



Yvonne and Patrick Taylor converted half their 45 by 72-ft. Quonset building to living quarters. Photo shows front entry.



Back end of building looks like a conventional quonset storage building.

Living Quarters Built Inside Quonset Building

Yvonne and Patrick Taylor put up a Quonset building to use for storage but ended up living in it after converting half the building to living quarters.

"When we retired, we intended to travel for much of the year, staying in trailer parks and being at home part time," recalls Pat Taylor. "Yvonne just wanted a place to store stuff back in Oklahoma, but I wanted a house to come home to. We compromised and built a house inside the storage building."

Taylor gives all the credit to his wife for designing and doing the finish work on the house. Born and raised on a dairy farm, she learned carpentry and woodworking from her dad.

"She would sketch out what we needed to do, and the next day we would work on it," he says.

A plumber friend helped run water pipe. Pretty much everything else was done by the Taylors, starting with the unique walls.

"The house is really a freestanding building inside the Quonset," explains Taylor. "Yvonne designed the side walls to match the curve of the Quonset ribs and then squared them off inside, using the space between as storage closets."

With the Quonset ribs for a roof, only weatherproof paper was placed over the rafters. Stud walls and rafters were fully in-

ulated and then finished off on the inside. Every effort was made to get as close to the inside roof of the Quonset as possible without touching it.

The Quonset building is 45 by 72 ft. The living quarters take up about half of it with a living room, master bedroom, kitchen, dining area, bath and utility room all on the lower level. A loft area extends over all but part of the living room and includes a bedroom, office and sewing room. All together it totals around 1,400 sq. ft.

All trim work, storage units and stairs and banister were built with home-sawn cedar. "I picked up 70 8-ft. logs for less than \$100 at an auction. We had them sawed by a custom mill that came to the farm and bought a planer to prepare them for trim."

The entire process, including cutting and laying tile across the kitchen, bath and utility areas as well as part of the living room and building a large deck outside the living area, took about two years. During that time, they also traveled for months on end with a 5th wheel trailer.

Taylor credits his wife for all the fine woodwork and built-ins, in addition to designing the angle cuts for the shell. He considers himself a rough carpenter, glad to follow her direction.

Once they finished the inside, they laid a



Living quarters consists of a living room, master bedroom, kitchen, dining area, bath and utility room.

mortared stone wall against the end of the living quarters to a point about a foot above the windows. They then laid a mortared stone wall for a patio, filled it with dirt and sand and finished it off with 2-ft. square tile they had gradually made over a period of months. Taylor would mix the cement and fill two molds. Before it had fully dried, his wife would work a colored powder into the surface to give it a brick red look. As the tiles dried they would be stacked, and the molds refilled. More 2-ft. tall walls were placed around the sides of the Quonset to hold flowerbeds.

"When we look back at it, we marvel at what we did without knowing what was really possible," says Taylor. "Not includ-

ing our own labor, we figure it cost \$30,000 to \$35,000. That includes the Quonset and \$10,000 in concrete for the slab."

One other thing the Taylors did that was unique was to end their driveway at the garage door on the storage/garage end of the Quonset. He says it is fun to bring visitors in from the garage to the living area of the building.

"They're always surprised," he says. "Sometimes people will say they stopped by, but didn't see the house. We just tell them to come back, and we'll show them."

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Gasifier Designed To Be Your Own Personal Power Station

Ben Peterson's gasifier is the result of his journey to be self-sufficient and create his own electricity.

The Oregon resident decided to use the one thing he had plenty of - wood - to create electricity by making wood gas to fuel a low-speed engine. The "Off Gridder" gasifier, as he calls it, uses a heat chamber with no oxygen to break wood down into its most basic elements - hydrogen, burnable carbon gases, and inert nitrogen.

Each morning Peterson loads his Off Gridder hopper with about 66 lbs. of small wood chunks. It feeds enough gas to an engine to charge a bank of batteries that meets the daily electricity needs for his house and shop - about 22 kwh/day.

Peterson first followed plans he got through the government's FEMA website to build the gasifier. It didn't work so he started experimenting - repeatedly - and modifying his own version.

"I started getting good results and knew this could be a viable energy solution for anyone with wood to burn," Peterson says. "So I set about developing a gasifier that would be easy to operate, easy to service, shippable, be multiple fuel capable and last a long time. Dozens and dozens of prototypes later, the Off Gridder is ready for market.

"For the very first firing you will want to run the unit for one to two hours just flaring the gas," Peterson explains. "This is done to break in the char zone and ensure the proper reactions are taking place. An air compressor is used to create vacuum that pulls air into the unit where it creates a very narrow zone of high heat. This hot carbon zone is responsible for turning the wood/biomass into fuel gas. Once the gas is clean, it's sent through the cooling and filtration system to the engine."

After the first use, start up time is just 3 to 5 min., Peterson says. Operation time varies according to the fuel and hopper size. Off Gridder comes with a standard hopper that lasts about two hours and a larger hopper that runs for four hours. Peterson uses a standard hopper to meet his family's power needs.

He emphasizes that using the right fuel is key. Peterson uses mostly pine, cut into 1 to 2-in. blocks that are 20 percent moisture or less. Other waste materials include plum and cherry pits, nutshells, wood pellets, or corn.

"Operating a gasifier is like driving a car," he says. "It's a mystery at first, but once you have it figured out, it's a piece of cake. This isn't for people that want to sleepwalk through their push-button life."

The Off Gridder is intended for residential



Ben Peterson uses his home-built gasifier to break wood down into gas that fuels a low-speed engine, which in turn charges a bank of batteries.

use, and not meant to run constantly. Peterson suggests using high amp items such as a washer, dryer and oven when the engine is running. The battery bank stores the energy for the rest of the day's electrical needs. If more power is needed, simply start up the gasifier again.

"The Off Gridder runs best with water-cooled cast iron 3, 4 or 6-cyl. low speed engines (1,800 rpm's)," Peterson says. "They're going to give you the best power, longevity and suction for proper operation. You can run stationary small block V-8 engines, too, but run time will be less. Pick up an old car engine and equip it with a truck alternator if you want to make DC power. Buy an old natural gas genset if you want to make AC power."

Waste heat from the engine can be used for hot water needs.

The Off Gridder starts at \$4,900 and requires minimal assembly. Peterson says it's well built from stainless steel, carbon fiber gaskets, industrial grade motors, ceramic fiber insulation, dual wall construction, and thick flanges. "It's designed to be an heirloom quality power station that you can pass down through your family for generations," he says.

Peterson's website includes a Q&A page that includes many details about the Off Gridder.

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