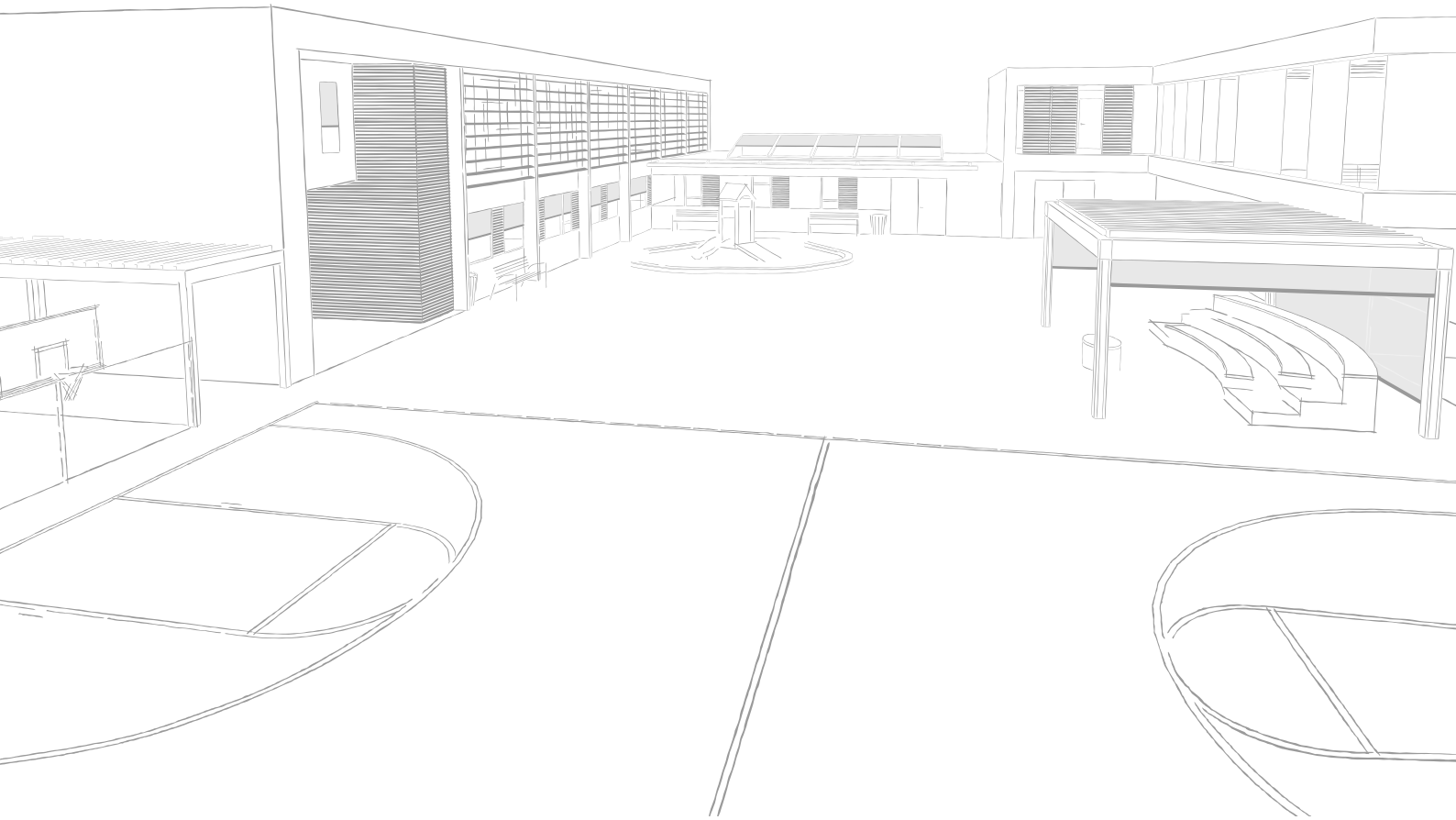
HEALTHY **SCHOOL** CONCEPT



English | 2019

RENSON®
Creating healthy spaces

OUR **MISSION**

Creating healthy spaces

Paul Renson

"RENSON® specialises in ventilation, sun protection and outdoor. With experience dating back to 1909, and an integrated team of more then 1000 employees, we develop systems and solutions which provide consumers with a healthy and comfortable living and working environment, also taking into account energy efficiency and the use of renewable energy. We develop innovative products and systems, and offer total solutions to make every house into a healthy and comfortable home.

"We also appreciate the aesthetic values of every building, allowing our sun control and ventilation systems to be incorporated invisibly into your home. Our outdoor coverings and aluminium blades for covering façades provide clear accents, offering added value to the architecture. Inside, we ensure that doors are integrated invisibly with no conspicuous frames or visible joints."

Discover how Renson® products can optimise the comfort experience while guaranteeing a contemporary design.

"We develop innovative products and systems allowing for aesthetic integration in every building."

COMFORTABLE LIVING STARTS WITH **RENSON®**

Renson® is innovation with a clear vision: ensuring the occupant's health and comfort, whilst taking energy efficiency and the added value of aesthetics into consideration.

The continuous supply of fresh air and the extraction of contaminated air through a demand-driven ventilation system enable you to breathe healthy air at all times.

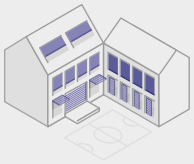
Intensive ventilation and exterior window blinds allow the warmth of the sun to enter when required, but prevent unnecessary cooling costs on warmer days.

The outdoor coverings ensure a pleasant ambiance so you can live outside throughout the year, without any hindrance from excessive sun, rain, wind or cold.

Whether you want something eye-catching … or not: aluminium blades provide striking facades with straight continuous lines. The ventilation and sunscreen systems are hardly noticeable from the inside, while invisible door systems ensure that closed doors and walls appear as one, without any disruptive frames and hinges.

