

**KOOLSHADE®**

# Solar Shading Systems

Sustainable solar shading with unrivalled performance



**Smartlouvre  
Technology**

Global manufacturer and distributor of MicroLouvre-KoolShade®

## Microlouvre KoolShade®

**A UNIQUE SOLUTION TO REMOVE SOLAR HEAT GAIN IN BUILDINGS.**

**RETAINING FULL DAYLIGHTING & VENTILATION.**

Woven in the UK, Microlouvre KoolShade® is the world's thinnest and lightest louvre system,

It contains up to 700 paper thin, bronze micro louvres woven into every metre of the metal fabric.

The story of Microlouvre-Koolshade starts decades ago, but the need and demand for its properties has never been stronger.

A huge shift in attitude is happening globally. There is recognition that we need to look at alternative options to live our lives with a net zero impact on the planet.

Brilliant minds are inventing solutions to deliver and implement strategies to reverse the damage already done.

**Microlouvre-Koolshade aims to play its part in removing solar heat gain from buildings, old and new, in a truly passive way.**



**KOOLSHADE®**

# Simply unique, thoroughly effective & sustainable

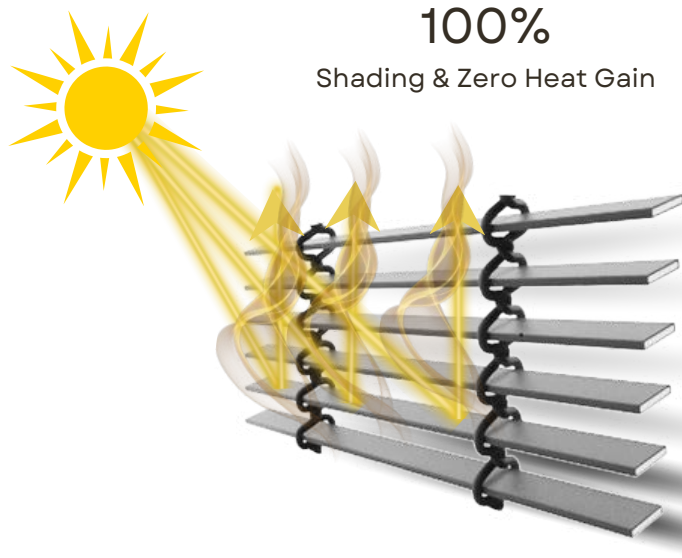
Applying Microlouvre KoolShade® to a building, provides effective protection against heat gain & glare whilst maintaining visibility to the outside world.

Its application has been proven to reduce energy demand for cooling by as much as 70% and lighting by over 50%. It is A1/A2 fire rated, which is now a legal requirement for many residential buildings.

Microlouvre KoolShade® metal fabric is only 1.55mm thick and each louvre measures only 1.25mm x 0.30mm. The fabric has an open area of 80% and weighs just over a kilo per square metre.

Even with temperatures well in excess of 40°+ no direct solar heat gain will reach the inside of the building. Zero heat gain, reduced glare but with perfect vision out.

When the sun is at 45°, TOTAL shading is provided

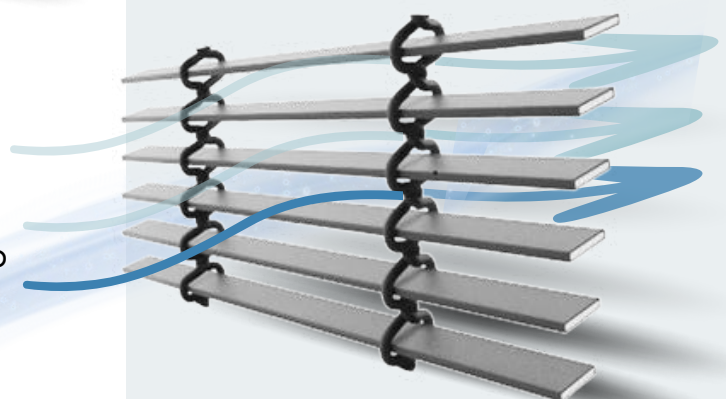


How does MicroLouvre Koolshade® work?

