

PHOTOVOLTAIC POST & BEAM FAÇADE

/ Structural

SYSTEM DESCRIPTION

Structural post and beam façades are the next step in the evolution of standard post and beam solutions. Not unlike its traditional predecessors, they have found use as the outer cladding of commercial office buildings, schools, or official government facilities, while raising the bar in aesthetic finish standards. These curtain walls have the IGU fasteners attached to the post and beam framework, concealed when seen from the outside to form a single glass across the façade, devoid of any protruding fixtures, while the IGU joints are sealed with UV-resistant silicone compounds.

The marvellous visual effects possible with structural façade systems can be made bolder still with an infill of PV modules, adding unique aesthetic and functional values to the architectural design.

The façade system proposed here becomes a solar power plant, the electricity from which can be consumed by on-site auxiliary units or sold back to the power company. PV modules are becoming a standard construction material, and buildings made with them are a true step from the 21st century into the 22nd. PV modules installed as façade infills generate power, provide low heat transmissibility (not unlike high quality IGUs), and filter out direct solar radiation to reduce the cooling demand of the building on hot summer days.

We have an individual approach to every building project, which is why our deliverables help achieve extreme energy efficiency with good levels of illumination of the rooms without losing any performance, typical of traditional façade glazing systems.

Commercially available structural post and beam façade solutions are perfectly compatible with the glass-to-glass PV modules, whereas the cross-sections of posts can safely and unobtrusively conceal all the electrical wiring used to transfer the generated energy to the user's loads.

The ML System photovoltaic modules are infill panels compatible with the majority of commercially available structural aluminium glazing systems, e.g. Aluron, Aluprof, Yawal, Ponzio, Reynaers, Sapa, Wicona, Schuco, Aliplast, Rehau, Alusystem, and others.

The PV modules in the structural post and beam façades act as:

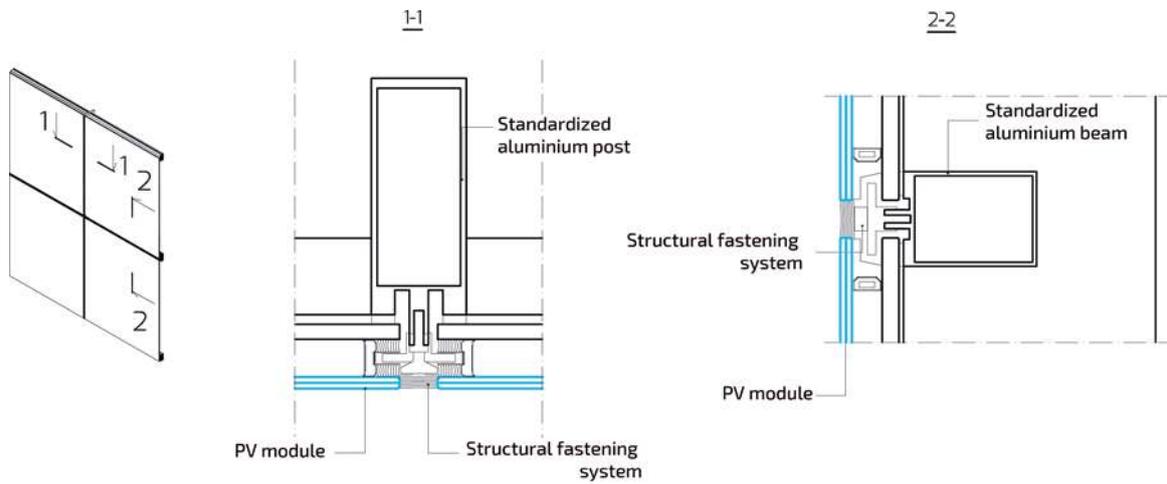
- infill panels for opaque and transparent sections
- thermal insulation partitions
- soundproofing partitions

The PV module panel sizes are adapted to the building architectural design, designer's guidelines and project investor's demands. The PV modules can be manufactured in irregular shapes or with openings.

System technical specifications

Unit power	max. 200 Wp/m ²
PV cell efficiency	max. 22.5%
Max. operating voltage	1000 V DC
Module types	Monocrystalline, incl. back-contact Polycrystalline Thin layer
Optional	Bifacial w/heating / glass heater Printed PV cells

Substructure material	Ref. system manufacturer
Maximum module size	Ref. system manufacturer
Structure colour	See RAL palette
PV module IGU thickness	Ref. system manufacturer
PV module IGU type	Single IGU, transparent Single IGU, enamel-coated 1-chamber IGU 2-chamber IGU
PV module IGU heat transfer coefficient	0.8-1.1 W/m ² K
Module transparency	as required



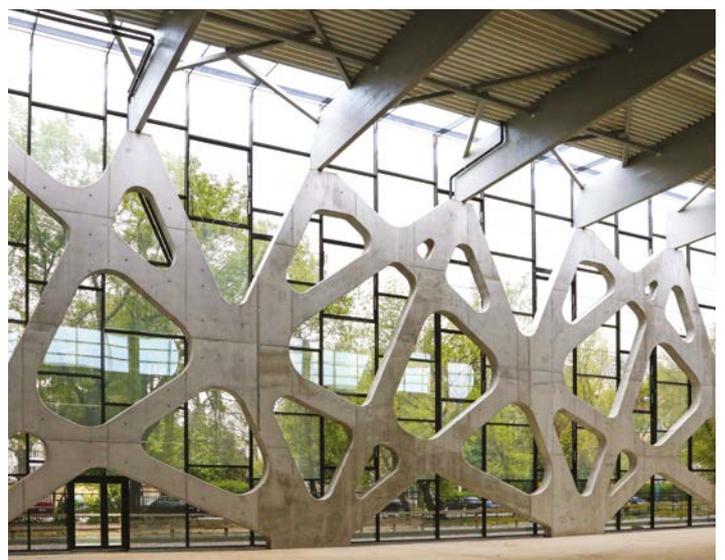
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