SolarLab

Beauty, Quality and Sustainability

Custom Solar Facades

Invisible Solar Power

Our innovative solar facades simultaneously provide free electricity and beautiful cladding for new or retrofit projects.

We ensure durability and resilience by giving you unparalleled design freedom with proven technologies.

Copenhagen International School with its 12.000 solar panels.

Bornholm Hospital was retrofit with exterior insulation and a custom solar rain screen.

Unparalleled Design Freedom

Solarlab can help you invisibly integrate on-site electricity production with unparalleled aesthetic flexibility. Our unique facades – curtain wall, louver, and rain screen – can be implemented in new as well as retrofit projects. Choose from our exciting range of non-fading colours that mimic a metallic or ceramic appearance, and can be freely combined with a myriad of textures and finishes. SolarLab's free scoping, simulations, and design support, along with our CAD & BIM tools for Rhino, Revit, SketchUp, and ArchiCad, will help you quickly create something remarkable!

Danish Design and Production

All SolarLab facades are produced in the EU, primarily utilising recycled materials and sustainable energy, as such leaving a minimal environmental footprint behind.

Our in-house design, engineering, and production ensures:

- Close collaboration and rapid response to project development
- Solutions, testing, and prototyping tailored to your unique project
- Specialist knowledge on sustainable solar energy and building codes

SolarLab's complete system package and full documentation provides transparency and the security that comes from utilising a single system supplier.

Resilient Investment

Resilience, durability, and ease of maintenance are critical for any building facade. By combining top-tier technology with our experienced team, we can help you integrate our beautiful, dependable, and long-lasting facades into your project.

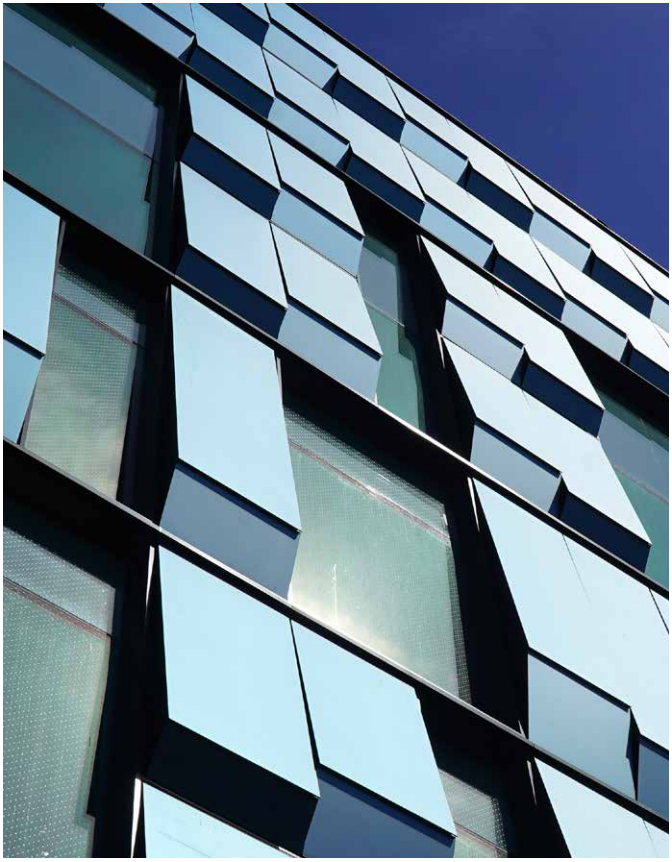
We prioritise safety and strength with our panel-level monitoring and high-quality components, ensuring optimal performance and minimal maintenance over the facade's multi-generational life.

Unlike other building materials, our solar facades repay the investment made in them many times over, both environmentally and financially.

Solar Facade Systems

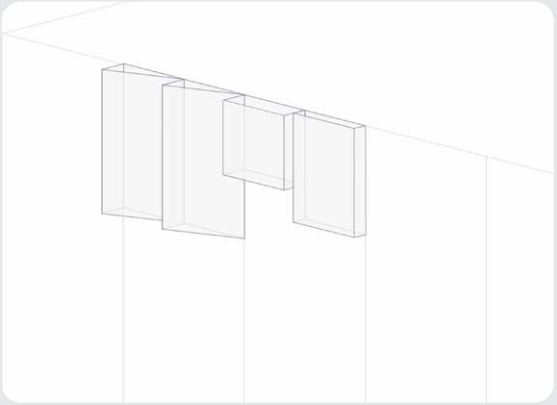
We offer three customizable solar facade solutions that can be fully tailored to the needs of your specific project. Going beyond traditional BIPV, our solutions always include all cladding and electrical components to ensure a successful end result.

By leveraging proven technologies and installation typologies we make it easy for you to design beautiful and sustainable architecture. We provide low risk ways to get to net zero that are both cost-effective and can be implemented by any facade installer.



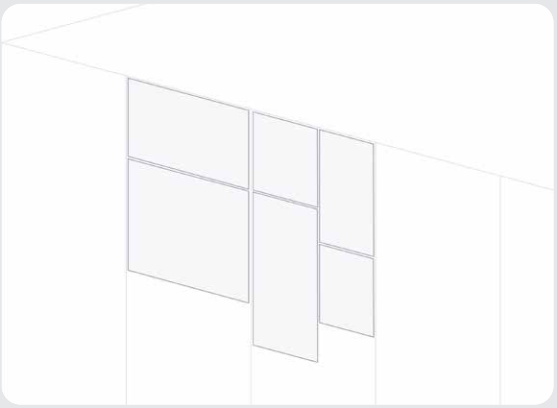
Rain Screen

Our ventilated rain screen is recognized as one of the best ways to increase durability and lower operational costs, by protecting the waterproofing and insulation from damage caused by the sun. The ventilating layer allows the structure to stay dry and protected from the sun whilst generating free and sustainable electricity.