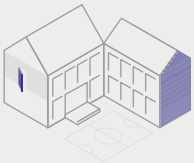
HEALTHY INDOOR AIR QUALITY

CONTROLLED INDOOR CLIMATE

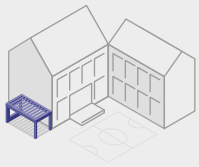


Ventilation **Sun protection**

Cladding & interior **Terrace coverings**



ARCHITECTURAL UNITY



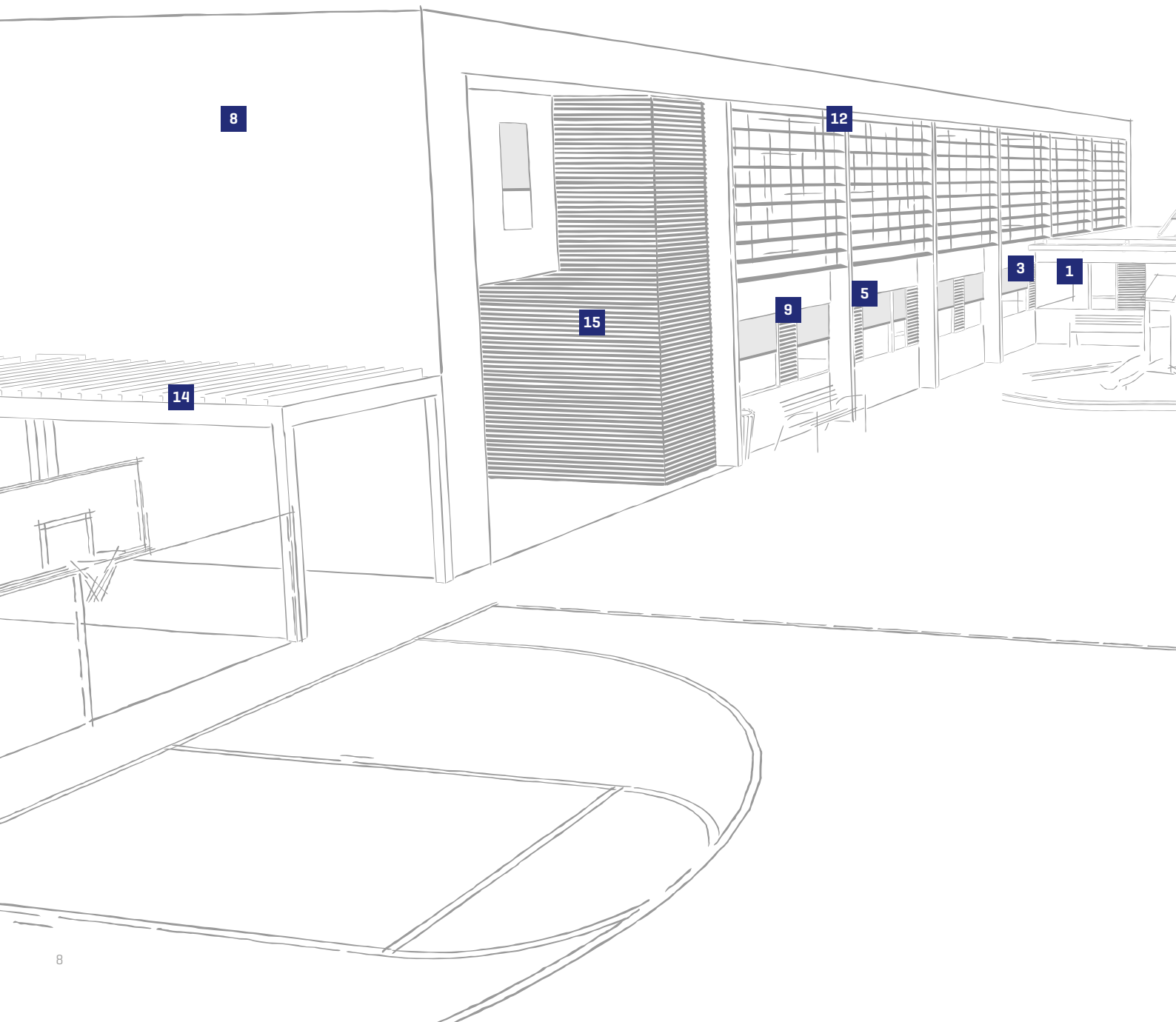
CONTROLLED OUTDOOR CLIMATE

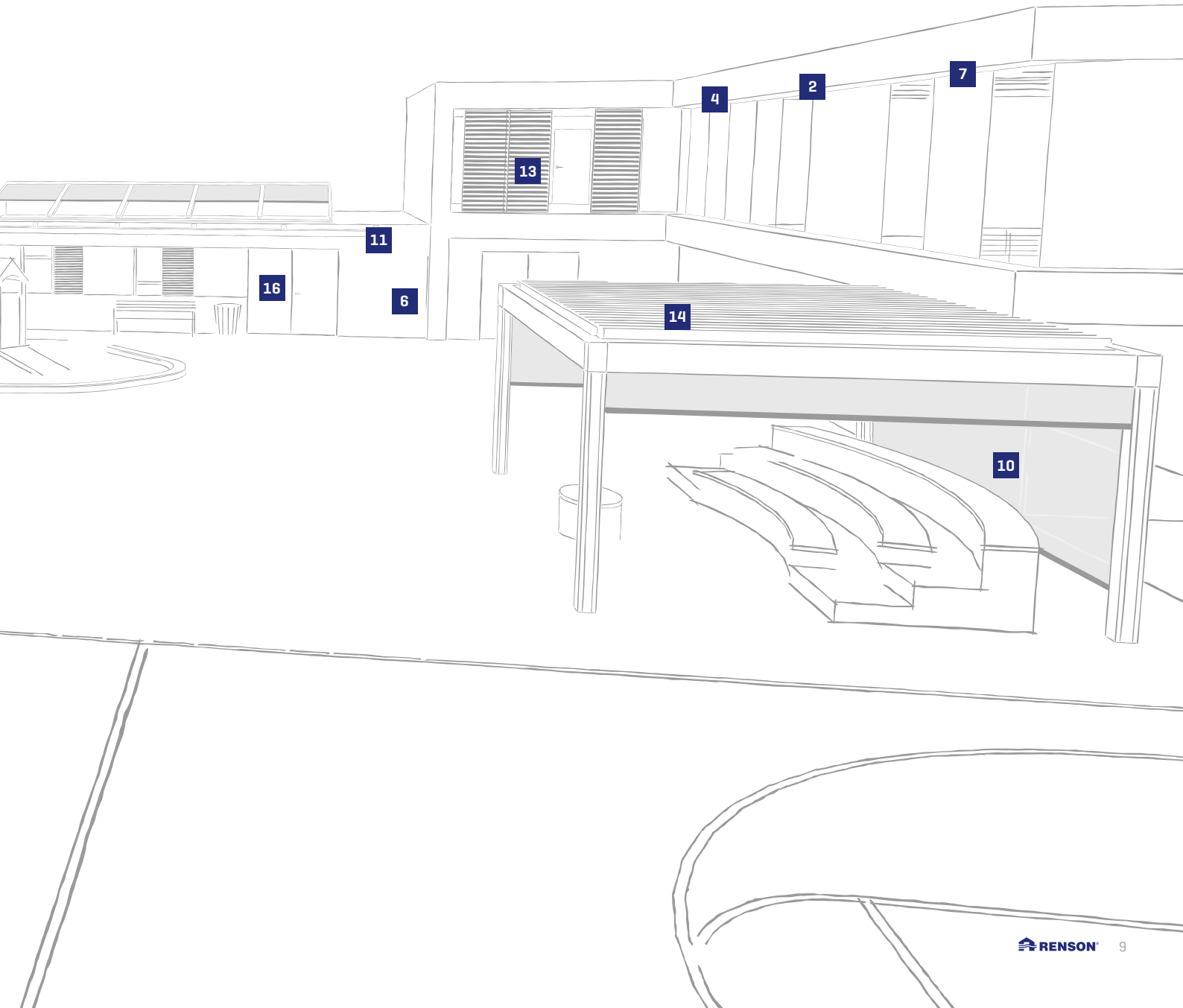
Musty rooms can feel very much like a sauna. Complaints of draughts, and not just in winter. Dry eyes and throats. Teachers teaching every day with a headache. Children becoming drowsy in the afternoons and failing to perform. These situations are a reality in many schools.

Research shows that pupils and teachers perform better in school buildings with a healthy design...
Good air quality and thermal comfort ensure better learning performance and reduce absenteeism.

When renovating schools or constructing new buildings for schools, it is therefore also important to not only implement energy saving measures but also to ensure that comfort can be ensured at all levels.

OUR **SOLUTIONS**

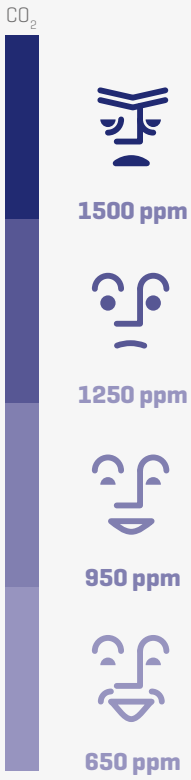




WHY VENTILATE?

A poor indoor climate leads to various comfort and health complaints among pupils as well as teachers, such as odour nuisance, headache, fatigue, worsening of allergies, asthma attacks or transmission of infectious diseases.

With the increase in health complaints, absenteeism also increases. That can be a nuisance not only for those suffering from the same but is also an extra cost component in education. Perhaps even more damaging is the fact that the performance of pupils also deteriorates as a consequence of poor indoor climate. Although it is difficult for humans to detect air quality with their sense organs, it can however be easily determined by measuring the concentration in the classrooms. The larger the number of people present in a room, the greater the CO_2 produced simply through exhalation, and the greater the consequent need for ventilation.

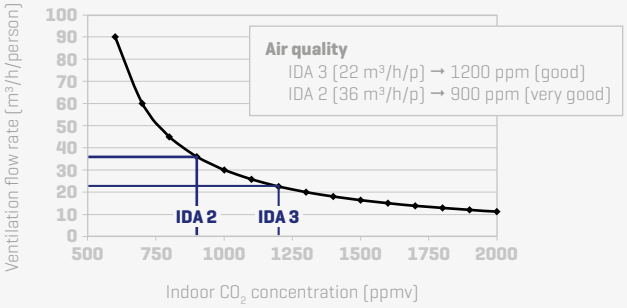


ppm = parts per million

MEASUREMENT OF INDOOR AIR QUALITY (CO_2 - PPM)

The concentration of CO_2 can be measured with a CO_2 sensor. The unit is ppm, or parts per million.
The maximum pursued value is 1200 ppm of CO_2. If the CO_2 exceeds this limit, people experience headaches, drowsiness, fatigue or irritation of mucous membranes. Research has also shown that concentration capacity reduces at a CO_2 concentration exceeding 1000 ppm.

Required ventilation flow rate per person



Continuous and controlled ventilation is the only efficient method to obtain a healthy indoor climate.

TIPS FOR A HEALTHY SCHOOL ENVIRONMENT

- Ensure adequate fresh air
  - Install a continuously operating ventilation system
  - Place meters to continuously monitor the CO_2 content.
  - It is better to install window ventilation over the entire length of the windows instead of installing one window ventilation system on one window; this will ensure that fresh air can flow in uniformly to the maximum possible extent
  - Use of sound-proof window ventilation in noisy environments

- In your design, do not locate the most intensively used rooms on the sun-facing front side

- Install sun protection systems on sun-facing façades

- Ventilated cooling (Nightcooling)

RESEARCH OF INDOOR CLIMATE IN BELGIAN SCHOOLS

- Phase 1: 200 CO_2 measurements in 96 classrooms, spread over ten schools. Results:

CO_2	≥1000	≥1200	≥1500	≥2000	≥2500	≥4000
%	70	57	47	32	19	4

Average value = 1702 ppm

- Phase 2: refining the results through long-term measurements in 5 schools. Results:

School	1	2	3	4	5
$CO_{2\,(ppm)}$	2206	3111	2997	1927	4117

Maximum measured value = 6760 ppm

VENTILATION CONCEPT 1:
DECENTRALISED SUPPLY AND EXTRACTION: ENDURA TWIST

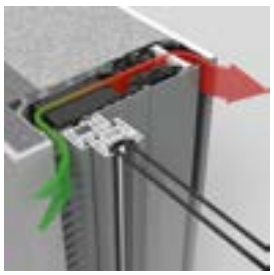
STRUCTURAL SUN PROTECTION

Sunclips®

INTENSIVE VENTILATION

Louvre type 431

DECENTRALISED VENTILATION SOLUTION WITH HEAT RECOVERY



Endura® Twist

SUN PROTECTION SCREEN

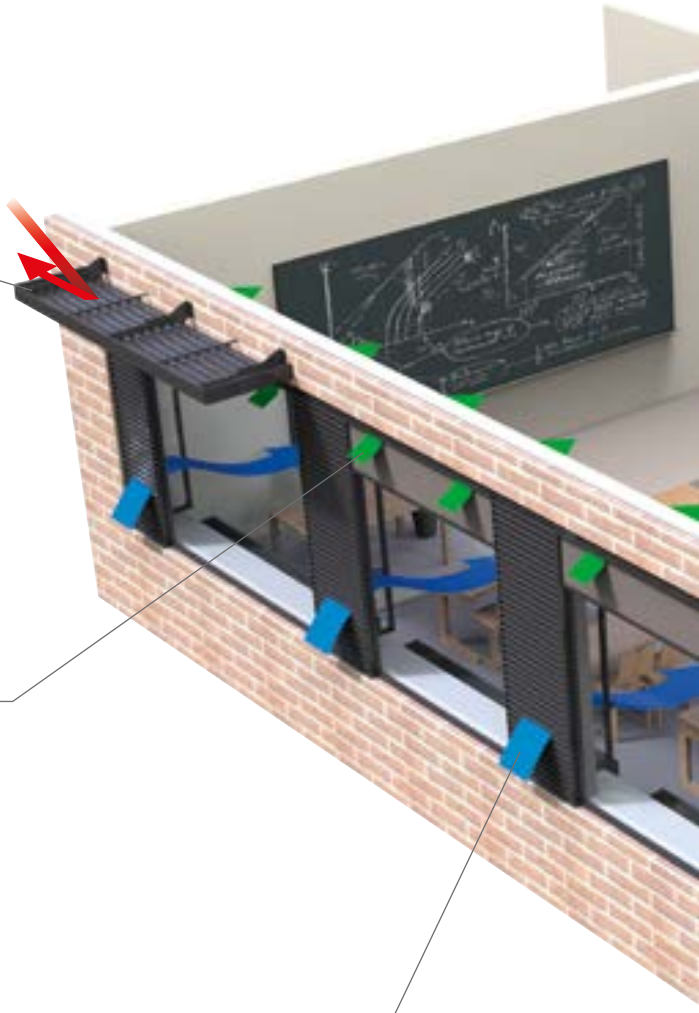
Fixscreen® 100^{EVO} SLIM IM7

Fixscreen® Mono AK ^{EVO}

VENTILATION CONCEPT 2:
CENTRAL EXTRACTION: HEALTHCONNECTOR

STRUCTURAL SUN PROTECTION

Sunclips®



NATURAL VENTILATION SUPPLY

Invisivent®EVO UT

INTENSIVE VENTILATION

Louvre type 431

MECHANICAL EXTRACT VENTILATION

Healthconnector®
Demand-controlled based on CO_2 and H_2O

SUN PROTECTION SCREEN

Fixscreen® 100^{EVO} SLIM IM7

Fixscreen® Mono AK ^{EVO}

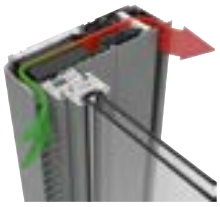

Louvre
Fixscreen® 100 EVO

VENTILATION CONCEPT 1

When renovating existing buildings, it is often impossible to install central ventilation systems because of the numerous pipes. In such cases, **Endura Twist, a decentralised ventilation system with heat recovery**, comes in handy. The system is installed in the **window frames**, thus ventilating the corresponding rooms and achieving an air performance of 180 m³/h. The integrated heat recovery works with an efficiency of max. 81 % (EN 13141-8). Depending on the outside temperature, a bypass system automatically switches the heat exchange off when no heating of the incoming air is needed or wanted, e.g. in summer.

