

Mobile building of the company STROJ d.o.o., SLOVENIA



General view of the building

Location	
Town or village / Country	mobile
Latitude	optional
Altitude	optional

Building	
Living area	20 m ²
Heat load (at -14 °C)	2 kW
Building year	1991

Biomass boiler	
Type of boiler	open fireplace (solar energy, biomass)
Nominal power	2 kW
Boiler manufacturer	STROJ

Solar heating system	
Collector area	5 m ²
Collector manufacturer	STROJ
Orientation / tilt angle	0° east – west / 45°
Space-heating storage volume	250 l (from this sanitary hot water 65 l)
Domestic hot water storage	thermal storage with connection with stove
Hot water preparation	combine stove with possibility of hot water for heating
Fractional energy savings	40 %

Cost Information (excl. VAT)	Cost basis 2003
Boiler	
Collector area	
Heating system	

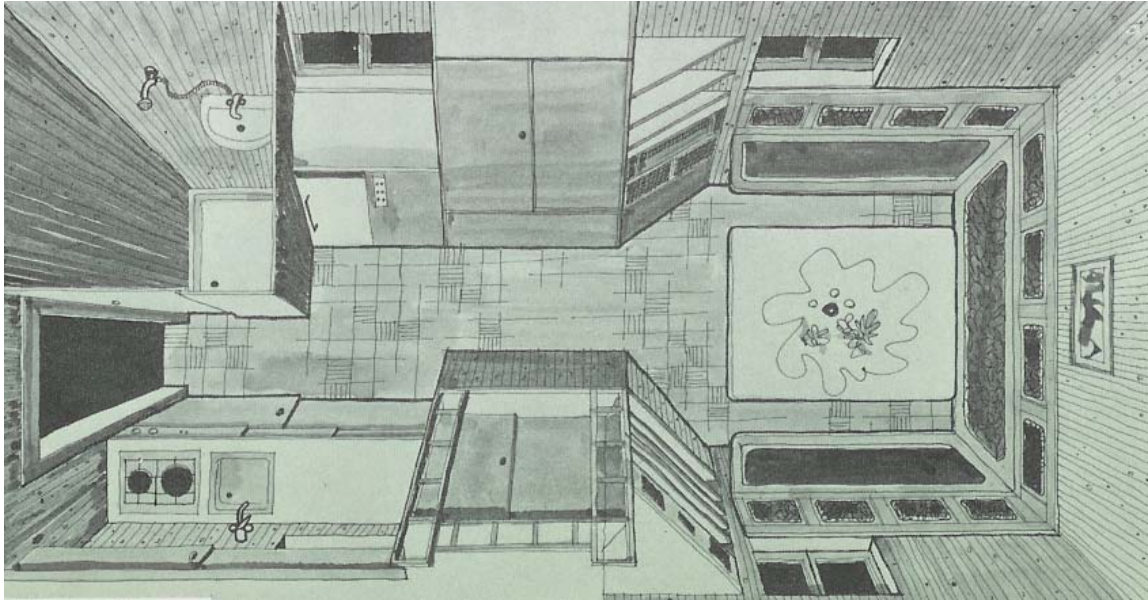
System description

Mobile energetically independent house was constructed by the firm STROJ d.o.o. for necessities of developing energetically independent and environmentally kind heating systems. The shack is designed on the elements of traditional architecture of Alpine area of Slovenia. The interior is adjusted to modern living-requests, who are improved by comfort and pleasant living sensation of wooden house. A wooden mobile biohouse is low energetic house, which uses few energy at heating spaces and is well ventilated at once. These two eliminating characteristics are reached with the use of suitable building materials and suitable construction. The isolation of outer walls is noticeable in a low heat transfer coefficient of outer walls (lower than $0,25 \text{ W/m}^2\text{K}$).

The wood contributes to a comfort and natural feeling, which is expected and wanted in a comfortable home. Metal gear of a mobile house enables safe transportation, it is projected on the use of high quality materials at expected higher rate of security and reliability (gear, static construction, braking system, lateral stability...). Outer measures of a mobile house are suitable to the requirements of road safety, because its length adds up to 8400 mm, its width is 2500 mm and height 3800 mm. 4-6 persons can use 20 m^2 of living space. The entrance of the house is secured by the jutting roof. That part can be even used as a small terrace. The interior disposal provides an enviable stage of comfort with a kitchen, gas kitchen-range, refrigerator, washing manger, dining room, shower, WC and bedroom with 4-6 beds. The house is equipped with all the necessary AV technique (SAT TV, VCR, TV, radio, telecommunications, computer, internet,...). There is an energetic bloc in the central part of mobile object, which is designed for preparative arrangement of physical parameters of comfort. The energetic part involves the preparative arrangement of warm sanitary water, central preparative arrangement of heating water for radiator warming and the output of electric energy. The fireside is used for process of combustion of biomass. The produced heat warms the living space directly, the leading of smoke-gases goes through a system of pipelines, which compound a heat transfer fluid, which is integrated into a heat reservoir. We can use two generators of heat for the process of arrangement of warm sanitary water and the process of arrangement of water for radiator heating system. The first source is in the process of combustion of biomass in fireside, the second source is heat, acquired by solar energy (SSE). The whole SSE area adds up to $4,75 \text{ m}^2$, the heat transfer fluid - water enters into the heat accumulator with volume of 300 l. The heat accumulator is placed in the central part of house. The solar part of the heating system does not need an antifreeze, because the system's projection enables the water to withdraw from the solar circuit. The system is controlled by pulps and pumps, which are fed by the electric energy, acquired by solar electric cells, provide for the correct functioning of the whole system.

