

# One step ahead of the sun

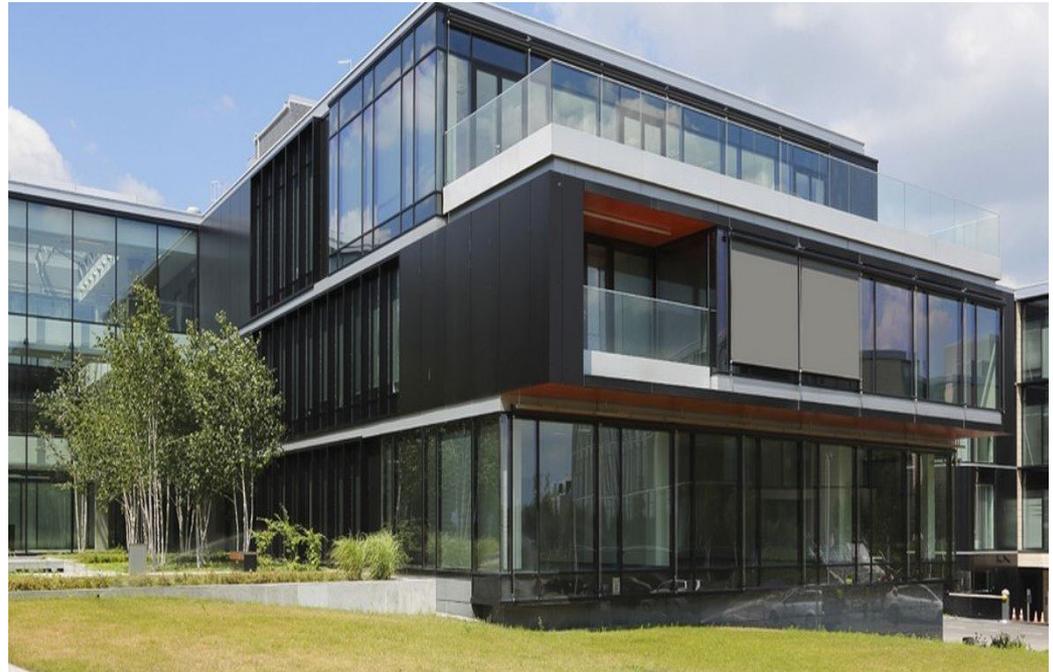
Indoor and outdoor sun  
control systems for windows  
in modern buildings

 LEX  
BLINDS



Lex Blinds understand that the energy efficiency of the building is an important aspect as the exploitation costs in such case are significantly lower. Therefore, balancing technical qualities, sustainability, design and comfort is by far the most enjoyable challenge while implementing Lex Blinds projects.

- Problems of energy efficiency in premises affected by solar heat and light.
- Possible solutions, taking into account the objectives and technical capabilities of the building.
- Advantages of window treatments.
- Examples and Lex Blinds projects.



# Solar energy performance:

In winter, we enjoy the heat and light generated by solar energy, but in the summer these advantages often become disadvantages:

- Overheating, room cooling, glare and other problems caused by heat and sun.
- Paradoxically, more energy is sometimes used in the UK to cool buildings, than for heating.



# Too late?

- It is not uncommon to think of solar control when it starts to cause you trouble, but you can prepare for it in advance.
- The goal is to make the most of solar energy without sacrificing it.
- Outdoor venetian blinds, like many other window coverings, are one of the weapons against natural disasters that we will be happy to enjoy.



