of their comfort at all times by overriding the automatic systems.

**Benefit:** The well-being of occupants, however long their stay in the hospital, is an absolute priority, especially as increased thermal and visual comfort can have a positive influence on their health.

### Help Healthcare Personnel to Work in the Best Possible Conditions

**SOMFY CAN!**

**Solution:** By combining weather sensors, timers, and centralized controls, Somfy solutions assist personnel by:

- > Providing the visual comfort they need to work effectively (e.g. for examining an X-ray on a viewing screen).
- > Eliminate repetitive tasks, such as lowering awnings across a floor of a retirement home when the sun is too bright.

**Benefit:** To ensure optimum availability, each and every member of staff must be able to give the best of themselves in an environment conducive to care.



#### Optimization of the temperature

When it is hot...

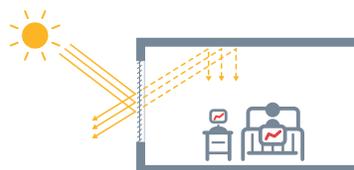


When it is cold...

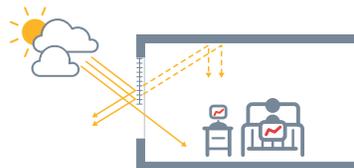


#### Natural light management

Reduce sunshine...



Let daylight in...





## Ensuring The Building's Performance

“Healthcare establishments use 3 to 5 times more energy than the average commercial building.” (Source IEA, 2008)

### Save Energy SOMFY CAN!

**Solution:** The sensors and automatic devices used in Somfy solutions reduce energy consumption:

- > By prioritizing the use of natural light.
- > By limiting energy leakage from the indoors in winter.
- > By reducing the amount of solar heat absorbed in summer.

**Benefit:** Today, thanks to Dynamic Insulation™, we can save energy without compromising the comfort of patients and healthcare personnel thermal and visual comfort can have a positive influence on their health.

### Ensure Profitable Investments SOMFY CAN!

**Solution:** Somfy's centralized automation solutions are easy to integrate and operate and help ensure a rapid return on investment:

- > Decrease healthcare expenditures: patients who benefit from greater comfort take fewer pain medications (22% less according to impact of light\*) and are hospitalized for noticeably short periods.
- > Reduce the number of manual interventions required, and therefore also reduce the building's running costs.

**Benefit:** Ensuring profitability is a major requirement for healthcare establishments.

### Expand Building Life Spans SOMFY CAN!

**Solution:** The high-quality design and manufacturing of Somfy solutions mean that buildings fitted with these solutions ensure years of efficient service:

- > Weather sensors automatically retract awnings in order to protect them from storms, thus reducing maintenance costs.
- > The motors installed ensure gentle movements that extend the life of blinds.
- > Centralization systems can be easily adapted to meet changes in regulations.

**Benefit:** Managing expenses is a key concern. Products installed must therefore anticipate future changes in order to enhance the building's lifetime.

### 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).

LUND UNIVERSITY	Electricity consumption (annual)	Cooling load reduction (in Watt)	Total savings on consumption (annual)	Simulation definition: A 25 m <sup>2</sup> patient room, with 7 m <sup>2</sup> window glass (double glazing Low-E except for Sao Paulo Double glazing, Façade wall U-Value: 0,33 W/m <sup>2</sup> K), representing 50% of the room façade section, south oriented. Sun protection device is an internal grey PVC. The comparison is made between sun protection device and no sun protection device, depending on light level considering 1 person occupying the room, equipped with 250 W artificial lighting (detailed analysis available on demand).
PARIS (France)	reduced by 39.6% (743 kWh compare to 1.231 kWh)	reduced by 39.7% (1.390 W compare to 2.306 W)	at price of € 0,11 kWh: € 53,68	
SAO PAULO (Brazil)	reduced by 28.52% (1759 kWh compare to 2461 kWh)	reduced by 38.53% (1822 W compare to 2964 W)	at price of R\$ 0.3 kWh: R\$ 210.6	
BARCELONA (Spain)	reduced by 40.3% (1.604 kWh compare to 2.689 kWh)	reduced by 42.05% (1.534 W compare to 2.647 W)	at price of € 0,14 kWh: € 151,90	
STOCKHOLM (Sweden)	reduced by 44.98% (795 kWh compare to 1.445 kWh)	reduced by 43,95% (1.227 W compare to 2.189 W)	at price of € 0,15/kWh: € 91	

\* The impact of light on outcomes in healthcare settings. August 2006, Anjali Joseph, Ph.D.