Supply / Extraction

Endura Twist: horizontal



Endura Twist: vertical

VENTILATION CONCEPT 2

Another option for the ventilation of schools is the **Healthconnector, a powerful centralised ventilation system**. While the incoming air is processed via the reliable, windows-integrated ventilation elements or ventilation valves, the air quality of the room is measured and managed by the Healthconnector. The integrated CO_2 and humidity sensors regulate the outgoing air volume as required. Depending on the tube diameter, a Healthconnector can master an air volume of up to 600 m³ per hour. The tubes can simply be led through the shaft to the roof where a central ventilator is installed.

Supply

Invisivent® EVO UT

Fixvent® Mono UT EVO

AK80 EVO

Sonoslot®

Transit

Invisido®

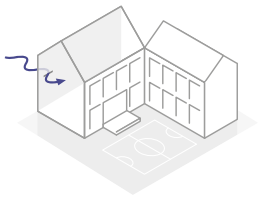
Silendo®

Extraction

Healthconnector®

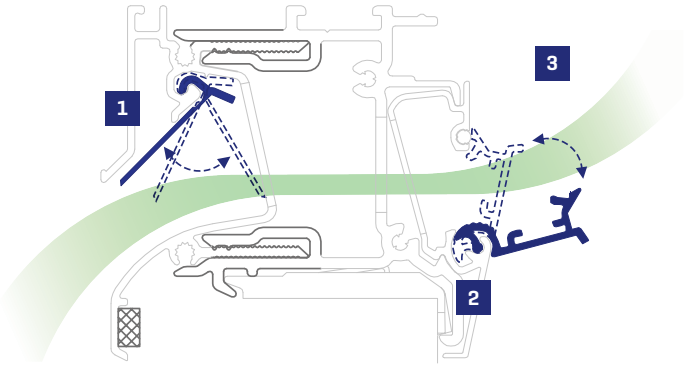
XD 25-50 / XD 75

VENTILATION:
SUPPLY/TRANSIT/EXTRACTION



I-FLUX® TECHNOLOGY

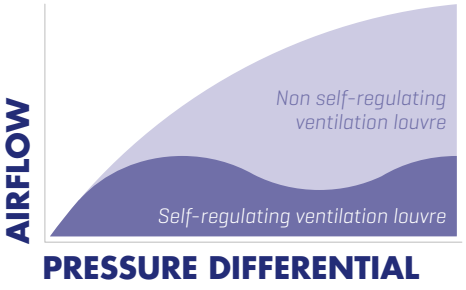
Thanks to the application of i-Flux technology, Renson® can guarantee maximum comfort with minimum energy loss. i-Flux technology is based on the following three principles:



1. Self-regulating: a self-regulating flap reacts to changes in pressure, ensuring a constant air-flow, that prevents draughts even with windgusts.

2. Manually controlled inner flap: the required air flow can be determined depending for example on the occupancy in the room.

3. Upward air flow: the shape of the inner flap conducts the fresh air upwards resulting in optimal distribution throughout the space and guaranteeing maximum comfort.




Invisivent® EVO UT

INVISIVENT® EVO UT

Can be used in case of high flow rates: self-regulating, starting from 10 Pa

The acoustic Invisivent EVO UT is self-regulating, starting from an air pressure of 10 Pa. This means that a higher flow rate can be obtained in rooms with high occupancy rates such as classrooms, offices, conference rooms, etc..

BENEFITS

- **Healthy and natural ventilation**
- **Comfort, thanks to the i-Flux technology**
- **High flow rate at 10 Pa**
- **Discreet placement above the window profile**
- **Maintenance-friendly, thanks to easily removable inner valve and replaceable acoustic foam**
- **Sound damping**

ACOUSTICS

Noise pollution can have a serious impact on the human environment. Opt during the design phase of the house for an Invisivent EVO UT or a Fixvent Mono UT EVO with integrated sunscreen.


Sonovent®

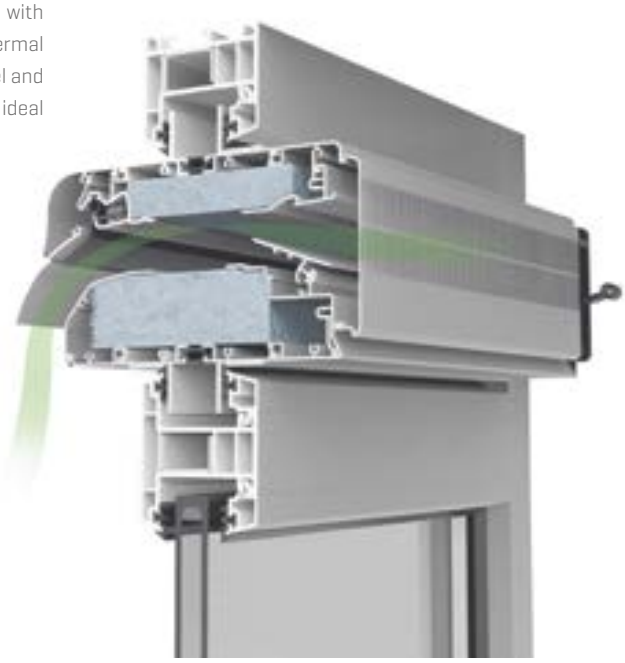
SONOVENT®

Self-regulating flap ventilator with a superior sound absorption

Renson® has developed the Sonovent range to meet with two aspects of living comfort:

- physical comfort: fresh and healthy air without draughts
- acoustic comfort: up to 56 dB sound reduction

The Sonovent is an extensive range of self-regulating window vents with a superior air sound insulation. Four types of the Sonovent are available; Small, Medium, Large and Xlarge, each model having 4 different air slot possibilities (10, 15, 20 or 25 mm). This comes up to 16 alternatives in total, each model with a different airflow and sound reduction. Furthermore, thermal breaks can be positioned differently, depending on the model and installation method. The Sonovent range therefore offers an ideal solution for every situation.



BENEFITS

- ⊕ **Healthy, natural ventilation**
- ⊕ **No drafts thanks to self-regulating flap**
- ⊕ **Insect mesh**
- ⊕ **Easy to maintain**
- ⊕ **Very high sound insulation.**
- ⊕ **An ideal solution for every situation (sound insulation, volume airflow)**
- ⊕ **Glazed-in installation or installation at transom**


THL100V

THL100 - THL100V

Sliding vent

The THL100 is a thermally broken louvred ventilator, made to measure, installed in a vertical (THL100V) or horizontal (THL100) position.

The THL100V creates a natural air circulation: incoming fresh air at the bottom and outgoing humid warm air at the top of the ventilator.

THL100

THL100V

BENEFITS

- ⊕ **Glazed-in installation or installation at transom**
- ⊕ **Thermally broken**
- ⊕ **Louvres at the outside, a slider at the inside**
- ⊕ **Insect mesh**
- ⊕ **Easy and efficient**


Fixvent® Mono UT EVO

FIXVENT® MONO UT^{EVO}

Discrete ventilation, sun control, acoustic comfort and insect screen in one

In addition to providing sun control, the Fixvent Mono UT^{EVO} also ensures ventilation and draught-protection thanks to the self-regulating flap which regulates the supply of fresh air. Wind resistance up to 130 km/h in closed position is guaranteed with the Fixscreen technology. Moreover, the screen can be used as an insect screen when closed.

BENEFITS

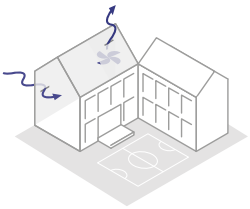
- ⊕ **Integrated ventilation & sun control**
- ⊕ **Draught-free thanks to self-regulating flap**
- ⊕ **High level of acoustic and thermal comfort**
- ⊕ **Darken at the touch of a button** (optionally with Light-block)

AIR TIGHTNESS

The air tightness of the house is demonstrated by the Blowerdoortest. This allows you to calculate air loss at a pressure differential of 50 Pa. The low leak flow of the Renson® window ventilators are measured according to EN1026 and are not decisive for the result of the blower door test.


Endura® Twist

VENTILATION:
SUPPLY/TRANSIT/EXTRACTION



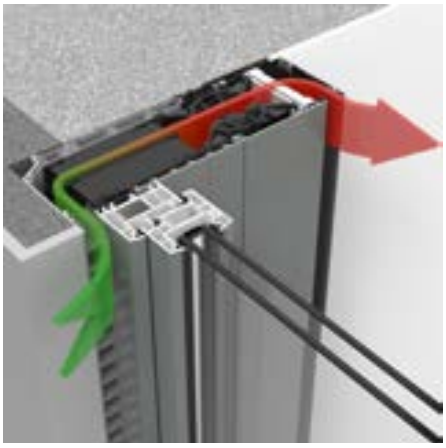
DEMAND-CONTROLLED* DECENTRAL MECHANICAL VENTILATION WITH HEAT RECOVERY

ENDURA® TWIST

The Endura Twist is a decentral mechanical ventilation with heat recovery which stores the heat of the indoor air in its regenerators. As the fans turn every 30 seconds, the regenerators pass the stored heat to the fresh incoming air, creating a pleasant preheated air being blown into the room.
Due to the continuous cyclic operation of the alternating fans, which ensures a **constant air supply and air extraction**, the customer can enjoy an optimal air quality at any time. The quick installation without ducts and easy maintenance make the Endura Twist ideal for both **new-builds** as **renovations**.
Thanks to its **innovative twisting technology**, the economical and highly efficient Endura Twist can boast with a thermal efficiency up to 81%.

Available for both **horizontal** installation (on top of the window profile) and **vertical** installation (perfectly combinable with screens/ roller shutters)

Endura Twist horizontally

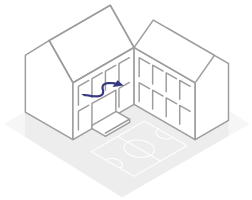


Endura Twist vertically

* with TouchDisplay with CO_2-sensor

Invisido®

VENTILATION:
SUPPLY/**TRANSIT**/EXTRACTION



INVISIDO®

Discrete transit above the door

Invisido is a discrete door grille, almost invisible. Because this grille is mounted on top of the door, an aesthetically disruptive opening beneath the door is no longer required. The unique design blocks see through and guarantees sufficient air transit from one room to another.