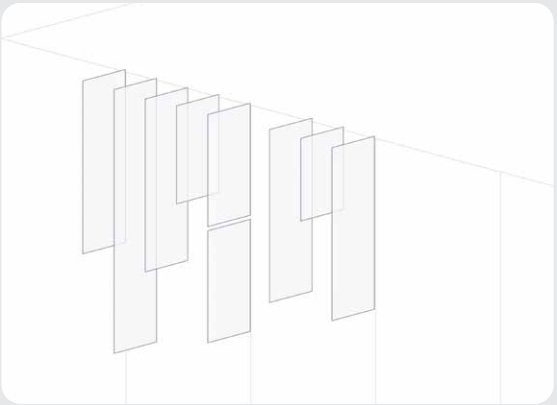
Curtain Wall

In unitised or stick-built curtain wall facades, our solar systems are fully integrated into the building envelope and replace spandrel, mullions, transoms, or vision glass panels. The durable tempered glass surface, which is integral to the water and air resistance of the building's exterior, provides low-maintenance cladding with a minimal environmental footprint, all while invisibly producing on-site electricity.



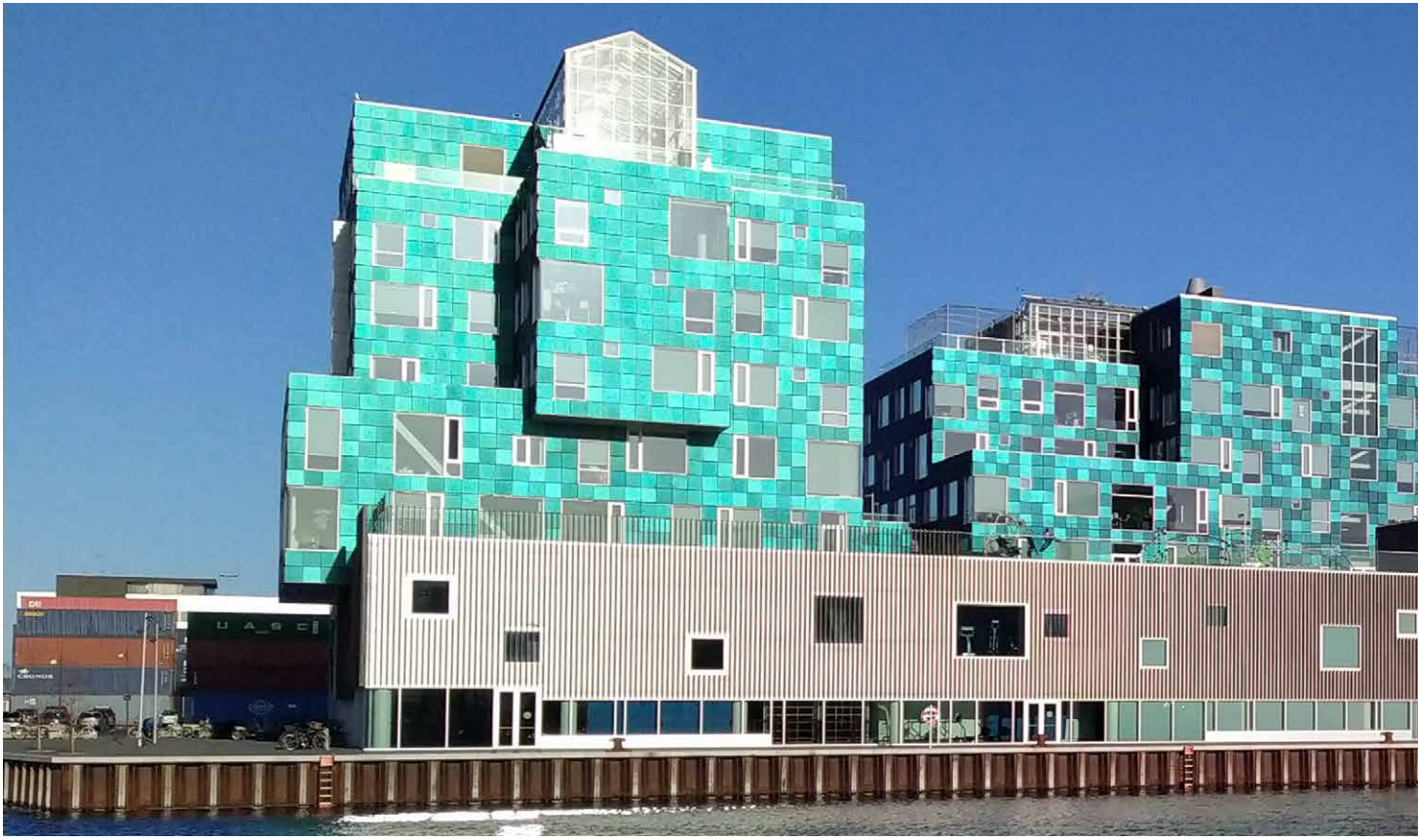
Louvers

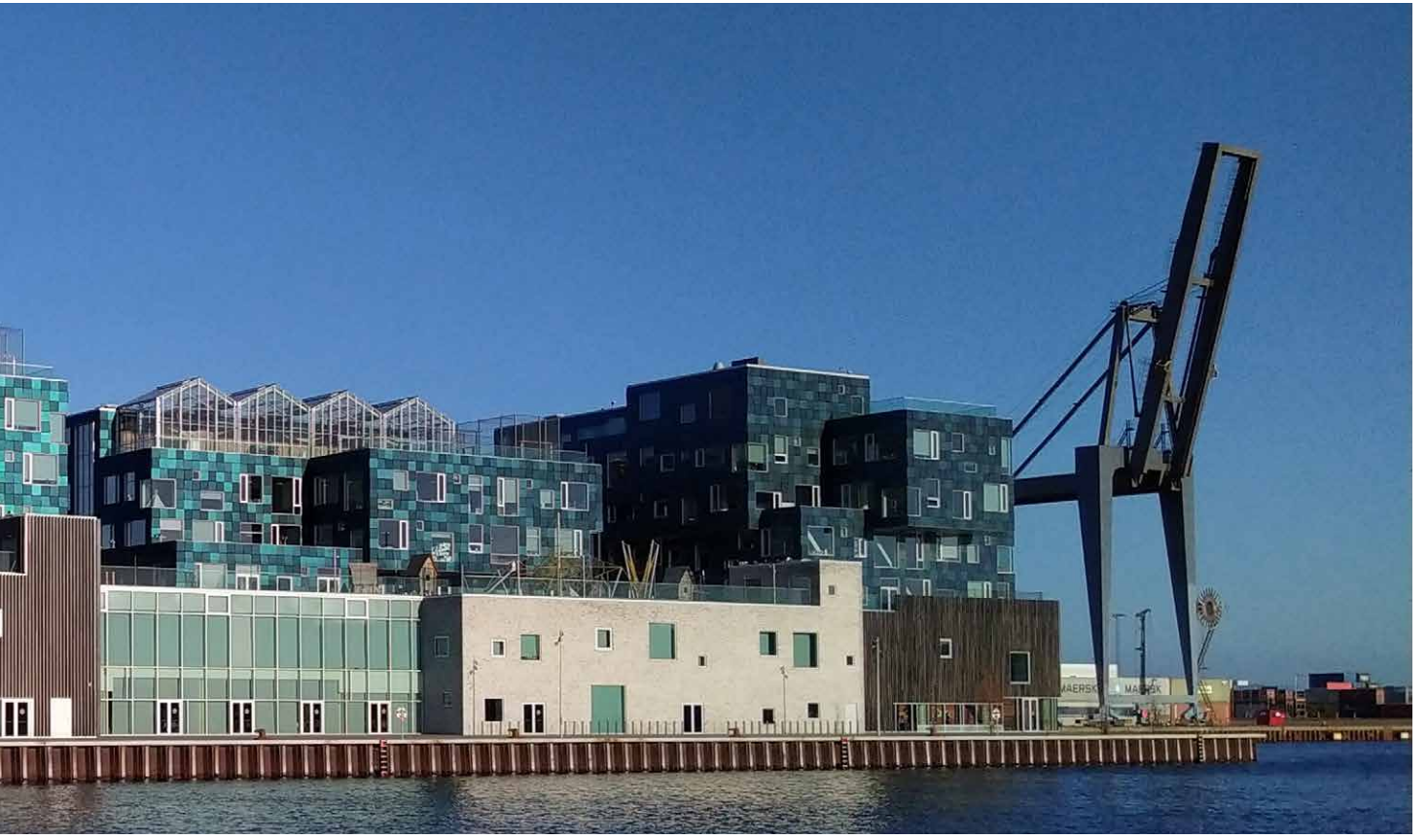
Louvers – also known as Brise-Solei – horizontally or vertically combine solar shadings and energy production by mounting fins to the building's facade. Typically installed on curtain wall mullions or across windows as an architectural element, louvers are an efficient way to keep most of the sun's energy outside the building envelope while still generating sustainable electricity.



Solar Facades for New Buildings

New buildings allow you to take full advantage, both architecturally and technically, of the transformative power offered by a custom solar facade. We also provide you with the design freedom to expand your architectural language as well as lower the building's environmental footprint.





The Copenhagen International School with its 12.000 individually tilted solar panels that define the buildings grid.

The Student Experience International on the waterfront in Amsterdam, frees up roof areas for social activities by completely covering all facades with solar cladding. While identical in color, the tilting, along with the satinated iridescence of the coating, tranforms the facade into a dynamic and gentle neighbour.

Red River College's Manitou a bi Bii daziigae building with varying panel sizes and a flowing facade, highlights the design freedom offered with a solar facade and the chameleon like nature of the color coating which provides a gentle and colourful addition to the campus.

The deeply articulated facade of Breidablikk Gaarden in Norway offers passive shading and architectural depth.

The tall and kinked panels on Fanshawe College in Canada creates a powerful rhythm and depth that takes advantage of the iridescent qualities of our metallic-like colours.

Solar Claddings for Retrofit

With our in-house design, engineering, and production we are prepared for the unique challenges and complexities that come with retrofitting high performance solar facades onto existing buildings. Leveraging our flexibility and creativity we tackle irregularities and unique designs in order to retain architectural integrity and quality.

