



## Wine shed "Le Corbet" Caves du Château d'Auvernier - Milvignes, Switzerland

Author: Cristina Polo (SUPSI)

Roof-integrated / Renewables integrated into landscape

### Solar

#### *What is the solution?*

Thierry Grosjean wanted the new wine shed "Le Corbet" built on the Domaine des Caves du Château d'Auvernier (NE) to run on solar energy in all circumstances. Although this wine-growing area is protected, its tenacity has finally paid off. He obtained a permit to build an installation of integrating coloured solar modules. It produces 14,600 kWh/year, which is a lot of energy, more than the shed consumes. The surplus is used to supply other equipment and winemaking machinery without emitting CO<sub>2</sub>. It reduces the farm's need for fossil fuels, the consumption of which is around 114,000 kWh/year. Thierry Grosjean is also planning to use solar energy for his castle.

#### *Why does the solution work in terms of compatibility with conservation and technical aspects?*

It was developed for protected buildings and places by the research institute Centre Suisse d'Electronique et de Microtechnique (CSEM) in Neuchâtel in collaboration with the Swiss company Issol. The colour is printed on the inside of the front glass using a ceramic printing process. According to the Swiss Federal Office of Energy (SFOE), tinted solar modules lose 39% of their output compared to un-tinted, transparent glass-glass modules with monocrystalline solar cells. As long as no official confirmed values for solar power production are available, it is assumed that monocrystalline solar cells without glass colouring could generate about 24,000 kWh/year. The Glass colouring thus

leads to a performance loss of 39% or 14,600 kWh/year instead of 24,000 kWh/year.

*Description of the context:*

The newly built wine shelter of Château d'Auvernier/NE was completed in June 2018. Due to the strict building regulations, Thierry Grosjean decided to install a terracotta-coloured PV system.

*Pros and cons of the solution:*

The 24 kW PV system is integrated into the south roof in an exemplary manner over the entire surface. The CO<sub>2</sub>-free solar power supplies various wine-growing machines, some of which also supply the Château d'Auvernier. Thierry Grosjean is a convinced advocate of photovoltaics and a stubborn fighter for solar energy. Motivated by his success, he is now planning to expand his to supply historical castle with PV electricity. Thierry Grosjean receives the Swiss Solar Prize 2019 in the category of energy installations.

*Type of data available (level of information, simulation):*

Hangar Viticole, Solaragentur Swiss solar award project 2019, Swiss solar award 2019 for the "GOTTBURG SA" company

*Additional information about the solution:*

Hangar Viticole, Solaragentur Swiss solar award project 2019, Swiss solar award 2019 for the "GOTTBURG SA" company. Link (German and French): [https://www.solaragentur.ch/sites/default/files/g-19-10-02\\_solarpreispub19\\_fueradag\\_v2.p084\\_85.pdf](https://www.solaragentur.ch/sites/default/files/g-19-10-02_solarpreispub19_fueradag_v2.p084_85.pdf) In terms of architectural integration, we can speak of a success story. Instead of a traditional cladding, the terracotta-coloured, semi-matt PV module with traditional appearance is integrated into the roof and completely replaces the tile covering. The south side of the facade is clad with terracotta photovoltaic tiles while traditional tiles are used to cover the complete the rest of the roof. The tempered safety glass with high light transmission enables a higher production gain compared to common glass. Its mounting system guarantees the same density as a conventional tile roof. The dimensions of the modules can be tailor-made, which is a real advantage. The aluminum Solrif frame 17.5 mm thick terracotta anodized resists saline environment. All these specificities make it possible to create a PV roof close to a tiled roof. traditional. The fields of application

proposed by the PV terracotta module are countless; it is finally becoming possible to install PV in complete visual discretion, thanks to the state-of-the-art technology developed at the Swiss Centre for Electronics and Microtechnology CSEM of Neuchâtel and meet the most recent standards. The plant produces approximately 23'500 kWh per year, which corresponds to the consumption of about 5 households (4'500 kWh/year excluding heating, average of one household of 4 persons according to Swissolar figures).  
Producer: ISSOL, Belgium Installations: Gottburg SA

*Are there any related publications or pictures of the solution?*



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