# Window treatments that help control the sun:

## Indoor window treatments:

- Pleated Blinds
- Venetian Blinds
- Roller Blinds



## Outdoor window treatments:

- Outdoor Roller Blinds
- Outdoor Venetian Blinds
- Lamels

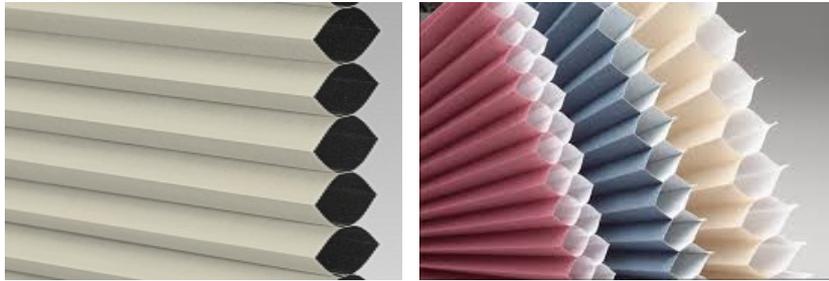


# Pleated Blinds

- Wide range of uses
- Modern look
- Minimally space consuming product
- Various control options
- Easy maintenance
- The ideal solution for non-standard shaped windows and skylights



# Special „Duette“ fabric



# Venetian Blinds

- Wide range of colours
- Convenient operation
- There can be slats of different widths - depending on the need
- The most commonly used slats are aluminum or wood
- Aluminum slats can be perforated - such blinds let in light, even in the closed position, but retain heat



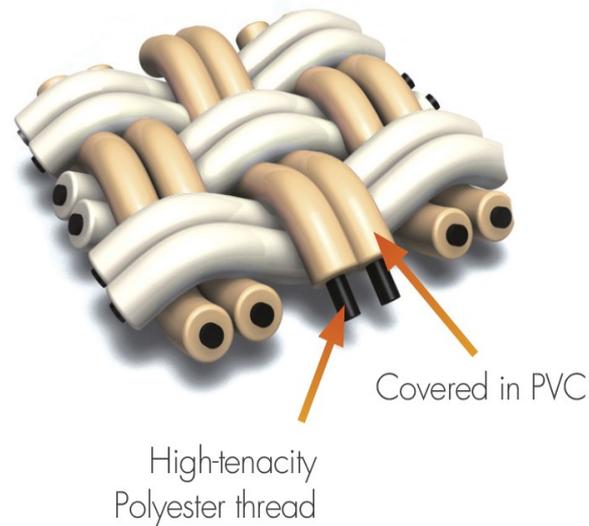
# Roller Blinds

- Roller Blinds are a universal way to decorate windows seeking comfort and functionality.
- Lex Blinds have more than 1000 fabrics to choose from.
- Roller Blinds are made of polystyrene and other types of impregnated fabrics; therefore, do not collect dust, do not attract moisture, retain their shape, and do not fade.
- Some fabrics are non-combustible, thus are suggested for installation in premises that are subject to high fire safety requirements (kindergartens, schools, hospitals).
- Universal control (chain, spring mechanisms, automation)
- Quick and easy installation



# „Screen“ is a smart fabric

- Maintaining privacy
- Energy saving
- Thermal insulation
- With different percentages of "openness"
- Blocking of direct sunlight
- Interior detail
- Maximum safety, non-flammable
- Easy maintenance, cleaning with a damp cloth or vacuum cleaner
- Longevity
- Possibility to use for different products (Roller Blinds, Vertical Blinds, Panel Blinds, Indoor and Outdoor Blinds)



# Effective thermal regulation

- Screen fabric can block up to 90% of the sun's heat on the outside of buildings.
- When used indoors, efficiency up to 70% if a glass package with tinted, reflex or solar control glass is used.
- Costs for space cooling are reduced.



# Eye comfort

- Adequate daylight and contact with the outside world is essential for well-being.
- Screen fabrics let in enough daylight, but at the same time eliminate unwanted sun side effects such as glare.
- The need for artificial light is reduced.



# Excellent air quality

- “Screen“ reduces air conditioning and thus prevents respiratory diseases caused by conditioning.
- Various tests, trials and studies have shown that this fabric is suitable for use in public buildings (schools, hotels, hospitals, office buildings, airports, etc.).

