

Dear friends and supporters of «Happy Home»

During my stay of 88 days in Thailand, my friends and team members completed Happy Home Ukraine. It was successful, meets the requirements for Ukraine and – in my opinion – looks really great.



This stay was again most interesting. We have all learned a lot and gained new insights, thanks to which we can incorporate further improvements and simplifications into the production and construction of future houses.

Professor Martin Beth, OST University of Applied Sciences, Rapperswil, visited us during my stay. Martin was very satisfied with our work. We were able to discuss with him new materials and our new suggestions for construction technology. It is extremely important to us that such changes are scientifically supported and confirmed.

The **OST University of Applied Sciences** will **continue** to support us in the future development and improvement of our technology. On the one hand, with the specialist knowledge of Professors Martin Beth, Felix Wenk and Peter Petschek, and on the other hand, with the scientific processing of specific topics in students' bachelor's theses.

We are incredibly grateful for that!

I would be happy to share with you what we have achieved in this short time; this in words and pictures.

As I wrote to you in the last report, the shell was completed as planned. During this stay we were again able to achieve our goals on time.

## Water Treatment

The groundwater is stored in an insulated water tank.

The water pump presses the water through a suspended solids and activated carbon filter.

For drinking water, you also need a ceramic filter (osmosis). After osmosis filtration, the water can be drunk without hesitation.

It is important that the water tank level is checked every 2 weeks.



## Wastewater Treatment



The wastewater is cleaned in a biological sewage treatment system and discharged into the ground via an overflow tank.

The bacteria in the wastewater treatment system

are inoculated with new bacteria every 12 months. This product is available at every hardware store.

The remaining suspended solids are emptied every 1 – 2 years by a farmer and distributed on the meadow as fertilizer.

A simple and ecological solution for wastewater that can be used anywhere.

We had to work with new employees for the interior finishing of Happy Home Ukraine. Unfortunately, these were available to us on the weekends only as they had to do their 'normal' job during the week. The

working situation in Thailand has become very difficult, the pay is usually poor and at the same time the cost of living is constantly rising!

I used the time from Monday to Friday to find **reasonable** and **reliable** suppliers, negotiate, place various orders, and make the corresponding down payments. I invested a lot of time in controlling.

Some of the employees knew little or nothing about construction. This made our focus on training, quality control and management of these employees all the more important. We explained how and why a task had to be done, why we value quality and what we want to achieve with it. This wasn't always easy because of the language barriers and cultural differences. In the end, however, they were very proud of their work.

Whether employees or suppliers: everyone said they had never seen such a beautiful house.



Core team with Prof. Felix Wenk



Core team with Prof. Martin Beth and his partner



Our supplier for tube laser work



In addition to work, there must also be room for a pleasant get-together

An extremely important point for me is the precision that we can achieve with the tubular steel construction / skeleton.

Unfortunately, this precision was not realized in the foundation. The first pour of the panel was leveled using a hose levelling system. As a result, we had an inaccuracy of 3 centimeters at 10 meters. By precisely assembling the tubular frame, we were able to compensate for these 3 centimeters in the affected areas so that the skeleton was plumb.

## **Interior Finishing**

We installed additional floor insulation indoors for Ukraine.

Here again an error occurred, so that the floor insulation was about 4 centimeters out of plumb in a different direction. These 4 centimeters had to be corrected with the ceramic work, so in the end we had to compensate for a total of 9 centimeters.

Even if it was annoying, such inaccuracies and misunderstandings can always occur with employees who lack foreign language and specialist knowledge.

Together and as a team, we solved this problem and corrected it accordingly.

Throughout the entire construction period, I always wished that I could complete a “Happy Home” in one go. The second construction phase lasted a total of 39 days with 4 women/men: on average, 4 women/men worked 3 days/week over 13 weeks.

This short construction time was only possible thanks to our team meetings, the planning of the next steps and the willingness to learn, elocation and motivation of the employees.

We started on February 9<sup>th</sup>, 24 with team meetings at various suppliers. After all down payments have been made, the suppliers started delivery according to our scheduling.

## **Electrical Installation**



Basically, all Happy Homes have a European security level. All lines are secured by an FI switch.

The quality and cross-section of the cables are dimensioned in accordance with European standards.



A service door in the ceiling ensures that additional empty pipes can be pulled in or any necessary repairs can be made at any time.

