



CAS Rebuild Ukraine

History and background information from Thailand
Strategy for Rebuild Ukraine

Advantage of the Happy Home

- Steel profile construction with local recourses
- Do-it-yourself kit
- Autarkic, thanks to 8 panels with 400 watts
- Drinking water membrane filter over gravity
- Wastewater cleaning tank
- Modular system
- Expandable
- Payable
- Save home

What is “My Happy Home”

- History and background information
- 2016, Prototype “Happy Home” built with 50 x 50 x 3 mm steel pipes
- Floor area inside and outside kitchen, 100 m²

- How is the “Happy Home” structured?
- 2020, first serially produced house
- “Happy Home” to support families in need

- Benefit for the families

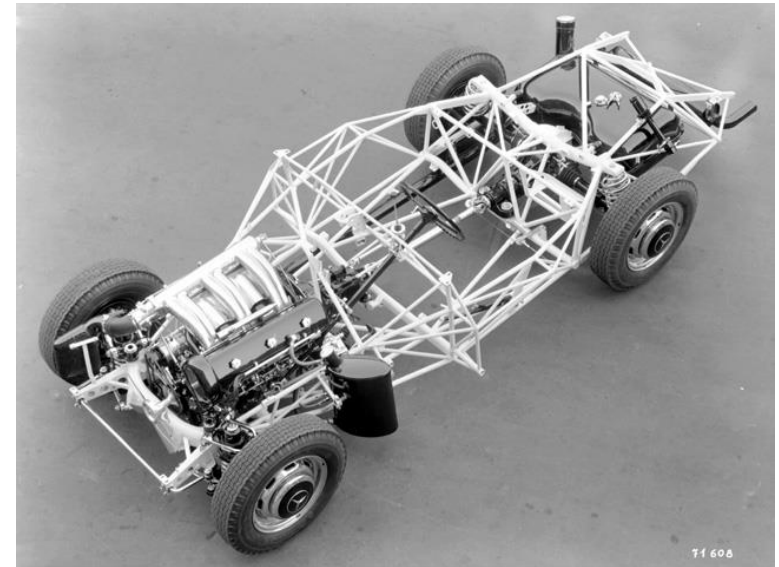
- Future steps
- Strategy for the Ukraine
- Inexpensive houses that can be relocated

History and Future Business

With the experience of 27 years as a supplier to the automotive industry, I have learned; one can contribute to society only with innovations and localized raw materials.

The main principles for success are:

- Cost savings in material, manufacturing process and assembly time.
- In racing, cars have always been built with tubular frames. This is why they are light and fast but still safe.



History and Future Business



My experiences have inspired me in designing and further developing the «Happy Home». We want to implement the lessons learnt for the benefit of the buyer.

Today we can build in Thailand very safe, simple houses for families.

Thanks to the modular skeleton construction, we can manufacture small houses up to villas, from the simple standard to the luxury version.

As is normal in the automotive industry, I am always looking for new technologies and materials for construction, so that we can build safe and stable houses that are cheaper and more ecological at the same time.

Movie my Happy Home, 2016



Modular Basic Pipe and U Profile Construction



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POS-NR.	SW-Dateiname(File Name)	MENGE
1	0014 Stütze 3200mm	4
2	0012 Querträger 3800mm	8
3	0011 Zwischenstück 3800mm	2
4	0013 Zwischenstück 1850mm	20

4000

3200

300

4000

1850

DETAIL A MAßSTAB (1 : 8)

DETAIL B MAßSTAB (1 : 8)

DETAIL C MAßSTAB (1 : 8)