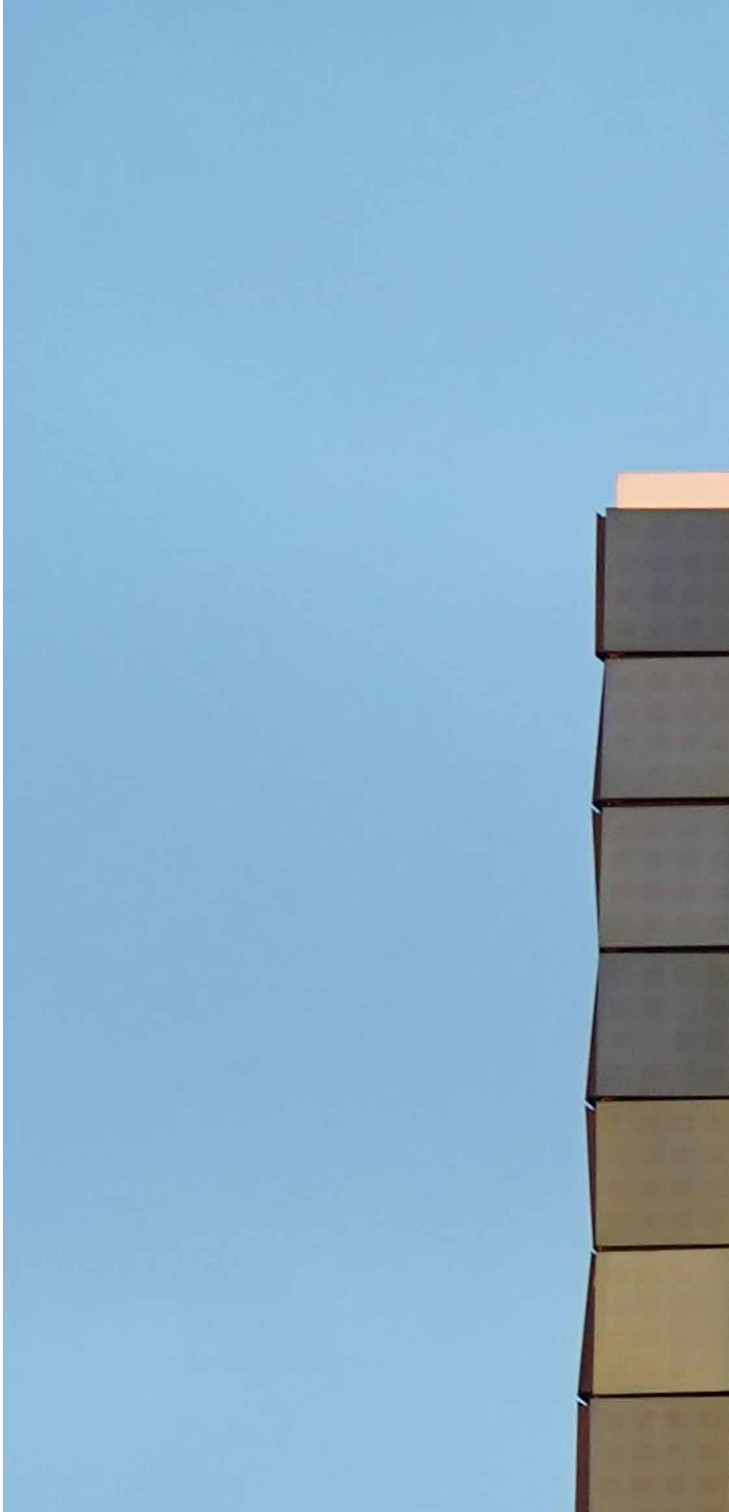
The Grøndals project in Denmark required a large number of unique panels, as well as both active and passive panels, to accomodate and fully replace a failing facade.

As part of an energy upgrade at Bornholm Hospital in Denmark, our ventilated solar rain screen made for both an aesthetic and environmental improvement. Our low-maintenance and durable cladding invisibly integrates high quality PV and takes full advantage of the material's unique qualities by combining flat and articulated cladding.

Trige Gaarden in Aarhus integrates floor-high panels that offer spectacular reflection and invisibly integrate the PV technology.

Proven Realisation Process

Although your architectural possibilities with SolarLab are nearly limitless, our facade systems also incorporate predictability. Through meticulous collaboration we provide you with both dependability and cost-efficiency. Our design and engineering teams will be there to support you all the way from early concept to final design, as well as during the the installation and commissioning process.



1
Scoping

By utilising your 3D sketches and models, we can simulate your project's electricity production potential and visualise our findings in 3D and data graphs to help you evaluate and develop your design from the earliest concepts.

These simulations, along with cost estimates, provide stakeholders with the necessary knowledge to make informed decisions and proceed with the supply agreement.

2
Architectural Design

SolarLab's design and engineering team is always available to help eliminate any potential concerns. To this end, we make it a priority to support your design process with tools, guidance, samples, and technical solutions along the way.

We offer prototypes of panels, mountings, or even complete facade sections, when needed for local approvals, testing, or to support the installation tendering.

