



Guide to Sun Control Systems

HunterDouglas

SUN CONTROL

Hunter Douglas Guide To Sun Control Systems

Innovative Products Make Innovative Projects

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Hunter Douglas is the world market leader in daylight regulation and solar heat control solutions. Its quality and durable sun control products (interior and external) not only boast the versatile functionality of a building, but also bring unmatched aesthetic enjoyment to the people. Truly blending functionality, practicality and aesthetics, these products add value to a building.

Hunter Douglas is continually improving, broadening and enhancing its product portfolio by developing innovative proprietary products. We offer an extensive range of architectural products for interior and exterior applications, including Ceiling Systems, Façade Systems and Sun Control Systems.

Above: Material Center & Omegam in Amsterdam, the Netherlands
Architect: Bik + Mulder Architects, Leiden
Product: Aerofoils 300AF

Design, Functionality and Comfort

Enjoying a development course of nearly 50 years, Hunter Douglas Sun Control Products provide professional sun control know-how and expertise for architects, which not only assist them in finishing the construction of a building and improving the façade, but also deliver outstanding architectural shading performances. From custom sizes/shapes to special vertical blinds, every sun control solution developed by Hunter Douglas engineering team meets multi-functional needs while fully expressing the decorative aesthetics of a building.

DESIGN

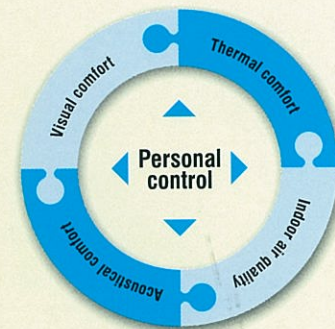
To satisfy various design requirements, Hunter Douglas Sun Control Systems can be installed in horizontal, vertical and any other angle; Control systems include manual, automated and many other options; Operating Systems feature solutions such as fixed, sliding, tilting and more; A variety of materials are available, e.g. aluminum, wood and glass; Also available in a variety of shapes, sizes and finishes.

FUNCTIONALITY

All Hunter Douglas Sun Control Systems have undergone simulated tests, e.g. operational tests in wind and snow that prove durability. With proper design, Hunter Douglas Systems are easy to install, use and maintain.



Hunter Douglas products are certified environmentally-friendly and flame-retardant and were awarded the seal of quality by China Building Materials Testing Centre (CBMTC) and National Centre for Quality Supervision and Test of Fire Building Materials (NFCT).



COMFORT

Hunter Douglas Sun Control Systems prevent excess heat from entering a building, reduce energy consumption through the cooling system and ensure a suitable interior environment. The intelligent control systems can even control entering heat and light according to different daylight and weather conditions. The integrated Sun Control Systems by Hunter Douglas not only save energy, but also improve interior comfort of a building significantly.



Our proprietary Luxacote® finish is specifically designed to withstand severe external conditions. The topcoat contains a solid UV filter, which guarantees perfect colour and gloss stability. This topcoat provides resistance against scratches and abrasion while the alloy and pre-treatment ensure corrosion resistance and high quality.



Above: Teleport Office Building, the Netherlands
Architect: Dam en Partners Architecten
Product: Aerofoils 300AF

Aerofins

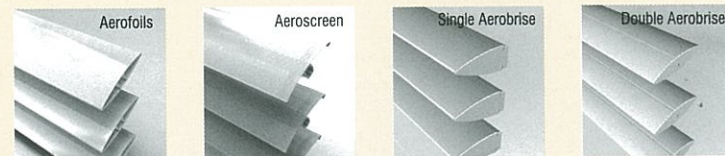
An Exceptional Sun Control Solution

Hunter Douglas Aerofins integrate both stylish design and functionality, creating a striking visual effect as well as a comfortable environment.

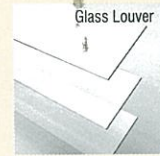
Hunter Douglas Aerofins Sun Control System includes three product options: Aerofoils, Aeroscreen and Aerobrise. Aerofins are an optimal system by which different products can be installed using the same installation components and systems. They can be projected horizontally, positioned vertically, or designed in any other direction to cope with different sun angles.



Aerofins



Custom Louver



100% recyclable

Hunter Douglas Aerofins System: exceptional design, functionality and comfort:

- Performance: Excellent shading performance; extensive applications; appropriate for architectural projects of different types
- Economical: Durable, easy to install and convenient to maintain
- Environmentally-friendly: Contains no pollutants; aluminum is 100% recyclable
- Energy-saving: Reduces thermal radiation and energy consumption effectively
- Design: A variety of colors, shapes and structures offers unlimited design freedom

Aerofoils

Graceful Lines



The Aerofoils System has six different standard extruded profiles which are wing-shaped and with sleek lines. Fin finishes are available in various solutions and installation systems in fixed and operable configurations. This system combines optimal solar effectiveness with a futuristic appearance.

