VIASOLIS

Manufacturer of PV glass & Supplier of Energy solutions

ARCHITECTURAL ENERGY SOLUTIONS

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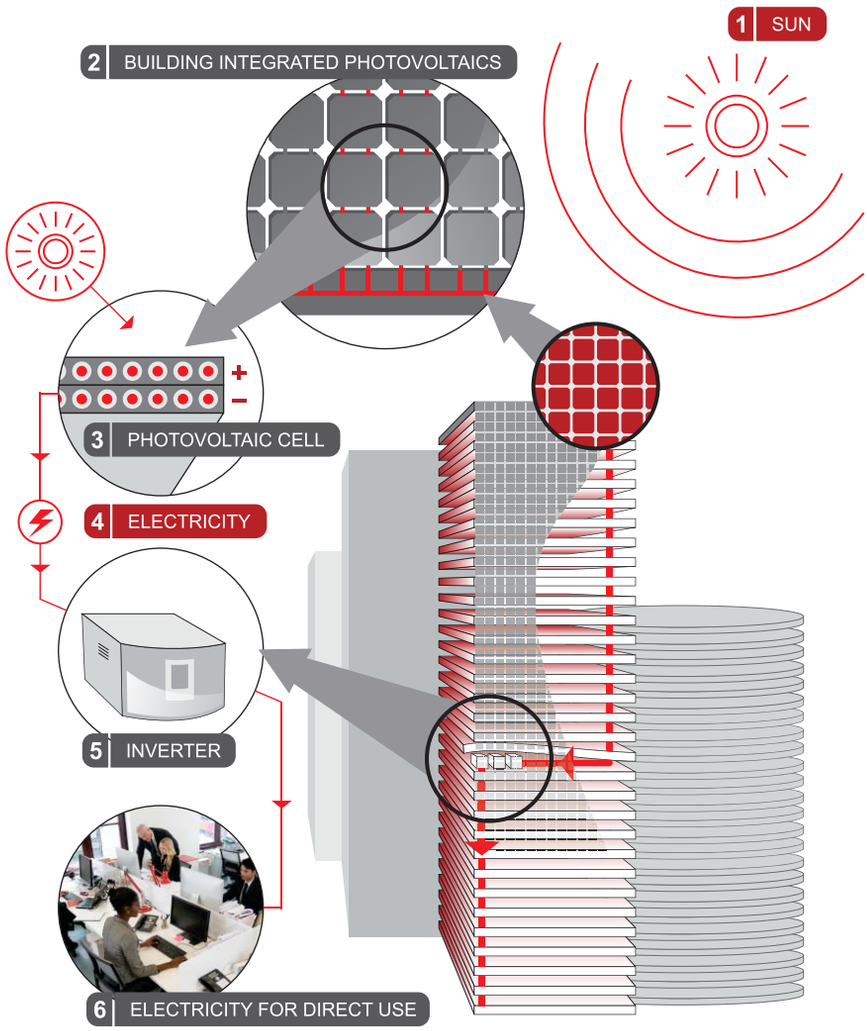
Why go solar?

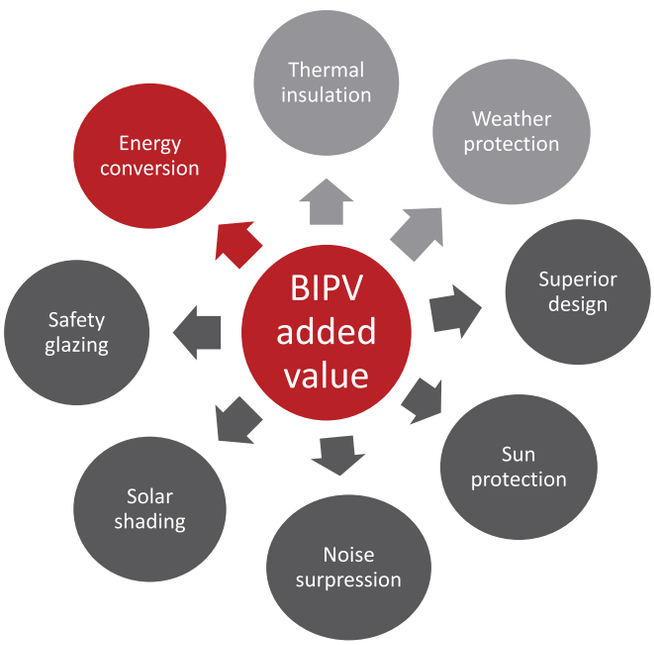
Are you aware, that 20 – 30 % of your electricity bill consists of energy delivery costs due to the highly concentrated conventional generation?