3
Realisation

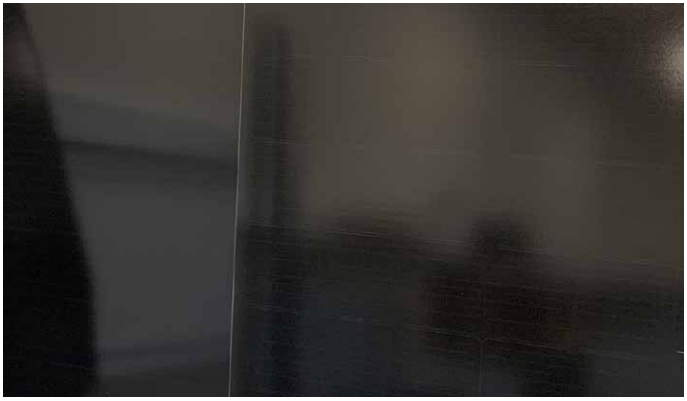
Once the architectural design is frozen and structurally approved, we begin final engineering, manufacturing, and assembly.

After third party inspection, the facades and detailed installation guides are carefully packaged and shipped for installation and commissioning by the local installers.

Colour and Finishing Freedom

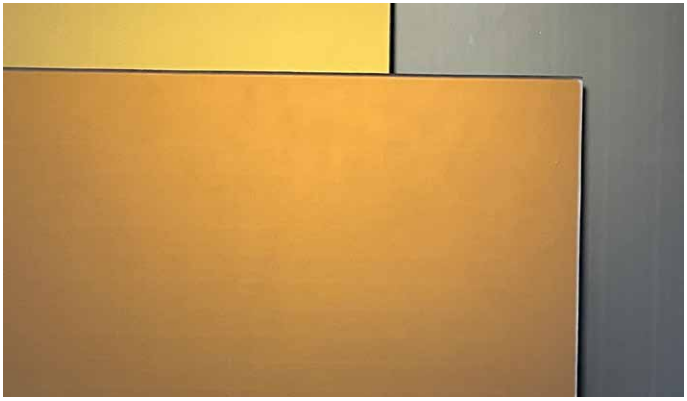
The aesthetic expression of the facade has both visual and physical qualities that can be customised. Our facades are made of fully tempered glass and seaworthy aluminium that ensures durability with a 50 to 80 year operational life. By customising surface finishing and the color coating on the rear of the glass, we make it easy to achieve any desired aesthetic expression.

With our range of highly reflective or matt metallics and glazed or matt ceramic-like surfaces in any color, you easily and cost-effectively construct a custom solution without compromising the performance of the solar facades.



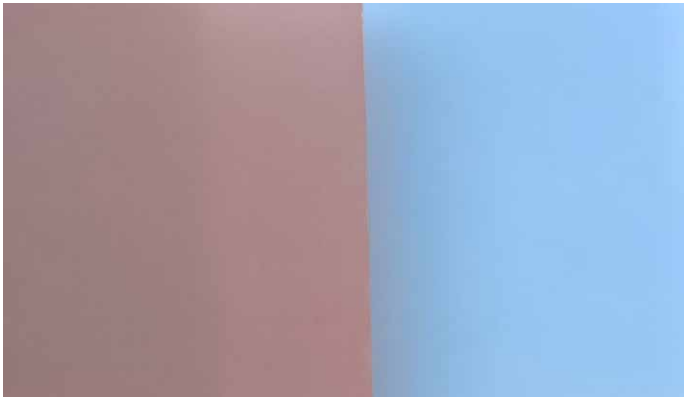
Natural

Without any added colouring, our ultra-clear float glass has the highest transparency and is able to achieve the highest electrical production possible. Depending on the desired appearance, you can choose to hide the PV technology or add an intriguing layer of visual detail to the facade by keeping it visible. Textures and finishes can be curated to sculpt reflections or further improve energy production.



Metallic-like Coatings

Plasma Vacuum Deposited (PVD) coating on the rear of the glass provides a unique combination of efficiency, permanence, and spectacular iridescent hues. The aesthetic quality of the metallic-like facades is achieved through multi-layered nanoscale filters, which ensure that only specific wavelengths of light are reflected and that most are transmitted through the glass to be captured by the PV cells. A matt metallic appearance, similar to anodised aluminium, is achieved when combined with our satin finish. A coloured mirror resemblance is achieved when combined with our crystal finish. Different light angles and the positioning of the viewer will alter the hue, creating a dynamic and ever-changing facade.



Ceramic-like Coatings

Similar to the metallic-like structural coating, the ceramic-like coatings are achieved using PVD nano-coatings. However, the ceramic-like coating achieves a fully diffused reflection through macro-level mixing. Applied on the rear of the glass, it can be provided in almost any shade to ensure the desired architectural integration. Its aesthetic appearance is comparable to a ceramic, stucco, or painted surface when combined with satinated glass, but can also be combined with crystal float glass for more traditional spandrel effects, or with textured glass for an advanced tactile or macro-level effect.