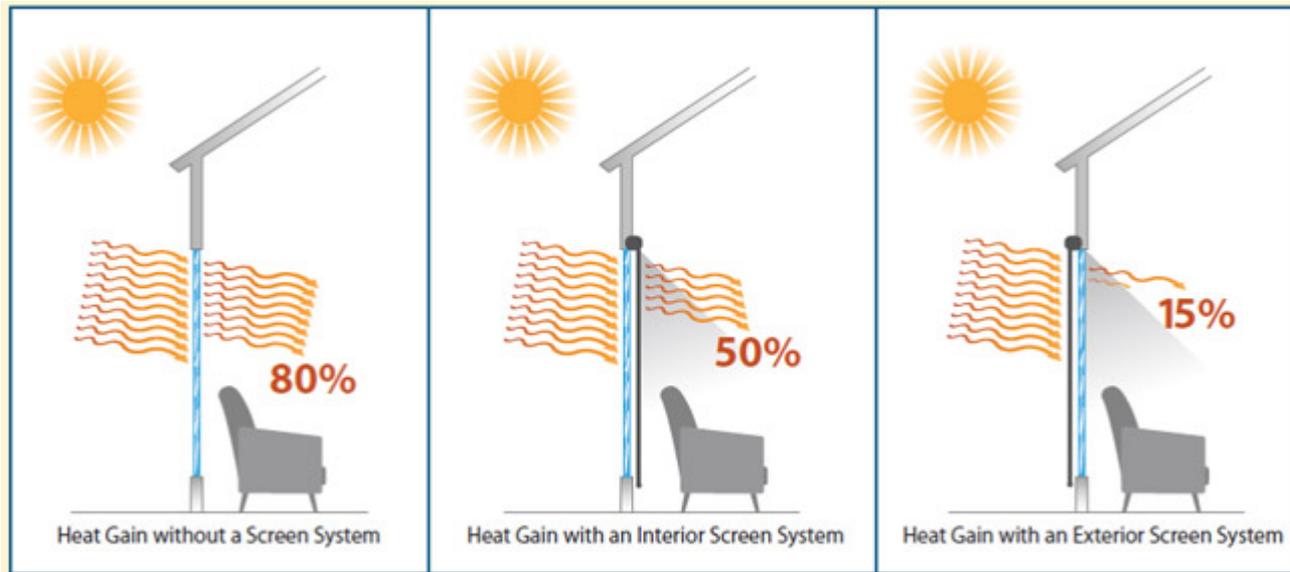


# Adjusted acoustics

- Too much noise inside (in a room or office) can cause great inconvenience to people who work indoors for a long time.
- Screen fabrics absorb up to 25% (depending on the type of fabric and the system used) of environmental noise, helping to create a more comfortable working and living environment.



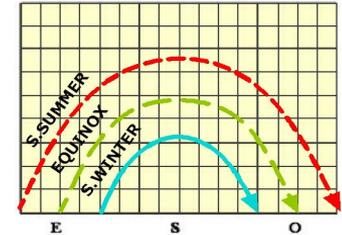
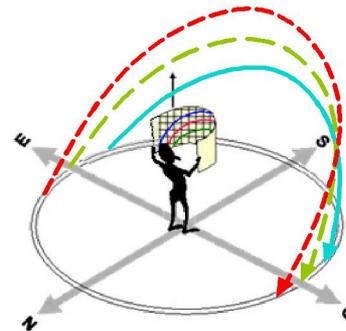
# Outdoor blinds - the most effective sun protection and energy efficient window treatments



The goal of a passive house is to achieve the maximum use of solar heat by orienting the largest windows to the south, thus meeting at least 50% of the heating demand in a natural way.