Right: VW/Audi Auto Jarof, Prague, Czech
Architect: Arif & Bintok
Product: Aerofoil 500/450/350/300AF



Aerofoils

- Extruded profiles
- Available in anodized finishes, polyester powder coated finishes, PVDF coatings and Luxacote® finishes
- Six standard profiles from 200 to 450mm wide
- Fin positioned horizontally or vertically
- System projected horizontally or positioned vertically
- Four installation systems available: fixed fins; adjustable fins with manual or motorized operation; V-bracket fixture; and Cup bracket fixture
- Fin span can be calculated according to different wind load (3.7m for 200AF and 4.7m for 450AF at the wind load of 1000N/m²)
- Two standard support structures are available, in tube or strip
- Corner solutions available for fixed systems

Below: Guangzhou Baiyun International Airport
Architect: PARSONS
Product: Aerofoil 350AF



Above: Theatre Recklinghausen, Germany
Architect: Architekten Auer + Weber + Partners
Product: Aerofoil 300AF



Above: China Life Insurance (Group) Company Nanjing Branch
Product: Aerofoil 300AF



AEROFINS

Above: Tesco's London
Architect: Tesco's Design Ltd, Kensington
Product: Aerofoils 300AF

Left above: Library of Chongqing University of Science & Technology
Architect: Shenzhen Xinzhongjian Architectural Design Consultancy Co., Ltd.
Product: Motorized Aerofoils 450mm

Left below: Rabobank, the Netherlands
Architect: VSHP Architecten
Product: Aerofoils 290mm



Aeroscreen

Preserve Views from the Windows



Left: Nanjing Library
Architect: ZUADR
Product: Aeroscreen

AEROFINS

Aeroscreen

- Roll-formed aluminum fins mounted to a substructure
- Polyester coil, PVDF and Luxacote® coatings available in 14 standard colors; Custom colors available upon request
- Fins available in six standard widths from 200mm to 450mm for exterior application, and in seven widths from 200mm to 600mm for interior application
- Both symmetric and asymmetric fins are available
- System projected horizontally or positioned vertically
- Two installation systems available: fixed fins, and adjustable fins with manual or motorized operation
- Fin span can be calculated according to different wind load (2.5m at the wind load of 1000N/m²)
- Two standard support structures available, in tube or strip
- Corner solutions available

The Aeroscreen System has roll-formed and perforated fins. While ideally controlling heat gain and light, the fins also preserve views to the outside and broaden the occupants' visual space. The elegant and transparent Aeroscreen System acts perfectly well with the sedate appearance of a building, creating a beautiful look with unique charm.



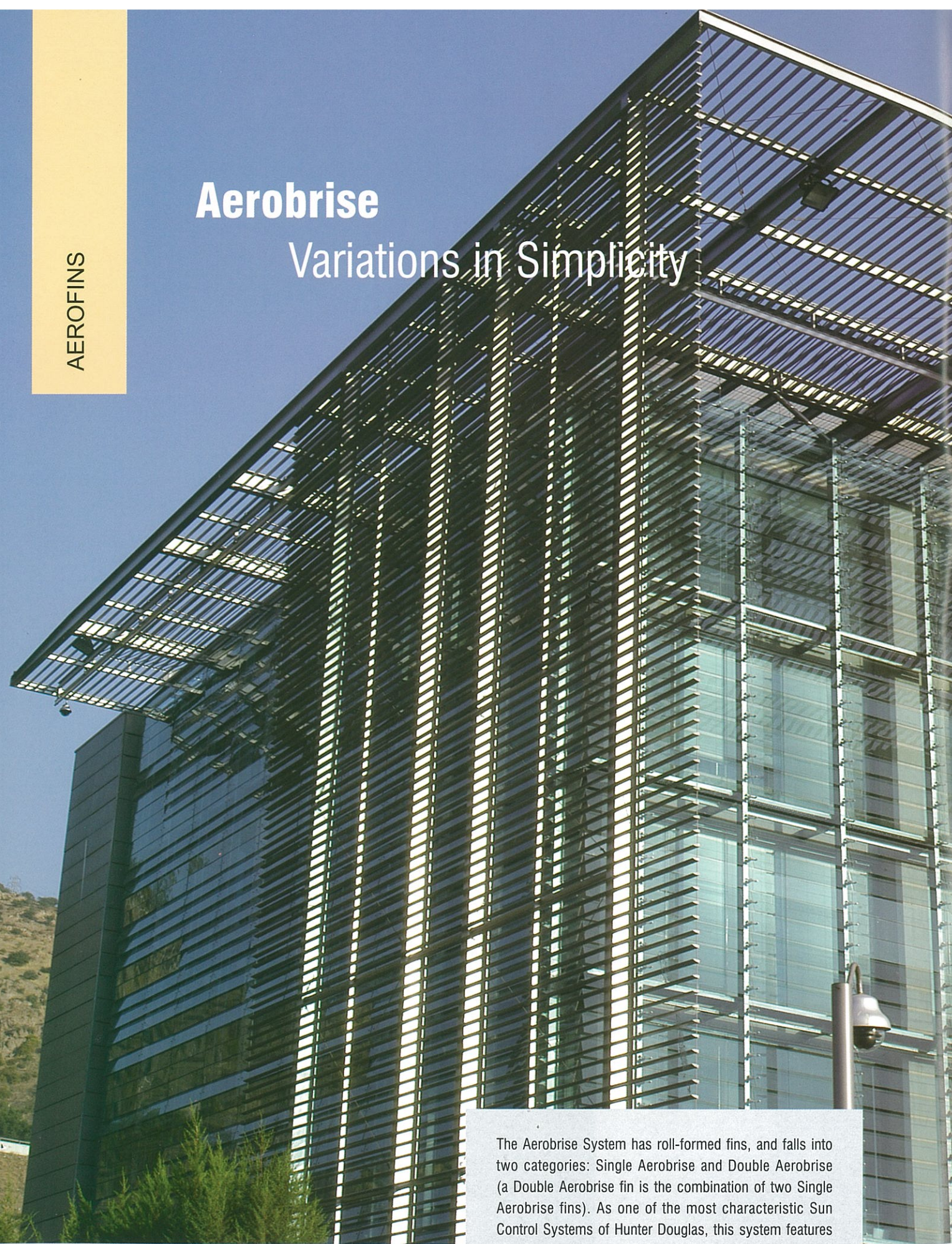
Below: Avansalud Clinic, Chile
Architect: Carlos Elton & Asociados Arquitectos
Product: Aeroscreen



