

Aut-o-Arc is a housing system which is both modular and self-sustaining.

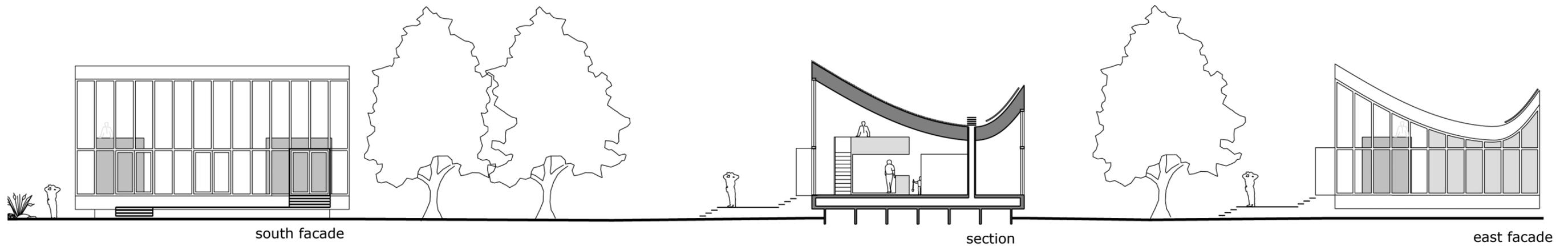
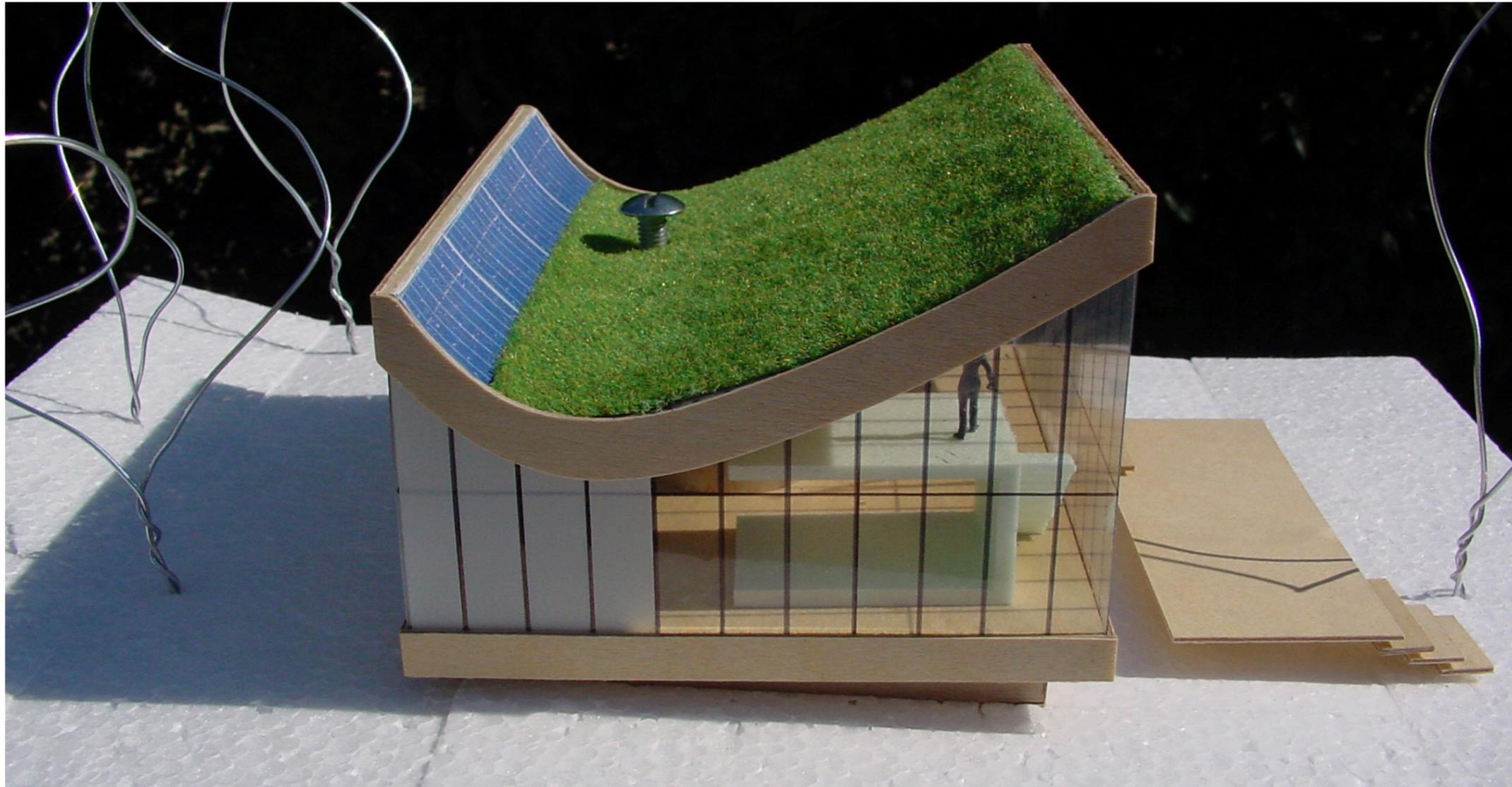


