



Movable sun protection solutions  
for sophisticated

# Architecture

METAL BLINDS | s\_enro · s\_enn · s\_onro

PERFECTION AND  
INDIVIDUALITY HAVE ALWAYS  
BEEN DISTINCTIVE FEATURES  
OF OUR WORK...

## TRENDSETTING

### MOVING SUN PROTECTION SOLUTIONS FOR SOPHISTICATED ARCHITECTURE

Those who seek to shape the future require working environments fitted out with the utmost functionality and technical perfection that create an inspiring atmosphere, so that people are provided with the ideal setting in which to live out their creativity, develop ideas and implement new solutions.

Today, modern office buildings, major business premises and private working spaces predominantly have large glass façades. The aim of these is to provide adequate natural daylight and to contribute to the passive generation of energy from the sun. In the summer, however, the primary requirement is to protect the building from excessive incident sunlight and overheating.

The best way of doing this is with a form of movable, external sun blind that provides protection from too much exposure to the sun, ensures the provision of daylight and also retains the contact with the outside world.

The selection criteria of builders and planners in relation to external sun protection are primarily defined these days by high

demands in terms of duration of usage in sunny and windy conditions, long durability, suitability for recycling and low maintenance costs. The architectural requirements in relation to the ability to integrate the product into the building's structure and the aesthetic aspects also play a key part in the selection.

It is specifically for these requirements of demanding architecture that we developed our high-quality, rolling metal blinds. With their slender stainless steel slats or aluminium micro slats and innovative features they redefine the term sustainability.

We would be only too happy to assist you in the planning and implementation of your building using tailor-made solutions.





## s\_enro

### Sun protection made of aluminium micro slats

s\_enro is the latest product from our range of metal blinds, with which we have successfully been active on the market for around fifteen years. In addition to the sophisticated design, high level of transparency and modest fitting dimensions that s\_enro offers, its homogeneous, precise surface gives the metal blind an aesthetically pleasing look.

As the slats can be fashioned in different colours, you are able to create an appearance in keeping with the building.

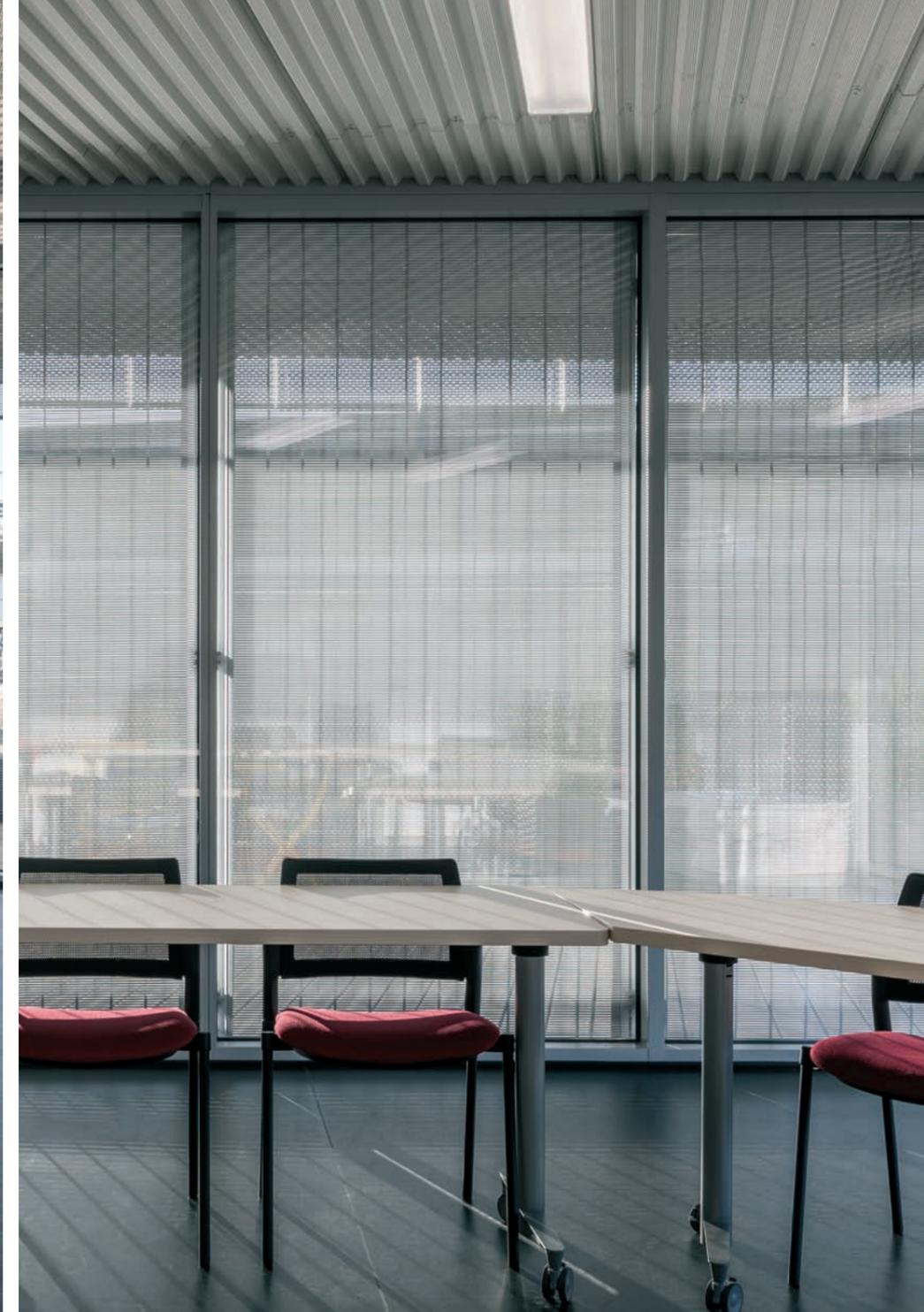
Bordeaux is a city in France that is influenced by the Atlantic climate, with lots of sun and wind. For functional reasons conventional sun protection was therefore out of the question for the neuroscience campus.