Right: Office Building of HDAPXM
Architect: ASG
Product: Aeroscreen

Aerobrise

Variations in Simplicity



The Aerobrise System has roll-formed fins, and falls into two categories: Single Aerobrise and Double Aerobrise (a Double Aerobrise fin is the combination of two Single Aerobrise fins). As one of the most characteristic Sun Control Systems of Hunter Douglas, this system features simple structure, sophisticated design, and unique and varying decorative effect.

Aerobrise

- Roll-formed aluminum fins mounted to a substructure
- Polyester coil, PVDF and Luxacote® coatings available
- 14 standard colors available; Custom colors available upon request
- Fins available in three standard widths from 100mm to 200mm for Single Aerobrise, and in two widths from 300mm to 400mm for Double Aerobrise
- Fin positioned horizontally or vertically
- System projected horizontally or positioned vertically
- Two installation systems available: fixed with adjustable fins (Single/Double Aerobrise), and adjustable fins with manual or motorized operation (Double Aerobrise)
- Fin span can be calculated according to different wind load (3.2m for 100AB and 4.1m for 400AB at the wind load of 1000N/m²)
- Corner solutions available

Below: Gymnasium of South China University of Technology
 Architect: ADRI of SCUT
 Product: Aerobrise 300AB



Custom Louver

New Realm of Imagination



Hunter Douglas Sun Control Systems expand the design leeway for architects with regard to structures, materials, finishes and colors. Custom Louver further extends the application of new materials and technologies to meet special requirements and turn designers' stunning ideas into reality. These special requirements push Hunter Douglas to develop more advanced products. Therefore, Hunter Douglas Custom Products connect the three architectural elements effectively: material, technology and design.

Right: Huawei Shanghai Base
 Architect: SOM
 Product: Grained Aerofins



Custom Louver

- Provide solutions in the stage of design and make sun control solution an integral part of a building
- Full service support from stages of design to construction
- Diversified product combinations lend broader leeway and unlimited possibilities for creative ideas
- Specially-processed and custom-made by a skillful and experienced engineering team with advanced equipment

Below: Chengdu Administrative Center
 Architect: CSWADI
 Product: Custom Glass Louver



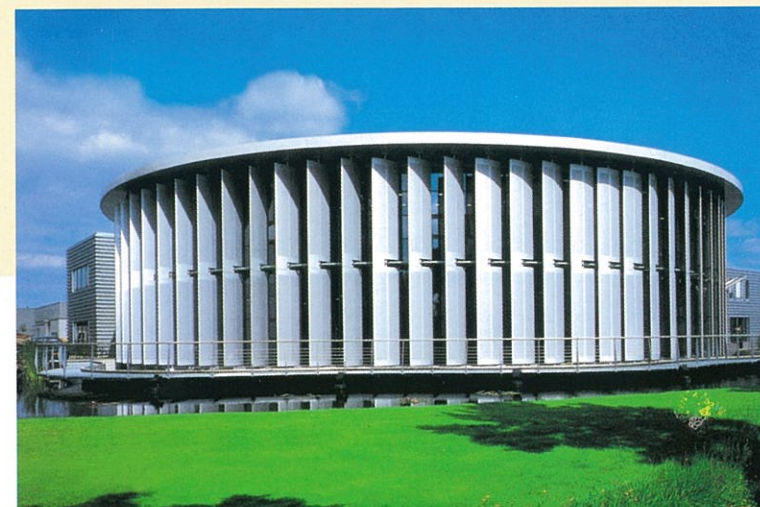
Right: Jiangmen New Town Mall
Architect: Blvd. International Inc.
Product: Custom Louver