# LEED FACTS

Somfy is one of your key partners for LEED certification. Somfy solutions for automated solar shading and natural ventilation devices create a bioclimatic façade by interacting with outside elements to utilize natural light and air while providing thermal and visual comfort. Somfy solutions contribute to energy savings, occupant comfort and design innovation.

Somfy solutions provide the opportunity to earn LEED points on new construction or renovation projects. Below are some areas of building design to interact with Somfy when attempting to achieve LEED accreditation. Our dedicated team is available to discuss the possibilities for your specific project needs. When designing the facade of your project, contact your Somfy Commercial Representative to understand how to utilize motorization to obtain the most LEED accreditation possible.

## LEED Facts INNOVATION & DESIGN



### **Innovation & Design:**

Somfy can contribute by educating the project team members about green building design and construction, the LEED requirements and application process early in the design phase.

## LEED Facts ENERGY & ATMOSPHERE



### **Energy & Atmosphere:**

Somfy can contribute by helping to optimize the energy savings of the artificial lighting systems and HVAC.

## LEED Facts INDOOR ENVIRONMENTAL QUALITY



### **Increase Ventilation:**

Somfy can contribute by allowing natural ventilation (operable windows) during cool days and/or by night cooling.

### **Controllability of Systems-Lighting:**

Somfy can contribute through the management of scenes between the lighting and solar protection systems.

### **Controllability of Systems-Thermal Comfort:**

Somfy can contribute by Dynamic Insulation™ solution interacting with the heating and cooling systems.

### **Thermal Comfort-Design:**

Somfy can contribute by helping to create the design of the building envelope for thermal comfort.

### **Daylight & Views-Daylight: Views for 75% of the Space:**

Somfy can contribute by increasing natural light levels while controlling glare and contrast.

### **Daylight & Views-Daylight: Views for 90% of the Space:**

Somfy can contribute by increasing natural light levels while controlling glare and contrast with view to the outside through motorized shading devices (perforated, roller with special fabric specs, blinds).

## Somfy's LEED Support



Contact a Somfy Commercial Representative to fully understand how we can help you gain LEED points for your building.

# SOMFY LEED REFERENCE



## Vancouver Convention Centre

- Status: Completed 2009
- Type: Infrastructure
- Applications: Automated roller shades
- Controls: Somfy Digital Network™
- Quantity: 170 Somfy Sonesse® 50 ILT motors
- Platinum LEED Certification



## National Public Radio Headquarters

- Status: Completed 2013
- Type: Office/Government
- Applications: Automated roller shades
- Motors: 150 Sonesse® 50 ILT
- Controls: SDN DecoFlex switches
- Gold LEED Certification

## INNOVATION & DESIGN

### Innovation & Design:

To provide design teams and projects the opportunity to achieve exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.

## ENERGY & ATMOSPHERE

### Optimize Energy Performance:

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

## INDOOR ENVIRONMENTAL QUALITY

### Increase Ventilation:

To provide additional outdoor air ventilation to improve indoor air quality (IAQ) and promote occupant productivity, comfort and well-being.

### Controllability of Systems-Lighting:

To provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms and conference areas) and promote their productivity, comfort and well-being.

## INDOOR ENVIRONMENTAL QUALITY (continued)

### Controllability of Systems-Thermal Comfort:

To provide a high level of thermal comfort system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms or conference areas) and promote their productivity, comfort and well-being.

### Thermal Comfort-Design:

To provide a comfortable thermal environment that promotes occupant productivity, comfort and well-being.