### in simple terms

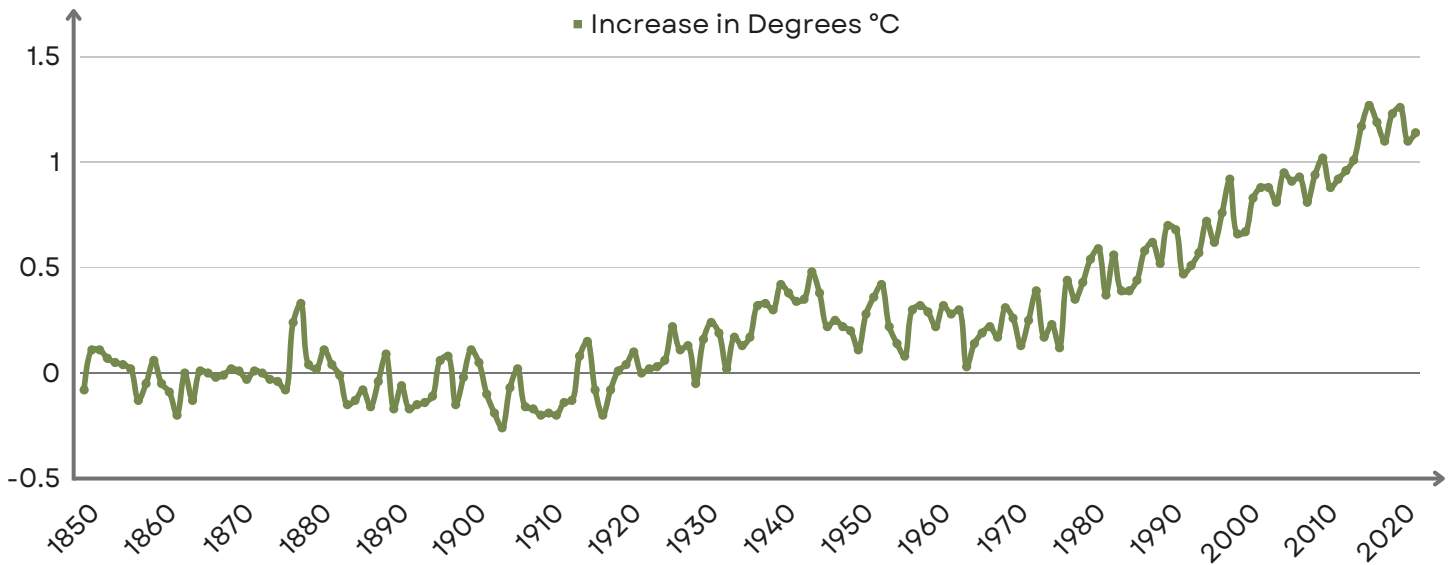
It doesn't allow the hot solar radiation through, it gets deflected by the angled micro-louvres.

But still allows light and ventilation to pass through as normal. This keeps rooms well lit and comfortably cool.



Let's face it, climate change means we will have increasingly longer and hotter summers across the globe.

Globally 2022 was the sixth warmest year in a series stretching back to 1850, according to figures released by the Met Office.



Change needs to happen,  
but not at more cost to the environment.

With most office workers spending up to 8 or 9 hours a day in work, the need for Thermal Comfort is growing rapidly.



# Occupant Health and Wellbeing

Companies that create a positive employee experience are 21% more profitable and enjoy 37% higher sales than their competitors

FTSE 100 companies that prioritise employee engagement and wellbeing out-perform the rest of the FTSE 100 by 10%

When choosing between products of equal price and quality, 65% of consumers prefer to buy from brands that treat their employees well .



## KOOLSHADE®

- Recycled, recyclable, net-zero
- Reduce the need & cost of air-con
- Durable & long lasting
- Environmentally conscious<sup>(60+ years)</sup>
- Non-mechanical cooling
- Suitable for retro-fit
- Part 'O' compliant