Left above: DUOC Building, Chile
Architect: Sabbagh Arquitectos
Product: Tube-shaped Custom Louver



Left below: Brentex Offices, the Netherlands
Architect: Van Ders Samenwerkende Architecten BV, Tilburg
Product: Custom Louver



Above: Biodesign Institute at Arizona State University, USA
Architect: Gould Evans + Lord, Aeck & Sargent Architecture
Product: Grained Custom Louver

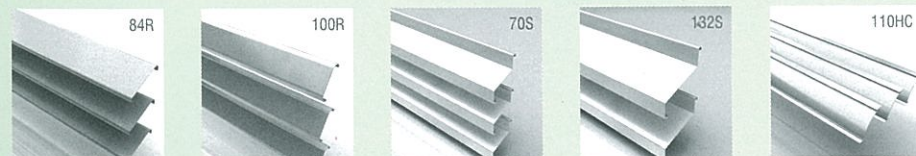
Right: Telheiras Residence, Portugal
Architect: Mundiplanos
Product: Linear 84R

Linear System

The Linear Sun Control System (e.g. 84R, 70/132S, 100R and 110HC) is based on roll-formed or extruded single skin panels. Possessing multiple integrated installation support systems, it can be horizontally projected or vertically mounted. The System is one of the classics among Hunter Douglas Sun Control Products, and is available in a variety of sizes and angles. Featuring decent design, unsophisticated structure and elegant look, the System provides a relatively economic Sun Control Solution for customers.



Linear



100% recyclable

Hunter Douglas Linear Sun Control System: exceptional design, functionality and comfort:

- Performance: Excellent shading performance; extensive applications; appropriate for architectural projects of different types
- Economical: Cost-effective, durable, easy to install and convenient to maintain
- Environmentally-friendly: Contains no pollutants; aluminum is 100% recyclable
- Energy-saving: Reduces thermal radiation and energy consumption effectively
- Design: Unsophisticated yet elegant look; Strongly expressive regarding colors, shapes, etc

Linear Eternal Classic

Right: Jinzhou South Railway Station
Architect: TSDI
Product: Linear 84R

84R

- Roll-formed C-shaped aluminum panels with nicely curved edges
- Panel 84mm wide
- Polyester coil, PVDF and Luxacote® coatings available
- 17 standard colors available; Custom colors available upon request
- The inward white coating is strongly reflective
- Bent or curved to follow the shape of a building
- Panels can be combined to achieve endless appearances
- Panels positioned horizontally
- System projected horizontally or positioned vertically
- Panel span: 1.2m at the wind load of 1000N/m²
- Multiple corner solutions available

70/132S

- Roll-formed Z-shaped aluminum panels
- Panel widths of 70mm or 132mm
- Available in anodized finishes, polyester powder coated finishes, PVDF coatings and Luxacote® finishes
- 17 standard colors available; Custom colors available upon request
- 132S appropriate for shading daylight coming from low angles
- Panel span: 1.3m for 70S and 1.8m for 132S at the wind load of 1000N/m²

Below: Comair, Kempton Park South Africa
Architect: Wim Swart
Product: Linear 132S



100R

- Roll-formed C-shaped aluminum panels
- Panel 100mm wide
- Extruded C-shaped panels of 100mm wide
- Available in anodized finishes, polyester powder coated finishes, PVDF coatings and Luxacote® finishes
- Unique U-shaped profile
- Panel span: 2.4m at the wind load of 1000N/m²

110HC

- Roll-formed aluminum panels
- Panels 110mm wide
- Available in anodized finishes, polyester powder coated finishes, PVDF coatings and Luxacote® finishes
- Panels mounted between carriers, suitable for framed structures
- System projected horizontally or angled projection
- Fascia available in U-shaped or bull-nose profiles
- Panel span: 1.8m at the wind load of 1000N/m²



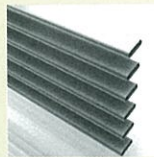
Right: Residence Nootshaele, Leuven, Belgium
Architect: Wit, Outgaarden
Product: Custom Shutters

