Rural building, Seegräben

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

The rural building is located in Seegräben, a small city in the north of Switzerland surrounded by cultivated fields and unspoiled nature. The BIPV system was integrated on a pre-existing roof facing the main road.

Sources: Elena Canosci

Design approach

The architects and customers wanted to rehabilitate an old country building without losing its notable features and link it to the latest sustainable building technologies on the market.

The building currently houses several functions and has been awarded a Minergie classification, a Swiss certificate for new and renovated low-energy buildings.

Aesthetic integration

The photovoltaic modules integrated in the canopy reproduce the terra cotta colour that is very common in the area for roofing. The use of custom-made elements allowed for integration in the structure.

Energy integration

The electricity produced is presumably used exclusively for the house attached to the building.

Technology integration

The BIPV system is made up of 54 individually sized modules (similar to the standard SUNCOL-TILE series modules from Sunage SA) that are glass-glass type (glass panel thickness 3.2 mm), frameless, and coloured using SUNCOL's unique technology. The SUNCOL colouring process results from a long period of research and experimentation to obtain the best balance between the appearance and the instrument. It consists of a unique mix of different ceramic colours applied to the surface of the front glass and embedded in the glass during the curing process in which temperatures of up to 650 °C are reached. Colour stability is guaranteed over time, and it is a wholly ECO-FRIENDLY process. 9 transparent, inactive panels are combined with the BIPV modules to form a light-filtering strip at the top of the canopy.

The BIPV modules are an integral part of the canopy roof along with the primary and secondary wood framework. A special interlocking and mounting system keeps them anchored to the structure and prevents the passage of water.

Decision making

The desire to produce clean energy did not need to clash with the building's appearance and its context,

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which is why coloured photovoltaic modules were used, perfectly integrating into the building and the surrounding landscape.

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PROJECT DATA

Project type	renovation
Building use	multifunctional
Building construction technique	pre-industrial
Building address	Seegräben, Switzerland

BIPV systems

BIPV SYSTEM DATA

Architectural system	Opaque roof
Integration year	2019
Active material	Monocrystalline silicon
Module transparency	opaque
Module technology	glass-glass, hidden PV, customized modules
System power [kWp]	7.5
System area [m²]	65
Module dimensions [mm]	720 x 1,145 x 40
Modules orientation	North-East
Modules tilt [°]	15

BIPV SYSTEM COSTS

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Stakeholders

BIPV system designer

Sunage SA

BIPV components producer

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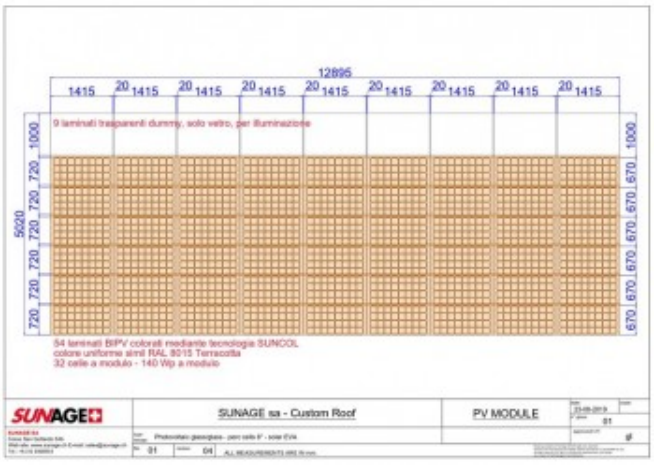

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Case study author:

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