### Daylight & Views-Daylight: Views for 75% of the space:

To provide building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

### Daylight & Views-Daylight: Views for 90% of the space:

To provide building occupants a connection to the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.



## Additional LEED Certified Somfy Projects

<b>Vancouver Convention Centre</b>	Vancouver, BC	LEED Platinum	<b>MedImpact Healthcare HQ</b>	San Diego, CA	LEED Gold	<b>Aerocentre V</b>	Mississauga, ON	LEED Gold
<b>California Lottery</b>	Sacramento, CA	LEED Gold	<b>Hess Tower</b>	Houston, TX	LEED Gold	<b>Royal Bank Tower</b>	Toronto, ON	LEED Gold
<b>LA Fireman's Fund Credit Union</b>	Pasadena, CA	LEED Platinum	<b>One Erdman Place</b>	Madison, WI	LEED Gold	<b>Telus Tower</b>	Toronto, ON	LEED Gold
<b>Hyundai Finance</b>	Irvine, CA	LEED Gold	<b>Shangri-La Hotel</b>	Toronto, ON	LEED Gold			

# SOMFY'S SCALABLE SOLUTIONS

animeo® IP leverages the reliability and scalability of Somfy Digital Network technology while adding the benefits of automation and simplified, centralized control.

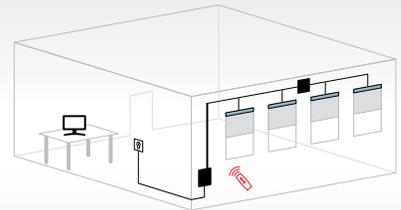


Below is an example of scalable solutions from Somfy. From a single room, to individual floors or rooms, to an entire building, animeo® IP and Somfy Digital Network™ installations are suitable for every jobsite. The scalable technology of both Somfy Digital Network™ and animeo® IP make them ideal solutions for larger installations where centralized control is a necessity. Incorporate animeo® IP into any Somfy Digital Network™ installation for automated total solar management. The animeo® IP graphic user interface, in-wall keypads and virtual keypads simplify commissioning, operation and troubleshooting. animeo® IP can also be integrated into third party BMS, EMS and AV systems.

## Single Room



For smaller installations, a standard Somfy Digital Network™ RS485 installation is a powerful yet economical solution. Local controls, including Somfy's full range of wired and wireless controls, can be added for convenient access.

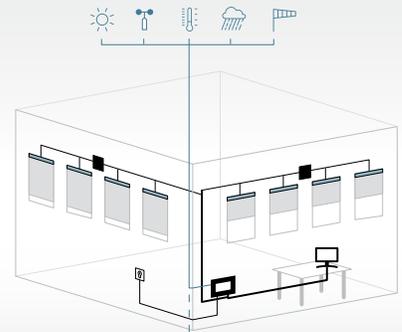


## Individual Floor



animeo® IP Building Controller

Automate up to 200 motorized shades based on sun, wind, rain or temperature sensors or time scheduled events.