In a double pedestal of a mobile energetic independent house there is also a 130-litre reservoir for rainwater (cool water for showering), and another extra 260-litre reservoir of drinking water on the attic. Putting up energetically independent mobile house on a firm basis, where an active integrated hydraulic system helps us, is quick and easy.

The firm STROJ was specialised in developing products, who are kind to nature, above all from the field of heating and air-condition techniques. First of all the firm is distinguished for an own innovative development and approach to individual specialities particular systems, who encourage processes of permanent improvement. Know how offers complete action of adaptation and integration of variable-complex heating systems.

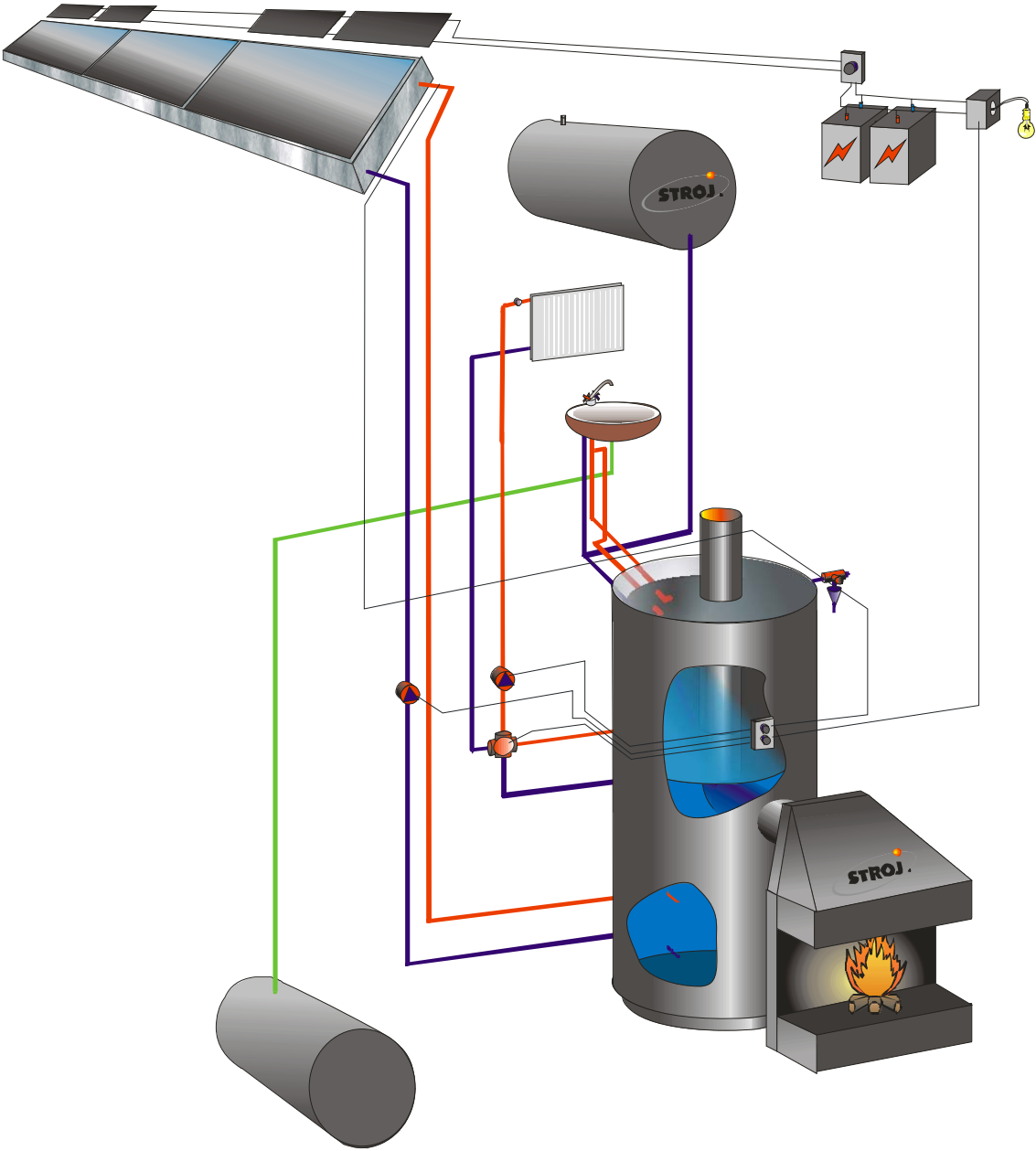


Interior disposition of mobile energetically independent house.



Interior of mobile energetically independent house.

The hydraulic scheme of the heating system



The scheme of the heating system in a mobile energetically independent house.