## Retro-fit

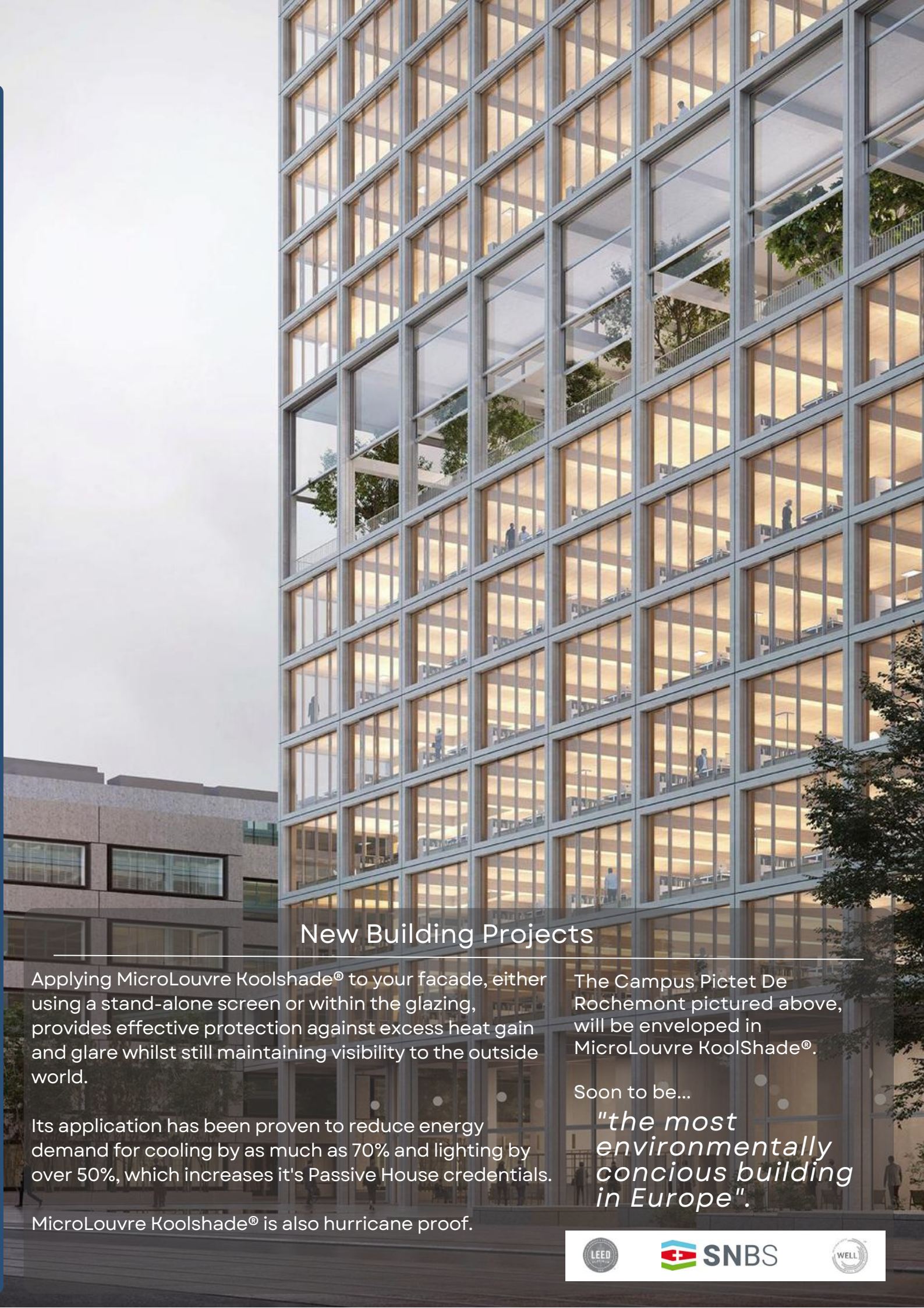
MicroLouvre KoolShade® is the perfect solution to retro-fit to existing fenestration.

The outcome can mirror any shape or profile and with a wide range of options for fixing, can be used across the whole range of building types.

The screens are can rejuvenate and transform tired buildings into modern, energy-saving, weather-protected investments. Our mesh system can help prolong the life of a building for many additional years.

MicroLouvre KoolShade® is also A1/A2 fire rated, which is now a legal requirement for many residential buildings.





## New Building Projects

Applying MicroLouvre Koolshade® to your facade, either using a stand-alone screen or within the glazing, provides effective protection against excess heat gain and glare whilst still maintaining visibility to the outside world.

Its application has been proven to reduce energy demand for cooling by as much as 70% and lighting by over 50%, which increases its Passive House credentials.

MicroLouvre Koolshade® is also hurricane proof.

The Campus Pictet De Rochemont pictured above, will be enveloped in MicroLouvre KoolShade®.

Soon to be...

*"the most environmentally conscious building in Europe".*



# SOLAR SHADING

## SOLAR SHADING

This is MicroLouvre Koolshade's® primary application and has been specifically designed for high performance sun control as an external passive system for the thermal management & glare reduction of sun exposed glazing.

