

SOLAR CONSTRUCTION WITH SULFURCELL: GROUNDBREAKING INDUSTRIAL ARCHITECTURE

The Sulfurcell headquarters in Berlin



SULFURCELL BREAKS NEW GROUND IN INDUSTRIAL ARCHITECTURE

With its newly constructed headquarters, Sulfurcell proves that solar construction can be both aesthetically pleasing and economic. With its building, which consists of an administrative building and production hall, Sulfurcell and its construction partners are breaking new ground in industrial architecture.



The administrative building: Energy generating glass facade

The main design element utilized on the administrative building is provided by the solar facade cassettes, which were deployed here for the very first time. Their surfaces consist of hardened, frameless glass, enabling the modules to create a smooth and elegant glass facade. Black metal spandrels and brown timber banding provide additional highlights.

When developing this solution, ease of handling was a decisive factor for Sulfurcell. The modules are hung like conventional cassette cladding systems. Because they are installed on a substructure, this even makes it possible to clad uneven background surfaces, such as the facade of an old building.

The solar facade cassettes are rear-ventilated and equipped with special recessed drainage channels. These discharge rainwater in a controlled manner, thus ensuring that the thermal insulation layer remains dry (see Fig. 5). In technical terms, the rear ventilation has the added advantage that the module temperatures are lowered, thus increasing their energy yields.

The 900 cassette modules on the facade supply around one third of the administrative building's energy needs. The remaining energy requirement is provided by the solar power system on the roof of the production hall, ensuring that the administrative building is 100 percent energy independent.

- |1| Contrasting surfaces – clear visual separation between the building functions
- |2| Facade elements integrated in the corrugated sheet cladding used for the production hall
- |3| The solar modules can be easily installed like conventional cassette cladding systems
- |4| Solar power system on the flat roof of the production hall
- |5| Structure of the facade cladding



|1|



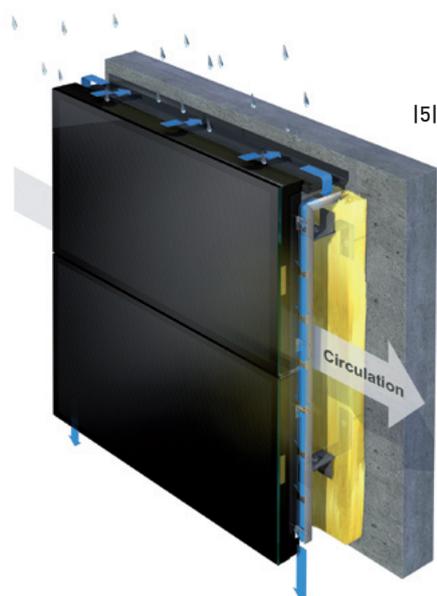
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|3|



|4|



|5|

The production hall: A cost-effective and lightweight structure

The design of the production hall reinterprets the conventional »industrial facade« for use with solar modules. Solar elements integrated in the horizontally laid corrugated sheet cladding on the exterior offer a double function, providing not just energy but also an attractive visual feature. The number of solar elements can be changed as required in accordance with the orientation.

The roof of the production hall offers considerable space for a solar power system that supplies additional energy to the office building. Constructed as a trapezoidal sheet roof combined with a sheet membrane covering, it meets all the structural requirements for installing a 500 kW solar power system.

About Sulfurcell Solartechnik GmbH

Sulfurcell was established as an offshoot of the Helmholtz Center Berlin for Materials and Energy and is now one of the three leading manufacturers of CIS/CIGSe-based thin-film solar power modules. With the completion of the company's new headquarters in Berlin, Sulfurcell is now commencing automated mass production and is increasing its annual production rate from three megawatts at the moment to 75 megawatts.

CONTACT

SULFURCELL Solartechnik GmbH
Groß-Berliner Damm 149
D-12489 Berlin, Germany
Tel.: +49 (0)30 46 77 77 - 0
Fax: +49 (0)30 46 77 77 - 400

info@sulfurcell.de
www.sulfurcell.de

