



# SMALL FOOTPRINT BIG IMPACT

Responsible Solar Shading



**MicroShade® is the new green technology solving the challenges of solar shading with a low-carbon footprint,<sup>1</sup> while ensuring people's well-being and reducing the total cost of ownership.<sup>2</sup>**

MicroShade A/S Sustainability Paper  
August 2022  
Images: Unsplash

<sup>1</sup> MicroShade® EPD – Preliminary Results (2021)

<sup>2</sup> Benefits of Using MicroShade® (2021)

# INDEX

DECARBONIZING THE  
BUILDING INDUSTRY

REDUCING FOOTPRINTS  
WITH NEW, EFFICIENT  
TECHNOLOGY

HOW TO BUILD WITH  
SUSTAINABLE IMPACT

HIGH RESPONSIBILITY,  
HIGH PERFORMANCE

CONTACT



# DECARBONIZING THE BUILDING INDUSTRY

We are all responsible for creating a more sustainable future.

All members of the European Union are committed to a 55% CO<sub>2</sub> reduction by 2030 and a climate-neutral Europe by 2050.<sup>3</sup> This will transform the continent into a modern, resource-efficient and competitive economy.

The building sector has a significant footprint covering 40% of all greenhouse gas emissions on a global scale.<sup>4</sup> This implies a great responsibility to reduce emissions in the building sector.

The new EU taxonomy from 2021<sup>5</sup> requires buildings and renovation projects to assess and document how they perform on sustainability. Market demand from users, investors, and government, requires a holistic sustainability approach, leading toward certification schemes such as DGNB, BREEAM, LEED etc.

The green transition in the building sector requires new circular business models, innovative materials and smart technologies that solve multiple problems while keeping up with new standards in the global economy.

MicroShade® is the new green solution to solar shading, providing sustainability impact on buildings and improving the indoor work environment for users.

In this sustainability paper you can read about how we provide sustainability impact in the building sector.

<sup>3</sup> [https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan\\_en](https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan_en)

<sup>4</sup> 2019 Global Status Report for Buildings and Construction prepared by the International Energy Agency (IEA). ISBN No: 978-92-807-3768-4

<sup>5</sup> [https://ec.europa.eu/sustainable-finance-taxonomy/activities/activity\\_en.htm?reference=71](https://ec.europa.eu/sustainable-finance-taxonomy/activities/activity_en.htm?reference=71)



# REDUCING FOOTPRINTS WITH NEW, EFFICIENT TECHNOLOGY

Daylight, solar heat protection and view out in buildings is the key element in the well-being and work efficiency of people.

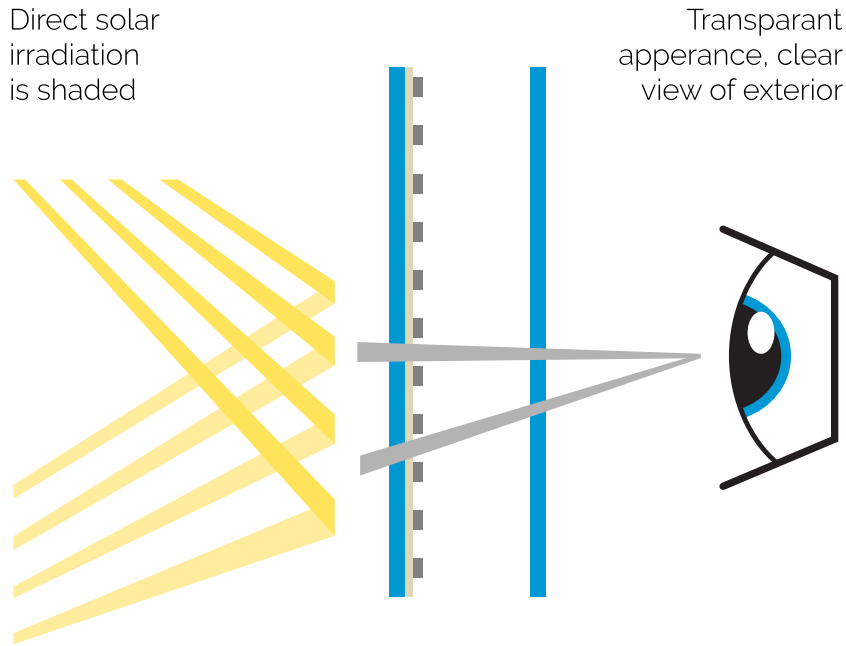
The façade is where these elements need to be managed. The façade and especially the solar shading solution determine the work environment and operating cost for the lifetime of a building and challenges the way we build, at what cost, and how we can thrive in buildings.

Finding a climate-friendly shading solution is essential to developing a more sustainable building sector.

MicroShade® is a micro-structured film installed inside the glazing and provides efficient shading, while at the same time ensuring plenty of daylight and a clear view to the outside. This leads to energy savings, increased well-being and work productivity.