BENEFITS

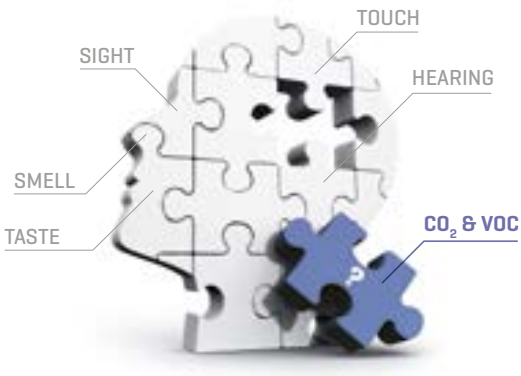
- ⊕ **Discrete - fully integrated**
- ⊕ **No see through**
- ⊕ **Suitable for all door thicknesses from 35 mm**
- ⊕ **Suits every interior**
- ⊕ **Guaranteed air flow - 25 m^3/h**
- ⊕ **Sound reducing - 28 dB**
- ⊕ **Draught-free**

VENTILATION:
SUPPLY/TRANSIT/**EXTRACTION**

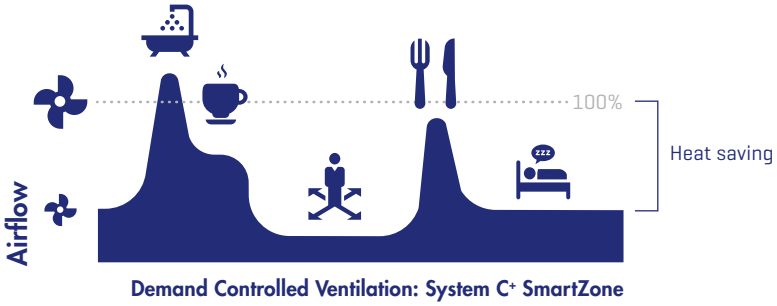
THE IMPORTANCE OF DEMAND-CONTROLLED VENTILATION

Correct ventilation is required to achieve optimum indoor air quality. It is important to extract polluted air from rooms and ensure it is replaced with fresh air.

People themselves are not able to detect changes in air quality. So we can't detect when certain concentrations of CO_2 or VOC become too high. We therefore can't expect the occupants of a house to assess how much ventilation is required to achieve a healthy indoor air quality.



That is why it is important for the level of ventilation to be adapted automatically to the ventilation needs. The ventilation level can be automatically adapted to anticipate the different phases of the day using integrated, intelligent sensors in the central demand-controlled ventilation unit. This automatic adaptation saves 30 to 50% of energy as compared with a permanent ventilation flow.



Demand Controlled Ventilation: System C+ SmartZone


Healthconnector®

VENTILATION:
SUPPLY/TRANSIT/EXTRACTION

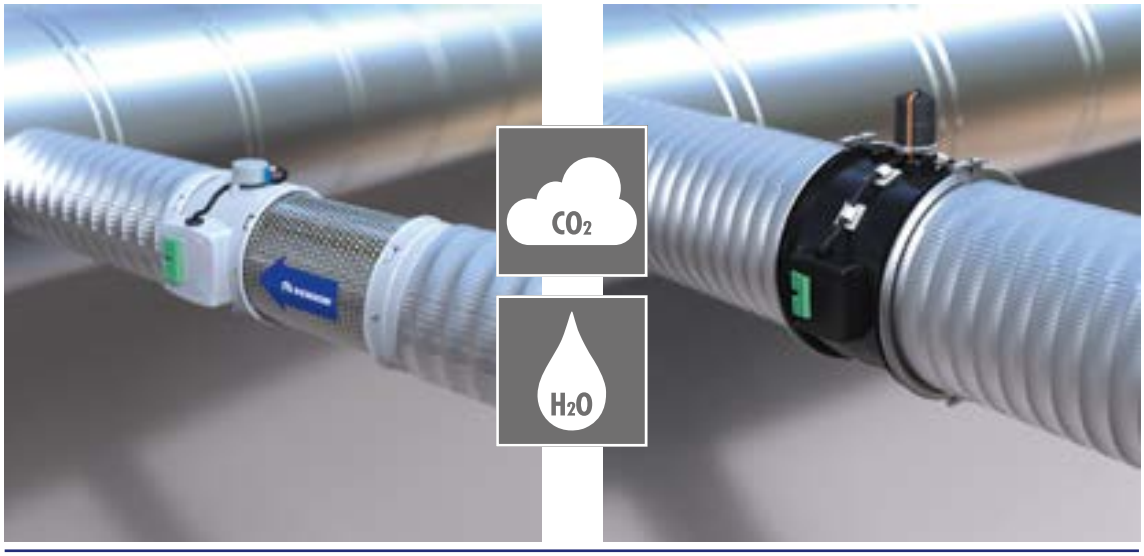
CENTRAL EXTRACTION
HEALTHCONNECTOR®

Demand-controlled mechanical ventilation based on CO_2 and H_2O combined with a central pressure-controlled ventilator

For new buildings or in case of major renovations, it is important to ensure the achievement of a sound, energy efficient, but at the same time, efficient extraction of contaminated indoor air as well.

The Renson® Healthconnector is an extraction valve that is controlled based on CO_2 and air humidity. This ensures that good air quality is always present in the rooms at all times.

Integrating the Healthconnector into an (existing) duct system.



BENEFITS

- ⊕ **Demand-controlled extraction according to CO_2 and H_2O**
- ⊕ **Maintenance friendly**
- ⊕ **Self-selection of ppm level**

Demand-controlled mechanical ventilation

It is important to focus attention on achieving energy efficiency and efficient extraction of the polluted air in healthcare facilities. The demand-controlled ventilation via the Healthconnector offers a solution in this regard.

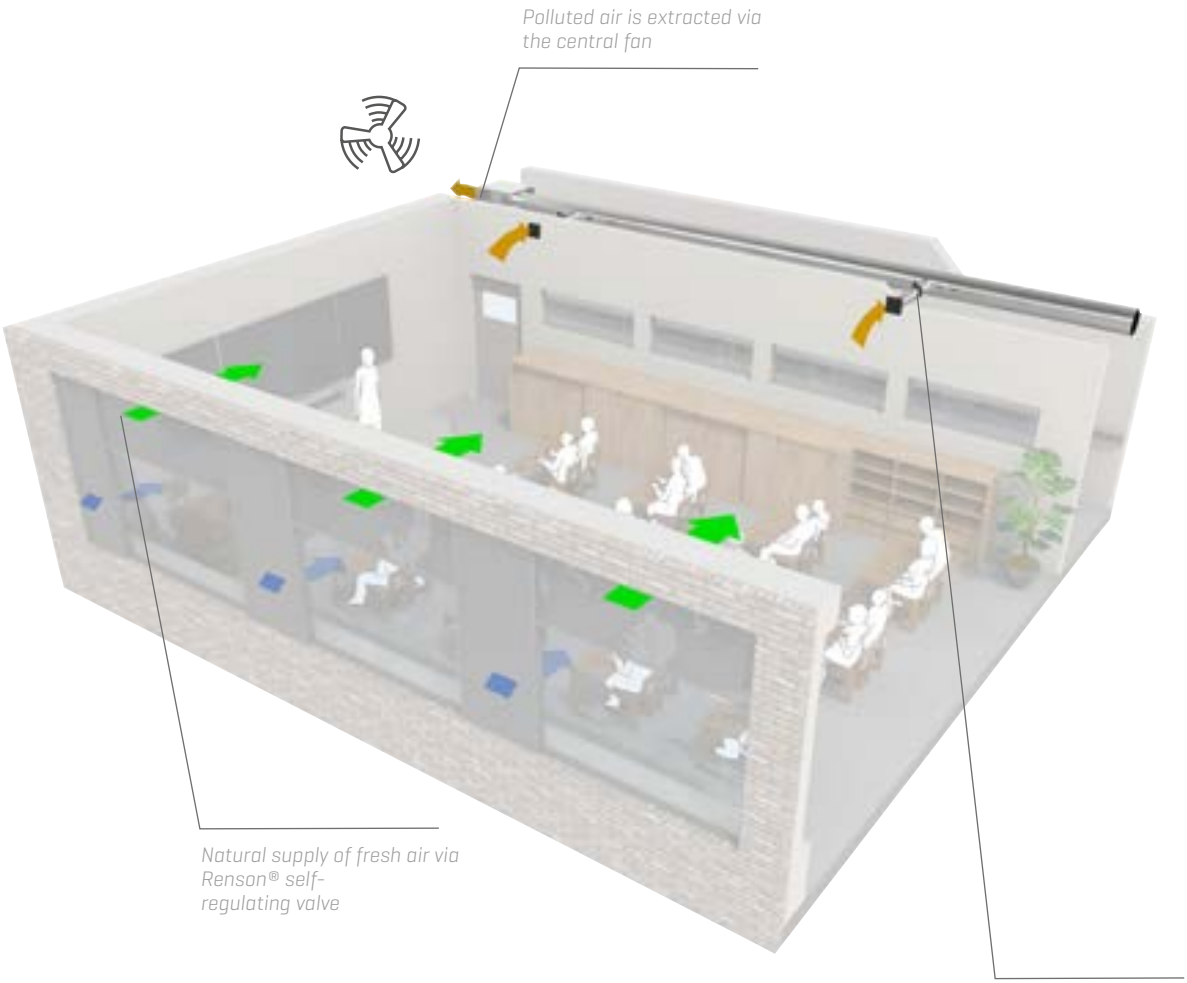
Demand-controlled ventilation with the Healthconnector ensures:

- good air quality with guaranteed comfort feeling
- heat saving
- less noise, since the central fan runs at a lower power

With demand-controlled ventilation with the Healthconnector, the CO_2 and moisture limit levels in a room are not exceeded.

Air control class CO_2 detection

Control of air quality via CO_2 detection as is done by Healthconnector is classified under the best air control class IDA-C6 of the European standard ventilation for non-residential buildings (NBN EN 13779).

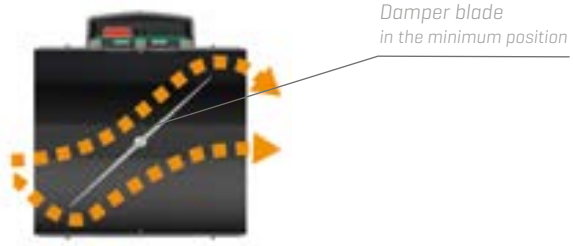


Polluted air is measured via the Healthconnector

Functionality of the Healthconnector®

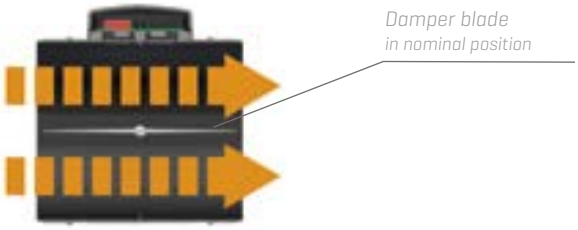
The Healthconnector is an autonomous precision control valve, fitted with CO_2 and H_2O (relative humidity) air quality sensors. The sensors measure the indoor air quality in the air stream extracted from the room, 24 hrs/day. Based on the air quality measured, the damper blade is automatically placed in the appropriate position (with a stepper motor). Thus the extraction flow is determined in an intelligent manner according to the indoor air quality measured.