## Multiple Floors or Entire Building

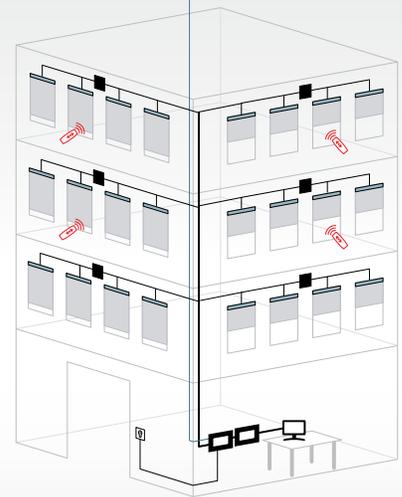


animeo® IP Sub Controller



animeo® IP Sub Controller

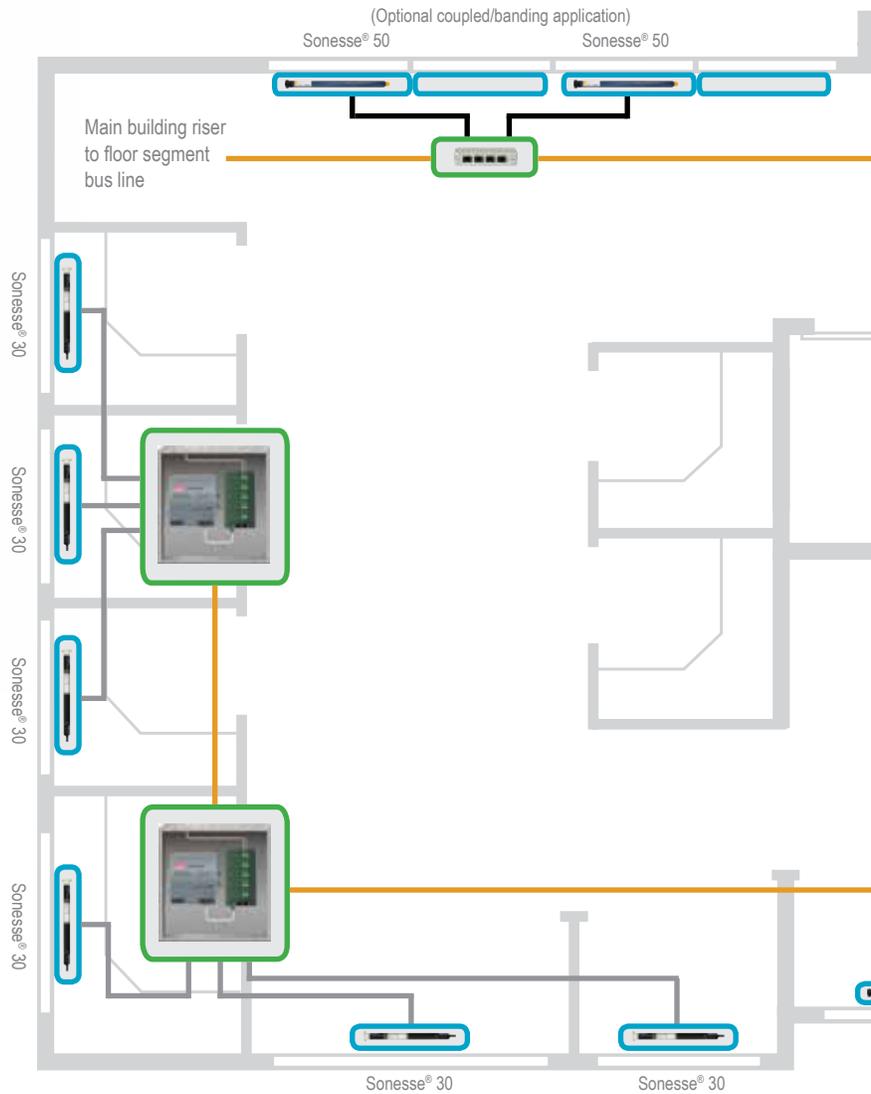
For installations greater than 200 motors, add animeo® IP Sub Controllers to expand system capacity (1 for every additional 200 motors).



# SOMFY DIGITAL NETWORK™ RS485



## Line and Low Voltage



### Power Distribution

- Low voltage transformer (24V DC)
- Provides data signal over a 16 AWG 2 conductor 24/2 cable
- Control box for communication
- Provides motor power over a Coleman Model 97295 or equivalent cable



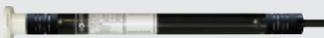
Powered by standard outlet or junction box



### Sonesse® 30 RS485

Low voltage motor (24V DC)

- Ultra-quiet operation
- Wide range of control options
- Fully programmable
- Powered off the bus line



