Low Cost Way to Re-Insulate Older Buildings

When he's not busy inventing and building in his farm shop, Roger Gutschmidt can often be found putting his good ideas to work elsewhere. The Gackle, N. Dak. man recently helped his church save on heating costs with an economical method of "topping up" the building's existing insulation.

"Our church walls had always been really cold and lost a lot of heat in the winter," he explains. "The building was originally constructed in the 1940's and the outside walls were built with 2 by 6's but only 3 in. of fiberglass bat insulation was installed. There was a 3-in. cavity of air space between the insulation and the sheet rock. We needed an inexpensive and easy way to insulate that space."

Gutschmidt did some research and learned about a product called Vermiculite, which is finely ground, lightweight, odorless and fire resistant with a high R-value. Best of all, it was relatively cheap. A 3 cu. ft. bag costs about $10.

"To put Vermiculite in our walls, the other volunteers and I simply drilled a series of 2 1/4-in. holes about 12 in. from the ceiling, and spaced 16 in. apart along the walls," he says. "I made several special funnels using spray cones from a field sprayer and sections of flexible hose cut from an old shop vac. I duct taped little battery-operated neck massagers onto the funnels to create a vibrating mechanism. This prevented the material from bridging inside the bottom opening."

By lightly tapping against the sheet rock with a rubber mallet, Gutschmidt says the Vermiculite shook down and got into all the voids in the walls.

The upper portion of the wall (from the hole to the ceiling) was filled with "Great Stuff," which is a triple-expanding foam sealant. One can filled about 12 by 3 by 16 in. of space.

"This was a great way to insulate our walls without having it cost a lot of money. The part we did (the sanctuary) measured 35 by 65 by 10-ft. high sidewalls," he adds. "Another member of our church closed up all the holes and mudded over them with sheet rock joint compound. It looks like a professional job and we did it all ourselves for about $900."

Contact: FARM SHOW Followup, Gutschmidt Manufacturing LLC, Roger Gutschmidt, 6651 Hwy. 56, Gackle, N. Dak. 58442 (ph 701 698-2310; shopdoc@drtel.net).

Roger Gutschmidt helped his church save on heating costs by "topping up" the building's existing insulation with Vermiculite. He drilled a series of holes in the walls and made funnels out of spray cones to blow the material in.

"Weight Kit" Solves Auger Problem

"I added this kit to one of my customer's 10-in. by 36-ft. take-out augers after he complained that it was a real back breaker to move it around - in and out of grain bins or under hopper bins and such," says farm repair shop owner Roger Gutschmidt. "I added the weight box to counter balance the lower end, enabling him to lift it more easily. I also mounted a jack with a swivel caster wheel from Shoup Manufacturing so he can now roll it around without injuring his back."

The swivel jack with pneumatic wheel rolls easily, and has about 15 in. of travel up and down, according to the Gackle, N. Dak. man. He says the caster-type flotation wheel rotates a full 360 degrees for easy, precise positioning and allows one person to move any auger from bin to bin. For transport and storage, it swings upward and locks in position.

The weight box consists of a 20-in. length of 3 by 5 by 3/8-in. wall rectangular tubing. Inside this 20-lb. box, Gutschmidt slid 3 pieces of 3/4 by 4 by 19-in. flat plates, which weigh 16 lbs. each. To increase the weight even more, he bolted another 21-lb. plate to the bottom of the rectangular tubing, bringing the total weight of the end of auger to just 90 lbs.

"The weighted box is welded to a couple of heavy duty clamps that go around the 10-in. auger tube," he says. "It's low profile so it doesn't interfere with loading onto trucks or trailers."

The weight box cost Gutschmidt $50 in materials, while the jack dolly added another $359 to the project.

Contact: FARM SHOW Followup, Gutschmidt Manufacturing LLC, Roger Gutschmidt, 6651, Hwy. 56, Gackle, N. Dak. 58442 (ph 701 698-2310; shopdoc @ drtel.net).

Gutschmidt added a weight box to counterbalance the lower end of his 10-in. by 36-ft. take-out auger, making it easier to lift (above). He attached a swivel caster wheel at the bottom to make the auger easier to roll around.

Generator Powered By "Wood Gas"

When Wayne Keith needs some electricity in a remote location, he just gets some firewood together and fires up his portable generator that runs on wood gas. Keith uses the same wood gasification system that powers his pickups on the farm (see Vol. 30, No.6). Since then he has refined his system, now in its third generation.

"I had to make some changes on the genset to burn the wood gas," says Keith. "On a pickup engine, you just step up the ignition timing. On a small motor, you have to take the flywheel off and cut a new keyway, then put the flywheel back on."

While Keith doesn't have much need for the wood-fired genset at home, he did have fun with it this past summer. It rode cross-country on a small trailer he pulled behind his wood fired pickup. Keith and his truck took part in the "Escape From Berkeley", a three-day road rally where all vehicles used non-petroleum fuels.

Keith drove a wood-powered 1991 Dodge Dakota V-8 from Springville, Alabama to San Francisco and back. The entire 7,388-mile journey was powered by wood pulled from a dumpster at a furniture factory before he left.

"The factory was going to pay someone to haul it away so they gave it to us," he says. "It was more than enough for that trip and a couple thousand miles more."

Keith reports that his truck took first place on days one and three of the three-day road rally. "I found out we were docked points for going more than 90 mph across part of Death Valley," he says.

Along the way, gas from the wood was also used to power the genset. Keith simply ran a flexible pipe from his gasifier to the genset. Once he had it running, he plugged in and used an electric table saw and other electrical tools to demonstrate.

While the system works fine for off-grid use, it requires constant attention. "Wood gasification requires little adjustments as you drive along," he explains. "If you're using a generator as a steady power source, you have to be there all the time."

Keith suspects computer controls could be designed to handle the job, but he isn't interested at this time since he has wind-powered generators producing his home's electricity.

"If Alabama had net metering, where we got paid for electricity produced for the grid, I would have one operating 24 hours a day," says Keith.

Contact: FARM SHOW Followup, Wayne Keith, 1950 Saint Clair Road, Springville, Alabama 35146 (wayne keith01@windstream.net.)

Wayne Keith modified his portable generator so he can run it on wood gas.