Having an obvious trend to grow, this part of costs builds up the end price for electricity in average 5% per annum worldwide.

And no single ViaSolis is confident, that the most efficient way to address this problem is to produce electricity locally in small capacity plants.

There is no doubts that solar PV distributed generation is one of the most perspective ways to deal with electricity price increase as well as deliver crucial contribution to the reduction of carbon emission.





BIPV compared to standard building glazed areas:

Similar features | Improved behavior | Exceptional

Building Integrated Photovoltaics (BIPV)

BIVP is the best solution to implement distributed in-house electricity generation. Being a synthesis of PV and conventional construction materials, BIPV can be easily integrated into the façade, roof and other parts of a building.

BIPV provides investors, architects and engineers with completely new opportu-nities to deal with energy supply and environmental issues.

BIPV solutions are suitable for all kind of buildings. It able to deliver significant part of energy consumption and in some cases can be a single solution to achieve nZEB status.

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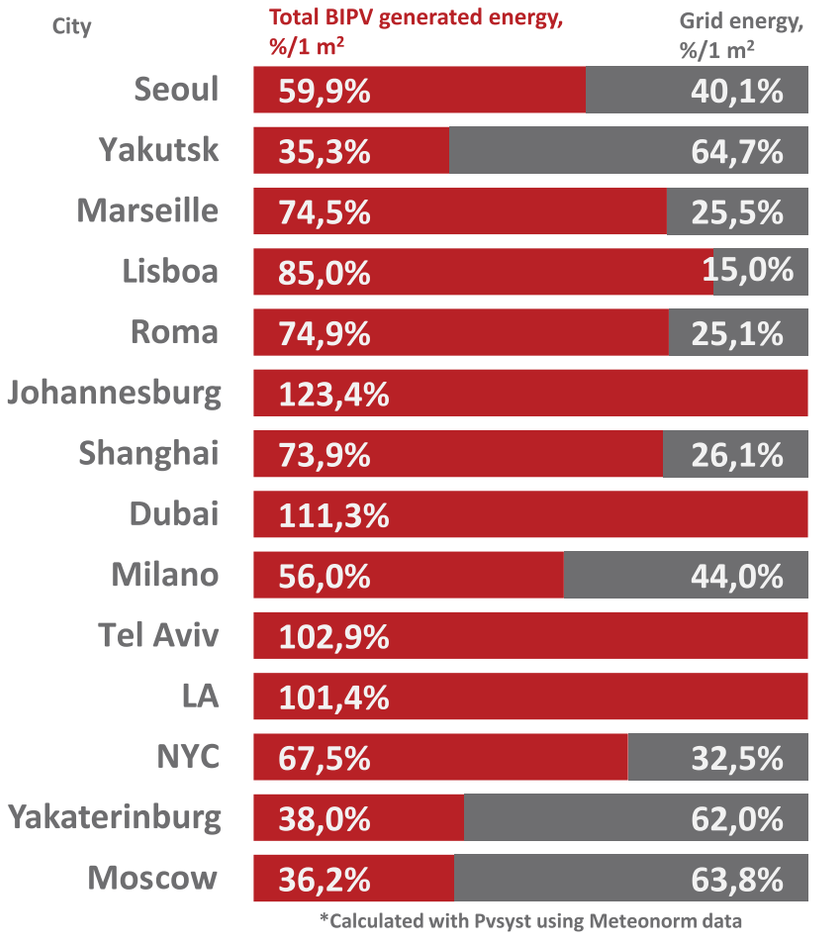
What can in reality BIPV can generate?

Public, which is not familiar with recent developments in PV industry, stereotypically that BIPV can generate electricity “just for fun” rather than for reasonable coverage of consumption.