4000

3600

1850

1850

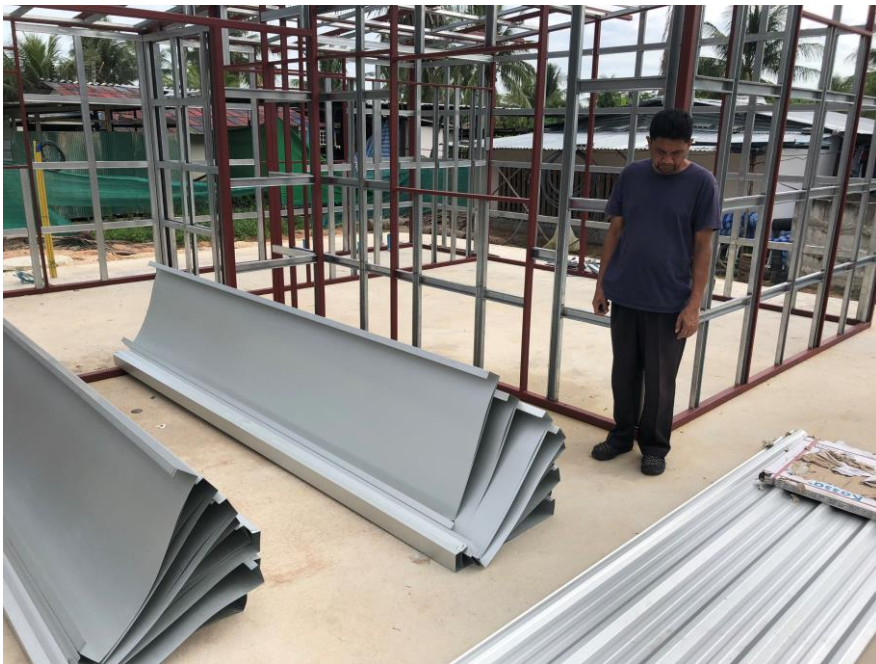
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Behandlung	-	-		

Ohne sep. Stückliste	-	Verwendungsbereich, Projekt
Sep. Stückliste gleicher Nr.	-	Tiny Homes
Sep. Stückliste anderer Nr.	-	Konf. Benennung
		Grundrahmen

Franz Gähler

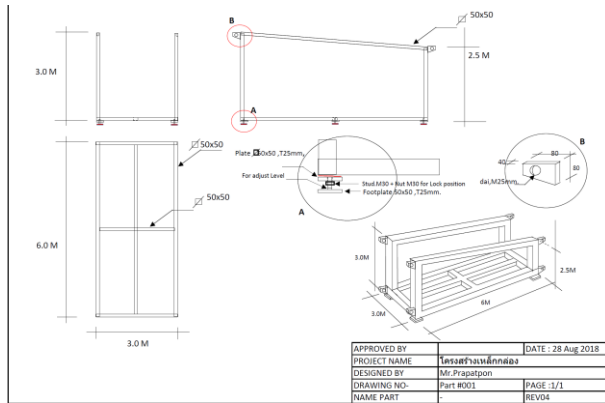
Steel Profile Construction with Local Resources



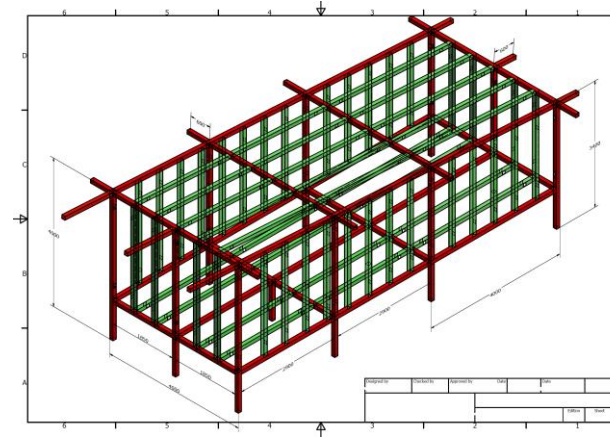
2016 Prototype Happy Home



First CAD Study



Frame Construction



Build-up Prototype



Insulation with Rock Wool



Sheet Metal Cascade with Facade



2016 Prototype Happy Home



Summary:

Basic concept, stable and isolated basic construction is feasible. Mass production is not possible; too many different steel parts. In addition, expensive production machines were required on the construction site. Very long building time, material was cut on site.

Target:

Solid and simple, modular basic construction. Easily expandable. Happy Home grows with the family. No special equipment required for the assembly. Parts assembled by a lock system developed by us.

Technology for the Production of the Steel Pipe Construction

Result thanks to the practicality with a pipe laser cutting machine.