To best balance the problems of solar heat gain, maintain contact with the outside & high natural daylighting & ventilation - in one simple system.

This image demonstrates the view through nature of the product, due to its micro-fine angled louvres.



An important feature of MicroLouvre Koolshade® is its ability to make previously unusable spaces usable again.

The image above is of a venue on a vineyard in South Africa. This is now able to taken bookings all year round, where previously it was overwhelmingly hot in summer months.

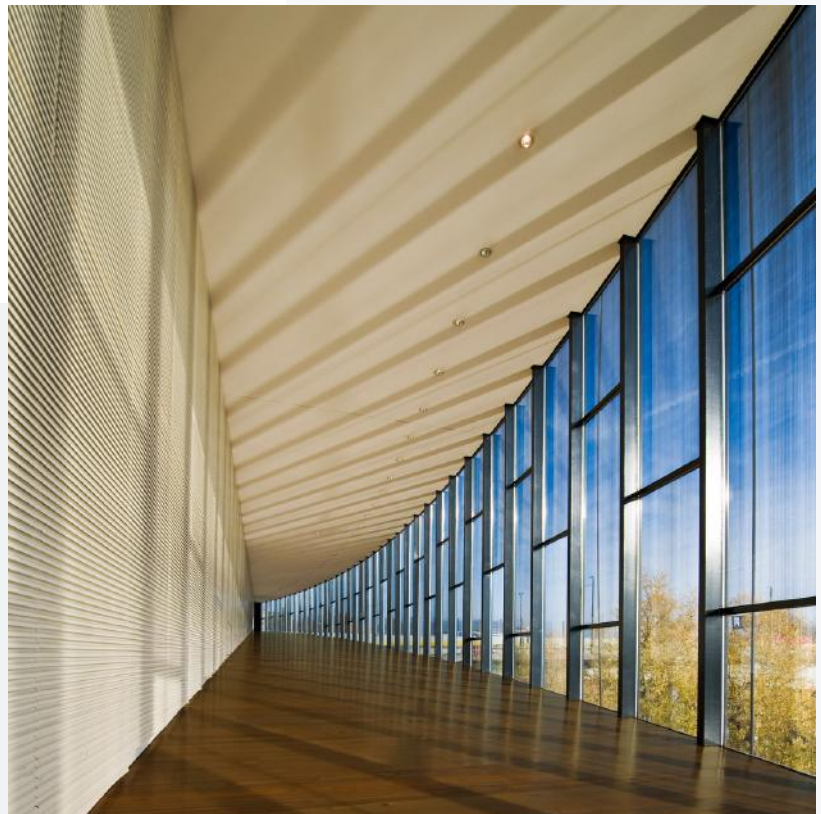
In a similar way, a carehome in Surrey UK couldn't let out 5 of it's rooms until MicroLouvre Koolshade® was fitted. They are now fully occupied.





Commercial, Public & Industrial buildings around the globe have been enjoying:

- Comfortable internal temperatures
- Significantly lower cooling costs
- Ventilated & bright spaces



The environmental benefits of MicroLouvre Koolshade® are many. Being a passive system, it needs no energy to work. It also reduces the need for air-con by 68%.