Glass Frit Print

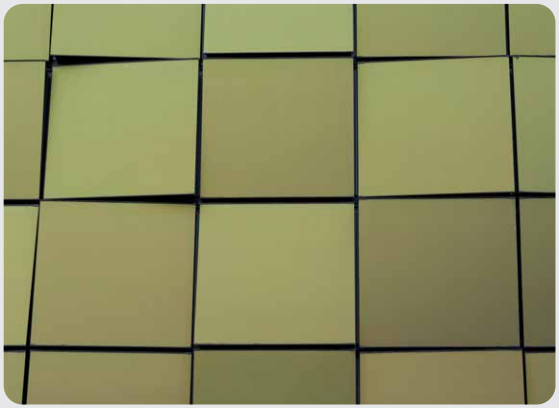
The traditional choice of printing coloured ceramic pigments onto the rear of the glass can create patterns not attainable with structural coatings, but does so at the cost of lower generating efficiency. With the glass frit print, patterns, colours, shapes, and graphics can be precisely defined. However, due to the opaque nature of the pigments, a pattern of holes must be incorporated to allow sunlight to penetrate to the PV cells behind the glass. The end result is less efficient energy harvesting and potentially lower colour permanence, which must be considered against its aesthetic possibilities.

Crystal

SolarLab's crystal finish provides a beautifully precise visual reflection that elevates the facade's aesthetic quality. Important to note, however, is that elements of the PV technology may be visible, a glare might occur, and the facade will require more frequent cleaning. Available with or without anti-reflection coating, the Crystal finish allows for seamless solar integration as spandrel panels in Curtain Wall facades.

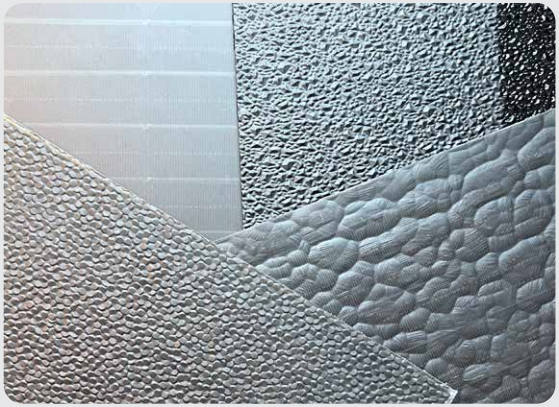
Satin

SolarLab's satin finish is our most popular, with a range of qualities including its self-cleaning ability and low glare. The acid-etched surface can harvest 5% more electricity from the sun than traditional PV glass by minimising specular reflection, and instead diffusing more light into the PV cells in the panel.