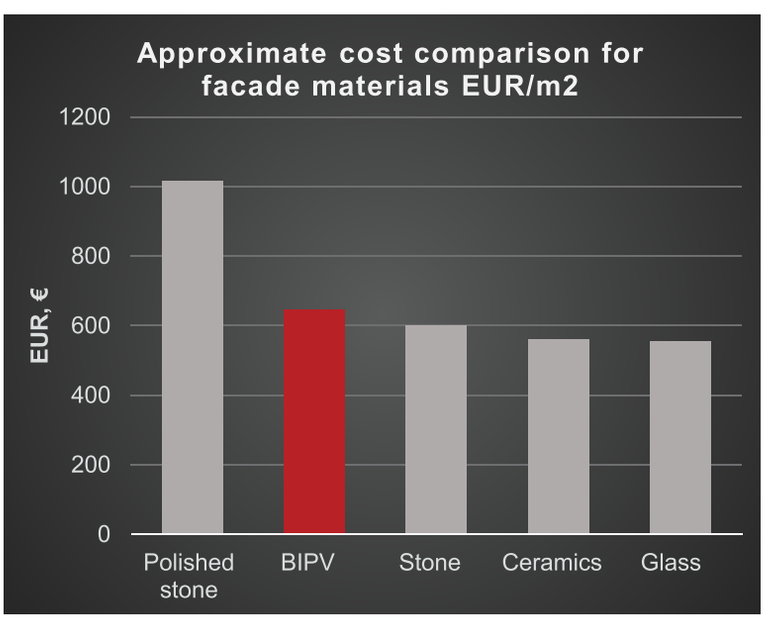
However, worldwide experience demonstrates absolutely opposite picture.

Meeting the demand for 80 kWh of 3-storey building using BIPV generated energy and grid energy in different places of the world / 1 m²



*Calculated with Pvsyst using Meteonorm data

You consider BIPV as too expensive?



Are you weighing conventional building envelope and energy supply solutions against BIPV, what is going to be less expensive to install?

Consider the savings from the building materials and labor that would normally be used to construct the part of the building that the BIPV modules replace and you will see that in reality, BIPV cost are practically the same as standard building material cost.

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Building Integrated PV – becoming inevitable part of modern

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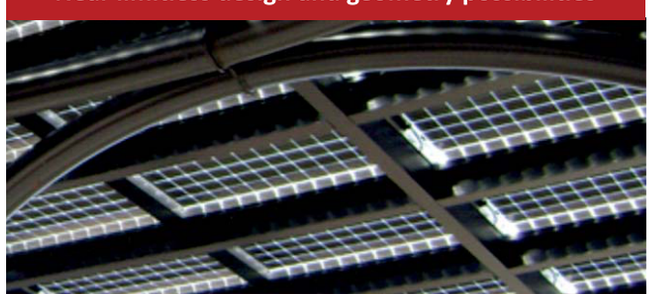
Superior aesthetics

Near limitless design and geometry possibilities



Applicability to limited space for installation

Saving environment - reduction of CO_2 emissions

The integration of PV systems into buildings not only provide inhabitants with low cost energy but also reduces the global greenhouse gas emissions.

It has been calculated that the integrated solar installations example of 10 000 square meters building will eliminate several hundred tons of carbon emissions each year.

10 000 m^2 meters building	
Saved CO_2 emissions because of solar installations	up to 400000 tons
1000 cars / 100 000 km CO_2 emissions	up to 21000 tons