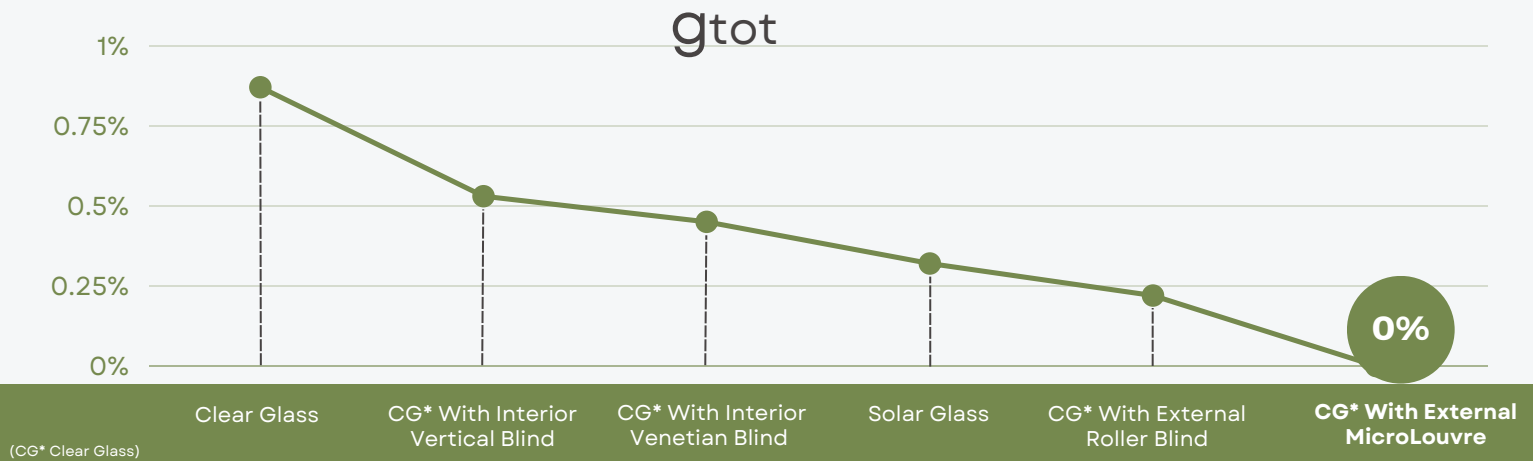
# WHEN FITTED TO WINDOWS, DOORS, SKYLIGHTS ETC IT WORKS AS A FILTER

## SOLAR HEAT GAIN

MicroLouvre KoolShade® is a highly efficient and versatile woven metal fabric. Its micro-louvres are set at specific angles to **stop solar heat gain & glare**, is **non-combustible** (A1 & A2 Fire Rated)

### Solar Heat Gain.

The UK is warming up, great for 'staycations' but can be very challenging in buildings, especially ones with no or limited ventilation and/or highly glazed areas. The higher the solar heat transmission, the hotter the room.



### IT ALSO:

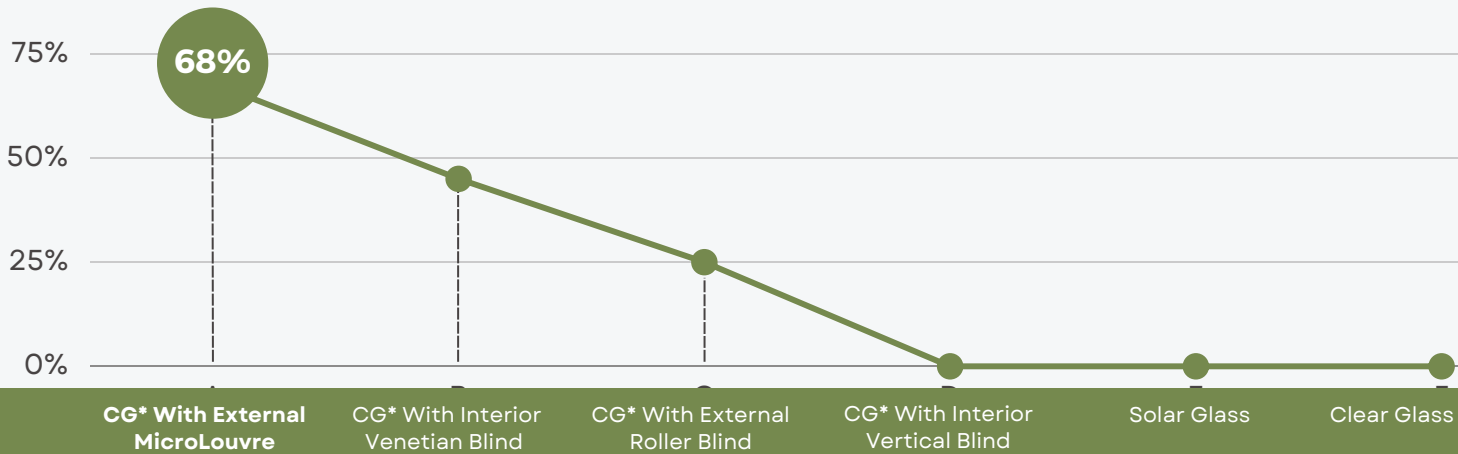
- Allows perfect vision out and an unrestricted flow of fresh air with a Clear Open Area of 80%
- Is compliant to all aspects of Approved Document O (Overheating Mitigation)
- Has a lightweight construction, ideal for any height of building and is hurricane-proof
- Can be powder coated to any RAL colour to compliment any design theme
- Is made from fully recycled and recyclable material

# TO ALLOW IN THE GOOD PARTS OF SUNLIGHT AND KEEP THE BAD OUT

## OPENNESS FACTOR

### **Openness Factor.**

Blocking the sun's heat is becoming evermore important, but the ability to see out is essential too. For wellness & well-being, a view can be priceless, as can fresh airflow.