Good indoor air:
Little need for ventilation



Cross section of Healthconnector®

Poor indoor air:
High need for ventilation



Cross section of Healthconnector®

Comprehensive applications

- **Renson® motorised natural supply**
  Air supply and extraction can be adjusted to each other. If the indoor air is of sufficiently good quality, the air supply as well as extraction can be reduced (energy-efficient).

- **Link to building management system (GBS)**
  The Master Healthconnector can be controlled via an (external) building management system (0-10 V) in order to adjust the ventilation rate by adjusting the Healthconnector according to the logic of the building management system.

- **Demand-controlled ventilation system with heat recovery**
  If a ventilation system with heat recovery (System D) is supplemented with a Healthconnector Master/Slave combination, this results in a demand-controlled ventilation system with heat recovery.

DEMAND-CONTROLLED MECHANICAL VENTILATION

HEALTHBOX® 3.0

Demand-controlled ventilation
Healthbox 3.0 screens air quality 24 hours a day for CO_2 or humidity and/or VOCs (odour) for each space connected. The extraction flow rate is adjusted fully automatically depending on the measured air quality by means of demand control. If the quality of the air in the room is good, then the extraction of air from that room will be reduced (temporarily). This provides maximum comfort and maximum energy savings.

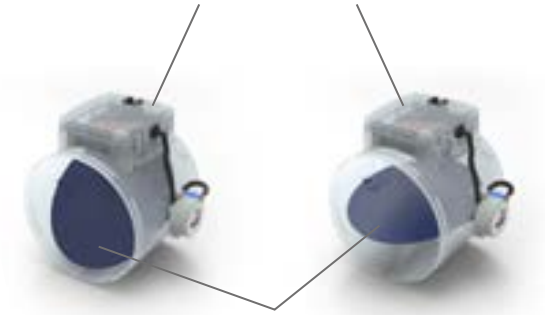
SmartZone technology
The demand-controlled ventilation of Healthbox 3.0 is achieved by use of the control valve technology. On the Healthbox 3.0 unit up to 7 control valves can be connected. By use of valve collectors, this can even be extended up to 11 control valves.

SmartConnect
The integrated SmartConnect links Healthbox 3.0 to the digital world. Healthbox 3.0 can provide interaction with the user in this way (via the app) and with other smart devices in the Smart Building (in order to experience enhanced overall comfort).

Application
For local ventilation applications, the Healthbox 3.0, connected to a separate ducting network, can offer a solution. This is a relevant ventilation application in a separate block with sanitary rooms, for example.

Control valve

Humidity or/and VOC or CO_2 sensor



The vane controls the ventilation level

BREEZE-FUNCTION

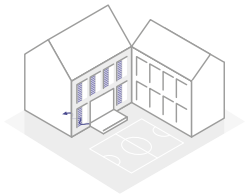
If there is a high demand for cooling, for example in summer, the Breeze function switches demand control off, so that the ventilation capability can be used to best effect.

ventilative cooling

OPEN

CLOSED

VENTILATION:
VENTILATIVE COOLING



WHY CHOOSE VENTILATIVE COOLING?

With the help of special louvers, safe and intensive ventilation at night is made possible. This ensures that the rooms that have heated up during the day again feel fresh and pleasant in the summer.

The coolness of the night is stored in the thermal mass of the school building due to the ventilated cooling. All the heat produced during the day (pupils, lighting, PCs, sun) can then be absorbed by this thermal mass, which will be cooled again during the next night. By combining these techniques with demand-controlled ventilation and sun protection as above, it is possible to obtain a pleasant indoor climate even on hot summer days without air conditioning.

Simple renovation solution

Louvre type 431
This built-in louvre ensures the secure ventilation of the school

Louvre type 432
Easily removable louvre in order to enable greater entry of light during winter

Louvre type 424RC2 (WK2)
For extra secure ventilation, a burglar proof louvre is used for ventilative cooling

WHY SUN CONTROL?

Saving energy is one of the key challenges in new construction and renovation. Windows play a vital role in this process.

COMFORT TAILORED TO EACH SEASON

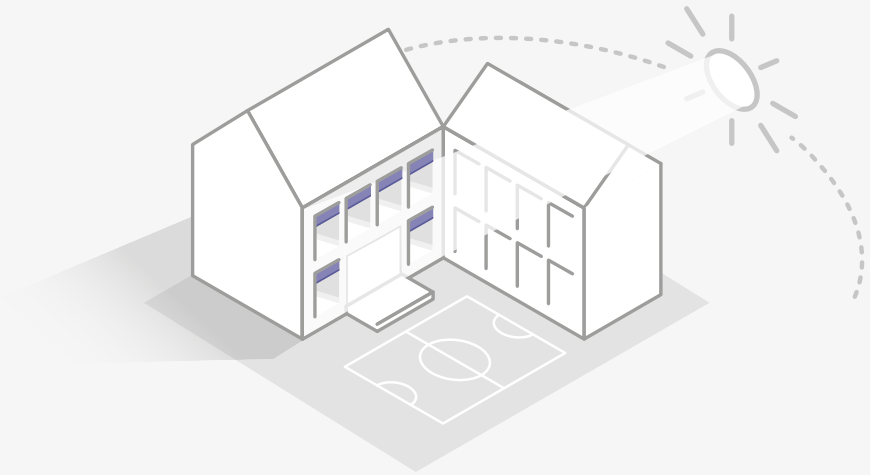
Large glass panels are frequently chosen in contemporary architecture. Today's high-performance glazing ensures good insulation and plenty of natural daylight guarantees optimal energy consumption and increased comfort in the home. Artificial, energy-intensive light does not suit pleasant, bright living spaces. During the winter months, a low sun also ensures pleasant warmth in the house, which means there is less need to use heating.

Everyone knows however that the sun can also influence the indoor climate less positively. Excessive sunlight can cause overheating, disruptive reflections on screens and discoloration of the furniture and decor.

An efficient outdoor sunscreen - sun control blades for the frame, brise-soleil above the window, sliding panels and wind-resistant screens - enables the occupants to enjoy the sun at any time of the day. These systems stop the sun rays from heating the indoor air, without disturbing the view of the garden.

Dynamic outdoor sunscreen provides extra efficiency by keeping out the excess sun when necessary but still be able to enjoy the pleasant solar gains in the winter.

"Outside sun control, guaranteeing comfort at 3 levels: thermal comfort, visual comfort and aesthetic comfort."



Winter
When there is a low-lying sun it is important to maximise solar gains (warmth and light) to increase comfort and limit energy loss.

Summer
When the sun is high in the sky it is necessary to limit solar gains using an efficient outdoor sunscreen. The application of screens and awnings avoids energy-wasting cooling and limits disruptive reflections without losing the view of the garden.


Fixscreen® 150 EVO

SUN CONTROL:
SUNSCREEN

WHY CHOOSE SUNSCREEN/EXTERNAL BLINDS?

Design

Renson® emphasises on design. With a large range of colours for the fabric and aluminium components, discrete integration into the façade and wrinkle-free fabric, the sunscreen/external blind is seamlessly integrated into your home. Dimensions up to 6m width or 6m height are possible (up to 22 m²).

Comfort

Sunscreens/external blinds not only ensure a comfortable indoor climate, they also prevent annoying reflections or glare, without disturbing the view of outside. The sunscreen can be fully automated for maximum comfort. This enables you to maintain an optimal temperature.

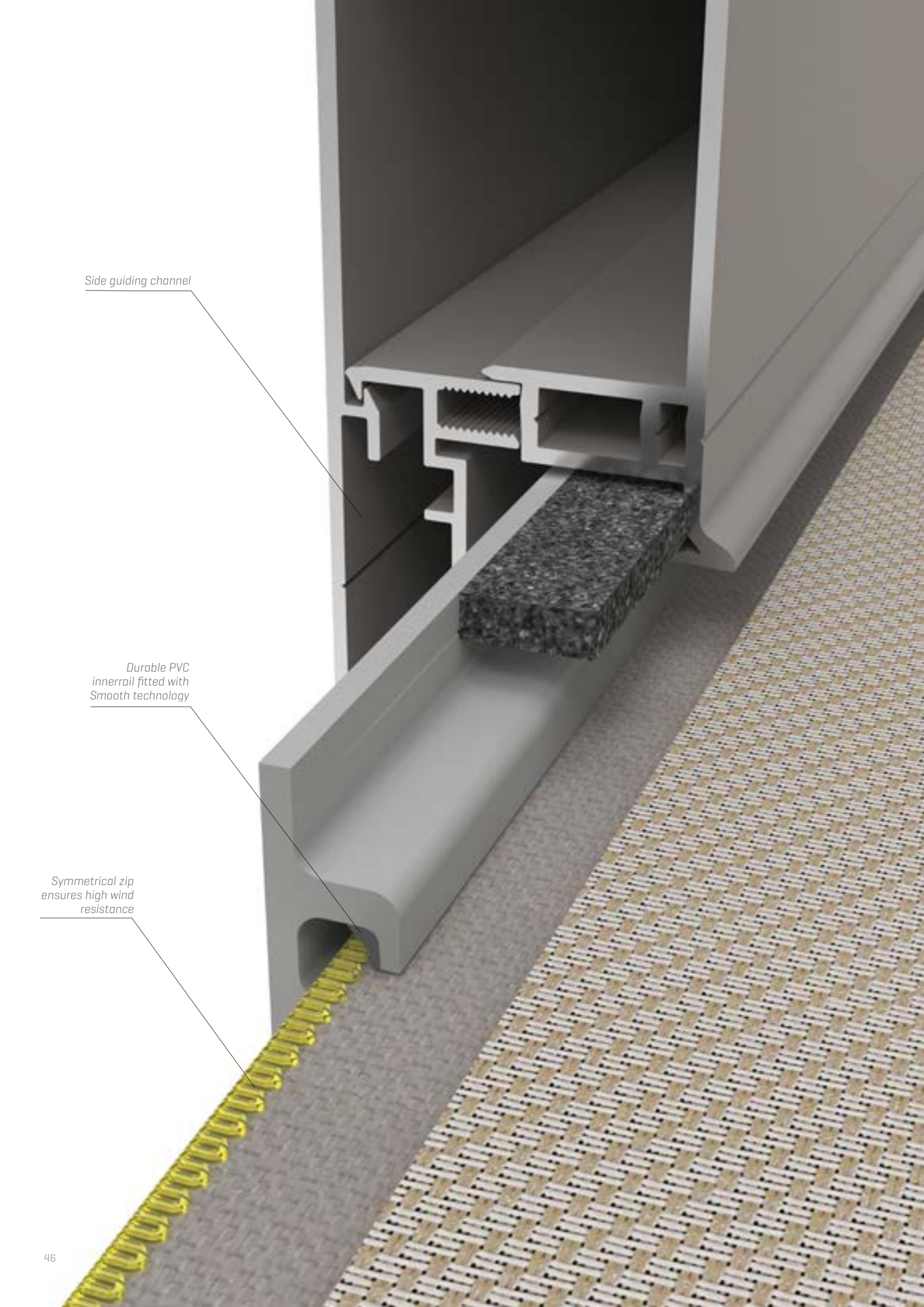
Sustainability

Thanks to the Fixscreen technology, screens/external blinds can be operated even with wind resistance up to 130 km/h, which corresponds to a hurricane of 12 Beaufort.