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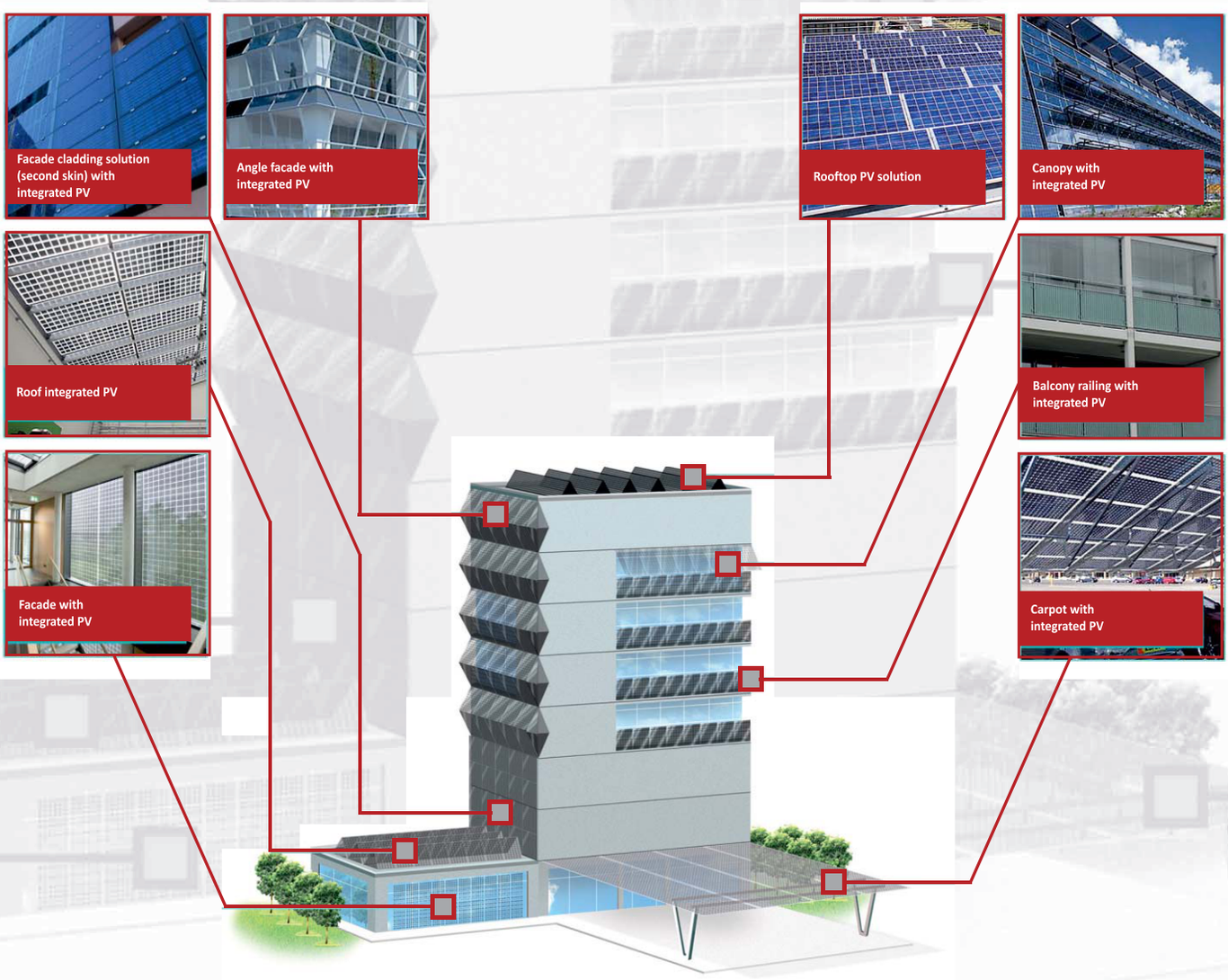
Wide applicability of BIPV

What makes BIPV solutions an attractive choice is its wide field of application. In addition to façade solutions, glass/glass modules can be used to replace balcony balustrades, facade cladding, awnings and sunshades, roof integrated systems.



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Advanced technologies

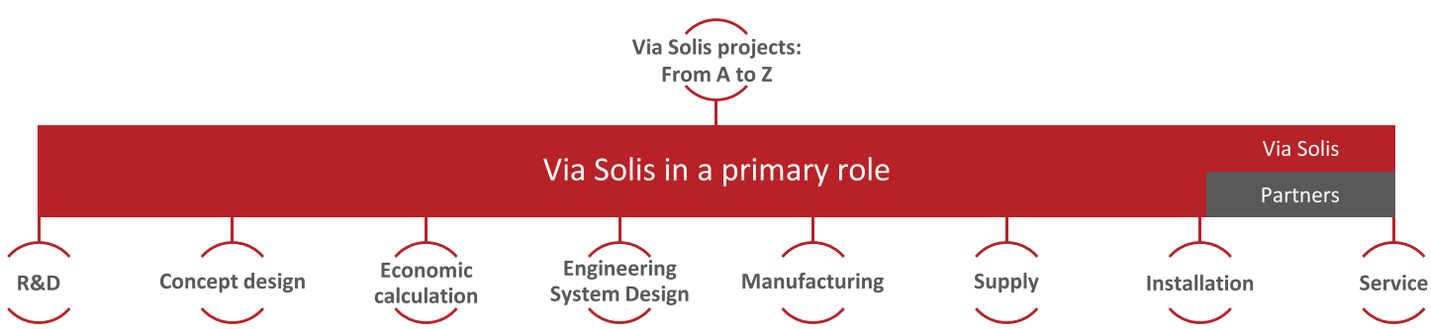
Via Solis operates one of the most advanced production facilities in EU. We merge and utilize best achievements from PV, glass processing & lamination as well as insulated glass manufacturing industries.

A solution for your entire project

Via Solis, having in house R&D capabilities and working together with the partners from construction industry, is able to provide the whole project solution, starting with concept design up to final implementation and after sales service.