Aut-o-Arc, elaborated for 50° latitude

1. Aut-o-Arc is suitable for many building sites.

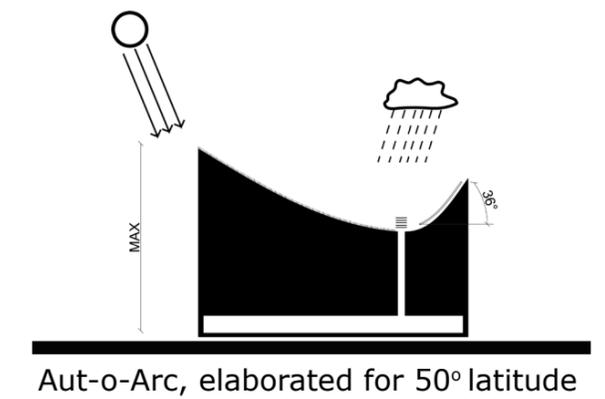
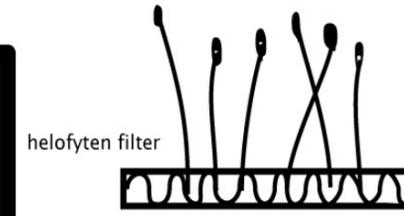
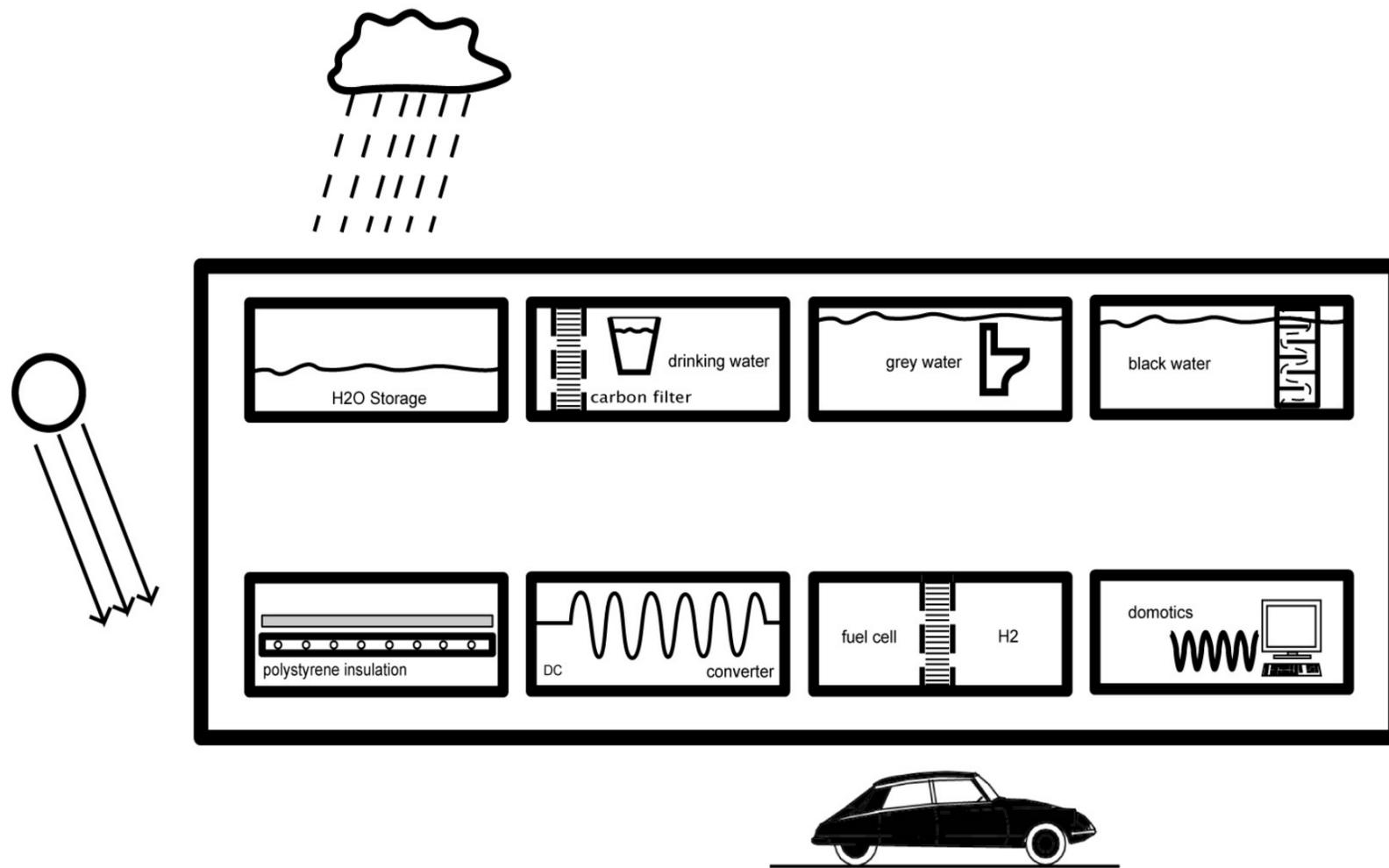
Aut-o-Arc can function independent of underground systems such as water supply, electricity and sewage. Its energy comes mainly from the sun, via solar panels on the roof. The roof also catches rain-water which, after filtering, is used (and re-used) throughout the house. Compost toilets eliminate the need for sewage.