Wind tunnel test:

Non-wind resistant screen at 30 km/h

Fixscreen® at 130 km/h


Side guiding channel
Durable PVC innerrail fitted with Smooth technology
Symmetrical zip ensures high wind resistance

TECHNOLOGY

Thanks to the Fixscreen technology (combination of a symmetrical zip and a patented wear-resistant HPVC innerrail), the screens are windproof in any position. So, flapping and ripped screens are a thing of the past. Fixscreen is branded as Renson® ZipShade in Northern America.

The Fixscreen® is equipped with several patented technologies:

Connect&Go®
The unique *Connect&Go plug* ensures simple connection of the motor to the current. The empty box is assembled first, followed by the fabric roller. It is ideal for fast installation of heavy boxes (large dimensions); it is also easy to replace the fabric (e.g. with other colour) or motor (e.g. switching a home automation system). (Not in the US)

Smooth technology
Smooth technology is the innovative guidance system that ensures even better wind resistance and extremely smooth functioning.

Click&Safe®
In case of hidden installation, *Click&Safe* ensures safe installation of the fabric roller. When installing, simply click the fabric roll into the box allowing the installer to keep his hands free to complete the installation safely.

- 5 years product guarantee for normal household use and regular maintenance
- 5 years guarantee on gloss level of aluminum profiles
- 5 years guarantee on electronic control (Somfy motorization & automation)
- 5 years guarantee on fabric collection (Crystal window 2 years guarantee)

- 7 years guarantee on the Fixscreen technology for Fixscreen, Topfix and Topfix VMS - zipper stays in side guiding channel - optimal attachment of zipper to fabric
- 5 years guarantee on the Fixscreen technology for Fixscreen Freestanding and Topfix Max (F)

- 10 years guarantee on the coating of aluminium components


Fixscreen®

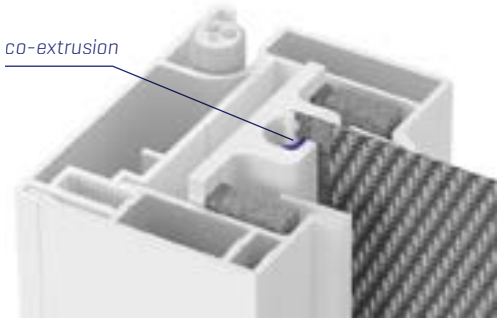
The headbox
The box profile is made of extruded aluminium profiles with sleek minimal lines.

Square design

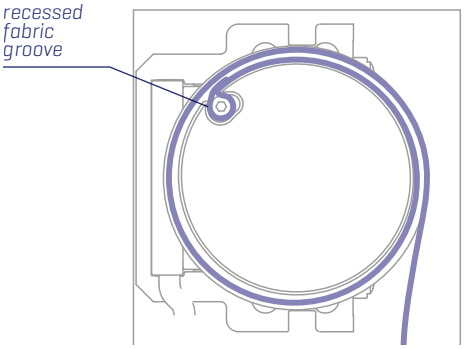
Soft design

The bottom bar
The extruded aluminium bottom bar is weighted with galvanised steel to achieve optimum performance and fabric tension. For perfect sealing, the base bar is equipped with a uPVC sealing strip.

Side guiding channel including zip system
The side guiding and the coupling side guiding channel are made of extruded aluminium. No screws are visible at the front. The intelligent windproof HPVC-innerrail has a patented wear-resistant layer, Smooth technology. This guarantees extremely smooth, windproof operation.



The fabric roller tube
This fabric roller tube is equipped with a unique patented recessed fabric groove to limit compression of the fabric strip on the screen.



BENEFITS

- ⊕ **Extremely wind-proof screen**
- ⊕ **Privacy**
- ⊕ **Light control**
- ⊕ **Heat and energy control**
- ⊕ **Insect repellent**
- ⊕ **Silent operation**
- ⊕ **Simple operation**
- ⊕ **Simple maintenance**
- ⊕ **Simple assembly**
- ⊕ **Large dimensions (up to 22 m²)**
- ⊕ **Joinable**
- ⊕ **Unspoilt outside view**

Fixscreen®

Find the right sun protection fabric in just a few clicks

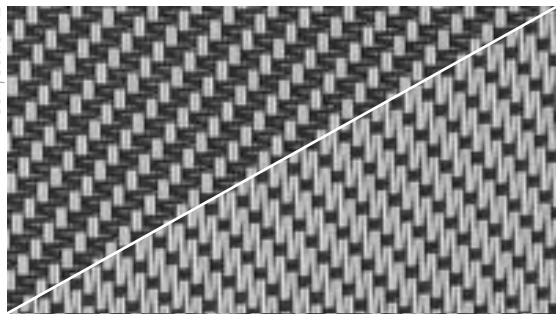
Are you convinced of the efficiency of outdoor sun protection fabric to keep temperatures in your house from skyrocketing? In that case, it's especially good to know what type of fabric is right for you. Luckily, this is now very easy and fast to do using Renson's online 'Screen Selector'.

Visit **www.renson.be/screenselector**. Based on the various criteria, including the type of window (corner window, sliding window, horizontal glazing, etc.) and on your personal needs, Renson will guide you easily through the process of choosing your screen. For example, are you looking for a black-out screen, how important is it to have light coming in and a view of the outdoors, what colours do you prefer, what are your privacy requirements, etc.? Each of these answers online is used as a filter to find the screen that will provide the best result.

FABRICS

Sun protection fabrics are technical fabrics that keep out the excessive heat and the bright light of the sun. An externally installed sun protection fabric reduces the effects of overheating. The hot rays of the sun are blocked before they reachthe glass. Apart from this functional role, the fabric also fulfils a decorative role. Colour is a decisive factor for heat transmission, the filtering of light, protection against UV-radiation, and the colour of the light.

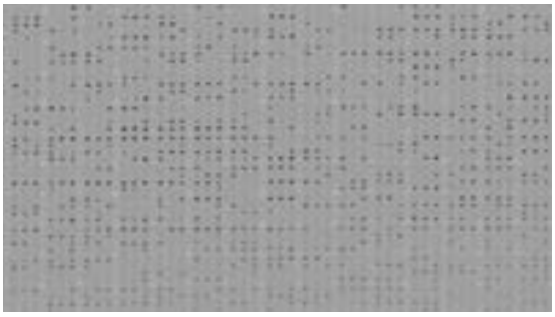
Confection 1



Confection 2

Fibre glass fabric

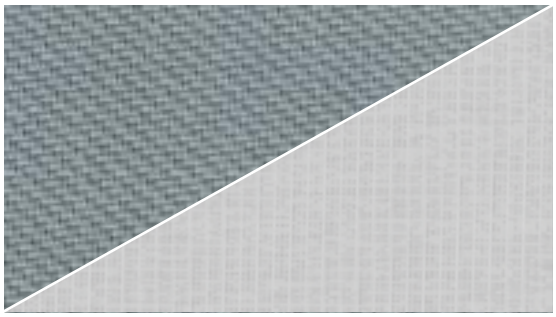
This fabric is woven from glass fibre threads with a PVC coating. A glass fibre fabric is rigid, impervious to moisture and heat, rot proof and colour fast. The glass fibre fabric has two sides: 'confection 1' and 'confection 2'. Either side can be used as the visible part of the screen fabric. There are different types of glass fibre fabrics, including the Privacy Fabric with an openness factor of only 1%.



Polyester fabric

This type of fabric is made of a finely-woven PVC coated mesh (fire classification M1) according to the pre-stressed method. The result is an extremely stable and non-deformable fabric with a long lifespan.

Satiné 21154

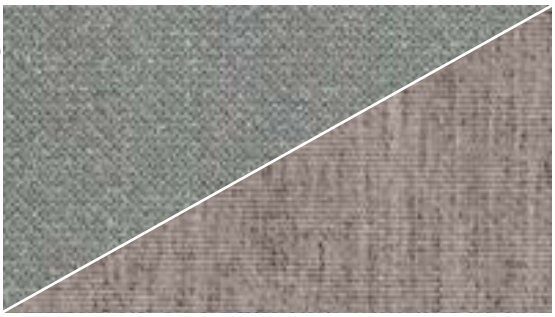


Soltis B92

Black out fabric

Black out fibre glass fabric and polyester fabric looks like a standard fibre glass or polyester fabrics from the front. On the back, these screens have a black out PVC coating, which completely blocks out the light.

Vuscreen Bergamo



Elements

PVC-free fabrics

The fabric range is elaborated with PVC-free fabrics. Vuscreen Bergamo is a PVC free polyester fabric. In contradiction with other polyester fabrics, this fabric has a "woven" look. Element is a PVC free acrylic fabric that, apart from the sunscreen properties, also scores high with regard to privacy. You cannot look from the inside out or from the outside in, which contributes to a cosy, intimate atmosphere at home.


Fixscreen® Mono AK EVO

FIXSCREEN® MONO AK^{EVO}

Acoustic comfort

The Fixscreen Mono AK^{EVO} ensures increased acoustic comfort thanks to sound reduction of at least 47 dB. This screen can be used on aluminium, wood, and PVC frames of depths from 50 up to and including 215 mm.

Fixscreen Mono AK^{EVO} & Fixvent Mono UT^{EVO} are two new screen concepts, each with its own specific characteristics, nevertheless combining simply in the same living space with a single look and feel.