PV safety glass

Via Solis is able to supply entirely customised PV safety glass components, representing a wide range of shape, size, glass features and colours, as well as transparency. Due to exceptional manufacturing flexibility, Via Solis PV safety glass is a perfect material for Building Integrated PV solutions, capable of meeting ambitious architectural and energetic self-sufficiency ideas.



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Advantages of
Via Solis Glass/Glass PV module: Higher YIELD

Conventional PV module	Glass/Glass PV module	Advantages of Glass/Glass PV module
3,2 mm front glass	Ultra thin 2 mm front glass	**Up to 2 %** higher YIELD effected due increased light transmission
EVA bonding	PVB bonding	**Up to 4 % higher YIELD** ensured of wider light spectrum utilisation (starts at 280 nm versus 320 nm (EVA)
Frame	Frame-less	**Increased YIELD** of the module and PV power station due eliminating negative impact of dirt, sand and snow that commonly stopped by the module frame
Heat transfer coefficient 0,36 W/(m^2•K)	Heat transfer coefficient 0,98 W/(m^2•K)	**3 time higher** heat transfer coefficient (inverse of thermal insulation), 3 time better heat dissipation resulting in **up to 2 %** higher YIELD

Advantages of
Via Solis Glass/Glass PV module: Longer PERFOMANCE

Expected life time 15-20 years	Expected life time 35-40 years	**Increased perfomance** in double
Different shrinkage of the encapsu-lation materials	Equal thermal shrinkage of the encapsulation	**No cell breakage** ensured by tantamount material design. Withstands higher stress coursed by fluctuations of temperature (day / night), heavy loads and strong winds
EVA bonding	PVB bonding	**Up to 50%** lifetime increase influenced by PVB absorption of UV- B and UV-A which significantly important to ensures long performance of semiconductor.
Open edge	Thermo-sealing edge isolation	**Up to 50%** increased lifetime due to robust protection against UV, moisture, ammonia and salt corrosion

Via Solis Glass/Glass module is the first PV module tested and approved by the Electrosuisse – main Swiss certification body.

Electrosuisse
Swiss Certification Body

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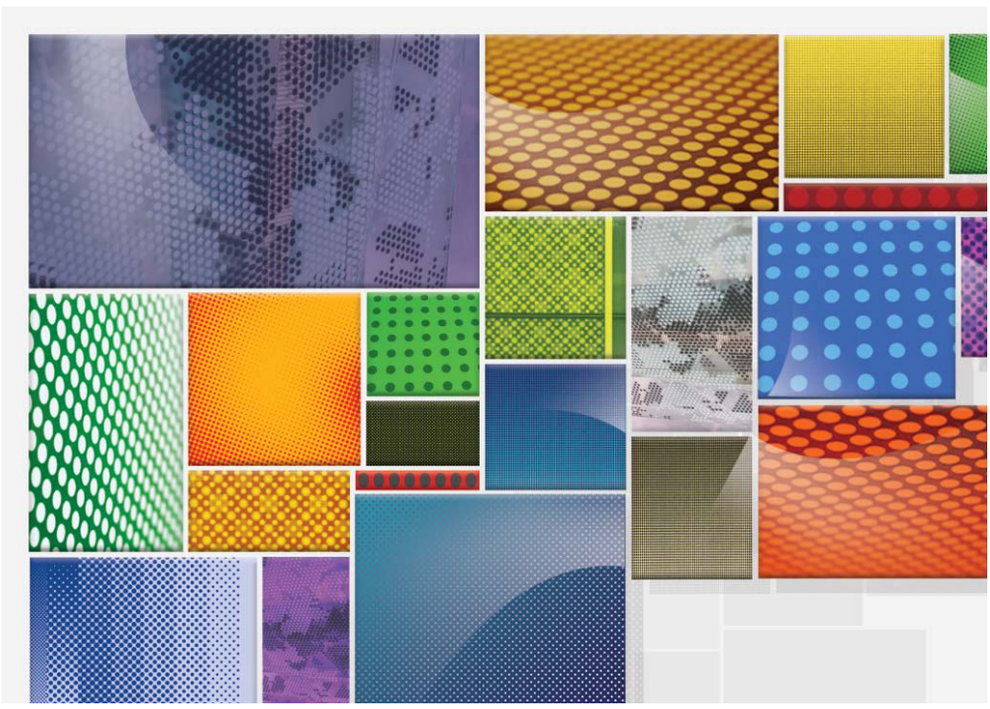
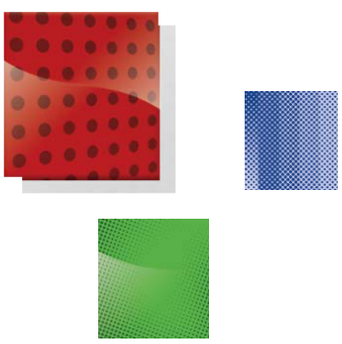
Design possibilities

Customized choice – wide range of dimensions, forms, colours and efficiency!