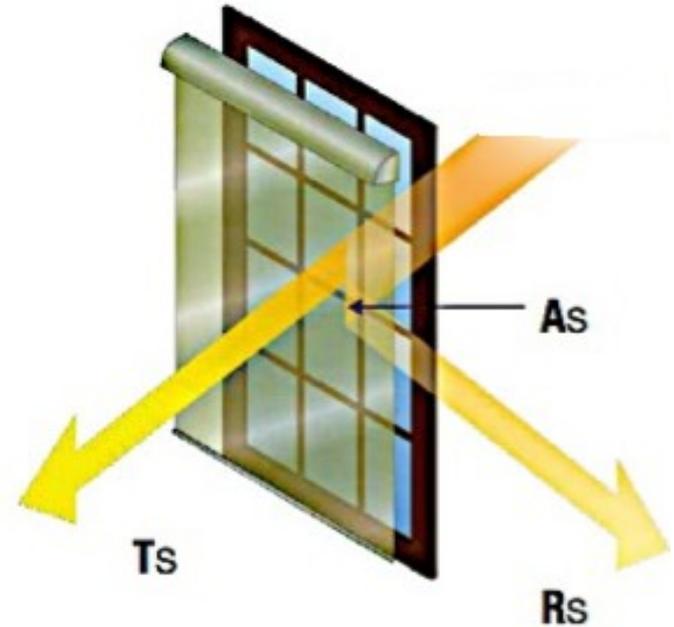
- In summer, shade above these windows is essential. Outdoor blinds are great solutions for balancing the energy needs of a passive house.
- They are usually placed on the southern and western facades of houses, depending on the position of the sun in different seasons.

--- Summer solstice (June)  
--- Spring and Autumn equinox (September/March)  
--- Winter solstice (December)



# Solar energy

- The effectiveness and benefits of sun control systems are measured as a percentage.
- The three main parameters are.
- TS bandwidth - how much solar energy passes through the canopy.
- AS absorption - how much solar energy is absorbed.
- RS reflection - how much solar energy is reflected.
- These three parameters are equal to 100% solar energy.
- They vary depending on the type of cover, density and EVEN COLORS!



# Outdoor Roller Blinds

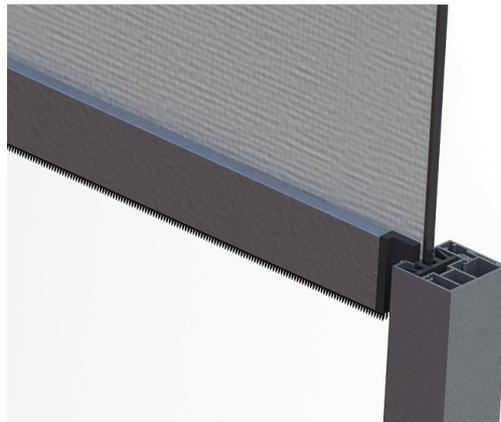
- Outdoor roller blinds are mounted outdoors, on a window frame or on a wall.
- There is a possibility to hide the structure on the facade.
- The side guides can be - cables, standard aluminum or "ZIIP" type.
- Structures - aluminum and painted according to RAL.
- Screen fabrics - suitable for outdoor conditions.



# „ZIIP“ side guides

Standard external roller blinds withstand wind gusts up to 10m/s, and with “ZIIP” type side guides up to 20m/s

There is no gap between the fabric and the side guide.



# Opportunity for skylights



# Possibility of integration

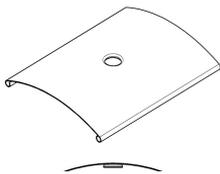


# Outdoor Venetian Blinds

- Adjustable tilt angle.
- Can rise to the top.
- Wide choice of slats widths and shapes - allows to adapt to the overall architecture of the building.
- Mounted externally.