RTS to SDN Receiver



RTS Transmitter



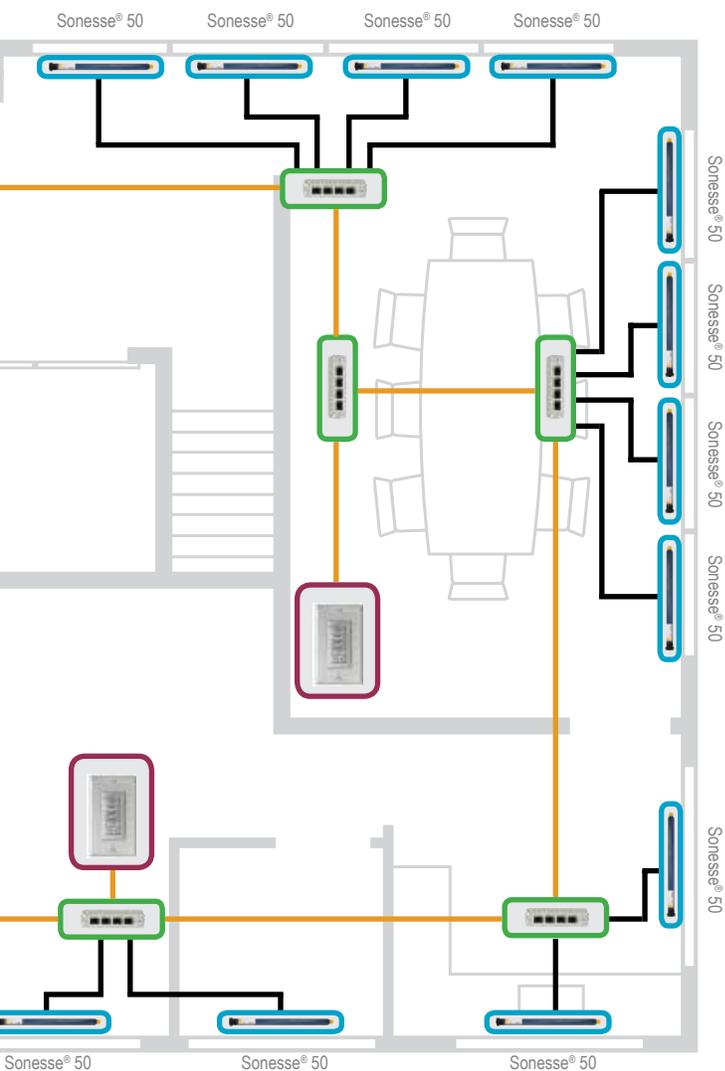
Digital Keypad



Virtual Keypad

- Fully programmable
- Individual motor and group motor functionality
- Up to 5 preset positions and full up, stop and down functionality

Somfy's line and low voltage solutions featuring the intelligent Sonesse® 50 and Sonesse® 30 motor lines offer ultra-quiet operation along with greater strength and quality than other motor options offered by the industry competitors. Somfy's line and low voltage motors and controls are a stand alone solution or can communicate with a building network using animeo® IP, providing the most flexible complete network solution available.



**animeo® IP**

- Provides connection from the Somfy digital network to the building network.
- Can be placed anywhere in the building.

**Powered by standard outlet or junction box**

**Sonesse™ 50 RS485**  
Line voltage motor (120V AC)

- Ultra-quiet operation.
- Ultra-powerful operation.
- Wide range of control options.
- Fully programmable.

**Powered by standard outlet or junction box**

**5, 6, or 12 port data hub/port**

- Allows digital communication off the bus line to controls.
- Increase motor connections along the bus line.

**3 Port RJ45 Splitter**

- Allows digital communication off the bus line to controls.

Coleman model 97295 or equivalent for Sonesse 30 motor wiring

4 Conduit 26AWG modular cable with RJ9 and an RJ45 connector for Sonesse 50 motor wiring

**BUS LINE**

**MOTOR**

**BUS DISTRIBUTION**

**USER INTERFACE**

## CASE STUDIES



### **UNITED NATIONS SECRETARIAT BUILDING**

United Nations Plaza · New York, NY 10017

# UNITED NATIONS

<b>Application:</b>	Renovation
<b>Sector:</b>	Commercial
<b>Market:</b>	Office
<b>Fabricator:</b>	Mariak
<b>Architect:</b>	HLW Architects
<b>Dealer:</b>	City View Blinds
<b>Contractor:</b>	Skanska
<b>Motors &amp; Qty:</b>	Sonesse® 30 RS485 Quantity 5000
<b>Controls:</b>	350 motor control panels 1,000 Somfy Digital Network™ RS485 Digital Keypads

## The Challenge:

In the United Nations Secretariat Building, Somfy was challenged to scale a solution to an enormous office space where several thousand blinds over dozens of floors would be automated to provide glare control throughout the day and also allow local control to the building's occupants.

