

Photo courtesy The Lambton Farmer, Dresden, Ont., Canada.

Ralph Baker's windmill-equipped silo is roofless, but can be roofed, using metal framework that supports the mill to also hold roof panels.

## SITS ON TOP 50-FT. SILO

# Monster Windmill May Solve Energy Problems

Like a lot of farmers, Canadian Ralph Baker, of Petrolia, Ont., has a couple of silos on his place. But one of those silos holds something more promising than a few month's feed for his cattle. This silo may be capable of producing all the electrical power and hydrogen fuel Ralph can use because of the giant windmill and generator he built on top of it.

Since 1972, Ralph has invested about \$10,000 to develop his unique energy self-sufficiency project. The current model weighs about 9 tons, according to Ralph, and perches 60 ft. above the ground on the 14 by 50 ft. silo. A 15-ft. dia. track around the top of the silo raises the rotor another 10 ft. above the silo wall.

Originally, Ralph made the blades out of tube steel with a sheet steel skin. They didn't work out, so he's modified them several times since then. The current blades are made of fiberglass and measure 50 ft. long. Ralph figures the mill should hit maximum efficiency with wind speeds between 15 and 17 mph. The blades will be turning at about 30 rpm at that speed and the generator at about 1,800 rpm.

"The alternator produces 12 KW of 60 cycle alternating current," Ralph explains. "The current will be used to heat the house in winter and to produce hydrogen for a variety of uses, during the summer.

"After maximum wattage is attained, the blades are designed to start to feather, and will come to a complete stall in high winds to prevent damage to the system. The feathering will be controlled with governors, a radio signal and a spring-loaded trip. The tail of the windmill keeps the blades turned into the wind. The whole thing can rotate 360° on top of the silo," Ralph told FARM SHOW.

Although Ralph's silo is roofless, the metal framework for holding the mill above the silo walls is equipped to hold roof panels. It also holds the silo unloader tripod pulley and has enough room between the mill and the silo to pull the silo unloader underneath at silo filling time.

"The principle of this design could be adapted to any silo structure. With slight design changes such as diameter of track, blade diameter and size of generator, it could be done. For

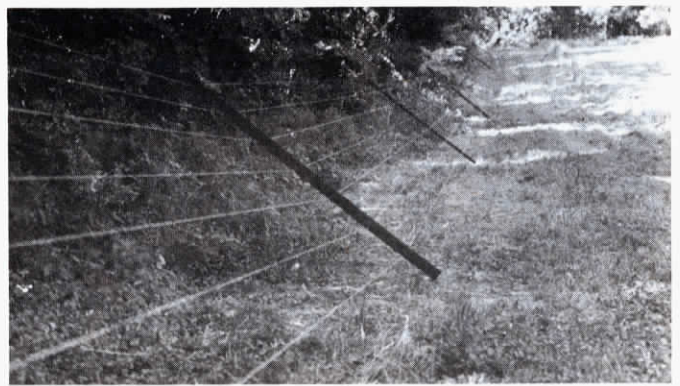


Photo courtesy Pennsylvania Farmer magazine.

Deer can make long, low jumps and short, high jumps, but they can't do both at once, say designers of slanted fence.

## SLANTED DESIGN KEEPS DEER AWAY FROM FIELDS, ORCHARDS

# Build Yourself A "Deer Proof" Fence

The search for a "deer proof" fence for orchards, pastures, fields or gardens may be over. Eastern farmers are using a new design that they say is nearly 100% effective at keeping deer out.

It's a 7-strand electric fence slanted at a 45° angle to the ground. It was developed and tested at the Cary Arboretum at Millbrook, N.Y., where experimentation is going on continuously to find the best methods of deer control.

Repellants and straight electric fences often give good initial control but lose their effectiveness after a few months, according to Wildlife Specialist Jay McAninch, who helped develop the new "deer-proof" fence. "We wanted to try something between the single wire electric fence and the expensive 8 ft. woven wire fence. This slanted fence design was the result. It's a physical and a psychological barrier to the deer.

"Deer would rather go under than over a fence," he explains. "When they go under the outer wires, they can't jump the inner wires and they become confused. That's the psychological barrier. A deer can make a long, low jump, or a short, high jump. But he can't do both in a single jump. The slanted fence is both too high and too wide."

Spacing of wires was determined from scientific measurement of the height of deer, and size of their heads. The bottom wire is 12 in. above

ground level, and each successive wire is 12 in. apart.

With the help of a manufacturer in Vermont — Brookside Industries, of Tunbridge — the slanted deer fence was electrified and tested at the arboretum. McAninch says the hot wires scared the deer so much that they stayed away and it was hard to gather research information on them. "In practical use by farmers and orchardists, the combination of electricity and a slanted design has given almost 100% control of deer," he told FARM SHOW

Fence cost may run 60¢ per lineal foot for the wire, corner assemblies, posts and spacers. On level terrain, corner assemblies are placed every 1,000 yds., and small posts are placed every 60-75 ft. in between. One or two wooden spacers are placed on the wires in between the small posts. More corners and posts are needed on hilly or irregular terrain.

The fence is charged by a low impedance charger that doesn't short out from heavy vegetation.

McAninch says the slanted fence is for big areas that need protection — not for 2 acre or smaller plots where repellants or other methods usually will drive the deer out.

For more information, contact: FARM SHOW Followup, Jay McAninch, Cary Arboretum, Millbrook, N.Y. 12545 (ph 914 677-5343); or, FARM SHOW Followup, Brookside Industries, Tunbridge, Vt. 05077 (ph 802 889-5556).

example, a 20 by 80 silo could accommodate a 100 ft. dia. blade and probably a 75 KW generator," says Ralph. He thinks his system could be duplicated for about \$1,000 per kilowatt.

Ralph also notes that state-of-the-art wind generators such as a Jacobs Windcharger could be installed on a silo, too, provided that sufficient blade clearance is available between the rotor and the silo top.

Ralph says he intends to go into commercial production when the mill and the generator prove to be workable. Until then, he has no detailed plans or other prepared materials to give out, but he will answer specific questions about his solution to energy problems.

For more information, contact: FARM SHOW Followup, Ralph Baker, R.R. 1, Petrolia, Ontario NON 1RO Canada (ph 519 882-1698).