

## Freestanding Screened Shelters

People with environmental illness can use a screened shelter to sleep outside and still be protected from rain, bugs and rodents. This article features four examples.



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Sometimes a house that is tolerable during the day isn't at night, when many people with chemical and/or electrical hypersensitivities are the most sensitive. Or there may be a need for a temporary place to be while building or renovating a house. Or moving to a safer house may simply not be an option.

A screened shelter may turn a marginal home into a usable one, providing a safe retreat when needed. In warmer climates, or with a suitable sleeping bag, it may be usable year round. Screened shelters have been built from Minnesota to Arizona, and several state parks in Texas rent them out to campers.

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Using a screened shelter does require excellent outdoor air quality, as there is no way to “close the windows.” This could make them unusable in a suburban area, with toxic drift from the neighbors, though that tends to be less at night.

It is typically a small, low-cost structure, which may not require a building permit (check locally). The choice of materials can be less stringent than for a house, as there will be extremely good ventilation.

### **A screened shelter in Texas**





This shelter is located outside Dallas, Texas in a hot and humid climate with moderate winters and occasionally severe thunderstorms. It is shielded from high winds by trees and a small hill.

It is a simple construction that most handymen or a specialist in screened porches should be able to put up in a few days. It cost about \$1,000 when it was put up around 1997.

The foundation is simply concrete blocks set on a bed of sand. The perimeter consists of solid blocks, while the rest of the floor is hollow-core blocks that are turned on their sides. The bottom frame of the structure is bolted onto the perimeter blocks. The structure is made of regular angle iron, which is either welded or bolted together. The angle iron was not painted, but allowed to eventually rust. Even ten years later, the structure is still sound.

The room itself is a box about 8 ft (2.5 m) long and 6 ft (2 m) wide and 6 ft (2 m) tall. Aluminum mosquito netting is attached to the sides and also across the top, making a flat ceiling.

The door is custom built out of the angle iron and mosquito netting.

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The roof sits like a hat on top of the screened-in box. It is made of two pieces of corrugated steel “tin roofing” material, each about 14 ft (4½ m) long and 6 ft (2 m) wide. This provides a 3 ft (1 m) overhang on all sides, to shade against sun and rain.

The roof is supported by small box steel beams that are welded together with a layer of Reflectix insulation (aluminized "bubble wrap") between the beams and the roof (see the pictures). The Reflectix helps to deflect the heat of the sun beating down on the roof. It does not at all help insulate against the cold.

The roof structure is simply welded on top of the screened-in box with some extra angle-irons as support.

This is a lightweight structure that would not be able to withstand the strong storms of the area, if it was not shielded by the trees and the small hill behind it. The relatively large roof would act as a large sail if the winds could get to it. The light structure would not be strong enough to hold it, and the light foundation would simply be lifted up by the winds. For a more exposed location, it would need a solid concrete foundation, larger corner posts and possibly some bracing.

The structure is also too light to handle a significant snow load, which is not an issue in Texas.

The roof overhangs work very well in normal rains, to protect the person sleeping inside. However, in heavier rains, the splashes from the ground are a problem. The woman who had it built wrapped the sides in large pieces of heavy cotton sheets, both for the rains and for privacy. But it was cumbersome and prone to mold growth.

Someone copied this design, and built it on a small flatbed trailer, so it could be moved if needed. Unfortunately, no picture is available.

## A screened shelter in Arizona



*Photo courtesy of Scott Killingsworth*

The second featured shelter is a converted carport that is located in rural northwestern Arizona. This climate has hot summers and mild winters, with little rain. It is feasible to sleep outside year round here.

The carport was custom built as a wooden structure on a concrete slab and with a steel roof. It was later converted by enclosing the rear half of the carport with mosquito netting, that is held in wooden frames. A simple screen door provides the entrance.

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Note the little stem wall under the netting, which helps keep the critters of the desert out.

This structure will be unbearably hot during summer days, when the sun beats down on the steel roof, as there is no insulation or attic to shield the space below. Adding sheets of insulation (such as Reflectix) will improve that, if daytime use was needed.

The owner covers her bed with Tu-Tuff plastic in the daytime, to keep blowing dust off.

### **Shelter in Florida**



This shelter was built in Florida in 2014, using materials for screened porches. It is attached to the porch of the house. Picture courtesy of Nathalie D.

## **Screened shelter in a Texas campground**



Most of the campgrounds in the Texas state park system have screened shelters. They are rustic wooden structures with mosquito netting and a steel roof. The side walls are half the normal height, which together with a large roof overhang protects against the rain. Inside is just a single room without amenities of any kind, except an electric light.

These shelters were not built with EIs in mind, and may not be suitable for EI travelers due to possible treatments of the wood, prior occupants, etc.

The one pictured is from Abilene State Park.

### **Other ideas**

In rainy or cold climates, a shelter can be built using sliding-glass patio doors on all four sides, so there can be plenty of ventilation or none at all. Aluminum-framed doors should be used, as they are the most tolerable.

*2009 (updated 2021)*