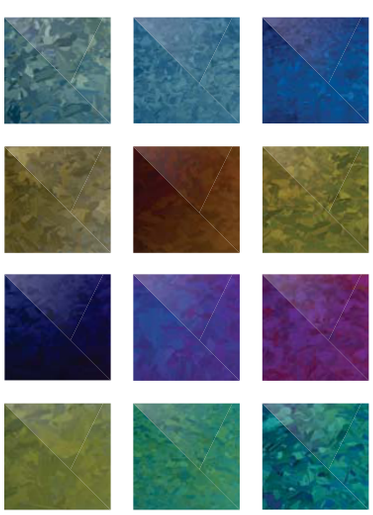
Foils & silk-screen printing



Via Solis can fulfill most requirements of the architect: supply products with a coloured silkscreen printing on the front and rear of the module, as a solid, uniform back tone or in a special design.

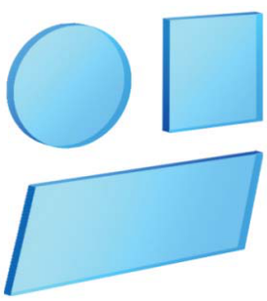


Colours



Via Solis PV modules will suit any design including a choice of colours of cells.

Dimension & shapes



Modules can be custom-made up to 1.7 x 3.5 metres in size, providing optimum flexibility. In addition, all shapes are possible, from square to triangular and circular.

Sizes:
Manufactured fully automatically – 1.7 x 3.5 m.

Manufactured manually – no limits.

Safety glazing

All Via Solis BIPV products meet Safety glazing requirements – tempered glass in combination with PVB lamination foil, specially developed for the solar industry, ensure additional safety features.

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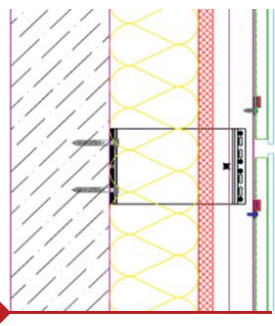
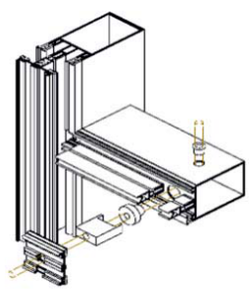
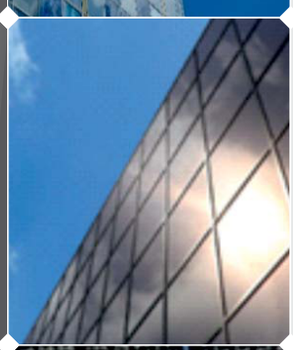
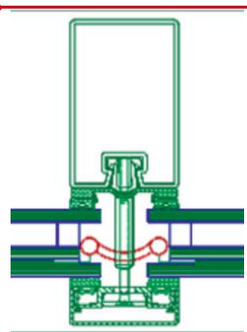
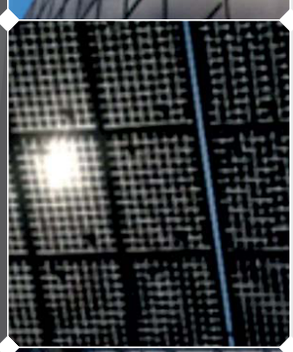
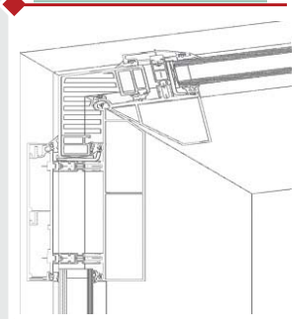
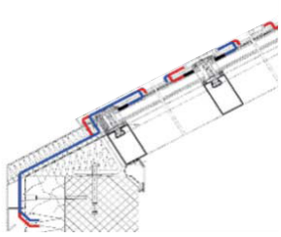
Via Solis installation technical solutions