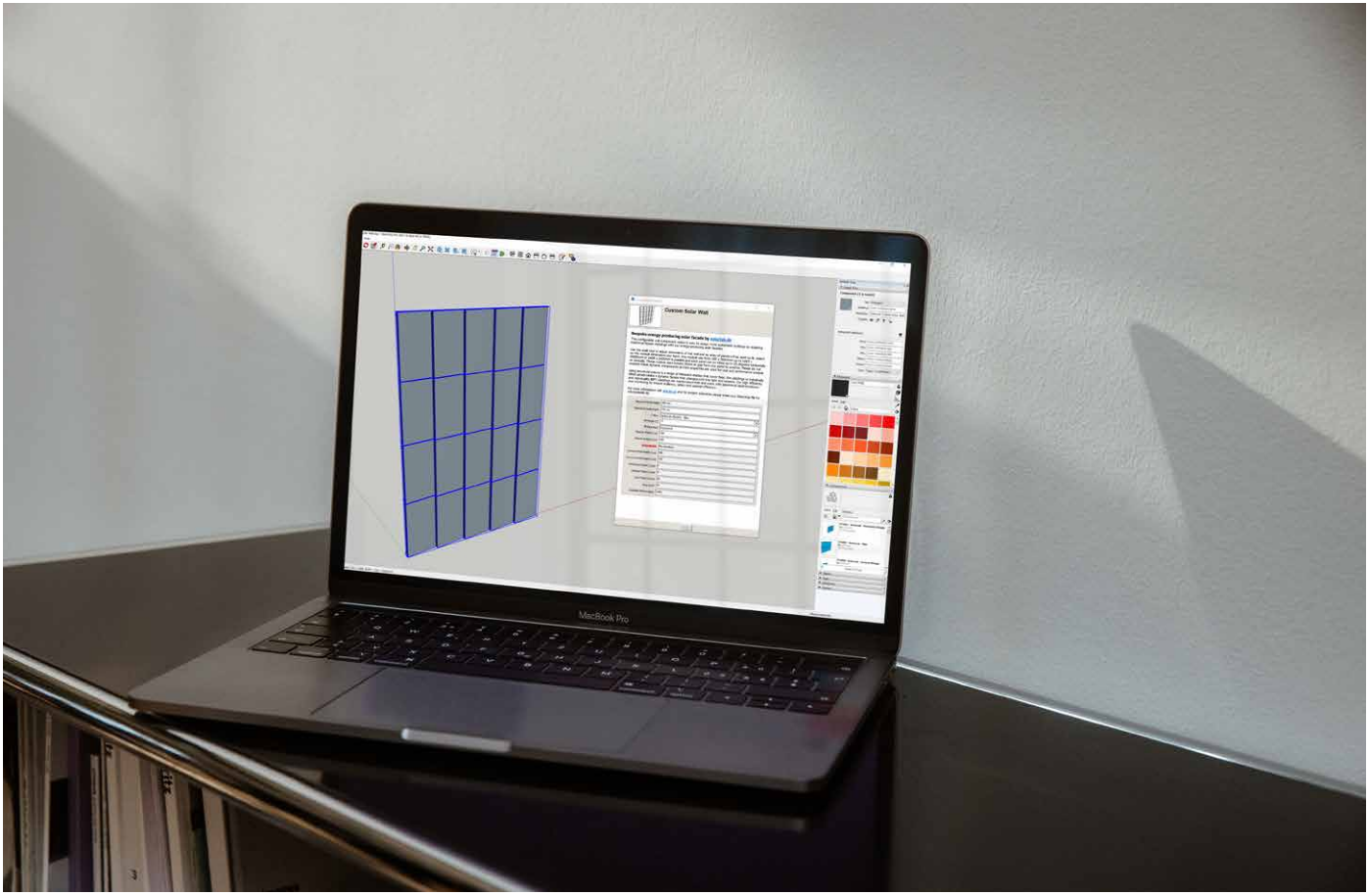


Textured

SolarLab's range of textured, deep-structured glass creates a surface with more depth and opportunities for aesthetic expression. Choose from split stone and charred wood textures or dots and lines in various widths. The interplay of light adds visual richness and a tactile aspect to the experience. Typically combined with a satinated finish, the PV technology can be completely hidden while enhancing the electrical production.



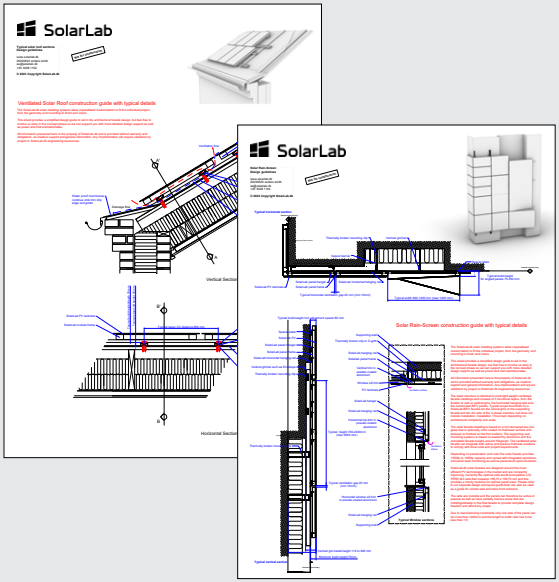
Tools & Guides



Design Guides

On our website www.SolarLab.global we make a range of design guides with typical details available, ranging from how to optimally layout PV panels and single line electrical diagrams, to our ventilated Rain Screens and roofs.

Please reach out if you're interested in our virtual or on-site AIA accredited continued education sessions, or would like to discuss a potential collaboration.



BIM & CAD tools

To support your design from early concept to final documention we have developed a range of dynamic BIM tools for the most common architectural CAD platforms. From SketchUp and Rhino to ArchiCad and Revit, you can access and download our tools at www.SolarLab.global.

Sustainable & Achievable

Our vision is not based on a distant utopia, it is as real and as tangible as a new office building or refurbished school. We envision sustainable, energy producing buildings, wrapped in remarkably beautiful, resisilent, and low-maintenance facades.

We aim to provide the world with electrified and de-carbonized cities without compromising building quality or urban experiences. We want to creat places worth living in and around.

We can do this because:

- **We have successfully completed a wide range of custom integrated solar facade projects**
- **We provide complete and tailored solar cladding solutions**
- **We manufacture in Denmark using sustainable resources**
- **We have decades of architectural and industrial design experience**
- **We have decades of low-carbon solar engineering experience**
- **We are passionate about the fact that not only is truly sustainable architecture achievable, but it is also the better choice for aesthetics and efficiency**

Transformative innovation

Custom solar cladding is a transformative building material that changes how we build. Our facades invisibly integrate energy production while providing longevity, a low maintenance requirement, and a beautiful aesthetic appearance.

Using proven materials that are abundantly available and eminently recyclable, our solar facades are prepared for the circular economy.

We utilise premium materials and processes that have proven the test of time, and manufacture our custom solutions in Denmark with a broad network of EU specialists, in order to provide innovative and world leading custom solar facades.

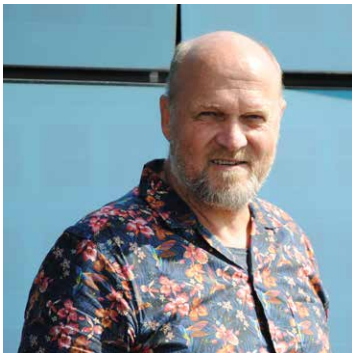
The People Behind the Facades

Anders Smith
Marketing & Design Support

Anders Smith brings international experience, as well as both architectural and industrial design expertise, to every project in order to realise its specific needs.

Anders lectures and provides AIA accredited CEU sessions, in addition to working directly with projects, architects, developers and other stakeholders, to help fulfil their architectural vision. Anders also develops tools, guides, and processes to help integrate SolarLab's solutions architecturally.

Anders is a strong believer in building a more sustainable, equitable, and liveable world, and that the transformational power of solutions such as SolarLab´s are needed to make it a low-risk as well as beautiful path.



Peter Melchior
Engineering & Compliance

Peter Melchior's more than 25 years of global engineering and project experience brings innovation and certainty to our solutions.

Peter is responsible for the engineering of the solar facades, along with the technology innovations, certifications and customisations necessary to meet our clients' specific needs. His deep understanding of the feasibility and applicability of different technologies ensures that SolarLab always deliver high-quality architectural solutions.

Peter's expertise and passion for renewable energy, coupled with his practical experience, is central to SolarLab's mission of making all new buildings more sustainable.