Fixscreen® Mono AK^{EVO}

Fixvent® Mono UT^{EVO}

BENEFITS

- **High level of acoustic and thermal comfort**
- **Connectable up to 21 m²** (with 2 motors)
- **Simple replacement of fabric** (Click&Safe)
- **Darken at the touch of a button** (optionally with Light-block)
- **Windproof up to 130 km/h in closed position**
- **Insect repellent**

Fixscreen® known in the USA as RENSON ZipShade


Fixscreen® 100 EVO IM7

FIXSCREEN® RECESSED INSTALLATION

Invisible, discrete installation

With installation method 7 (IM7) the fabric roller is accessible for installation and maintenance from underneath. With this method it is possible to fully conceal the box in the cavity. This installation method is the perfect solution for low-energy homes and passive houses, since there is no need to penetrate the outer shell of the house.

- For all window types: aluminium, wood, PVC
- For new builds/private house construction and projects

The slim version enables the sunscreens to be integrated in an even narrower cavity (box of 110 mm). An additional benefit is the fully retractable bottom bar in the box.

Fixscreen® 100^{EVO} Slim - IM7A

Fixscreen® 150^{EVO} - IM7A

BENEFITS

- ⊕ **Fabric roller removable from outside and below**
- ⊕ **Recessed installation**
- ⊕ **Ideal for low-energy houses**
- ⊕ **Insect repellent**
- ⊕ **Ideal for extension by integration into the passage**
- ⊕ **Conservation of privacy**
- ⊕ **Up to 22m²**

Fixscreen® known in the USA as RENSON ZipShade


Topfix® Max

TOPFIX®, TOPFIX® VMS AND TOPFIX® MAX (F)

The range of screens for horizontal windows

These sunprotection screen enable optimal management of the incoming sunlight in all horizontal or inclined glazing (verandas, skylights, etc.).

Topfix®

Topfix is a motor-operated horizontal sun screen equipped with a revolutionary span system combined with the renowned Fixscreen technology. This makes it possible to achieve unequalled tensioning of the fabric, which eliminates the need for traditional fabric supporting rolls. The Topfix can handle up to 12 m² with the compact box. The box can be installed on top, sideways or at the bottom.

Box on top

Box sideways

Box at bottom (indoor application)

Topfix® VMS

The Topfix VMS features a revolutionary tension technique, made possible by the renowned Fixscreen technology and has been specifically developed for the VELUX Modular Skylights modules. The Topfix VMS can be installed above the fixed and movable modules e.g. with special mounting feet, enabling a perfect installation onto the VELUX Modular Skylights.

VELUX®

Topfix® Max (F)

Topfix Max (F) allows the rolling of the fabric from top to bottom, from bottom or to top depending on the required aesthetics. Blackout is also achievable with indoor and outdoor applications. For the Topfix Max, widths of up to 5 m, and extremely large surfaces of up to 30 m² are possible.

Box on top

Box at bottom (outdoor application)

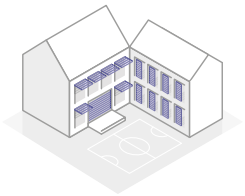
BENEFITS

- ⊕ **Guaranteed at wind speeds up to 120 km/h**
- ⊕ **Perfect fabric tension without fabric support rollers**
- ⊕ **Compact headbox dimensions**
- ⊕ **Topfix® Max up to 30 m² per screen**

Topix® (Max) known in the USA as RENSON ZipShade Top (Max)


Sunclips®

SUN CONTROL:
ARCHITECTURAL SUN CONTROL



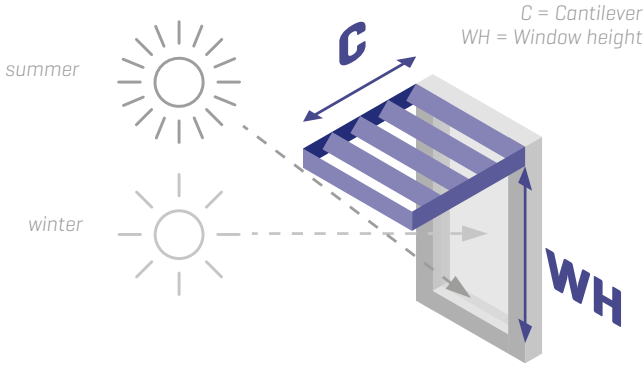
HORIZONTAL ARCHITECTURAL ALUMINIUM SUN CONTROL

Horizontal shading offers the ideal solution for managing heat entry through sunlight, without impeding the view. Applied especially above window frames in south-facing windows.

During summer, when the sun is high, horizontal brise soleil offer ideal protection. During winter, when the sun is low, they let heat into the building.

Recommended overhang of the brise-soleil

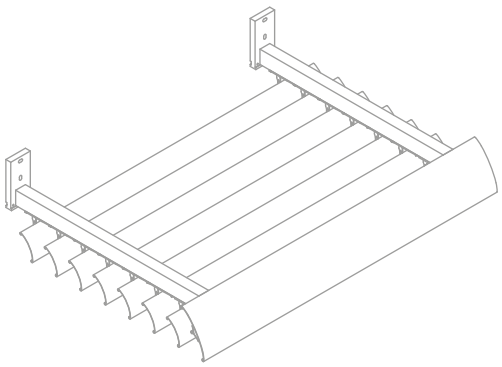
To achieve optimal results with the brise soleil it is important that the overhang is properly tuned to the situation. The orientation of the façade and the height of the window shade are crucial elements. The dimensions of the overhang recommended by Renson® in the table to the right, is an example calculated for Belgium to ensure 75% of total warmth radiation is kept out during the summer by the cantilever.



Orientation of the façade	E	SE	S	SW	W
Recommended overhang C (eg. Belgium)	1.2 x WH	0.8 x WH	0.5 x WH	0.8 x WH	1.2 x WH

Recommended overhang is in function of the latitude, programme available for specific calculations

Sunclips® [SE.096]




Loggiawood®

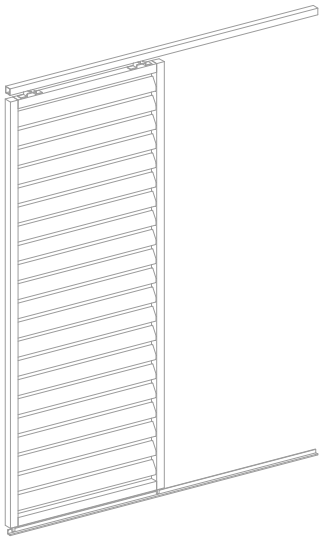

Loggialu
Loggialu Plano
Loggiawood
Loggialu Privacy (rotating blades)
Loggiawood Privacy (rotating blades)
Loggiascreen Canvas

LOGGIA®

You control the amount of light that comes in

The Loggia sliding panels combine the functionality of an efficient sun screen panel with the elegant look and aesthetic design within a high-quality and contemporary concept. With the vertical sun screen sliding panels, the owner can even influence the way sunlight enters rooms (i.e. dynamic sun protection).

The Loggia panels are constructed from aluminium frames finished with screens, and aluminium or wooden blades. It is also possible to opt for movable aluminium or wood blades, which can be manually rotated from the closed position to the fully open position, or vice versa.



BENEFITS

- ⊕ **Multipurpose façade elements**
- ⊕ **For simple and flexible use**
- ⊕ **Aesthetic quality finish**

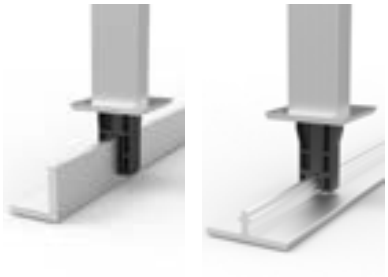
Loggialu Wooddesign | Loggialu Stirata | Loggiawood Linea

Specifically for Outdoor applications

FLEXGUIDE®

The Flexguide is a self-regulating under-guide that uses spring tension to adjust itself to height differences with respect to inclines, construction tolerance, thermal dilatation, etc. It eliminates the need to place filling material under the under-guide profile to level out slopes (up to 50 mm).

The under-guide profile should be secured normally to the base. The Flexguide spring-loaded pin must always remain in contact with the under-guide profile, on inclines or uneven surfaces, or if the dimensions change, for example, due to temporary loads or thermal dilatation.

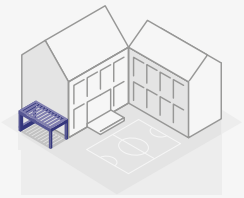


Privacy

Privacy with rotating wooden or aluminium blades


Algarve®

OUTDOOR COVERINGS



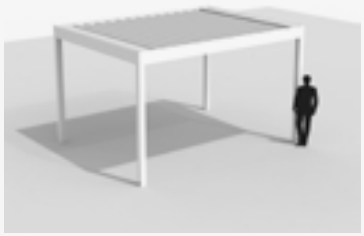
Experience all the comfort indoors as well as outdoors ... all the year round, thanks to Renson® coverings. These are designed with a specific focus on contemporary design, quality and sustainability.

ALGARVE®

This covering offers the perfect sun protection solution thanks to its movable aluminium blades. The Algarve also offers protection in case of rain showers. This terrace covering has a minimalist look due to its sleek design and clean lines.

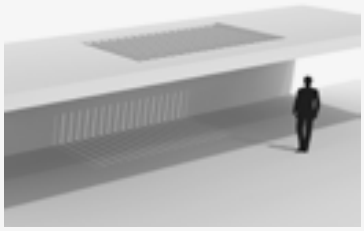
ALGARVE® CANVAS

This elegant covering provides protection with a fixed roof consisting of 2 layers: a solid top roof of white, profiled steel panels with anti-condensation layer and an aesthetic sub-roof, finished with a zippered tensioned fabric.



AERO®

This covering with rotatable blades but without posts can be perfectly integrable into new or existing structures.



SQUARE DESIGN

LOUVERED ROOFS (rotatable louvered roof)

LOUVERED ROOFS (rotatable and retractable louvered roof)

FIXED ROOF

INCLINED DESIGN

RETRACTABLE fixscreen roof

CAMARGUE® LINE

CAMARGUE®

This innovative and modular mountable patio cover can be supplemented with perfectly integrated side elements.

CAMARGUE SKYE®

A fully closable patio cover with rotatable and retractable aluminium blades. Here too, side elements can be perfectly invisibly integrated.

LAGUNE®

LAGUNE®

This patio cover has a sun-, water- and windproof translucent fabric in the roof structure. Side elements can be seamlessly integrated.

ALGARVE® LINE

ALGARVE®

A horizontal sun and water resistant roof with tiltable aluminium blades. Side elements are possible in surface mounted.

ALGARVE CANVAS®

Covering with fixed roof, aesthetically finished with fixed ceiling with Fixscreen-technology.

AERO® LINE

AERO®

Horizontal sun and water resistant roof with tiltable aluminium blades, perfectly integrable into new or existing structures.

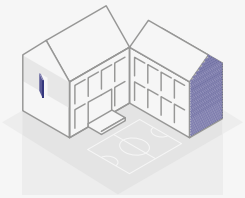
LAPURE®

LAPURE®

Minimalist patio cover with water, wind and sun resistant screen roof and open panoramic view.
Side elements are possible in surface mounted.