## CLEAR VISION OUT, DAYLIGHT IN



### **Clear View.**

Natural light has a range of benefits including an increase in levels of serotonin.

So, not only will the occupants feel happier, but levels of productivity increase in naturally lit places.

# LONGEVITY

## MicroLouvre KoolShade®

Shading from the sun has been a challenge in habitats for decades.

HRL LABORATORIES



Malibu



1969



INDIANAPOLIS COUNCIL BUILDING



Indianapolis



1976



PECKHAM POLICE STATION



London

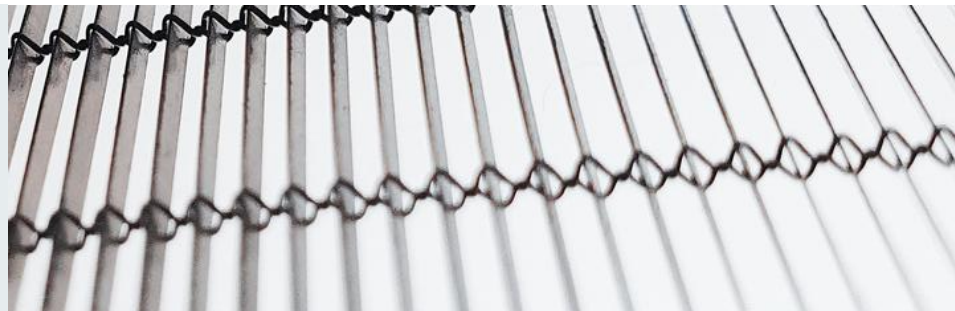


1988



KoolShade was the original name for MicroLouvre KoolShade®, and the images above show installations, still going strong, from 1969, 1976 & 1988.

And MicroLouvre KoolShade has been shading homes, offices, factories, hotels, airports and more for decades.



# PROJECT EXAMPLES

## SOLAR SHADING

& lighting, facades & interior design  
in sectors like

- HEALTH
- EDUCATION
- AEROSPACE
- RESEARCH
- THE ARTS
- TECHNOLOGY
- PHARMACEUTICAL
- CONSTRUCTION

& many more.