Codification	Image	Details	Sketch
Second skin SS20		On facade for glass glass photovoltaic modules solution. System creates secondary facade without any visible metal mounting parts. Modules with any shape and dimensions up to 3500x1700 mm	
Aluminium facade system AFS50		Aluminium curtain wall and window system. Standard aluminium facade solution adapted to photovoltaic insulated glass units integration and cabling works.	
Steel facade system SFS50		Steel curtain wall and window system. Steel structure allows system to be more flexible by reducing system limitations and components sizes comparing to aluminium system.	
Aluminium roof system ARS50		Aluminium roof glazing. Possible for any slopes various sizes. This system is a regular aluminium roof system adapted for photovoltaic insulated glass units installation and cables dragging.	
Steel roof system SRS50		Steel roof glazing system. Available in any slopes and various dimensions. Steel structure allows system to be more flexible by reducing system limitations and components sizes comparing to aluminium system.	

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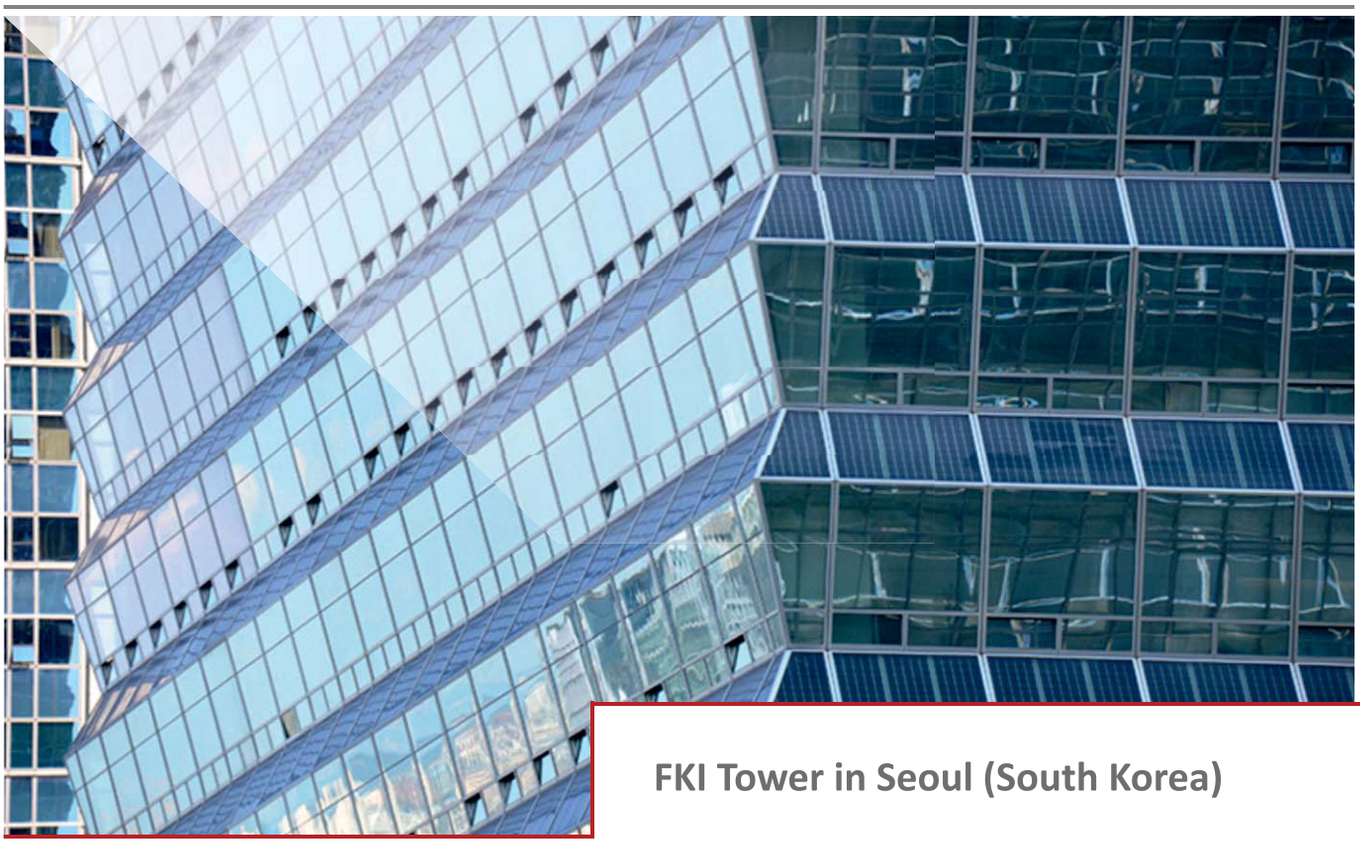
Worldwide practice of BIPV