All specialists have confirmed that a high-strength pipe connection can be produced with the pipe laser cutting technology.

This technology is already successfully used in the Automotive Industry as well as for furniture and space engineering.

We already have a first quotation in hand. This confirms our assumption that we can offer a highly stable basic construction for a Happy Home.

It is secured that a buyer can build his home on his own and save huge costs.

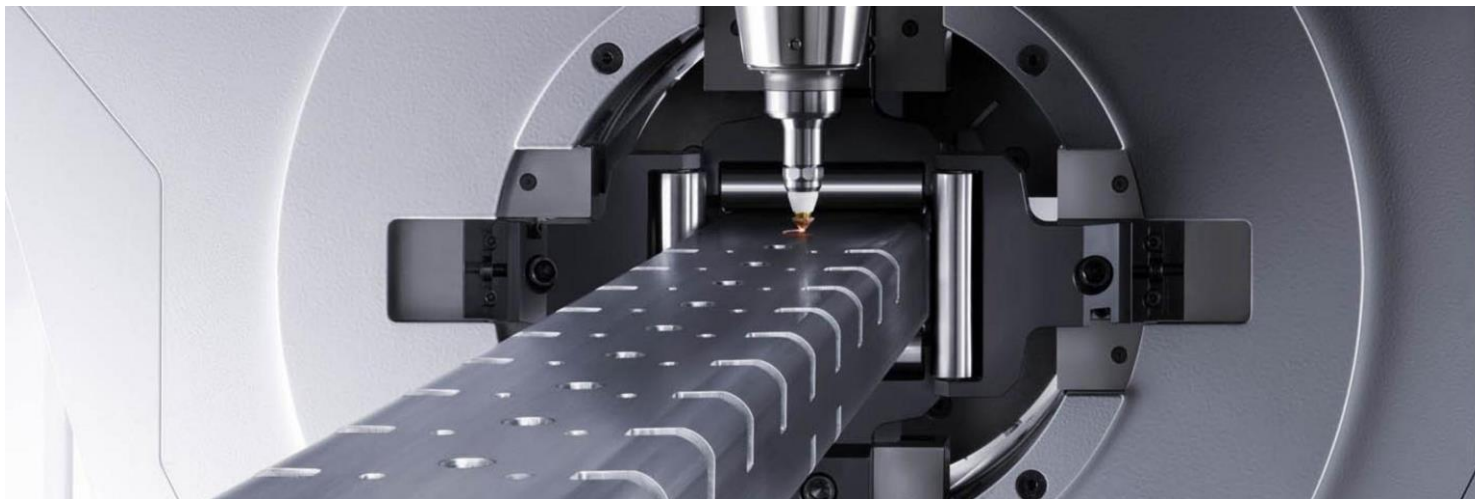


Steel Profile Construction with Local Resources



First Happy Home serially produced with a pipe laser machine

Production time for the steel frame work : 56 minutes



Floor Frame Construction



Floor Frame Construction