# Slat shapes



C-shaped, with a solid edge



C-shaped - without solid edges

Higher transparency, lower top pack

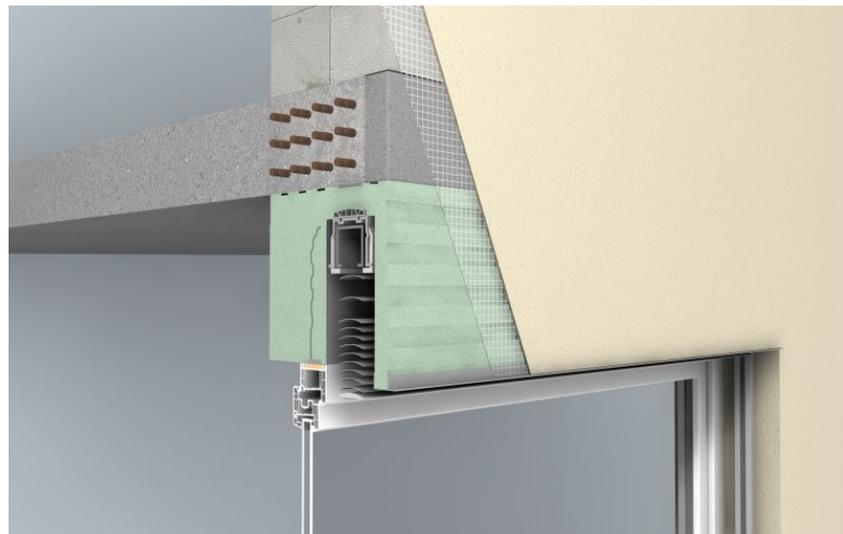
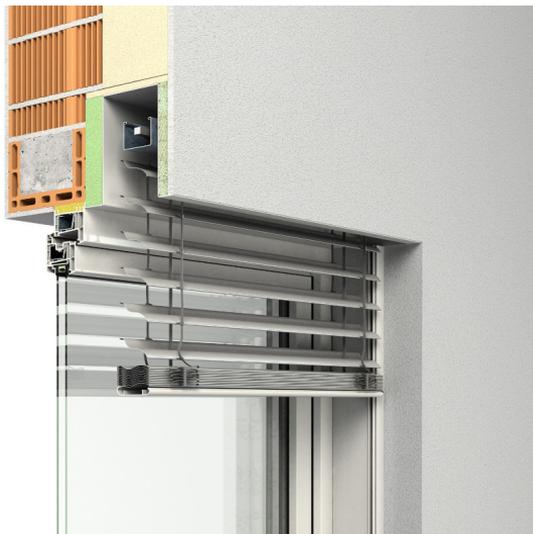


U-shaped - increased strength

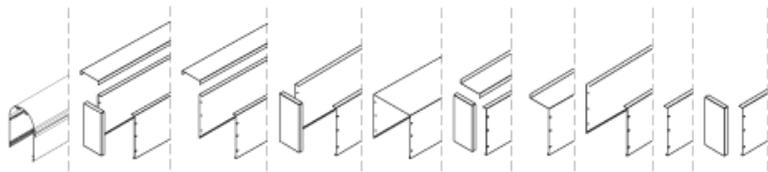


Blackout  
Z and S slats

# Integrated boxes



The top box can be of different types, shapes, thicknesses



# Insulating frames



## Modular systems for large facades



Daylight function: the ideal solution for offices that need natural light but at the same time block out sun reflections