Aut-o-Arc can be erected almost everywhere, even on sites that are not suitable for regular housing, like a temporary empty building site or a site in a nature reserve. After removal the 'footloose' Aut-o-Arc will leave no traces on the land.



2. The roof is shaped like a hand collecting water and (solar) energy.

The roof of Aut-o-Arc has a characteristic curve. The uplift at the south side was done to create a large south-facing façade (optimised for 50° latitude), so as to get as much sunlight inside the house as possible. The north side of the roof is tipped upward for an optimal orientation of the solar panels. The resulting curve resembles a funnel that collects rainwater. The roof is shaped like a hand collecting water and (solar) energy.

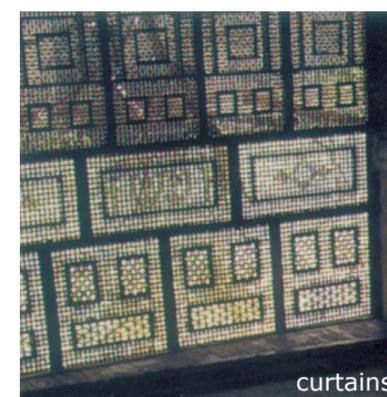
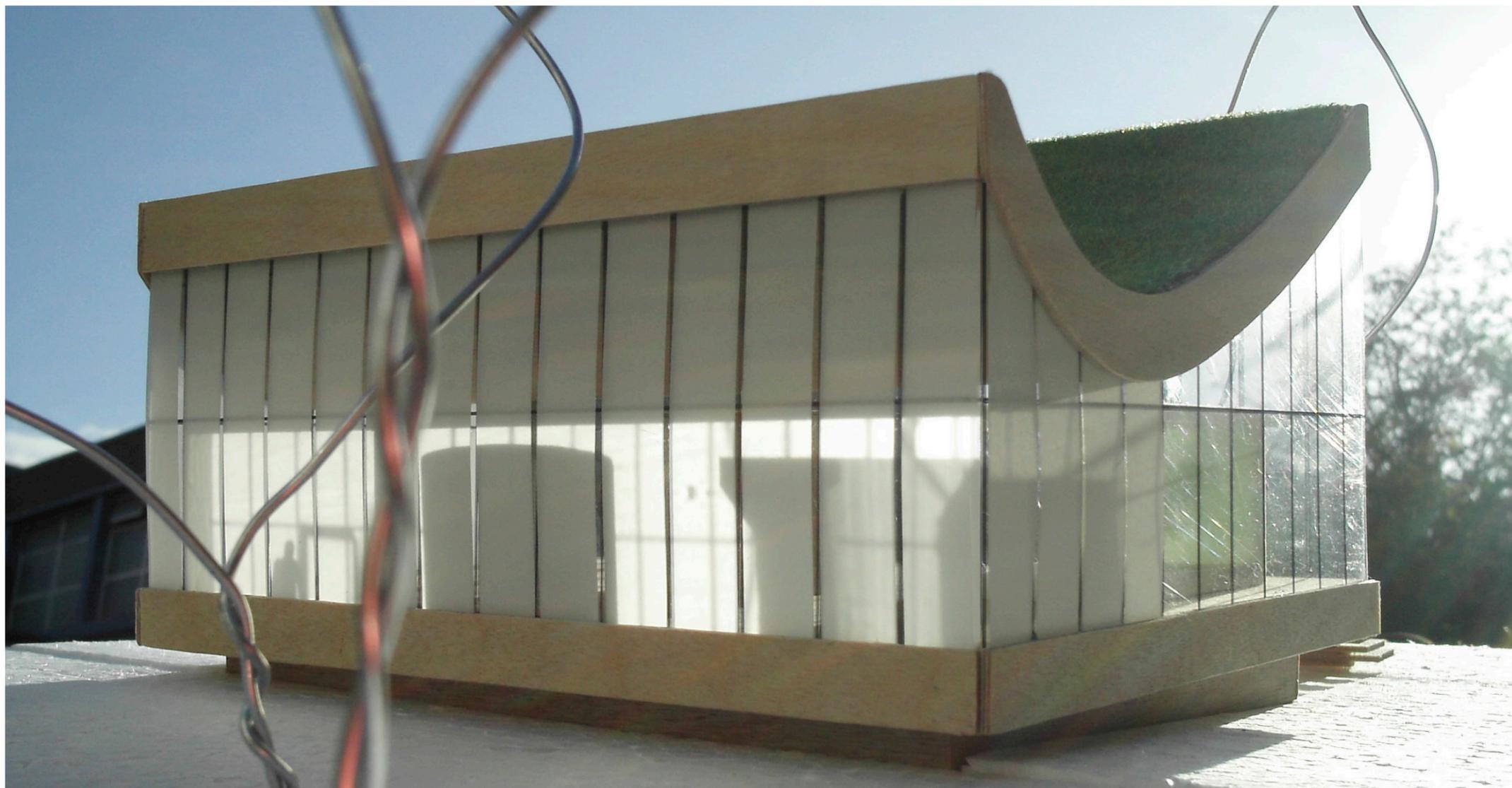


Aut-o-Arc

3. The floor of Aut-o-Arc stores, filters and converts electricity and water.

The roof and floor of Aut-o-Arc work together closely. The roof generates electricity and water, and the floor stores, filters and converts it, in order to make it suitable for human needs. The floor is made from steel compartments, insulated with polystyrene. Like in a ship, each compartment contains a different system: storage tanks, filtering systems and energy systems. Electricity from the sun, for instance, powers an electrolyser that generates hydrogen. The hydrogen is used for heat and electricity for the house, and can also power a hydrogen car (creating a unique symbiosis between house and car).