Construction Progress



Construction Progress



Construction Progress



Construction Progress



Construction Progress



Facade



Assembly Wall Rockwool Insulation



Sanitary Installation



Sanitary Installation



Inside View



Finished House



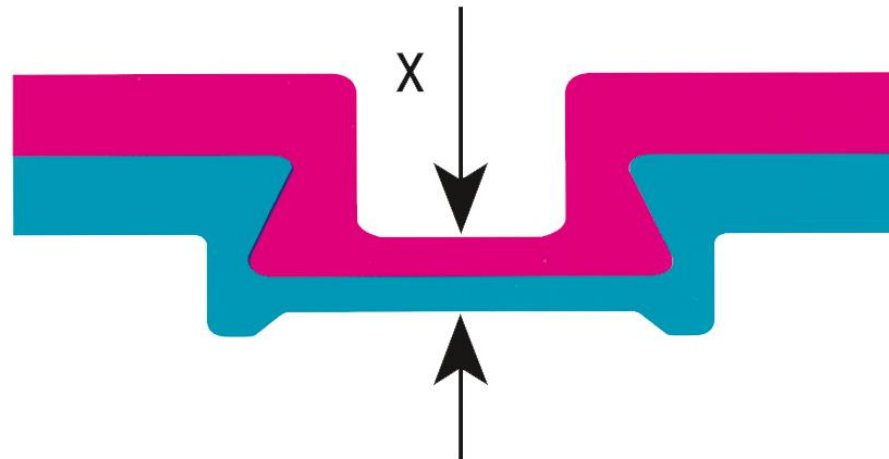
Finished House



Connection Technology for the Profiles

Mechanical fastening

- Clinching
- Rivet, technology from aviation
- Blind rivet nut



Ground Water Filter

Supplier Openversum

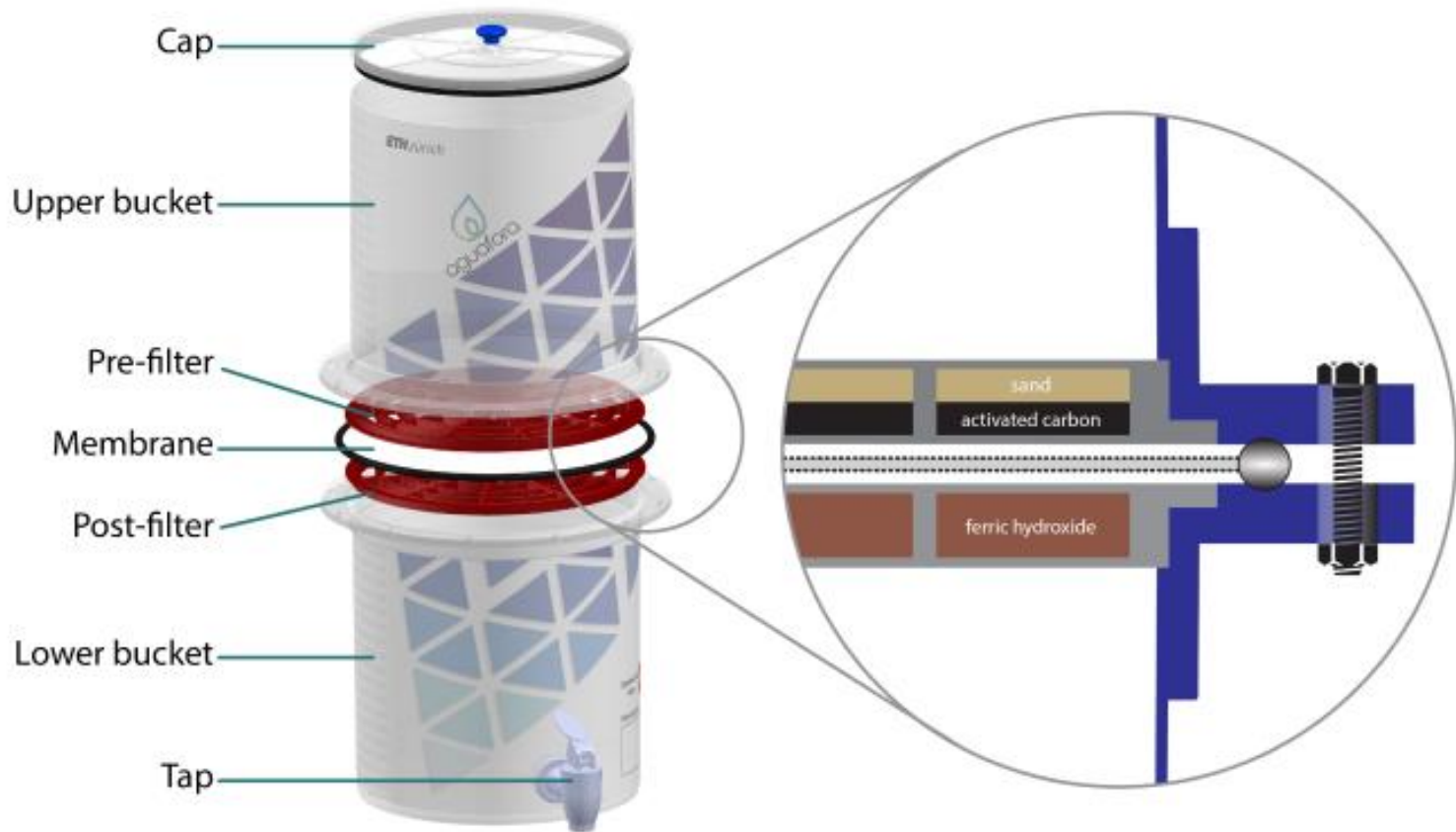
All-in-one drinking water filter

- High removal rates of pathogens (>99.999%), pesticides, heavy metals and micropollutant
- Lowers the risks of recontamination
- Stable long-term performances