# Sun control system - Lamels

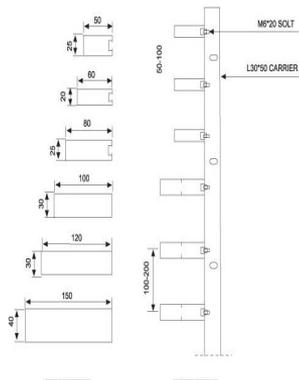
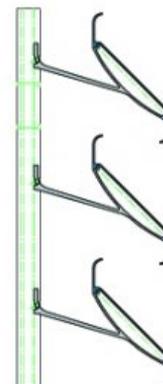
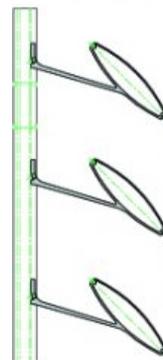
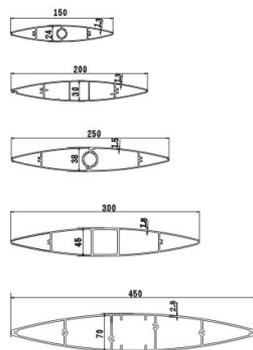
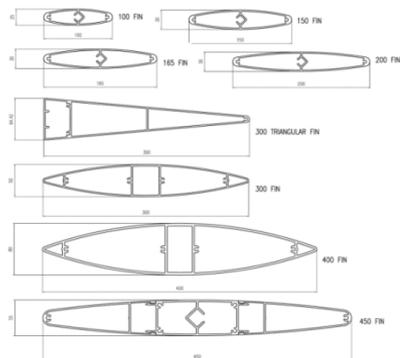
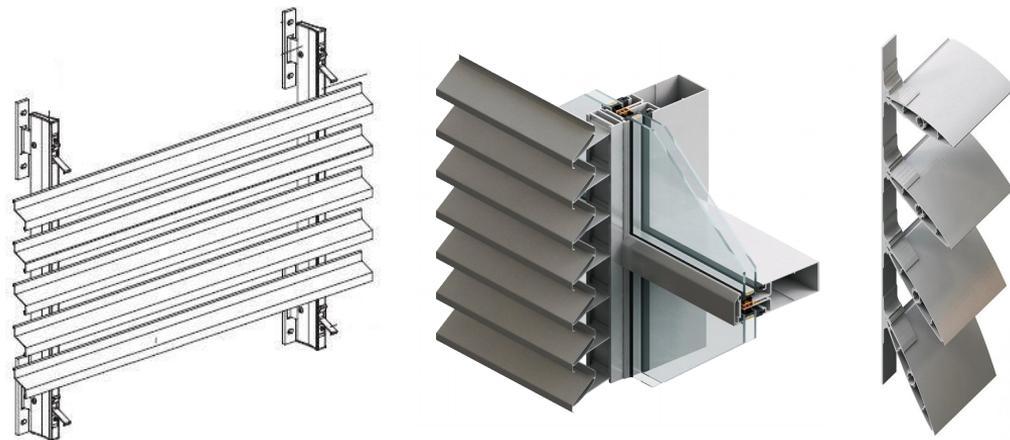
- Stationary or variable angle.
- Facades of unlimited size can be covered.
- Wide choice of shapes.
- Effective sun protection.
- Various mounting methods.
- Non-standard window covering solution.
- Minimal maintenance during operation.

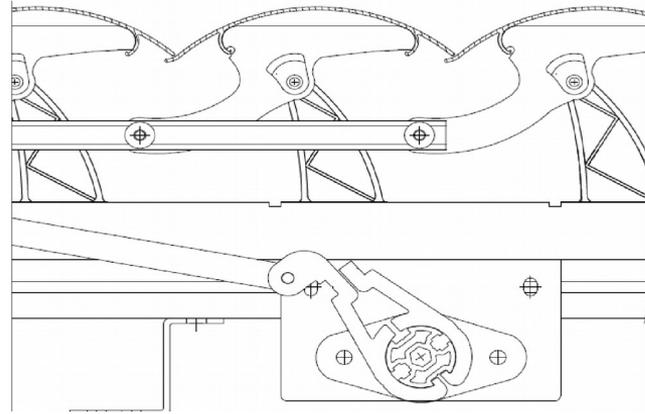


# Vertical Lamels



# Selection of profiles





75E			50A		
80R			50E		
88E					
95E					
145E					
155E					
optie					
50E			50A		
75E			95E		155E
80R			88E		145E

## Control: automation and accessories that increase the efficiency of solar control

Accessories that increase efficiency:

- Temperature sensors
- Light sensors
- Obstacle detection
- Wind sensors
- Timers
- Common meteo stations



# Management systems. Wired or radio signal operation

Wired systems are designed for large buildings, office buildings, etc.:

- Guaranteed signal
- Ability to manage an unlimited number of products
- Possibility to connect to a common building management system.

