



# Raeber Multifamily House

Biel, Canton Berne (CH)

## Building Details

### CONTACTS

|                          | Name   | Website (or e-mail)  |
|--------------------------|--|--|
| <b>Owner</b>             | Richard A. Raeber                            | Pavillonweg 1, 2502 Biel/Bienne                                      |
| <b>Architect</b>         | Isaac Rachamin Architekt<br>Avir Architektur | <a href="http://www.avir.ch">www.avir.ch</a>                         |
| <b>Energy Consultant</b> | AquaPlanIng GmbH                             | <a href="http://www.aquaplaning-gmbh.ch">www.aquaplaning-gmbh.ch</a> |
| <b>PV Installer</b>      | -  | -  |

### BUILDING

|                        |               |                |             |       |
|------------------------|---------------|----------------|-------------|-------|
| <b>Completion year</b> | 2010 Building | 2010 PV Plant  |             |       |
| <b>Category</b>        | New           | Renovation     | Enlargement | Other |
| <b>Typology</b>        | Residential   | Administration | Industrial  | Sport |
|                        | Agricultural  | Urban          | Historical  | Other |

**Building Energy Performance** kWh/m<sup>2</sup>y -

### Description

The residential building, located on a hill overlooking the Biel lake in Canton Berne, is immediately evident for the contrasting blue-brown color of façades. The architectonic project is characterized by large solar blue surfaces on south and west façades, beside which other facades are cladded by larch wood. PV plant is distinguished by five independent module strings connected to an inverter. The façade works also as a hot water generator, thanks to five panels installed in the lower part of the south façade with 45° tilt. The water is pre-heated and then put into a second boiler. The temperature's difference is lower and also the necessary energy for final heating is lower. In 2011 the building wins the Swiss Solar Prize as "institution" for his laminated solar technology.

### Aknowledgments

Swiss Solar Prize 2011– Cat. A "Institution" to Meyer Burger



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## BiPV Details

### LOCATION OF PLANT

|                    |                        |         |                      |
|--------------------|------------------------|---------|----------------------|
| <b>Roof</b>        | Flat roof              | Sloped  | Curved               |
| <b>Façade</b>      | Cladding               | Balcony | Greenhouse Curved    |
| <b>Glass</b>       | Façade                 | Roof    | Solar shading Canopy |
| <b>Orientation</b> | South                  | West    | East North           |
| <b>BiPV System</b> | Façade opaque cladding |         |                      |

### ARCHITECTURAL EVALUATION

|                     |           |
|---------------------|-----------|
| <b>Color</b>        | Blue      |
| <b>Transparency</b> | opaque    |
| <b>Frame</b>        | frameless |

### COSTUMIZATION LANGUAGE AT COMPONENT SCALE

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

### SPECIFICATION

|                          |                        |   |           |
|--------------------------|------------------------|---|-----------|
| <b>Photovoltaic</b>      | Monocrystalline        | Multicrystalline                          | Thin Film |
| <b>PV Module</b>         | <b>Cells</b>           | -   |           |
|                          | <b>Module</b>          | Laminated 3S-pv Swiss Solar, Meyer Burger |           |
| <b>Power</b>             | <b>kWp</b>             | -   |           |
| <b>Size</b>              | <b>m<sup>2</sup></b>   | 87 (PV Modules); 13.5 (Thermal solar)     |           |
| <b>Energy production</b> | <b>kWh/year</b>        | 6500                                      |           |
| <b>Cost</b>              | <b>€/m<sup>2</sup></b> | -   |           |