Shutters

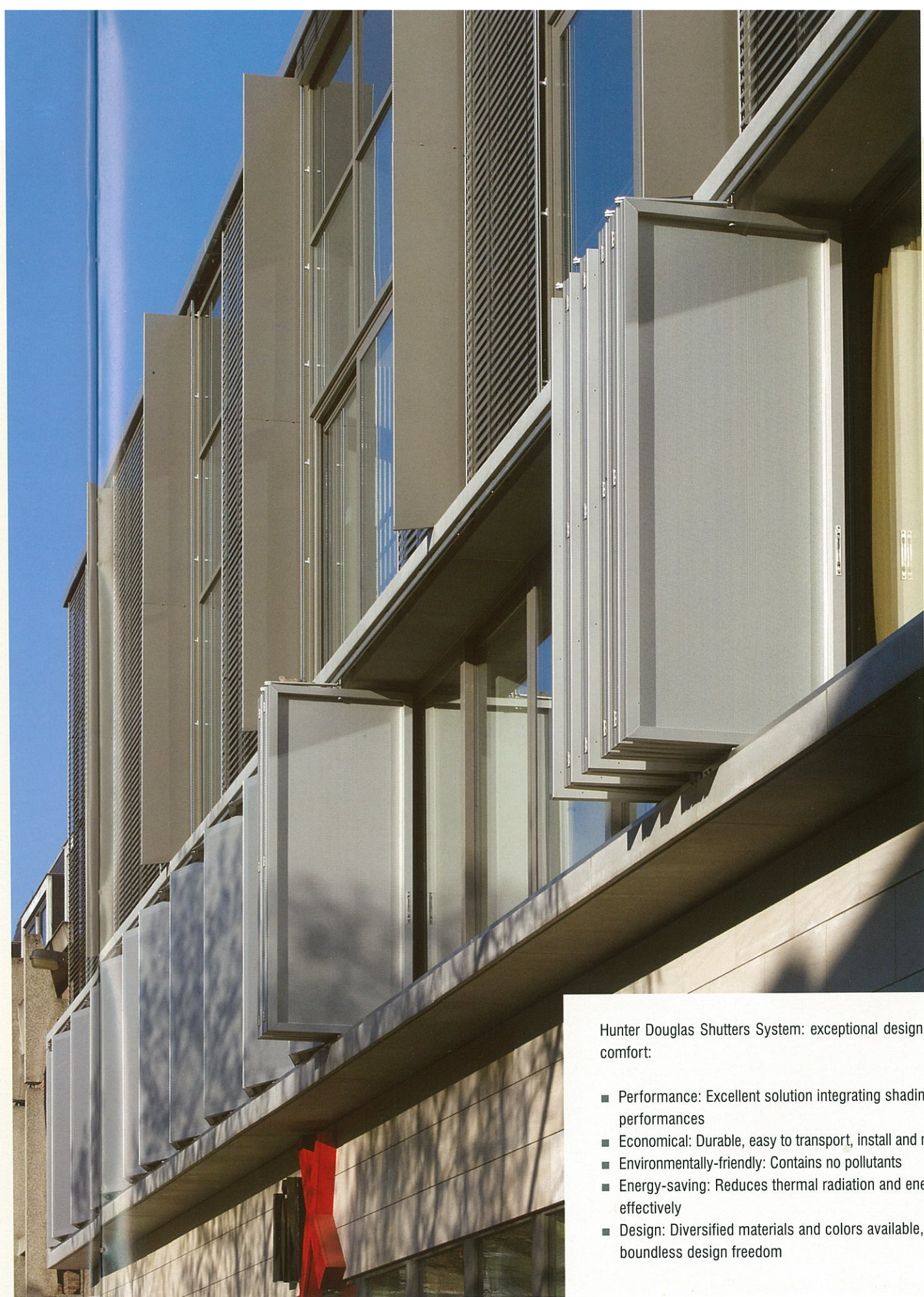
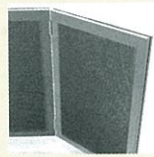
Modernized Interpretation for Traditional Elements

The Shutters System delivers outstanding shading and thermal performances, as well as privacy control to the interior space, so it was widely used in traditional buildings. Nowadays when large areas of glass are applied in architecture, designers reconsider this traditional element and use it creatively to create a comfortable interior environment, and at the same time make the building stand out with an exceptional look. Hunter Douglas Shutters System understands the new interpretation of this traditional architectural element.

Sliding Shutters



Custom Shutters



100% recyclable

Hunter Douglas Shutters System: exceptional design, functionality and comfort:

- Performance: Excellent solution integrating shading and privacy performances
- Economical: Durable, easy to transport, install and maintain
- Environmentally-friendly: Contains no pollutants
- Energy-saving: Reduces thermal radiation and energy consumption effectively
- Design: Diversified materials and colors available, offering boundless design freedom

Sliding Shutters

Enjoy Privacy

This new sun control product can be installed vertically to the façade, allowing architects to improve the aesthetic effect of the façade while giving considerations to both shading and privacy performances.