The sun protection was also required to be in harmony with the transparent perforated metal skin that forms the building's external façade. This was successfully achieved using the s\_enro metal blind, which when down blends in as one with the façade.

### NEUROCAMPUS BORDEAUX

- 395 units
- Volume: c. 730 m<sup>2</sup> (total area) of rolled s\_enro metal blinds

Architect vib architecture  
Client Conseil Regional d'Aquitaine  
Realisation 2016  
Use Centre of excellence for neuroscience



**Sun:**

As soon as the sun rises to more than 21° above the horizon, any direct penetration of the sun's rays is completely cut out.

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**Wind:**

The sun shading systems are tested up to wind resistance class 5\*. This corresponds to a wind speed of up to 26 m/s (storm Beaufort 9). The systems can be operated up to 21 m/s\*. This makes s\_enro up to 90 % more wind-resistant than conventional external venetian blinds and up to 160 % more wind-resistant than textile awnings.

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**Heat:**

The blinds are able to prevent up to around 90% of incident solar energy. Air-conditioning costs can thus be greatly reduced or air conditioning not used at all.

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**Seeing out:**

High transparency through to the outside thanks to an opening percentage of c. 24%\*\*.

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**Recycling:**

The aluminium micro slats can be easily recycled.

\* Dependent on dimensions and installation situation

\*\* With a sightline angle from inside of 16°

# s\_enn

Pure minimalism in stainless steel

The basic idea behind the s\_enn metal blind fits on one sheet of paper: it should simply be better. Its core component - its slat - was developed in collaboration with the Fraunhofer Institute for Solar Energy Systems (ISE) in Freiburg. The objective was to achieve optimum energy reduction and visual contact with the outside world.

In developing this wholly new product, we have succeeded in creating a timeless, wind-resistant classic that thrills clients with its minimalist aesthetics and extreme precision in stainless steel.

Architect Langhof Architektur und Stadtentwicklung  
KSP Jürgen Engel Architekten  
Client Strabag Real Estate  
Realisation 2016  
Use Hotel, offices, retail



The Upper West Berlin is the new landmark of the capital's City West district. At 118 metres high and with 33 storeys, the building is one of the tallest in Berlin.

The white façade with its net-like structure gives the tower the feel of a sculpture. Designed to ensure maximum visibility through to the outside, s\_enn is the ideal energy-efficient complement to this building.

Even with the sun blind down, the breathtaking view over Berlin thus remains an impressive experience for visitors to the Skybar One Lounge around 110 metres above the ground.

## UPPER WEST BERLIN

- 1,648 systems
- Volume: c. 5,100 m<sup>2</sup> (total area) of rolled s\_enn metal blinds



**Sun:**

As soon as the sun rises to more than 21° above the horizon, any direct penetration of the sun's rays is completely cut out.

**Wind:**

The sun shading systems are tested up to wind resistance class 5\*. This corresponds to a wind speed of up to 26 m/s (storm Beaufort 9). The systems can be operated up to 21 m/s\*. This makes them up to 90 % more wind-resistant than conventional external venetian blinds and up to 160 % more wind-resistant than textile awnings.

**Heat:**

The blinds are able to prevent up to 85% of incident solar energy. Air-conditioning costs can thus be greatly reduced or air conditioning not used at all.

