ingenhoven

Fraunhofer-Center for Silicium-Photovoltaic CSP Halle

Location
Halle, Germany

Built
Competition 2008, 1st prizeExecution: 2009 – 2013

The Fraunhofer Centre for Silicon Photovoltaics CSP is a joint facility of the Fraunhofer Institutes for Mechanics of Materials and for Solar Energy Systems, which complements their existing activities and increases their efficiency. It focuses on the crystallisation of silicon and the study of its microstructure, electrical and mechanical properties.
The new 4,000 square metre building is located on a brownfield site on the grounds of the former state sanatorium in Halle. The Weinberg Campus functions as a scientific location for university facilities, research institutes, technology and start-up centres and companies. The site is made available to the Fraunhofer-Gesellschaft by the state of Saxony-Anhalt and is located in the southern part of the technology park. Access is from the south via Otto-Eißfeldt-Straße.
The new building stands as a solitary structure in the landscape, parallel to the surrounding new buildings, and ties in with the historical orientation of the former state sanatorium. A conscious decision was made not to enclose the building, so that the surrounding landscape extends up to the building, while hedges create a generous spatial effect. The austere cuboid structure encloses a linear courtyard, which is connected to the west by a transparent atrium. It consists of two flush structures - an office and laboratory building and a technical centre - connected by a surrounding

vestibule. The atrium serves as an entrance and reception area. The first two upper floors of the laboratory building house offices, with measuring rooms below. The technical centre is divided into three segments and houses all the technical systems and equipment. Storage areas are located on the ground floor and in the basement, while deliveries are made via the courtyard to a specially designated area in the hall, where goods are handled using crane runways and mobile lifting platforms.

To ensure a short assembly time, the supporting structure of the technical centre consists of prefabricated steel columns and beams. The walls are made of sandwich panels, while perforated trapezoidal sheeting is installed as secondary cladding once construction is complete. This external cladding protects the wall panels from damage and overheating and acts as solar shading. The courtyard façade is planted with climbing plants, and the perimeter screen in the entrance area bears the CSP logo. The south-facing parapet strips of the office building are fitted with photovoltaic modules, while horizontal louvre blinds provide additional solar shading. The north façade has a solar shading system. The transparent atrium is naturally lit and ventilated. The roof structure allows for the addition of glazed photovoltaic louvres, which provide both energy generation and shade. Around 3,000 square metres of the roof is covered with greenery.

The new building has been awarded the German Sustainable Building Council's [DGNB] Gold certificate.

Awards, Nominations

Team

Architect
ingenhoven architects, Düsseldorf
Christoph Ingenhoven, Rudolf Jonas, Ben Dieckmann, Anke Koch, Patrick Esser, Darko Cvetuljski, Torsten Horn, Yi Li, Tessa Zaune