FKI Tower in Seoul (South Korea)

US Mission to the United Nations
(Geneva, Switzerland)

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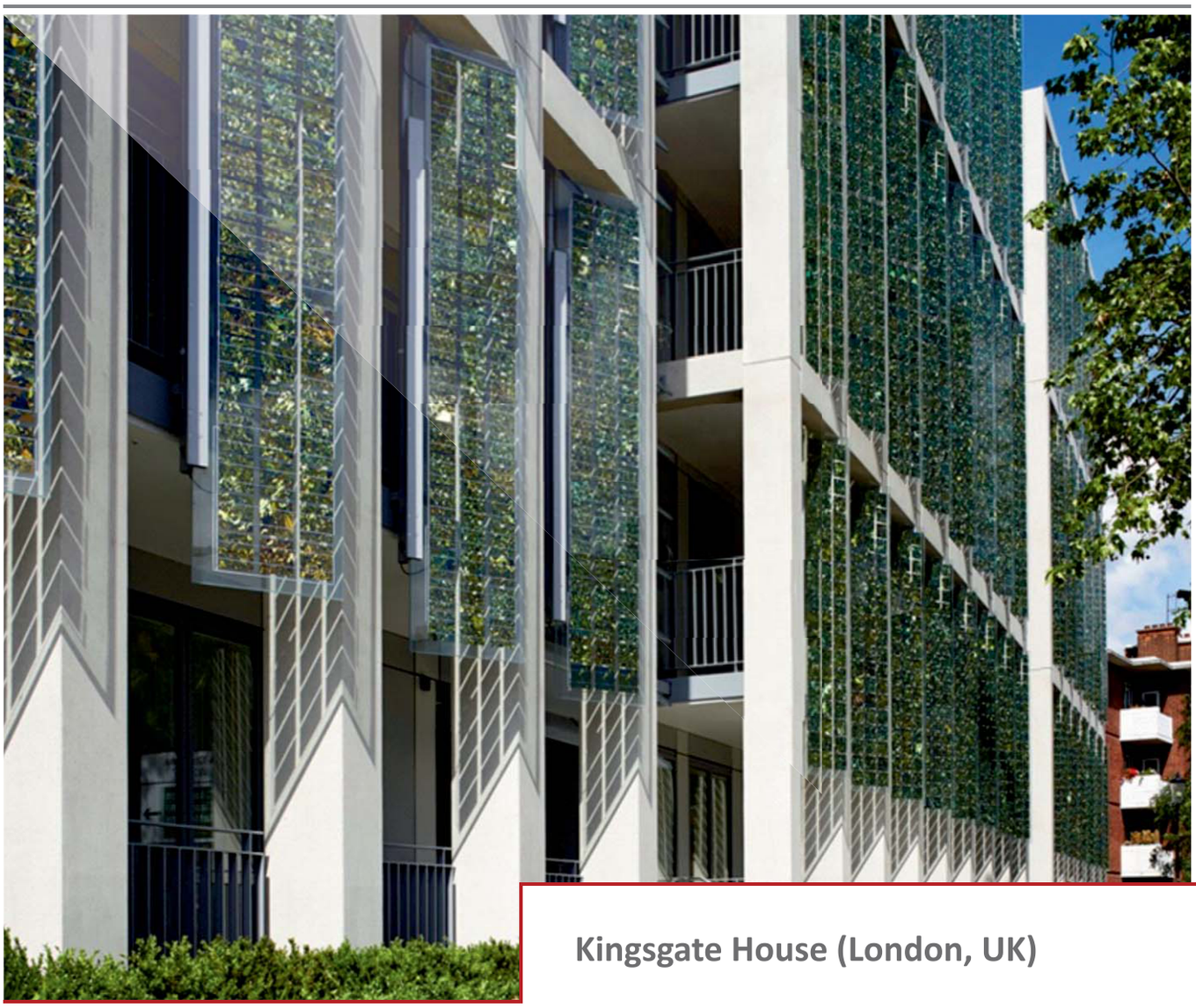
Worldwide practice of BIPV

TD Bank, Mississauga (Toronto, Canada)



Kingsgate House (London, UK)

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Headquarters

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