**Seeing out:**

High level of transparency from inside to outside thanks to an opening percentage of c. 21%.

**Recycling:**

The stainless steel micro slats can be easily recycled.

\* Dependent on dimensions and installation situation



Architect sander.hofrichter architekten GmbH  
Client Klinikum Region Hannover  
Realisation 2014  
Use Clinic



## s\_onro

### Roller shutter and sun blind made of aluminium micro slats

With its modern form, s\_onro combines blind and roller shutter functions in fascinating fashion. What makes it really special is its unique construction.

At an angle of inclination of 20 degrees and above the aluminium curtain shields the interior from direct sunlight. The amount of light that gets in can be individually determined by opening and closing the blind, all the way to complete blackout conditions.

With its high level of transparency, s\_onro ensures sufficient incoming light and the ability to see outside.

After some four years of construction, Lower Saxony's most modern clinic building opened its door for operation as a hospital. In addition to cutting-edge medical equipment and the highly modern organisation of work, the focus of the builders and architects was above all on employee and patient satisfaction.

In this respect the high-quality s\_onro aluminium blind fuses aesthetically into the appearance of the façade and with its outstanding properties fulfils all the requirements of a modern hospital building. The sun protection was integrated into surface-mounted boxes tailored specifically to the project and also contributes to the clinic's sustainable, efficient use of energy.

### KLINIKUM HANNOVER

- 415 systems
- Volume: c. 1,070 m<sup>2</sup> (total area) of rolled s\_onro metal blinds

**Sun:**

As soon as the sun rises to more than 20° above the horizon, any direct penetration of the sun's rays is completely cut out.

**Wind:**

The sun shading systems are tested up to wind resistance class 6\*. This corresponds to a wind speed of up to 30 m/s (severe storm Beaufort 10). The systems can be operated up to 26 m/s\*. This makes s\_onro up to 130% more wind-resistant than conventional external venetian blinds and up to 230% more wind-resistant than textile awnings.

**Heat:**

The blinds are able to prevent up to around 90% of incident solar energy. Air-conditioning costs can thus be greatly reduced or air conditioning not used at all.

**Seeing out:**

High transparency through to the outside thanks to an opening percentage of c. 18%\*\*.

**Recycling:**

The aluminium-profiled slats can be easily recycled.

\* Dependent on dimensions and installation situation

\*\* With a sightline angle from inside of 10°



## s\_enro



View of slats from outside

### Product benefits

- Sun protection with high level of transparency, thus retaining contact with the outside world
- Modern, elegant look in aluminium
- Modest installation dimensions thanks to small winding diameter and low weight thanks to roll-formed production
- Good provision of daylight with simultaneously high energy reduction
- Choice of colour scheme
- Highly resistant to wind, so can also be used for tall buildings

## s\_enn

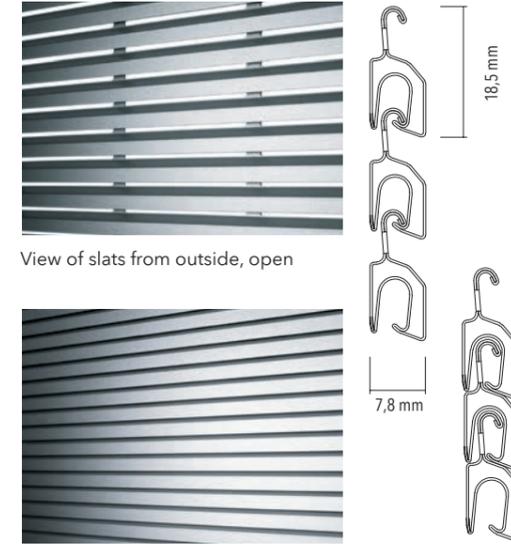


View of slats from outside

### Product benefits

- Sun protection with high level of transparency, thus retaining contact with the outside world
- Modern, elegant look in stainless steel
- Modest installation dimensions thanks to small winding diameter and low weight thanks to roll-formed production
- Good provision of daylight with simultaneously high energy reduction
- Highly resistant to wind, so can also be used for tall buildings

## s\_onro



View of slats from outside, closed

### Product benefits

- Dual function: Optionally as sun protection or as privacy screen / blackout
- Blackout when blind is closed
- Modern, elegant look in aluminium
- Low weight thanks to roll-formed production
- Good provision of daylight with simultaneously high energy reduction
- Choice of colour scheme
- Highly resistant to wind, so can also be used for tall buildings

The standard slat colours for s\_enro and s\_onro:



s\_enn slat colour:

