University of Applied Sciences and Arts of Southern Switzerland
Department of Environment Constructions and Design
**Institute of Applied Sustainability to the Built Environment**

**SUPSI**

Swiss BiPV Competence Centre

Pitched roof

# Private house in Flums

## Flums, Canton St. Gallen (CH)

### Building Details

| CONTACTS | Name | Website (or e-mail) |
|---|---|---|
| Owner | Ursi and David Wildhaber Family | usriwildhaber@yahoo.de |
| Architect | - | - |
| Energy Consultant | - | - |
| PV Installer | - | - |

**BUILDING**

| Completion year | 1700 | Building | | 2010 | PV Plant |
|---|---|---|---|---|---|

| Category | New | Renovation | Enlargement | Other |
|---|---|---|---|---|
| Typology | Residential | Administration | Industrial | Sport |
| | Agricultural | Urban | Historical | Other |

| Building Energy Performance | kWh/m²y | - |
|---|---|---|

## Description

The realization of this PV roof, perfectly integrated in this private historic building 300 years old, became a basic reference example about building practices in Canton St. Gallen. The building permit, firstly negated for conservative reasons about historic buildings, was released two year later, and the building also received the Swiss solar Prize 2011, cat. A "personalities". The new roof is a replacement of an existing granary roof, consisting in a complex integration with 10-12 cm interspace for providing the ventilation and cooling of PV cells. The new roof, besides satisfying the entire electricity need of the family, also provides the building protection from atmospheric agents and from degrade, guaranteeing urban landscape conservation.

**Aknowledgments**      Swiss Solar Prize 2011– Cat. A "personalities"

## LOCATION OF PLANT

| Roof | Flat roof | Sloped | Curved | |
|---|---|---|---|---|
| Façade | Cladding | Balcony | Greenhouse | Curved |
| Glass | Façade | Roof | Solar shading | Canopy |
| Orientation | South | West | East | North |
| BiPV System | In-Roof Solar Tiles (PV modules) | | | |

## ARCHITECTURAL EVALUATION

| Color | Black |
|---|---|
| Transparency | opaque |
| Frame | - |

## COSTUMIZATION LANGUAGE AT COMPONENT SCALE

| PV CELL | MODULE LAYERING | MODULE FEATURES | DUMMIES |
|---|---|---|---|
| DESCRIPTION | | | |

## SPECIFICATION

| Photovoltaic | Monocrystalline | Multicrystalline | Thin Film |
|---|---|---|---|
| PV Module | Cells | - | |
| | Module | - | |
| Power | kWp | 9.5 | |
| Size | m² | | |
| Energy production | kWh/year | 10000 | |
| Cost | €/m² | - | |

SOURCE: Solaragentur-Swiss Solar Prize 2011