Radio systems suitable for the private sector:

- Cheaper installation
- Easy to use
- Possibility to expand the number of controllers without the help of specialists.

## Central control system - for large buildings

There are four main levels of management:

- Management - simultaneously from one place
- It is possible to control certain motors individually
- Managed in zones from one place
- Controlled areas from one place, plus you can control certain motors individually.



- Zones can be divided according to floors, according to facades, according to the purpose of the premises, etc .
- The lift-lower cycles of each engine can be seen
- Identify a faulty engine
- Connect to space heating and cooling systems to keep everything running synchronously
- Connect ambient sensor triggers, etc.

# Radio systems

- Wide selection of controllers (different designs, sizes, number of channels, technical features, etc.)
- Individual or group management
- Environmental sensors
- Possibility to control one motor with several transmitters
- State-of-the-art feedback with feedback (intelligent control)
- The motors give feedback to the transmitters
- Can be managed online



Possibility to combine many home devices into one control system, thus maximizing energy savings

Various scenarios can be created by programming the window covering positions according to them:

- "Back home"
- "Weekend"
- "Vacation"
- "I'm at home"



# Sensor monitoring and control:



# Conclusions

- Controlling sun and daylight increases visual comfort, health and productivity. It is important to avoid near-zero energy consumption in buildings.
- A 2014 study by the European Sunshine Organization (EU) shows that controlling the sun's exposure to external and internal products has an impact on a building's overall energy savings.



# The importance of solar control for energy efficient homes:

**WHY CHOOSE OUTDOOR BLINDS?**



**ISOLATION**  
Reduce energy consumption, save on heating and cooling costs.



**SOLAR HEAT CONTROL**  
Outdoor blinds block up to 95% of the sun's heat.



**DAYLIGHT**  
Maximum access to daylight indoors reduces the need for and cost of artificial lighting.



## 5 tips for effective sun control:

- Make sure your windows and doors are properly covered, depending on the weather.
- Connect heating and cooling systems to window coverings.
- Take advantage of the free sun heat on sunny winter days.
- On winter nights, close the window coverings to save the accumulated heat, and on summer days, keep the window covers in the closed position to prevent the rooms from overheating.
- Automated meteorological sensor window coverings will help you control your home environment even when you are not at home.

## Lex Blinds elegantly covered windows at The Shard

That's how we made an unconventional decision - to use **Outdoor Roller Blinds** with screen fabric in an indoor environment.



Our new project in London with Outdoor Roller Blinds was the perfect solution for more efficient sunlight control.



# Lex Blinds Outdoor Roller Blind in sunny Grenada!



Motorised Outdoor Roller Blinds are revolutionising the way we look at light management. Epitomising comfort, control and style, motorisation provides the ultimate convenience in maintaining privacy and controlling natural light.



## Outdoor Roller Blinds with “ZIIP” side guides



## Detached house project, United Kingdom

Blackout and Screen fabrics, Day and Night roller blinds, Prestige systems, pleated blinds and roman blinds - TaHoma home management system, automated battery-powered products.



# Outdoor Venetian Blinds London



## Lex Blinds window coverings dressed up a cosy Ibis hotel in London

Roller Shutters are a modern exterior solution, which provides a triple benefit - energy and cost savings, sound isolation and an enhanced safety function.



## Lex Blinds team decorated windows in student accommodation in Birmingham

- Total 1300 Blackout Roller Blinds have been installed.
- Modern and especially functional Roller Blinds with a 'Blackout' fabric were selected because this fabric blocks out sunlight and darkens the room, providing maximum comfort.
- Roller Blinds with the Supra system allow the fabric to roll onto the roller tube, covered in a special aluminium cap. On opening the window, the fabric of the roller blind remains fixed close to the glass due to special guides