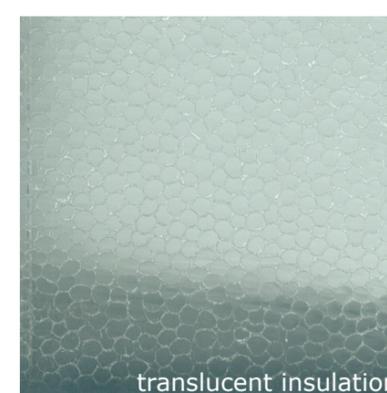
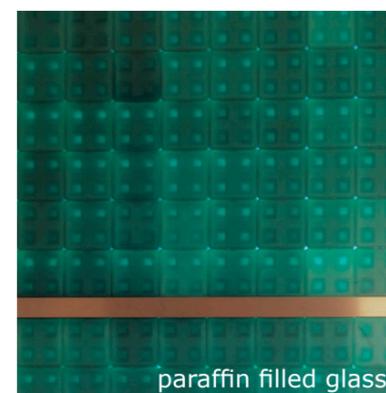


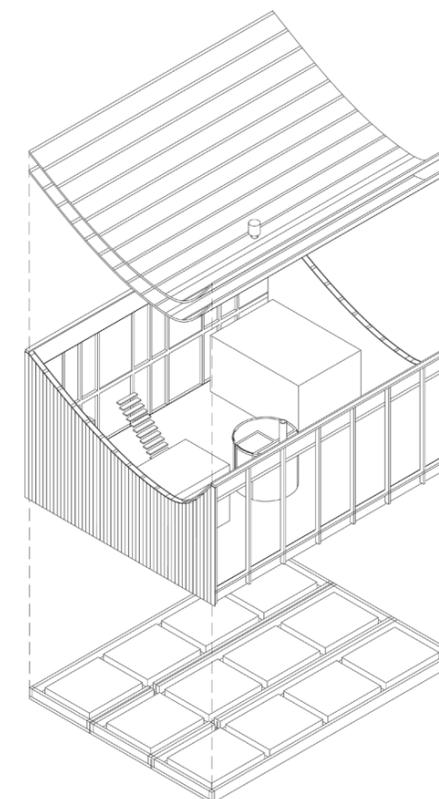
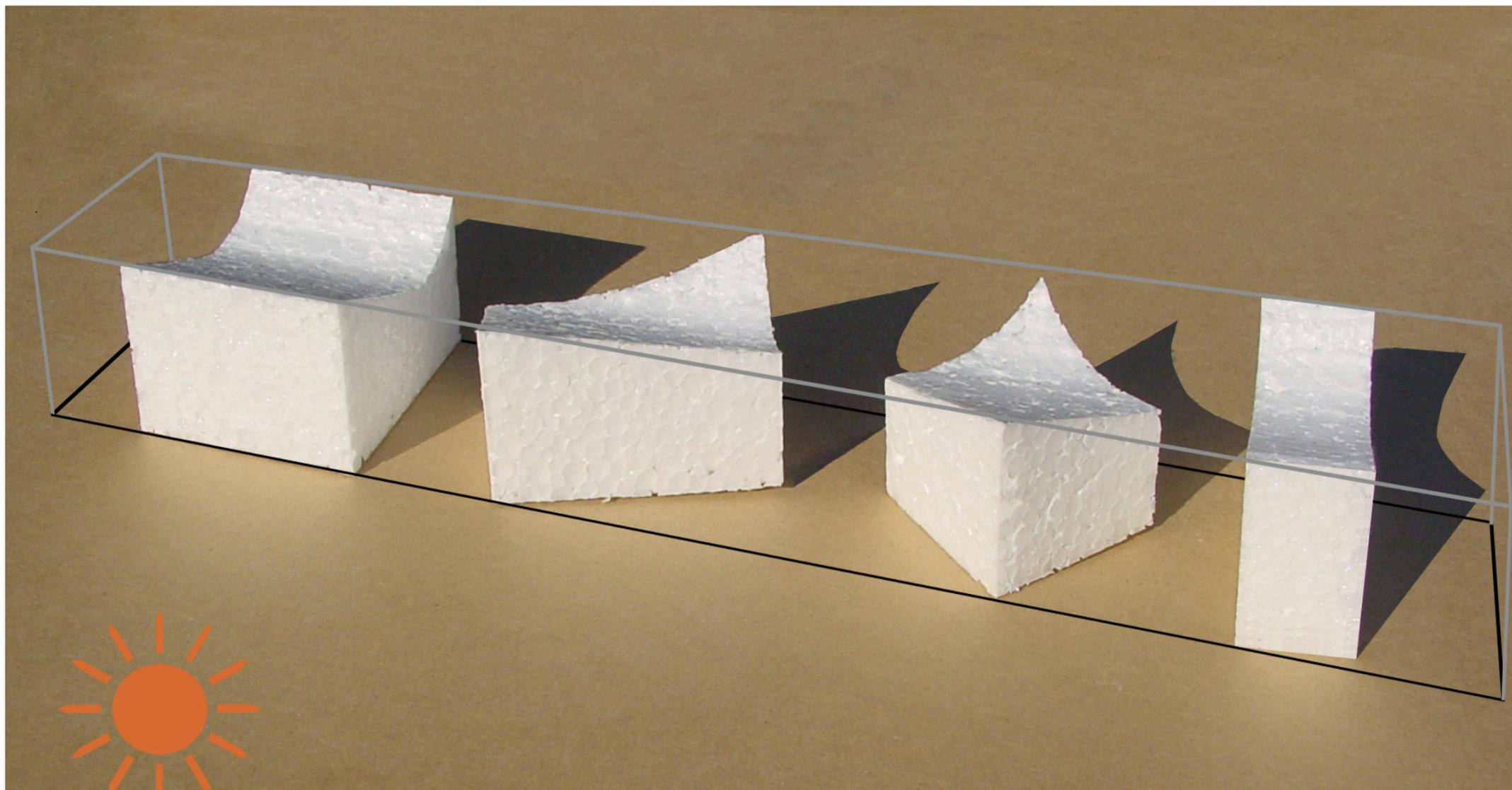