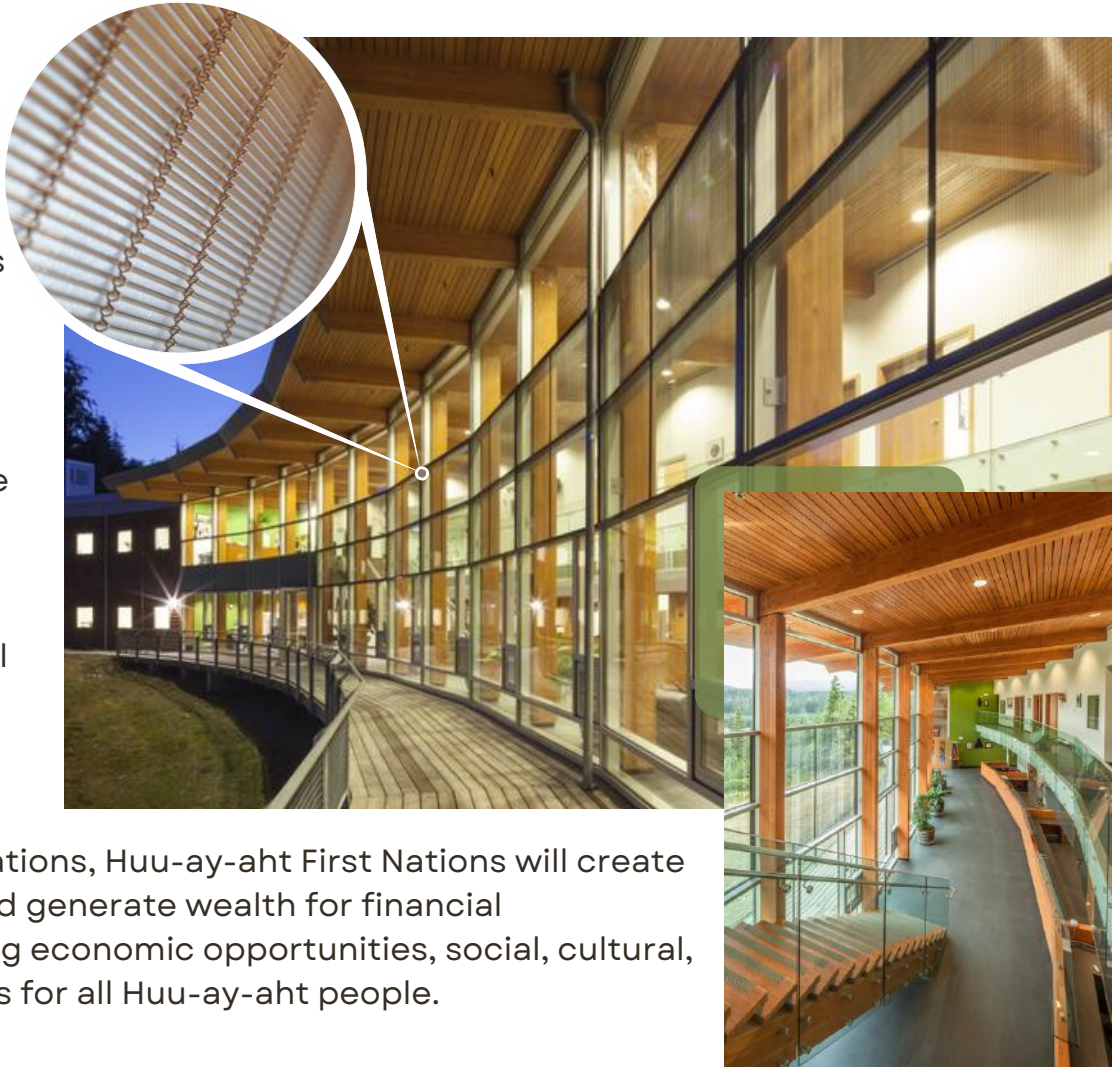
huu ay aht

Huu-ay-aht First Nations is a self-governing, modern treaty Nation whose lands are in the Barkley Sound region on the west coast of Vancouver Island, at the entrance to Alberni Inlet.

The lands and waters making up their traditional territories have been occupied by them since time immemorial.

As a leader among First Nations, Huu-ay-aht First Nations will create certainty for its people and generate wealth for financial independence by providing economic opportunities, social, cultural, and recreational programs for all Huu-ay-aht people.

## HUU-AY-AHT FIRST NATIONS





The use of horizontal shading fins was woefully inadequate against the summer sun, and as experienced in 2022, simply ineffective against temperatures above 40°.

Microlouvre KoolShade stops Solar Heat Gain and dramatically lowers internal building temperatures but stopping solar heat gain.

It's very simple to fit. Retrofitting to buildings, using either frames, cable systems or outriggers will enhance the aesthetic of any building and proven to last many decades.

SUFFOLK COUNTY COUNCIL



## PROJECT EXAMPLES

### **Stunning, modern, but fundamentally flawed.**

Endeavour House has a modernist, glazed exterior that looks amazing. The glass has no opening windows, so the building has become like a greenhouse.



The use of MicroLouvre KoolShade® has added a stylish envelope to a section of the building which brings thermal comfort to those inside.

It is a highly efficient and versatile woven metal fabric. Its micro-louvres are set at specific angles to stop solar heat gain and glare, and is non-combustible.

## PROJECT EXAMPLES



The BINARY House project was undertaken by the SPACE Group. The rear elevation contains a central fixed glazed panel that is seemingly wrapping upwards and over to become a skylight.

The architect used MicroLouvre KoolShade® brilliantly to blur the lines between the garden, the sky and the indoor spaces.

The rooms flood with daylight and remain cool from natural, passive 'air conditioning'. Solar heat gain is stopped before even reaching the living space.

# BINARY HOUSE

Passive House 







**MicroLouvre KoolShade®** is an essential part of building new homes and a perfect way to improve your **Carbon Footprint** in retro-fit installations.