## The Solution:

Mariak provided window blinds that were installed by City View Blinds and commissioned by Somfy Systems for the 2012 renovation of this iconic building in New York City. The blinds are automated on the Somfy Digital Network™ RS485 and move to a timed schedule based on the path of the sun with input from Somfy Sunis WireFree™ sun sensors, providing maximum natural light while eliminating bothersome glare for UN employees.

## Benefits:

Intelligent keypads were installed for each motorized window treatment, enabling office personnel to choose from five different preset slat angles or close them completely. Janitorial services have easy access to intelligent keypads that will bring the blinds up completely for ease of cleaning and maintenance. During off hours, the motorized treatments revert back to the automated mode that reacts to the time of day and sunlight levels, ensuring the most efficient system operation throughout the building while being easily adjusted for personal preferences.



CASE STUDIES



**KAISER PERMANENTE HOSPITAL – OAKLAND, CA**

280 West MacArthur Blvd · Oakland, CA 94611

# KAISER PERMANENTE HOSPITAL

<b>Application:</b>	New Construction
<b>Sector:</b>	Commercial
<b>Market:</b>	Healthcare
<b>Structural Type:</b>	12 Floors
<b>Developer:</b>	Kaiser Permanente
<b>Architect:</b>	NBBJ – San Francisco, CA
<b>Contractor:</b>	McCarthy Construction
<b>Dealer:</b>	Peninsulators – San Jose, CA
<b>Motors &amp; Qty:</b>	390 Sonesse® 50 ILT2
<b>Controls:</b>	350 Intelligent Keypads animeo® IP Buco and Subco Integrated bedside controls

## The Challenge:

The Kaiser Permanente Hospital in Oakland, CA is the flagship hospital for Kaiser Permanente which is one of the largest not for profit hospital organizations in the country. The Kaiser Permanente development team is committed to using the latest technologies in order to control and manage the natural light entrance in the building.

## The Solution:

The design team at Kaiser Permanente partnered with Somfy and Peninsulators to manufacture and install 390 motorized roller shades powered by Somfy Sonesse® 50 ILT motors into the hospital's patient rooms. The install utilizes 350 Intelligent Somfy Digital Network Keypads, one animeo® IP Building Controller and one animeo® IP Sub Controller. Intelligent keypads are installed on the headwall of every patient room and are integrated to the patient bedside control system via dry contact wiring.

## Benefits:

The automated shades increase productivity of the nursing staff and empower patients by integrating the shading system into the patient bedside control system and nursing stations. The keypads are programmed to provide complete up and down control of the shades, as well as intermediate control at intervals of 25, 50 and 75%. animeo® IP is also programmed into the nurse's station PC's to provide additional control and real-time feedback of the shading system, thus ensuring the staff knows the status of all the shades at all times.



CASE STUDIES



**RBC CENTRE**

55 Wellington St West · Toronto, Ontario

# RBC CENTRE

<b>Application:</b>	New Construction
<b>Sector:</b>	Commercial
<b>Market:</b>	Office
<b>Architect:</b>	Kohn Pederson Fox Associates Sweeny Sterling Finlayson & Co. Architects Bergman + Hamann Architects
<b>Dealer:</b>	Solarfactive
<b>Developer:</b>	Cadillac Fairview
<b>Motors &amp; Qty:</b>	ILT2 – Quantity 1,586
<b>Controls:</b>	Somfy Digital Network™ RS485

## The Challenge:

In 2006, developer Cadillac Fairview sought to create a new skyscraper in downtown Toronto to LEED Gold standards, but complicating the sun management possibilities were the neighboring skyscrapers including the new Ritz Carlton which was part of this complex. Not only does the sun management system have to react to the path of the sun, but also the shadows produced from the neighboring buildings.