The Sliding Shutters System is suitable for many different types of buildings, and can integrate with the whole building seamlessly and become an organic part of it.

Right: Commercial and Residential Housing
Architect: Peter Jonssen, Rupert Ranft, Matthias Luke BDA, Köln
Product: Sliding Shutters



Sliding Shutters

- Extruded aluminum frames
- Two standard fin materials available: aluminum and special wood (e.g. red cedar)
- Custom fin materials available: profiles, glass and perforated panels, etc.
- Six standard fin shapes available: five for aluminum, one for wood
- Various finishes available for frames and fins; the specially processed wood is durable
- The dimension of aluminum frames varies, depending on wind load and fin materials
- Fixed or adjustable fin configurations available
- Components include top and bottom rails, runners and necessary hardware for adjusting and moving fins

Below: Chasse Carre, the Netherlands
Architect: O.M.A. Rotterdam
Product: Sliding Shutters



Above: Nieuw Australie, the Netherlands
Architect: DKV Architecten
Product: Sliding Shutters

Custom Shutters

Creative Ideas Originate from Life



Left: Designcenter De Winkelhaak, Belgium
Architect: Coby Manders & Filip Pittillion, Antwerpen
Product: Custom Shutters

SHUTTERS

Custom Shutters

- Provide solutions in the stage of design and make sun control solution an integral part of a building
- Full service support from stages of design to construction
- Diversified product combinations lend broader leeway and unlimited possibilities for creative ideas
- Specially processed and custom-made by a skillful and experienced engineering team with advanced equipment

Hunter Douglas Custom Shutters System offers unprecedented design flexibility to architects by using different materials, forms, systems and colors. Hunter Douglas never ceases in its efforts to develop new building materials and use them creatively. Hunter Douglas' sophisticated ability to manufacture custom products has brought together the three cornerstones of architecture: material, technology and design.



Right: Noorderplassen, Almere, the Netherlands
Architect: Maccreanor Lavington Architects
Product: Custom Shutters



Right: Yihe-Nanhu Golf Villas, Guangzhou, China
Architect: A.E.P. Design Singapore
Product: Custom Shutters

Light, Heat and Energy

Light & life

In everyday life, we experience the effects of electromagnetic waves. From radio waves to gamma rays, only part of the light spectrum is visible to the naked eye. Some of these waves are useful and necessary for life, while others can be harmful. The light that our eyes can see influences our thought processes and psychological processes, such as mood and performance. In order to obtain a healthy work and life environment, it is necessary for us to take measures to manage indoor light and heat.

Light control

Values for the right luminance levels, for office activities recommended by ergonomics, are laid down in European legislation.

- Optimal luminance levels are between 500 to 1500lux;
- Natural sun light is the best light source;
- Light hitting the outside of a building varies from 10,000lux to 100,000lux depending on the season, façade orientation, cloudiness and geographical location.

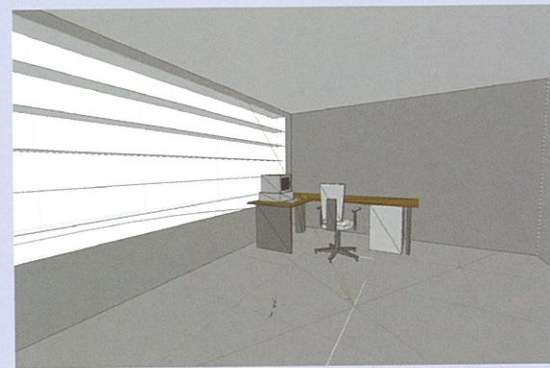
As a result, the quantity of light entering the building needs to be controlled for optimal working conditions.

Climate control

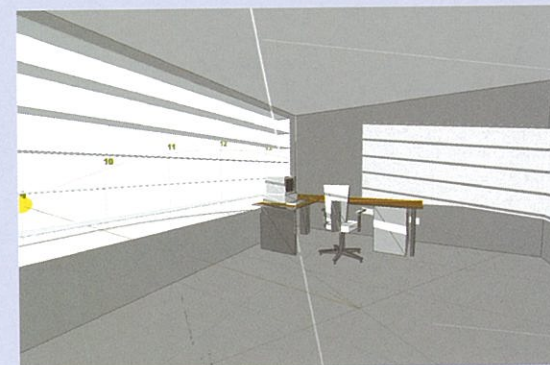
Modern buildings nowadays are insulated to such an extent that there is hardly any heat loss. In most cases, office systems and the body warmth of the people in the building produce enough warmth to heat the building.

- Heating installations are less necessary, but on the contrary, heat control is the issue;
- Prevent direct or indirect sunlight from causing heat gain in the building;
- Limit the use of air-conditioning installations to reduce CO₂.