The electrical pipework was prepared, the fuse box was installed in the intended position and the main power cables were then inserted.

From that day on we finally had electricity for the electric handheld machines!

## Insulation

We used rock wool for the insulation because it is resistant to mold, rot and vermin.

With the external wall and the rock wool we also get a high insulation value. This massively reduces energy consumption for heating and cooling.



On average, our Happy Home uses around 2,000 KW of electricity per year.

## Interior Walls

We again used cement fiberboards for the inside of the house. When assembling the panels, the openings for plugs, switches and service doors were considered.

Panels suitable for wet rooms were used in the shower/toilet.

## Sanitary Installation

According to my experiences and according to statements from Thai friends, the water pipes in Thailand are often leaky. Therefore, the risk of mold formation is very high, and a lot of water can be wasted.



Thanks to **Geberit's** generous donation of the concealed installation, we were able to save a lot of time and install the water pipes **tightly** straight away.



This concealed installation technology ensures that all pipes and openings are tightly connected and that the sanitary systems are installed stably.



In a small area at the left side, we installed a shower without a bath attachment.

The toilet is, of course, Rimfree.

## Windows

We had the windows and patio doors made of aluminum and with insulating glazing.

Why aluminum frame? It is important to us to use building materials that are as recyclable as possible and to reduce wear and tear. In addition, aluminum frames require almost no service.



We couldn't use wooden because the termites in Thailand are very hungry.

Thanks to the insulating glazing, heat and cold can be kept out of the house.

The assembly was carried out quickly and precisely.



All my Thai colleagues were **amazed** at how **much cooler** it is in the Happy Home thanks to the rock wool insulation and the windows.

## Heating / Cooling



We installed two air/heat exchangers for heating/cooling. In the future, these will be operated via the PV and storage system and will therefore be self-sufficient and cost-effective.

In Ukraine, the Happy Home is additionally equipped with a wood stove. Together with the PV and a storage system, there is enough energy available for daily use and heating.

Professor Martin Beth checked the functionality of the cooling system in the Happy Home Ukraine; everything is working well.



## The Blue Walls



My Thai colleagues and the employees on the construction site found the blue color for the interior walls simply impossible!

In the first Happy Home it was more of a mishap until I realized that – thanks to the blue color inside – I didn't have any mosquitoes or other bugs.

Our employees really **appreciated working in the house**, where the indoor climate is most **pleasant**, and the mosquitoes feel uncomfortable.

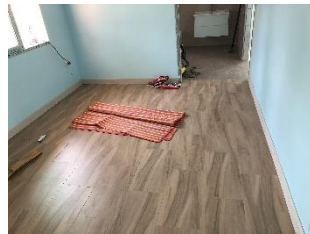
If I had to look for employees on the construction site, I was sure to find them inside the Happy Home.

## **The Floors**

We covered the floors in the house and on the terrace with ceramic tiles. Because of the high humidity, there is a general risk of algae deposits.

According to advertising, our ceramic plates should have an anti-mould and algae coating.

After leveling the concrete slab, the ceramic work was carried out quickly.



We chose varied ceramic plates for the different rooms of the Happy Home.

## **Inner Doors**

The delivery time for the sliding doors was also postponed at the end of May.

Here too we have considered a family business with children. Unfortunately, the head of the family was ill with Corona, so there was a delay in completion.



The doors are made of wood and are extremely space-saving thanks to the sliding mechanism.

In the meantime, they have been delivered and are fully assembled.



## Speaking of children

There are no day nurseries in Thailand. That's why our employees bring their small children to work. Floor mats or hammocks are set up and the children are happy playing wherever they are.



My little friend loved being in the small room.

During a tour of the construction site, I saw him playing and asked if he liked the house. He just said that this was now his play and bedroom, but he would share it with his little brother.

His aunt, who translated for me, laughed, and said he wasn't the only one who would like to live in a Happy Home.

In a video I have put together countless photos of the interior finishing and completion of the Happy Home Ukraine. Here you can get an impression of our work and get a detailed picture of the different works and its result.

2023 Start Happy Home Ukraine: <https://youtu.be/diSIV6qNI5M>

2024 Finishing Happy Home Ukraine: [https://youtu.be/FghL\\_J8UPNw](https://youtu.be/FghL_J8UPNw)

As always, I am available to provide you with additional information and will keep you informed about the next steps.

Kindest regards

Franz