We have combined in-depth engineering know-how, design simplicity and functionality in a high-quality product that reduces carbon emissions compared to other shading solutions and contributes to creating sustainable buildings designed for the future.





MicroShade® – encapsulated between glazing panes

## HOW MICROSHADE® WORKS

# HOW TO BUILD WITH SUSTAINABLE IMPACT

The sustainability impact of MicroShade®:

## Environmental impact



Reduces the CO<sub>2</sub> footprint in the construction phase by only requiring 0,24 kg/m<sup>2</sup> in material use.<sup>6</sup>  
No extra installation requirements as it is built into the glazing as a passive solution.  
Reduces the CO<sub>2</sub> footprint in the operation phase by providing effective shading that minimizes the use of cooling.<sup>7</sup>  
Zero operation and maintenance cost.<sup>7</sup>

## Social impact



Provides efficient shading, creating a good indoor environment with pleasant temperatures and a limited amount of direct solar beam.<sup>7</sup>  
Reduces glare<sup>8</sup> whilst allowing natural daylight.  
Allows for a clear view out at all times, leaving an unobstructed view.  
The above-mentioned factors lead to increased well-being and a better work environment.<sup>7</sup>

## Economic impact



Low total cost of ownership (TCO).<sup>7</sup>  
Low installation cost, requires no maintenance or operation costs.  
Product lifetime aligned with that of the window.

MicroShade A/S is developing an **Environmental Product Declaration (EPD)** to present transparent, verified, and comparable information about the life-cycle of MicroShade. Furthermore, MicroShade A/S is developing documentation packages for the leading building certification schemes **DGNB**, **BREEM** and **LEED**.

<sup>6</sup> MicroShade® EPD – Preliminary Results (2021)

<sup>7</sup> Benefits from Using MicroShade® (2021)

<sup>8</sup> MicroShade® Glare (2022)



**99 %** Achieved productivity from thermal environment <sup>9</sup>



**20 %** Increased user satisfaction with regards to daylight access <sup>10</sup>



**40 %** Increased weighted view out <sup>10</sup>



**26 %** Less energy spend on cooling and heating <sup>10</sup>



**20 %** More useable space also near the windows <sup>10</sup>



**67 %** TCO reduction for window and solar shading <sup>10</sup>

<sup>9</sup> Compared to no shading on a south façade in Stuttgart - Benefits of Using MicroShade® (2021)

<sup>10</sup> Compared to an external screen with 5% transmittance activated at 150 W/m<sup>2</sup> on a south façade in Stuttgart - Benefits of Using MicroShade® (2021)

**MICROSHADE® INSTALLED  
IN THE 02 BUILDING IN  
STEINKJER, OSLO  
NORWAY**

**① Reduces CO<sub>2</sub> footprint through minimal material use, solar heat reduction, and no operating or maintenance costs. A built-in passive solution with a long lifespan**

**② Creates shaded work environments without compromising healthy daylight and a clear view out**

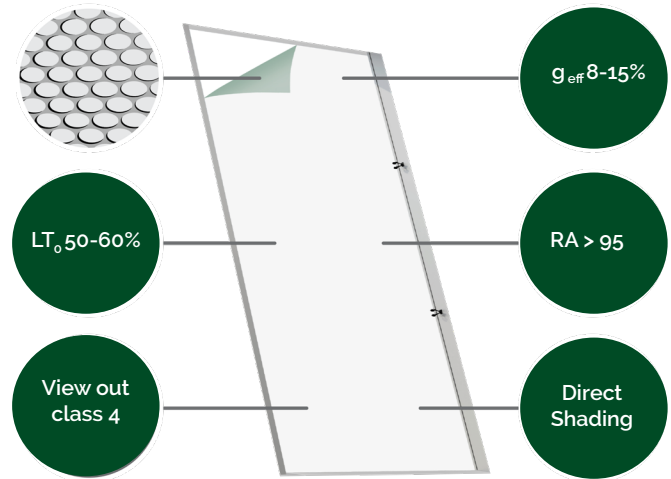
**③ Allows functional and aesthetical design without compromising full architectural freedom**

# HIGH RESPONSIBILITY, HIGH PERFORMANCE

As a responsible company, our products and methods are science based, as we validate our results with certified partners such as ift Rosenheim, Fraunhofer ISE, FORCE Technology etc.

With our validated online shading calculator SimShade® you can find the optimal shading solution for your façade.

The figure to the right shows the MicroShade® effect in key numbers.





"Our own measurements confirm that the temperature from the sun has been significantly reduced using MicroShade®, in some cases from 30 down to 25.5 degrees. It used to be boiling hot in the sun and it could be difficult to read what was written on the board. The problem's been solved, and everyone's a lot more comfortable."

**Architect Gorm Albertsen,  
responsible for schools and  
institutions in Aarhus Municipality.**



If you want to know more about MicroShade:

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