4. Solar façades make maximal use of solar energy

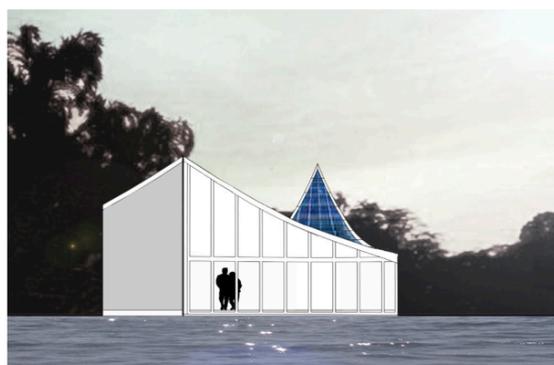
The façades were designed to make maximal use of sunlight and solar energy. The south-facing double windows of the house are layered with 4 centimeter thick paraffin, a Swiss innovation. During the day, as the sun heats the windows, the translucent paraffin becomes fluid and stores solar radiation (it can store ten times as much as concrete). At night, as the paraffin sets, it emits the heat.

The north façade is a large window pane filled with translucent insulation materials. Light can freely penetrate the house, and only little energy will be lost.

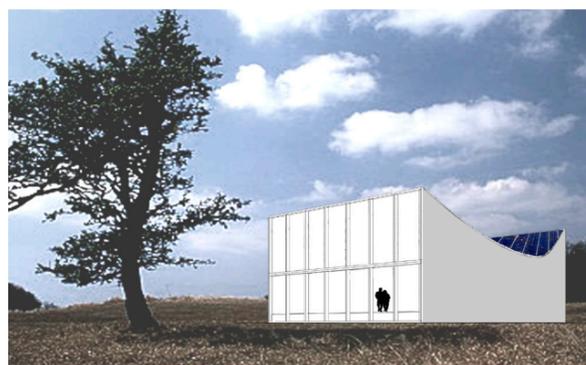




prefabrication: technologies used by shipbuilding industry and wood frame construction



riverside



countryside



suburbs

5. Aut-o-Arc: built for mass production

Aut-o-Arc consists of three parts: the roof, the façades and the floor with the technical systems. The uplifts on the north and south side of the roof are fixed, they are needed for the collection of rain water and solar energy. Depending on the orientation of the building site, Aut-o-Arc can take on many different shapes and sizes.

Aut-o-Arc was built with conventional technologies, keeping the overall costs low. Wood frame constructions are used for the roof and façades. The steel floor is made with technologies used by the shipbuilding industry. The floor has tiles that can be lifted to reach the underlying piping; therefore it is possible to make electrical and water outlets wherever one likes. This makes it easy to partition the house.