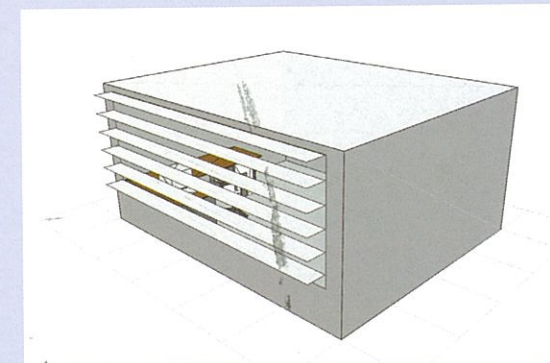
As a result, the quantity of heat entering the building needs to be controlled for an optimal inside climate.



Interior view: 12:00pm, April 1



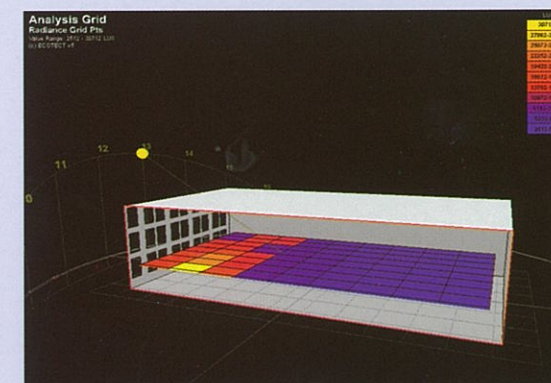
Interior view: 9:00am, December 1



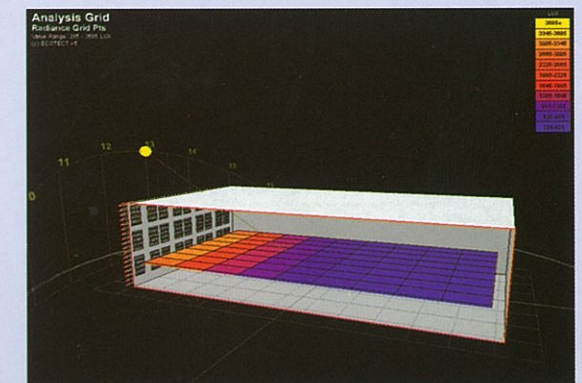
Exterior view

Sun Control Systems are passive systems that control interior light and heat. In summertime, the systems can block or weaken solar heat before it enters a building, thus reducing the amount of energy used for cooling and saving on cooling costs. The software developed by Hunter Douglas helps draw the chart of shading performance through simulating the movement of the sun using accurate calculations. While in winter the sunlight comes in at relatively low angles, and solar heat gain can help save energy on heating a building. Based on the status of the sun control systems, the heating effect can also be illustrated with the help of computer animations. Optimal shading and minimum energy consumption can be achieved through changing the openness and angle of the shading system. The intelligent lighting control system by Hunter Douglas regulates daylight automatically according to different levels of light intensity that enter the building, thus further reducing energy consumption and improving indoor comfort.