Novel manufacturing process

- Low production costs
- Biodegradable cartridge
- Solvent-free

Ground Water Filter



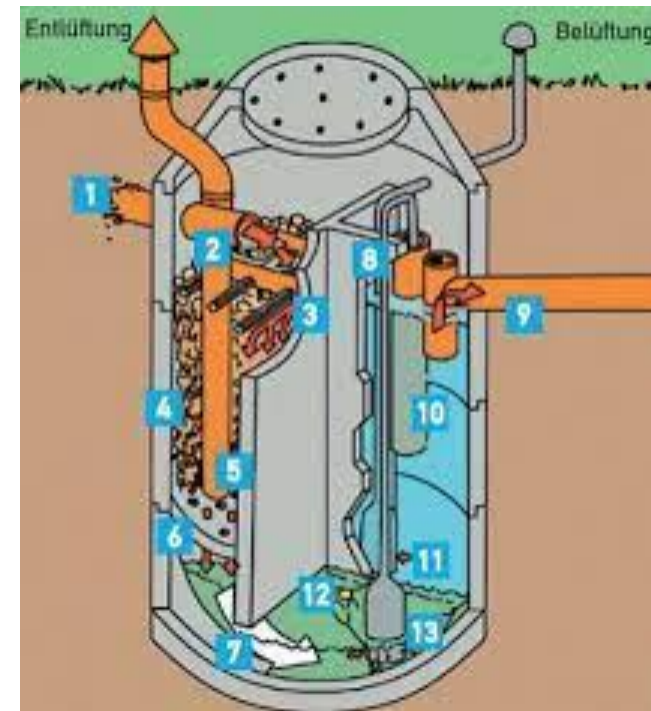
Waste Water Treatment



Waste Water Treatment Functional Description

Biological waste water treatment tank with three chambers

- Waste water from the toilet (1)
- Waste water from the shower and the washbasin flows directly into the seepage tank (3)



Photovoltaic Installation



Photovoltaic Power

The Happy Home is autarkic with a small Forklift battery

- Sunpower, with 400 watts / panel
- Installed capacity 3,2 WK / Hour
- Hybrid
- Overproduction is given to the neighbor
- Converter, Huawei



CAS Rebuild Ukraine

Next Generation U Profiles

Production Line Move

Mechanical strength

U Profile Production Line

Productivity per hour	60 bis 120 meter per hour
Profile dimensions are set with CNC	96 – 155 mm
Sheet thickness	1 – 3 mm





CAS Rebuild Ukraine

Information on the Construction of the «Ukraine House»

Information on the Construction of the «Ukraine House»

