

# The KIWI chalet – Leading the way towards Zero CO<sub>2</sub> emissions

PHOTOS: RAPHAEL FAUX



**The KIWI chalet on Wispilenstrasse has just been renovated. With the goal of not only reducing KIWI's energy requirements but also eliminating greenhouse effects, Kiwi has achieved Zero CO<sub>2</sub> emissions. This corresponds to – and even exceeds – the demands of the Swiss authorities regarding the emission of toxic substances.**

Before the renovation, KIWI was energy absorbing. It was built in the 1940s according to the regulations that existed at the time. But the world has changed. Today's dramatic increase in the world's total energy consumption and the huge ensuing environmental problems have led to a growing awareness of our personal responsibility to contribute towards a cleaner world. The Demole family felt compelled to do their share by reducing their own energy requirements and in particular by eliminating CO<sub>2</sub> emissions when rebuilding their chalet.

**But Mrs Demole has very personal reasons for reducing or even eliminating CO<sub>2</sub> emissions...**

***Mrs Demole, how did you go about planning this radical transformation of KIWI?***

We started the renovation in 2013 after several years of planning to make the best of this charming site. Our family is growing and we want to fit everybody in without changing the atmosphere of the chalet and its surroundings.

**It is obvious that the Demole family is renovating KIWI in their own very special way. Mrs Demole's enthusiasm for the project is evident as she explains how it all began:**



### Mountain air – the healthy solution

As a young child, my second son developed serious asthma. It affected him badly – he was very frail and we were terribly worried about his health. In Geneva, where we live, the fog can be dense in the winter season and I realized this was when his attacks were worst. We were in and out of hospitals during those years and the doctors gave him oxygen so that he could breathe. At that time inhalable forms of Ventolin didn't exist and I had to give him a bronchodilator syrup. This medicine took over half an hour before it had any effect. It was just horrible. My four year old son asked me over and over again if he was going to die.

Then I discovered that if I took him up into the mountains when his asthma attacks started he filled his lungs with fresh air and recuperated quickly. Some time later I happened to listen to a radio programme that explained that the air was heavily polluted on certain days at peak hours in the city and that sensitive people like the elderly and babies should stay inside. I thought this was just crazy. My child could not breathe because we were pol-

luting the air! I felt I must do something, I wanted to be involved in some way in cleaning the air which belongs to all human beings.

### Founding ProGaia

I have always been interested in architecture, and when my husband and I bought an old farm in Geneva we had to modernize it. Of course I wanted to reduce our CO<sub>2</sub> emissions as much as possible, but how could I go about it? I realized that nobody specialized in the whole process of reducing CO<sub>2</sub>. Where were we supposed to start? By insulating the roof? The cellar? The walls? How important was the quality of the windows? Could we use solar panels? Geothermal heating? How much would it cost? How could we get permission for this venture, and from whom? And how many years would it take to cover the cost?

Then one day my eldest son phoned me from Stockholm. He said that in Sweden there were independent, impartial companies that helped people to build and refurbish houses and buildings ecologically.

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Inspired by this possibility, I founded ProGaia in Geneva. I am driven by the desire to do my share – not just for my son – and to help all children to breathe clean air and live healthy lives without having to wear masks over their mouths and noses.

#### **A passion for renewable energies**

ProGaia is now a small company consisting of architects and engineers, all of us passionate about renewable energies. Our field of activity is the ecological renovation and construction of real estate. The heating of houses and other buildings represents 35% of Switzerland's total energy consumption, mostly using fossil fuels, which seriously contributes to pollution and the greenhouse effect. At ProGaia we work with our clients both to reduce their total energy consumption and to replace non-renewable energy sources with on-site renewable energies in order to achieve Zero CO<sub>2</sub> emissions. Our business concept is to guide our clients through the ecological process from start to finish, from drawing board to finished construction. We accelerate the use of new technological findings, realizing that each time we use new, clean technology we help science to progress. ProGaia wants to convince people that we can re-invent our lives without feeling that we are less comfortable. Quite the contrary, in fact. In Geneva, our own house now has Zero CO<sub>2</sub> emissions.



#### **Applying Zero CO<sub>2</sub> at KIWI**

Here at KIWI, although we have expanded our living space by 50%, we have reduced our heating requirements by 65% and we have Zero CO<sub>2</sub> emissions. We are extremely grateful to the Bernese Oberland authorities for dealing with our reconstruction plan quickly and for approving the installation of solar panels on the roof. And thanks to new technology and better, more suitable design, our solar panels look more like traditional "ardoise" than the older solar panels we sometimes see. All our panels were produced in Switzerland.

#### **All our energy needs are produced on-site**

The solar panels and geothermal heating now produce all the energy we need for heating the chalet on-site, as well as our hot water and all other domestic electricity. We now produce more energy than we need, and the surplus is sold to BKW. Hopefully, it will soon be possible to store energy on-site in order to achieve complete self-sufficiency over time.

#### **Mrs Demole, who has reconstructed KIWI?**

Mr Martin Reuteler at Rieder Architektur has been responsible for the reconstruction of KIWI, with guidance from ProGaia for the ecological appliances.

#### **How have passers-by and other residents in Gstaad reacted to the reconstruction of KIWI?**

We have been pleased and surprised to note the great interest shown in what we are doing here at the chalet. I believe many people want to do their share and reconsider their energy needs and their carbon footprint.

[www.progaia.ch](http://www.progaia.ch)