## The Solution:

The RBC Centre features 1,586 of Somfy's intelligent ILT2 motors with sun and shadow management control of their interior shading and roller blinds provided by Solarfactive Products of Ontario. Automated shading devices were programmed into 200 discrete zones of bidirectional control, enabling precise optimization of natural light and glare control in every part of the building.

## Benefits:

The RBC Centre achieved LEED Gold status in part by utilizing the sun and shadow management system on the Somfy Digital Network™ RS485. When one façade of the building is in direct sunlight, part of that same façade can be in the shadows of a neighboring building. The bidirectional control enables those windows in the shadows right beside the windows in the sun to react individually to the outside elements to reduce glare in the sunlight, while allowing the natural light to enter from the shadowed area. This optimizes the useful natural light from outdoors.



# CASE STUDIES



## TOUR SEQUANA

Issy les Moulineau, France

# SEQUANA

## Total Light Management:

Maximizing energy savings and indoor comfort through balancing natural and artificial light.

<b>Application:</b>	New Construction
<b>Sector:</b>	Commercial
<b>Market:</b>	Office
<b>Design Team:</b>	Bridot & Willerval, Jean-Michel Wilmotte
<b>Bind/Lighting Control:</b>	Philips-Somfy Light Balancing
<b>Lighting:</b>	Philips T5 ETO and LED Luminaires
<b>Motors &amp; Qty:</b>	3500 Somfy LW motors

## The Challenge:

The 330ft high Tour Sequana was designed to accommodate the 2,400 employees of Bouygues Telecom covering 88,000 square ft over 23 floors. The challenge was to reduce the average energy consumption to 8.3kWh/ft<sup>2</sup>/year, which is 3 to 4 times less than the tower building in the La Defense area of Paris. One of the key aspects to the design was to prioritize the use of natural light in the space where possible.

## The Solution:

To achieve the targeted energy reduction figure as well as comfort levels, the developers invested in a high-performance glass façade which represented a solar factor of less than 25%, while having a light transmission figure of at least 50%.

The unique solution of comfort and light balancing is the combination of lighting and solar protection management systems – the Philips-Somfy Light Balancing solution. A total of 3,500 automated venetian blinds were installed, all motorized by Somfy. The blinds are activated to manage thermal heating, reduce visual glare discomfort and to take advantage of the sun's position for natural light as required. When the blinds are closed, the artificial light levels are boosted and when the blinds are opened, the artificial lighting is dimmed. This assures optimal contrast values for working at a computer screen or on a document.

## Benefits:

With the Philips-Somfy Light Balancing solution, the Tour Sequana targeted energy consumption levels have been met. The management of artificial and natural light ensures the best level of indoor comfort in terms of light levels and glare.



Artificial lighting management systems and blinds that communicate with each other generate significant energy savings and maintain optimal visual comfort for occupants.

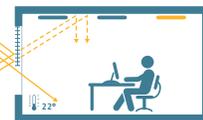


This is why Somfy and Philips Lighting share a common goal: to improve the indoor working environment through effective lighting management.

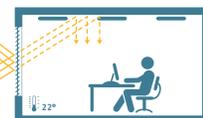
The combination of natural light and artificial lighting is optimal



No sun, overcast  
Natural light: minimal  
Artificial lighting: maximum



Some sun, a few clouds  
Natural light: average  
Artificial lighting: average



Clear skies  
Natural light: maximum  
Artificial lighting: minimal

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F: (905) 238-1491

Somfy is the leading global manufacturer of strong, quiet motors with electronic and app controls for interior and exterior window coverings. Over 270 million users worldwide enjoy the more than 150 million motors produced since 1980. For more than four decades, Somfy engineers have designed products for both the commercial and residential markets to motorize window coverings such as interior shades, wood blinds, draperies, awnings, rolling shutters, exterior solar screens and projection screens. Somfy motorization systems are easily integrated with security, HVAC and lighting systems, providing total home or building automation.

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