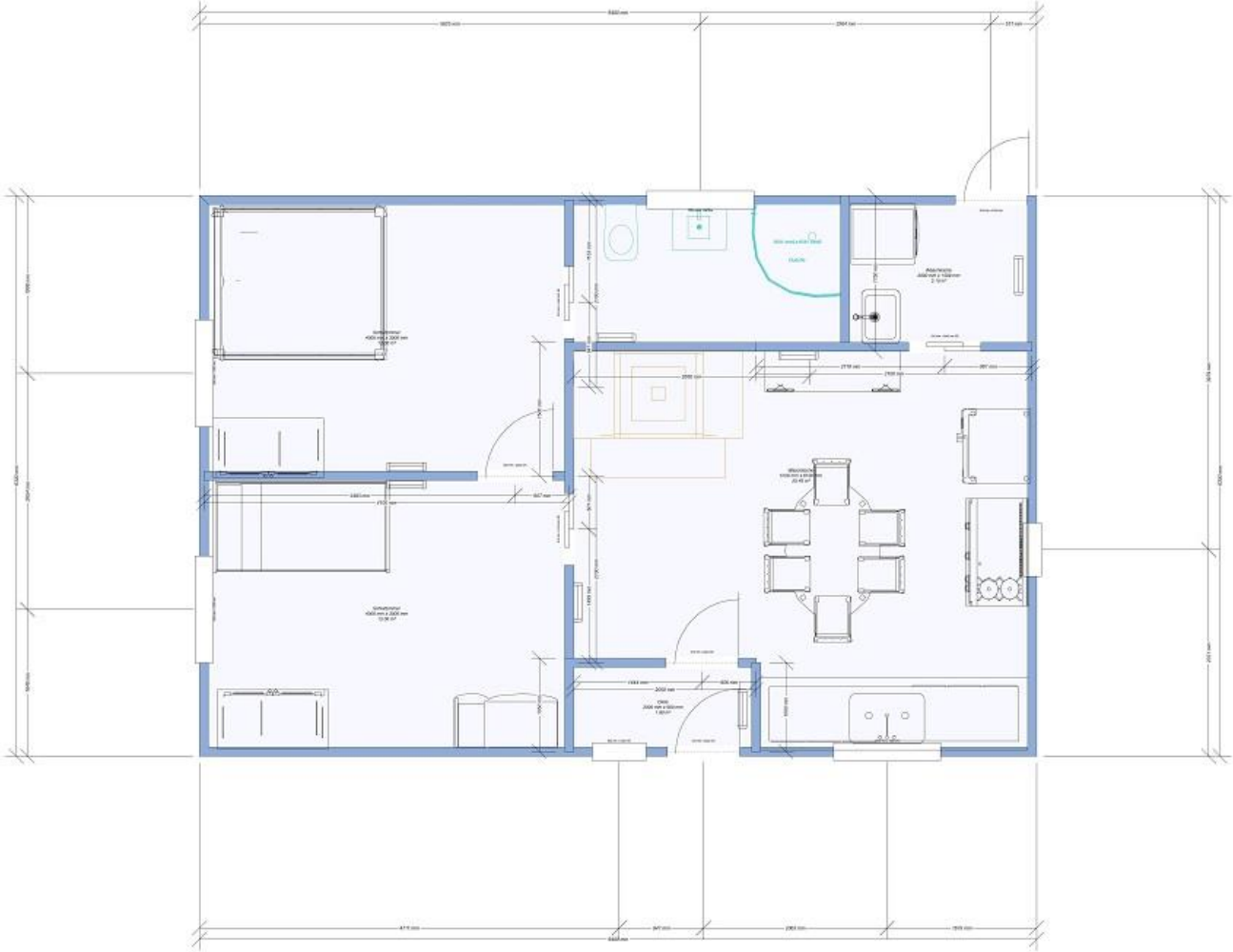


The core of the house wall consists of a steel framework with 100 mm rock wool insulation.

In addition, 100 mm foam concrete panels are installed inside and outside.

The floor area of a standard house is 54 m², it includes 2 bedrooms, shower / toilet, kitchen and laundry facility, see also the suggested on the next slide

Basic Layout for an «Ukraine House»



Additional Information



With these installations, the «Happy Home» will be completely self-sufficient and can be erected as a permanent building anywhere in the Ukraine, regardless of the infrastructure, and will certainly have a useful life of two generations.

Thanks to the modularity of our structure, the «Happy Home» can be adapted to the needs of individual families.

When it comes to production, emphasis is placed on simplicity, so that the house can be produced on site and assembled without specialist training. Two men can build a house in about 4 weeks.

The system and the construction will be freely accessible and made available for re-building the Ukraine.

We want to use local resources as much as possible and check with Ukrainian partners which technologies are available locally. Wherever possible, the recipient families should help with the assembly and thus establish a deep connection to their «Happy Home».