Kristin Rødder
Realisation & Operations

Kristin Rødder is the key driver in the company's Operations and Customer Relations.

As the production manager at SolarLab's assembly plant in Aarhus, Kristin brings years of expertise as well as a meticulous attention to detail to her role. Her experience in operational and human resource management ensures smooth operations, high customer satisfaction, and a great working environment.

With thorough experience and deep knowledge, Kristin plays a crucial role in guiding clients with insights and recommendations in preparing comprehensive documentation and competitive tendering material.

Quality & Sustainability

With factories in Denmark and utilising EU-based components, we focus on delivering durable, beautiful, and high quality custom solutions with a low carbon footprint for the circular economy.

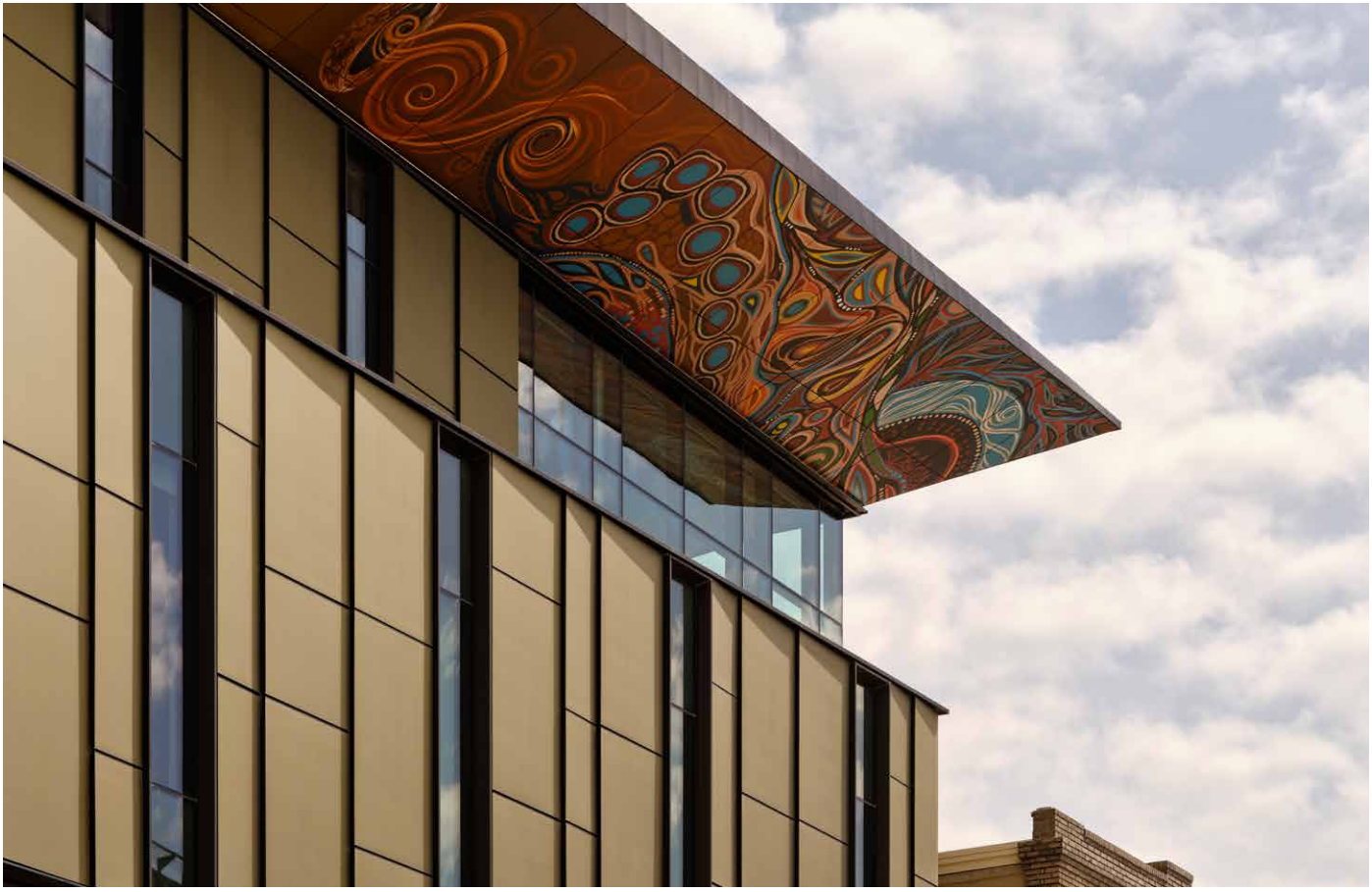
In-house design, engineering, and production allows for rapid innovation and thorough quality control to ensure that we, without compromising architectural integrity, provide solutions with a multi-generational operational life.

By employing skilled labor with years of experience, providing on-site training to ensure quality results and equitable working conditions, and by working closely with our select group of suppliers in the EU, we make it possible integrate a high degree of recycled materials and sustainable energy while facilitating almost complete recycling in existing systems.

Design Freedom & Architectual Quality

From the very beginning, we have been dedicated to providing architectural solutions that are tailored and complete, as well as prepared for a circular future. We believe this is the only way to achieve true environmental, financial, and social sustainability.

Utilising high quality materials and processes, our solar facades are first and foremost a high performance cladding that can out-live most traditional materials, while providing energy resilience and reliability.



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