DESIGN	MATERIAL	WIDTH	HEIGHT	AREA	BLIND WEIGHT	ENERGY REDUCTION	WIND STABILITY	DRIVE	CONTROL SYSTEM PROTECTION REQUIREMENT
<b>s_enro</b>									
Rolled sun blind (non-closing)	Aluminium micro slats, roll-formed	min. 0.8 m max. 2.50 m	max. 3.50 m	max. 8.75 m <sup>2</sup>	c. 5.2 kg/m <sup>2</sup>	$g_{total} = 0.09$ (1)* $g_{total} = 0.05$ (2)*	max. class 5**	230V tubular motor	Wind monitor and frost sensor
<b>s_enn</b>									
Rolled sun blind (non-closing)	Stainless steel micro slats roll-formed	min. 0.65 m max. 2.70 m	max. 4.50 m	max. 12 m <sup>2</sup>	c. 4.2 kg/m <sup>2</sup>	$g_{total} = 0.16$ (1)* $g_{total} = 0.10$ (2)*	max. class 5**	230V tubular motor	Wind monitor and frost sensor
<b>s_onro</b>									
Rolled sun blind / blackout (closing)	Aluminium profiled slats roll-formed	min. 0.80 m max. 2.40 m	max. 3.00 m	max. 6 m <sup>2</sup>	c. 5.8 kg/m <sup>2</sup>	$g_{total} = 0.05$ (1)* $g_{total} = 0.03$ (2)*	max. class 6**	230V tubular motor	Frost sensor

(1) Metal blind in combination with thermally insulating glazing (total energy transmittance of the glazing as per EN 410: 0.53)

(2) Metal blind in combination with sun protection glazing (total energy transmittance of the glazing as per EN 410: 0.36)

\* approx. guide values, depending on the color of the shutter, type of glass and installation situation

\*\* Dependent on dimensions and installation situation

... THEREFORE ALL OF OUR  
SOLUTIONS SHOW UP A  
UNIQUE SIGNATURE.

## REFERENCES

WE HAVE REALISED THE FOLLOWING PROJECTS

UNI BRIXEN · MERCK SERONO GENEVA · HEGAU TOWER SINGEN · LINKED HYBRID BEIJING · ISOZAKI TOWER BILBAO · ROCHE  
DIAGNOSTICS MANNHEIM · WESER TOWER BREMEN · MUNICH AIRPORT · STUTTGART TAX OFFICE · WÜRTH WALDENBURG  
· MUNICH UNIVERSITY OF APPLIED SCIENCES · UNI AUGSBURG · HERMA FILDERSTADT · IKB BANK HAMBURG · GIZ BONN ·  
EUROPAALLEE ZÜRICH · FEDERAL EMPLOYMENT AGENCY DÜSSELDORF · UPPERWEST BERLIN · NEUROCAMBUS BORDEAUX ·  
PORSCHÉ WEISSACH · BOSCH RENNINGEN · UNIVERSITY LIBRARY GÖTTINGEN · ESTORIL SOL RESIDENCE CASCAIS ·  
SENFTENBERG UNIVERSITY OF APPLIED SCIENCES · HEIDELBERG SAVINGS BANK · UNI MAINZ · SIEMENS HEADQUARTERS  
MUNICH · DALL-MANKAI HAMBURG · SCHWABINGER TOR MUNICH · BAYER K9 LEVERKUSEN · THE MARK BUCHAREST · NDR  
HANNOVER · NEUER WALL HAMBURG · CONVENTPARK HAMBURG · HEUSTON SQUARE DUBLIN · GERLING QUARTIER COLOGNE  
· LICON LAUP-HEIM · EMAG SALACH GÖPPINGEN · VICAR WARSAW · GROB MINDELHEIM · MUSEUM CHUR · PHILIPS HEAD-  
QUARTERS HAMBURG · ERKELENZ SAVINGS BANK · HABA RODACH · BUHLMANN DUISBURG · UNIVERSITY CLINIC BOCHUM ·  
WALTER-KOLB-STRASSE FRANKFURT AM MAIN · LEMKE MARKLOHE PRIMARY SCHOOL · ERCO LÜDENSCHIED · CLOUTH  
QUARTIER COLOGNE · MARIE-ELISABETH-LÜDERS-HAUS BERLIN · POLICE HEADQUARTERS COTTBUS · FRAUNHOFER INSTITUTE  
BAYREUTH · MARIE CURIE GRAMMAR SCHOOL DRESDEN · HERRNHUTER SOCIAL WELFARE OFFICE HERRNHUT · SCHLÜTER-  
SYSTEMS ISERLOHN · RESIDENCE AM BONGERT BRIDEL · BELSENPARK DÜSSELDORF · WE ARE HAPPY TO PROVIDE FURTHER INFORMA-  
TION ON OUR REFERENCE JOBS AND PROJECTS ON REQUEST.



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