House Schneller Bader

Operazione co-finanziata dall’Unione Europea, Fondo Europeo di Sviluppo Regionale, dallo Stato Italiano, dalla Confederazione elvetica e dai Cantoni nell’ambito del Programma di Cooperazione Interreg V-A Italia-Svizzera. (Codice progetto 603882)

Introduction

With its rectangular layout and pitched roof, House Schneller Bader provides a perspective backdrop to a farmyard on one side and an open field on the other. The single-family home is impressive due to the perfect integration of the photovoltaic system on the southern-facing side of the roof.

Sources: Solarchitecture.CH

Design approach

The building's bearing structure is reinforced concrete; an insulating layer and an interior brick wall complete the vertical envelope. The ventilated roof consists of a wooden frame structure that rests directly on the load-bearing masonry. The pitched roof design includes photovoltaic modules and fibre cement panels. The building as a whole is reminiscent of traditional buildings in the area. Due to these unique characteristics, the project won the Norman Foster Solar Award in 2017.

Aesthetic integration

Thanks to the choice of materials and colours and the careful alignment, this new building fits perfectly into the surrounding landscape. The photovoltaic modules completely cover the southern side of the building's roof. The dark colouring similar to that of the fibre cement panels on the other side and the appropriate arrangement of the modules makes this building an excellent example for integrating BIPV systems into traditional architecture.

Energy integration

The BIPV modules generate 22800 kWh of electricity per year, completely covering the building's cumulative demand. Almost 44% of the electricity produced is sent to the network.

Technology integration

The monocrystalline silicon photovoltaic modules are integrated in the roof's ventilated package and cover the entire surface.

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PROJECT DATA

Project type	new construction
Building use	residential
Heritage constraint	conservation area
Building construction technique	postwar
Building address	Trinserstrasse, Tamins, Switzerland

BIPV systems

BIPV SYSTEM DATA

Architectural system	Opaque roof
Integration year	2016
Active material	Monocrystalline silicon
Module transparency	opaque
Module technology	glass-glass, recognizable PV, standard modules
System power [kWp]	17
System area [m²]	108
Module dimensions [mm]	1,300 x 875 x 6.5
Annual FV production [kWh]	22800

BIPV SYSTEM COSTS

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Stakeholders

Main building designer

Bearth & Deplazes Architekten AG

BIPV system installer

Helion Solar AG
Triststrasse 3, Chur, Switzerland
sales@helion.ch +41 91 850 32 30
https://www.helion.ch/

BIPV components producer

3S Swiss Solar Solutions AG
Schorenstrasse 39, Thun, Switzerland
info@3s-solar.swiss +41 332242500
https://www.3s-solar.swiss/it/?hsLang=it

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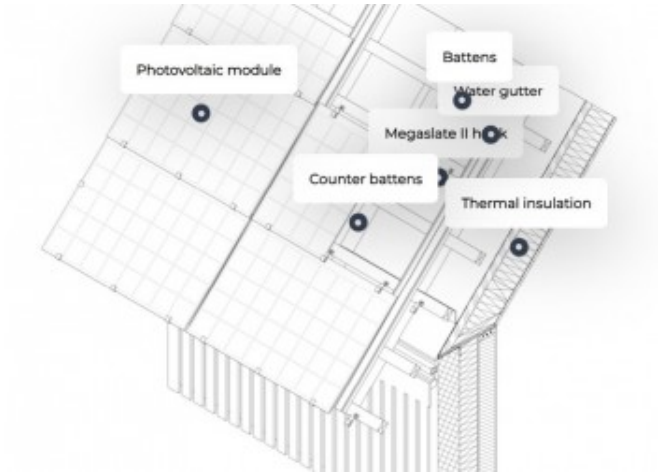

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Case study author:

Eurac Research