Linius®

FAÇADE & INDOOR



Renson® also thinks about the durable aesthetic finish of the façade and indoor. We include architectural cladding of the façade, which makes a house really stand out in the street. The ventilation and sun control, on the other hand, are hardly noticeable inside. And thanks to the invisible door systems, we perfectly anticipate recent developments in minimalistic and pure architecture in contemporary homes.

Aluminium blades add a unique and pure look to the outdoor façade of your home. The Linius wall-mounted blade system ensures continuous façades with clean lines into which even the doors and garage doors can be integrated. Available in all possible RAL colours, adapted to the joinery of the façade.

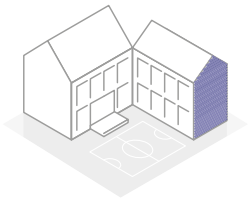
The inconspicuous integration of ventilation and sunscreens also follows this pattern. That is why ventilation louvres have evolved the last years from large block-systems on the glass to discrete flap gratings, such as the Invisivent EVO UT, which are positioned almost invisibly on the window profile.

Renson® also considers the uniformity of its systems allowing the design of the ventilation and sun control system to be perfectly coordinated.

'Discrete interior doors' – the trend for a timeless interior with a consistent minimalist design. The invisible door system perfectly anticipates this recent development. Thanks to this system, the door blends into the wall, without disturbing frames and hinges.

The Invisidoor is an invisible aluminium frame for interior doors, which can be painted to match walls perfectly and is equipped with a magnetic lock, detachable acoustic seal as a door buffer, and invisible 3D-adjustable hinges of argenta. Thanks to these hinges, the outside cylinder of the door, usually seen on the outside of the door, is no longer visible.

FAÇADE CLADDING



LINIUS®

Horizontal façade cladding

With the Linius system, façades or façade parts can be finished to create seamless wholes with a strong horizontal accent. Gates or doors can also be clad with the same profiles. This way you get a precise and tight fit with the rest of the façade to create a uniform whole. The façade system consists of individual aluminium profiles, which are available in different versions. Depending on the application, you have the choice between either completely closed or ventilating systems. Due to its high quality finish, Linius is also suitable for indoor use.

LINARTE®

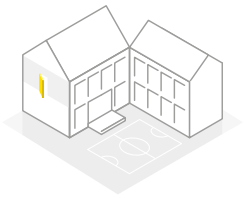
Vertical façade cladding

Aluminium façade cladding with minimalist vertical lines. The profiles are available in different shapes and numerous colors, which can be combined differently. The façade can be personalized by integrating LED-strips and wooden inserts. Garage doors and house doors integrate smoothly into a single flush façade surface. Functional elements such as a letterbox, intercom or doorbell are seamlessly integrated. Thanks to the individual profiles, you can even finish curved façades and because of the high-quality finish, they are also suitable for indoor applications.

reddot design award
winner 2018


argenta® invisible neo

INDOOR: INVISIBLE DOOR SOLUTIONS



Argent Alu, better known under the brand name argenta®, is part of the Renson® group. Argent Alu is already active for over 100 years in developing and producing hinges and joints for interior doors. Under the brand name Rob, it has become the specialist in sliding gear for both interior and exterior sliding doors.

More information: www.argentalu.com & www.rob.be

ARGENTA® INVISIBLE NEO

Invisible design hinges

The argenta invisible neo is a 3D adjustable invisible hinge that excels thanks to its timeless design and superior finish and testifies to a high level of technical ingenuity. The argenta invisible neo stands out as the winner of the renowned Red Dot Design Award and IF Product Design Award.

BENEFITS

- ⊕ **Pure and high quality design**
- ⊕ **No visible screws**
- ⊕ **3 sizes: S5 – M6 – L7**
- ⊕ **Easy-hook: position and 3D adjustment by 1 person**

ARGENTA® INVISIDOOR®

Invisible frame for interior doors

Thanks to the invisidoor, an invisible aluminium frame for interior doors, it is possible to enjoy pure design. Thanks to the invisidoor® the door is in line with the wall, enabling you to be creative with spaces and partitions. argenta invisidoor is branded as argenta invisiframe in Nothern America.

BENEFITS

- ⊕ **Little chance of cracks in paintwork**
- ⊕ **Wide choice of standard dimensions** (made-to-mesure available)
- ⊕ **Standard with paintable primer**
- ⊕ **Also double doors, room-height doors, Rf doors...**

ARGENTA® INVISIDOOR® SDX

Invisible wall fixture system

The argenta invisidoor SDX is a complete solution with an invisible aluminium frame for interior doors which slide into the wall. Now you can also choose the sleek design of the invisidoor range for sliding doors. Because the frame is equipped with the argenta proslide slide-bar bracket, you can use doors up to 100 kg. Can be assembled and disassembled quickly and easily using the removable upper section of the roller assemblies and stops. The fittings are fixed to the door using Manual-Fix. This creates a tiny space (up to 5 mm) between the door panel and upper profile with a sleek finish result.

BENEFITS

- **Complete solution**
- **Invisible and stable profile**
  Doors up to 45 mm and 100 kg
- **Quick and simple assembly**
  Removable upper rail
- **Minimum play of 5 mm**

ARGENTA® PIVOTICA®

Minimalistic and invisible pivot system

Thanks to its compact dimensions the pivotica is not only simple to install in the door, but this pivot system can also be used to adapt it to room-height doors. You can even choose where the door is hinged (minimum of 40 mm from the side edge of the door). This allows you for example to rotate wide doors in the middle and the pivotica is suitable for both left and right doors. Thanks to the argenta pivotica it can be used creatively in different shaped spaces and walls because no frame is required for this pivot system, which means you can position it perfectly flat against the wall. All components of this system are rustproof. The pivotica is preferably used in combination with the magnotica, a magnetic door closing system.

BENEFITS

- **Invisible**
- **Suitable for floor-to-ceiling-height doors**
- **Simple assembly**
- **Free choice of pivot**
- **Child-friendly** (easy to open)
- **Pivot system in door leaf** (instead of floor/ceiling)

SQUARE BLACK

Sober lines

The Square combines pure geometry with excellent sliding door capacities. The rectangular modern shapes, powder coated in trendy black is the perfect eye-catcher in every modern home. The rolling system is completely hidden behind an adjustable running track. Tight design but also easy to install.

BENEFITS

- ⊕ **Doors up to 80kg**
- ⊕ **Firm powder coated components**
- ⊕ **Plastic wheels with ball bearing**
- ⊕ **Adjustable for every door width**

LATENT

Sober lines

Minimalistic doors only reveal the door panel while the sliding railsystem remains entirely hidden. For this sliding door type, the Latent profile offers a perfect solution. The running track is completely hidden in the ceiling and leaves a small gap of 3mm between the door and ceiling. The profile is designed for a quick and strong connection with plasterboard. If there are any problems, there is a small access part to disassemble every rolling part without damaging the ceiling.

BENEFITS

- ⊕ **Doors up to 80 kg or up to 120 kg**
- ⊕ **Completely hidden running track**
- ⊕ **Parts can always be disassembled, even after finishing**
- ⊕ **Available in anodised grey or black**

Get inspired in our showroom
EXIT5 at Waregem along the E17

EXIT 5

EXPERIENCE, **I**NNOVATION & **T**ECHNOLOGY @ RENSON

WE'D BE HAPPY TO HELP YOU!

Our head office - the elegant building designed by the late architect Jo Crepain, which has been the visiting card of our company for many years now - is now being renovated. The bottom part of the building now has an imposing glass façade. Behind the façade, there is a new 'Customer Centre' with reception rooms for customers, conference rooms, and an auditorium, where large groups of more than 300 people can participate in presentations. In case of smaller groups, this auditorium can also be divided into 3 separate rooms.

The highlight of the project is the new showroom of 1250 m², where professional customers as well as private individuals can be accommodated. Apart from a showroom for Renson's various innovative solutions and concepts, it is planned to make this room a knowledge centre, where customers can walk in and ask questions about ventilation, heating, sun protection, ventilative cooling, acoustics, interior, etc, ... In short: everything to provide the home with all the necessary comfort. There is also the possibility to view the solutions in practice in show houses located nearby.

For more information about the network of Renson ambassadors, please visit our website at: www.renson.be

RENSON®: YOUR PARTNER IN VENTILATION, SUN PROTECTION AND OUTDOOR

Renson®, with its headquarters in Waregem (Belgium), is a worldwide trendsetter in natural ventilation, sun control and outdoor.

Creating healthy spaces

From 1909, we've been developing energy efficient solutions assuring a healthy and comfortable indoor climate. Our headquarters - built according to the 'Healthy Building Concept' – is a beautiful example portraying our corporate mission.

No speed limit on innovation

A multidisciplinary team of more than 80 R&D employees continually optimize our products and develop new and innovative concepts.

Strong in communication

Contact with the customer is of the utmost importance. A group of 100 in-the-field employees worldwide and a powerful international distribution network are ready to advise you on site. EXIT 5 at Waregem gives you the possibility to experience our products on your own and provides necessary training for installers.

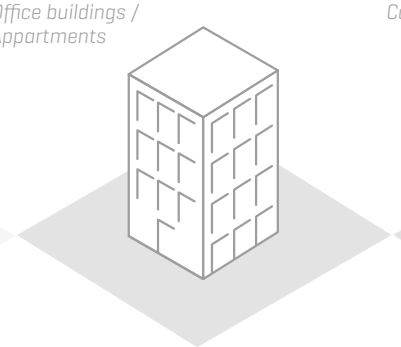
A reliable partner in business

We can guarantee our customers optimal quality and service thanks to our environmentally friendly and modern production sites (with automated powder coating line, anodisation line, uPVC injection molding machinery and mold making shop) covering an area of 95.000 m².

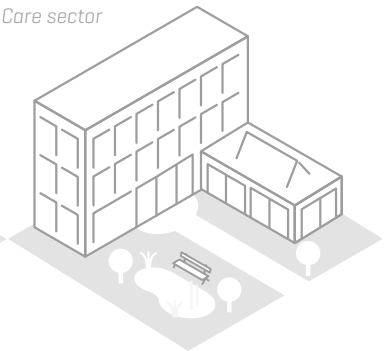
Discover our solutions for:

Residential homes

Office buildings / Appartments



Care sector



RENSON®
Creating healthy spaces

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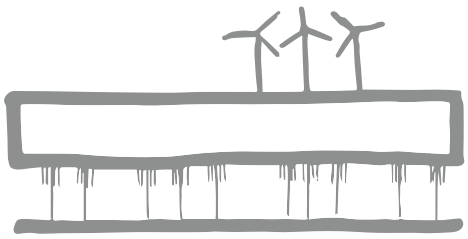

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