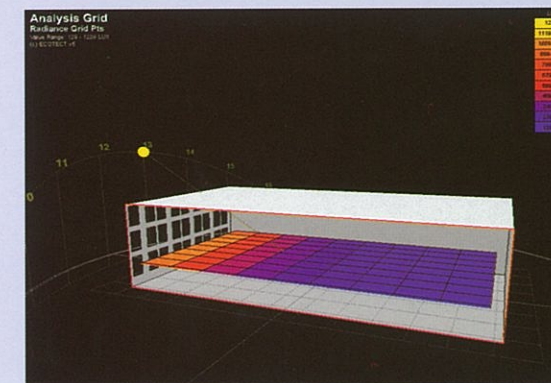
Radiance Analysis Grid Charts



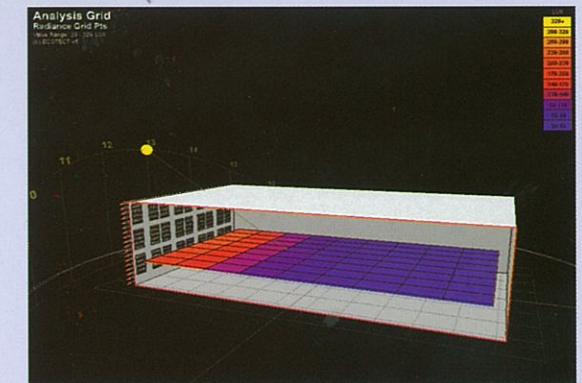
Without a sun control system, sunny day



132S Sun Control System, sunny day



Without a sun control system, overcast day



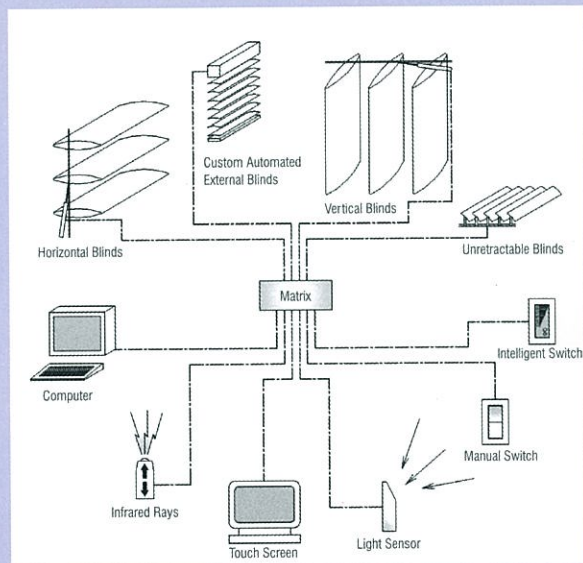
132S Sun Control System, overcast day

Comparative analysis: with/without the 132S Sun Control System of Hunter Douglas; between sunny and overcast days.

Control Systems

Controlled light and heat

The more controllable the system is, the more comfortable the indoor environment will be. Hunter Douglas offers a full range of custom control systems for customers, no matter if it is a basic control system based on the sun and weather conditions or an intelligent control system that takes the overall management of the whole building and human-oriented control into consideration.

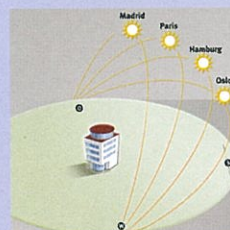


Basic control system



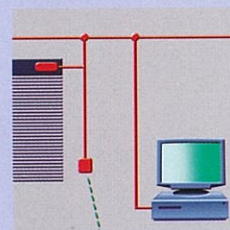
The basic control system is a simple switch between on and off. The system can be fixed or remotely controlled, by which you can adjust the shading system to any angle you want to ensure optimal human comfort.

Enhanced control system



The enhanced control system includes a switch and a timer. It expands the control area and controls the sun shading system according to the information sent by light and wind sensors.

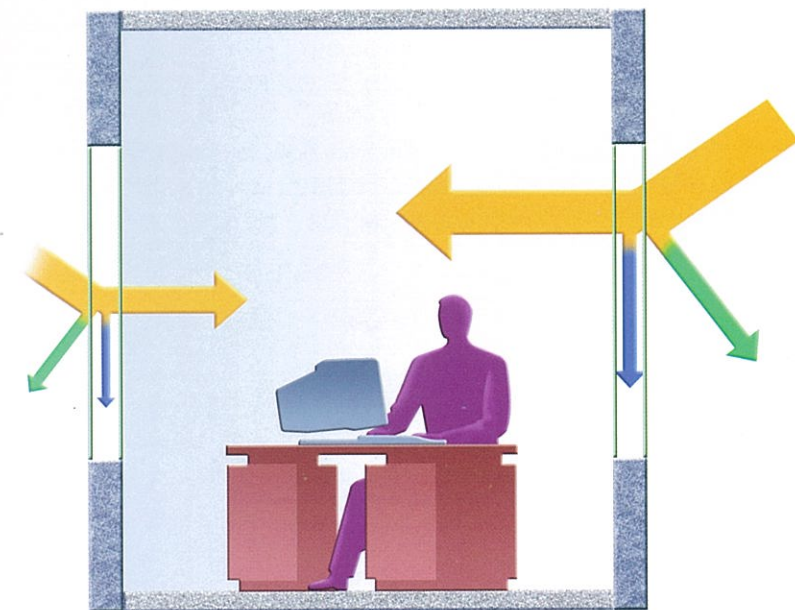
Intelligent control system



The intelligent control system allows highly automated control of the sun shading system through software programming and connects with the management system of the whole building, including the integrated control of cooling, heating and lighting. The intelligent control system can also shift to manual control mode or preset the control program for a certain day.

Environmental Protection

Many research reports have focused on topics like whether a good thermal system can assist energy saving and help achieve the Kyoto Agreement targets. Among the many measures for heat preservation, increasing the application of glass is the most frequently recommended and adopted way. However, as an outward decorative material of buildings, glass is just a static decorative element. On the contrary, weather changes with the alterations of seasons. It even changes greatly in a single day. The various sun control products (manual, motorized or automated) by Hunter Douglas allow dynamically controlled sunlight from the windows and create an agreeable indoor environment. Therefore, we can largely reduce the energy consumption on cooling in summer and heating in winter by blocking the sun in summer to prevent excess thermal gain and allowing it to shine through in winter.





- China
- Hong Kong
- India
- Indonesia
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- Korea
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- Philippines
- Singapore
- Taiwan
- Thailand
- Vietnam
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- Europe
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HunterDouglas

CEILING

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FAÇADES