Additional Information



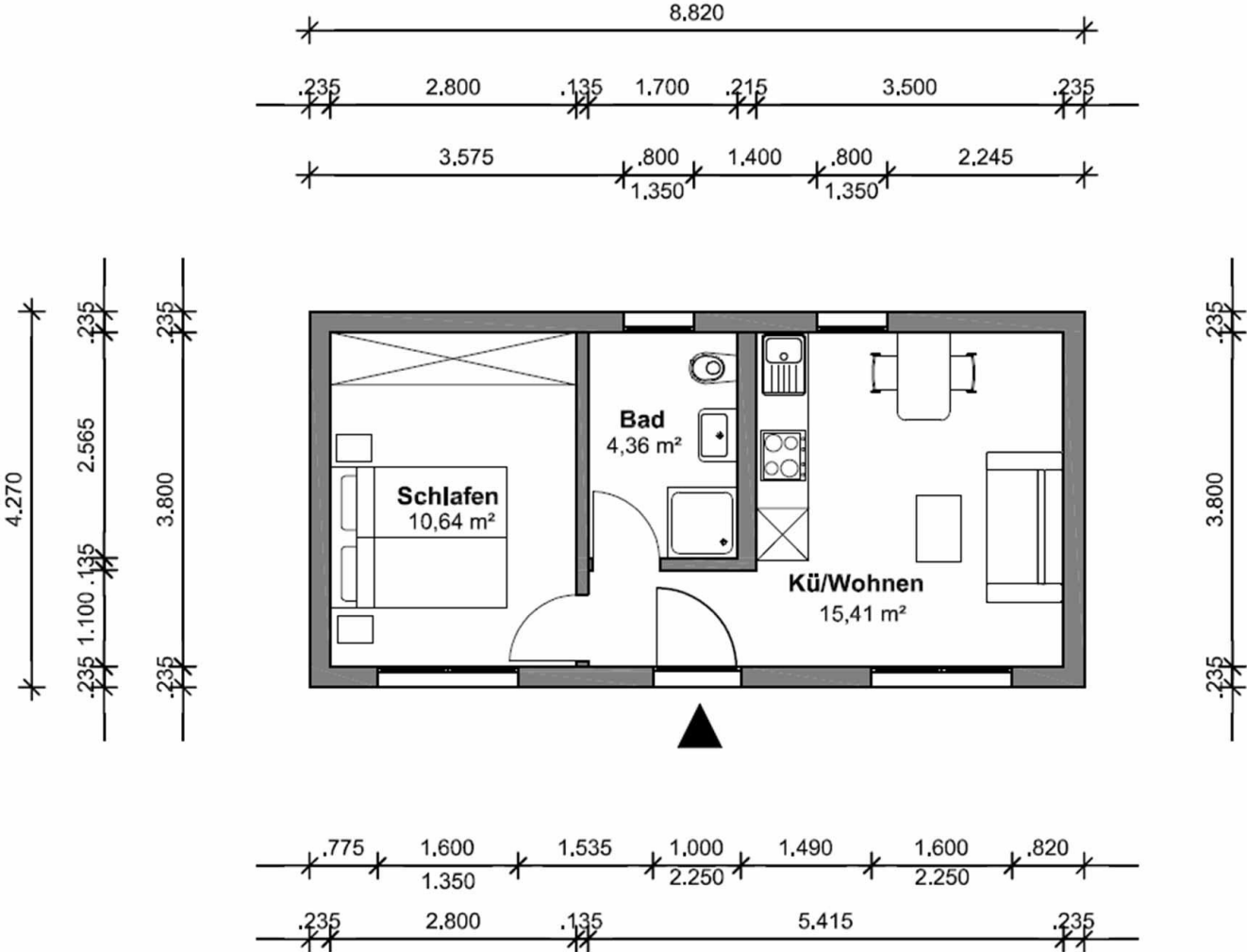
The «Happy Home» corresponds ecologically and economically to the current standard. The CO2 footprint is kept small and should be amortized over a maximum of 7 years.

As far as possible, the required materials are procured locally.

I am convinced that with our concept we could be of help for the reconstruction and the necessary shelter for the families in the Ukraine.

For this I put available my know-how and the construction plans for the houses and would also be willing to support installing of a local production.

Additional Layout Sample



Additional Layout Sample

