



Residential and commercial building Feldbergstrasse - Basel

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Thermal and Photovoltaic roof-integrated System

Link to best practice example (Hiberatlas):

<https://www.hiberatlas.com/en/residential-and-commercial-building-feldbergstrasse-basel--2-67.html>



Solar

What is the solution?

The entire energy requirement for heating, domestic ventilation, hot water and auxiliary energy is covered on the roof of the building. On the one hand, this is achieved through state-of-the-art thermal insulation techniques, on the other hand through passive and active use of solar energy (thermal and photovoltaic). PV system pitched roof in-roof system Substructure type: montavent in-roof on the dormer roof Road side mounted on roof PV system Total area: 63.7 m² / output: 9.9 kWp, annual yield approx. 9'000.

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

Several requirements of the cityscape commission for façade and roof design had to be met. In this case panels have been integrated into the south pitch which does not have any requirements for protection and on the dormer roofs on the north pitch. This solution has been discussed and accepted by the Commission.

Description of the context:

Two more than 100-year-old apartment buildings on Feldbergstrasse are being renovated to produce more energy than they use for heating/hot water, ventilation and auxiliary energy. The 12 apartments did not meet today's

comfort requirements. Accordingly, the apartments were poorly rented or stood empty. The need for maintenance was high.

Pros and cons of the solution:

Scalability of the solution: if the 1.5 million buildings in Switzerland were renovated on this basis, corresponding to the current technical progress, the total energy needs of our housing stock would decrease from 125 TWh/year, to around 9 TWh/year. The resulting energy substitution of nearly 115 TWh/year corresponds to the annual production of 15 large-scale fossil fuel or nuclear power plants, such as Gösgen with 7.5 TWh/year. This exemplary architectural and energy achievement should be brought to the attention of every parliamentarian.

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

Three different types of modules and integrated models have been used: - Sanyo HIP 195 with integrating System INDACH (Roof and garret south) -Sanyo HIP 245 (Garret north) -Special execution (Window lintel garret south)

Additional information about the solution:

The project was awarded with the Swiss solar prize in 2009. Link: <https://www.solaragentur.ch/dokumente//G-09-08-20%20Viriden.pdf>

Are there any related publications or pictures of the solution?



Roof with solar thermal and PV ©Nina Mann



Roof with solar thermal and PV ©Nina Mann

<https://www.hiberatlas.com/smartedit/projects/67/SystemkomponenteSolaranlagenFeldbergstrasse.pdf>

Factsheet solar