



Polysolar

Transparent BIPV Glazing

Photovoltaic Architectural Glazing for Building Integrated Solar Solutions

Polysolar is a world leader in the development, design and delivery of Building Integrated Photovoltaic (BIPV) solutions. Producing unique innovative transparent photovoltaic glass technology for use within the built environment.

Building Integrated Photovoltaics (BIPV)

As the name would suggest, BIPV is the concept of integrating photovoltaics into the building envelope whereby the photovoltaic modules replace conventional construction materials, taking over the function they would otherwise perform. Where space is limited, this is often the best solution to meeting renewable requirements.

Transparent PV technology

Along with expertise in BIPV solutions, Polysolar is a developer, manufacturer and distributor of next generation thin-film photovoltaic glass with the focus on transparent technologies. Products are designed to meet project-specific architectural requirements and are fully MCS certified.



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Polysolar Thin-film Technology

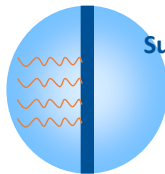
Thin film technology consists of photovoltaic active material being vacuum deposited between two sheets of glazing. Polysolar's thin-film panels consist of a float glass laminate, unframed, with side or back mounted junction box and MC4 connectors. These innovative panels offer the latest in transparent PV technology and are available in transparencies up to 50%. Polysolar also offers bespoke services to aid in architectural design flexibility. Bespoke options include size, transparency, colour and surface finish. Single and double glazed units are also available.



Performance at poor angles



Efficiency in low light



Superior heat tolerance



Comparable costs



Dual sided operation



Strong panels

High efficiency at non-optimal angles

Greater potential for installation on all building surfaces, such as the vertical façade, flat roofs etc.

More consistent energy yield

Efficiency at low light levels means energy is generated more consistently throughout the day and year ensuring it is more in keeping with demand.

Higher efficiency over a greater temperature range

Higher efficiency over a greater temperature range means maximum potential energy production and also negating need for ventilation.

Initial installation costs similar to conventional building materials

Marginal extra-over costs and additional multi-functionality makes thin-film photovoltaic glass economically superior.

Dual sided operation

Panels will generate electricity from light hitting both sides of the panel, maximising the yield potential.

Tough and rigid panels

Laminated glass/glass modules increase the panel's functionality and potential for installation applications. Toughened, tempered glass is available to customer specification.



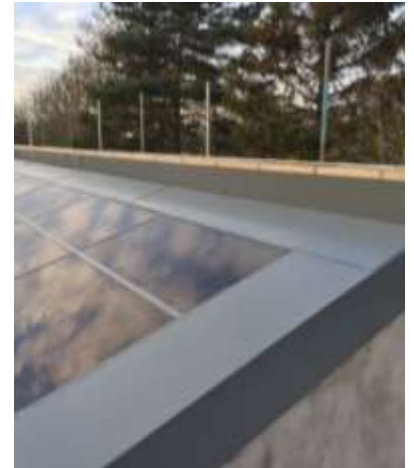
Polysolar BIPV

With the range of PV technologies available, there are vast opportunities for incorporating BIPV into all kinds of building structures including: Facades, skylights, atriums, carports, canopies, greenhouses and many more. The benefits afforded to BIPV are extensive making it more than just a source of renewable energy



Multifunctional

BIPV glazing not only acts as an integral part to the building envelope, forming the weatherproofing and structural design, it also delivers excellent thermal control and solar shading, all whilst generating a renewable source of electricity.



Thermal control

With double glazed units achieving a U value of < 1 , BIPV can significantly enhance the thermal properties of a building without the need for extra insulation.

Solar shading

BIPV reduced the solar gain into a building, negating the need for external structures such as brise soleil.

Building regulations

BIPV is an excellent way of improving a building BREEAM scoring. It can also reduce carbon tax and aids in futureproofing buildings.

Marginal additional cost in construction

By substituting conventional building envelope construction materials for solar PV modules, the additional installed cost of the PV energy generation element is only marginal within the total build and in some cases cheaper on a square meter basis. Add on the multi-functional benefits afforded by PV glass and its opportunity to reduce energy consumption, and the additional costs can become non-existent.



Polysolar BIPV solutions



Façades

Polysolar's photovoltaic glass panels are ideal for incorporating into building façades due to their frameless design and aesthetic finish. They are also more efficient at non-optimal angles than crystalline silicon panels and so are ideal for a vertical mounting system. Panels can either be incorporated into a curtain walling framework or in a bonded rainscreen system.



Skylights

With colourless, transparent PV options available, skylights and glasshouses are an ideal way of incorporating PV into a building. Transparencies are available of up to 50% making this solution both aesthetic and functional. Polysolar works in collaboration with leading glazing companies to offer full solutions.



Greenhouses

Greenhouses provide an ideal structure on which to integrate PV panels due to their strong existing framework and their optimum and variable positioning with regard to the sun. The technology is transferable from a domestic to an industrial scale without adverse effect on plant growth or temperatures within.



Canopies

Incorporating PV into canopies and walkways is a great way of utilising what is often a large space more productively. One advantage of using BIPV in a canopy structure is that the PV has dual sided operation, increasing the overall energy yield. Petrol stations, carports and railway stations are a few examples of idea candidates for this solution.

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