- Removes the need for mechanical cooling & reduces Air-Con usage by 68%
- Allows a free flow of air through your building with an 80% open area
- Fully recyclable & made from recycled metal



**MicroLouvre KoolShade®** was specified as a means of solar gain control, enabling views whilst reflecting sunlight.

*The nature of this MicroLouvre® creates very interesting halo effects when hit by light giving it an animated yet technological feel.*

## PROJECT EXAMPLES



# HAZENDAL

ANNO 1699

Hazendal Wine Estate in Stellenbosch is one of South Africa's most famous wine producers and Premium Lifestyle Estates.

# HAZENDAL WINE ESTATE



Their beautiful venue 'The Glasshouse', suffered from excessive heat and glare due to the all-glass construction.

Temperatures had to be reduced whilst maintaining contact with the beautiful surrounding gardens.

An internal aluminium louvre system inside the glass roof was both ineffective and blocked natural daylight and vision.

The Glasshouse has to be used for all-year-round weddings parties, and business functions, therefore, a solution had to be found.

Now MicroLouvre KoolShade® is fitted it is now able to take bookings all year round, where previously it was overwhelmingly hot in summer months.



## ACCREDITATIONS

### **Fraunhofer**

The Fraunhofer Institute for Solar Energy Systems ISE, with a staff of 1200, is the largest solar research institute in Europe.

When tested at Fraunhofer, the angle selective MicroLouvre achieved impressive results confirming MicroLouvre as the most comprehensive solution for Thermal and Visual Comfort in one system.



USGBC is the recognized leader of the green building movement, providing the tools to help advance and sustain green building practice and the innovation necessary to fully carry out our mission.

Through LEED and GBCI's expanded portfolio of aligned certification standards, we are at the forefront of driving growth across a global market that is at varying degrees of adoption and maturity.



CSIRO works with leading organisations around the world. From its headquarters in Canberra, CSIRO maintains more than 50 sites across Australia and in France, Chile and the United States, employing about 5,500 people.

CSIR grew rapidly and achieved significant early successes. In 1949, further legislated changes included renaming the organisation as CSIRO.



Collaborating with customers, suppliers, academia and other stakeholders is fundamental to what we want to achieve. It's about pushing boundaries and finding inventive ways to collectively make a positive contribution to an ever-changing world. This will be vital if we're to realize our science-based target of halving our carbon emissions by 2030.



The Good Homes Alliance's stated aim is to build and promote sustainable homes and communities and to transform the whole of mainstream UK house building into a sustainable endeavour. It is a not-for-profit community interest company with a board of directors.

## SIMSCALE

SimScale have evaluated the thermal and pressure flow characteristics of MicroLouvre® and simulated the fabric in their digital wind tunnel set up at various wind speeds and angles.

The results have allowed us to validate previous performance data and determine an appropriate discharge coefficient (Cd) which can be inputted directly into thermal modelling software such as IES, TaS and DesignBuilder.



Building Research Establishment (BRE) the world's leading building science centre, wind tunnel tested MicroLouvre screens from different angles to simulate severe wind conditions on high buildings.

MicroLouvre proved to be indestructible at winds exceeding 100mph+, in excess of Hurricane Force 12 on the Beaufort Scale and a Category 2 Hurricane on the Saffir-Simpson scale.



## BERKELEY LAB

The Lawrence Berkeley National Laboratory California is a multiThe Berkeley Lab included MicroLouvre in a major research project for one of America's largest Energy companies. With MicroLouvre, daily cooling loads were reduced by 68% on sunny days when compared with dual pane, high performance solar control glass with an internal blind.



ISO 9001 is defined as the international standard that specifies requirements for a quality management system (QMS).

Organizations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements.



Recognised internationally as the go-to professionals in all aspects of fire safety. We are very proud to be working with one of the world's leading fire engineering and solution providers, trusted by many of the most prestigious construction firms, architects and estate owners.

And,...the added benefit of deterring birdstrikes.



In the UK alone well over a hundred million birds die from glass strikes every year (British Trust for Ornithology).



LEED v4 Points are awarded for bird safety as part of the Innovation and Design (ID) category





Manufacturer of  
**MicroLouvre KoolShade® fabric**  
A unique remedy to the challenges of  
solar climate change on our habitat.

**SLTechnology Ltd. Global Manufacturers of MicroLouvre KoolShade® Fabric**  
18 The Tanneries, Brockhampton Lane, Havant, Hampshire, PO9 1JB, UK



[info@smartlouvre.com](mailto:info@smartlouvre.com)



[smartlouvre.com](http://smartlouvre.com)



02392 456 333