



## Residential and commercial building Feldbergstrasse - Basel

Author: Cristina Polo (SUPSI)

classical central ventilation with suspended ceiling

### HVAC

#### *What is the solution?*

A centralized ventilation with heat recovery, typical of the Minergie buildings, was added to the building. The main pipes pass through technical compartments near the staircase area. Minergie® Certification for low energy consumption buildings is the Swiss brand that certifies the sustainability of new or redeveloped buildings. To achieve the Minergie® certificate specific attention was paid to control of the air change throughout the year and to good good performances and verification of summer thermal comfort. This certificate implies a limitation of additional costs up to a maximum of 10%, compared to conventional buildings.

#### *Why does the solution work?*

The intervention for ventilation was done entirely internally without repercussions on the façade. The air intakes pass in the subsoil of the court. The 100-year-old apartment buildings on Feldbergstrasse in Basel, Switzerland is a 6-storey residential building with 12 apartments. The building is an apartment-block designed around an internal court. In this type of nineteenth-century institutional and residential block as well as the twentieth century perimeter block in the old part of Basel, the central yard is could be communal or private courtyard surrounded by a group of buildings. Many central courtyards had specialised utilisations e.g., workshops and ground floor dwellings backyard, or have served only as ventilation wells. Several requirements of the cityscape commission for façade and roof design had to be met mainly in the front facade towards the street.

#### *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:*

The solution is very simple: starting from the basement, in the central area are placed the main vertically ducts and the distribution at the floor is horizontally through lowered ceilings in the corridors. No external intervention on the façade was carried out. Controlled ventilation systems are mandatory for residential buildings that are certified in accordance with the rules of the Minergie building standard to achieve high energy efficiency. Since a tight building envelope prevents the gradual loss of warm air, ventilation systems compensate for this with a continuous, controlled exchange of air.

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

Several data are available in the architect's web page and projects documentation: Viridén + Partner AG, <https://www.viriden-partner.ch/mehrfamilienhaeuser> The project was awarded with the Swiss solar prize in 2009.

*Additional information about the solution:*

<http://www.viriden-partner.ch/plus-nullenergiehaeuser?lightbox=datattem-is05dqmd> [https://www.hiberatlas.com/smarteredit/projects/67/G-09-08-20Viriden\\_5.pdf](https://www.hiberatlas.com/smarteredit/projects/67/G-09-08-20Viriden_5.pdf) Swiss solar prize 2009, <https://www.solaragentur.ch/dokumente//G-09-08-20%20Viriden.pdf>

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



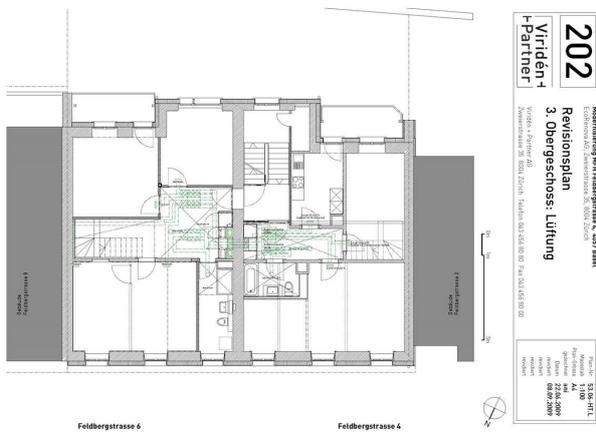
Execution of pipes during the works ©V+P



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Ventilation plan of the 3rd floor ©V+P

Link to best practice example (Hiberatlas):

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