This Utility Vault bunker silo is 120 ft. long and 64 ft. wide. With a concrete floor, it holds about 2,000 tons of high moisture corn silage. Cattle shelter or machine shed can be built adjacent to silo's walls.

A solid flat base is built up with about a 2 in. grade to allow silage acids to drain out of the silo. Wall sections are 4 in. thick at top, 8 in. at bottom.

PRECAST CONCRETE SECTIONS

Booming Demand For New-Style Bunker Silo

"We're sold out way into next year — just can't make them fast enough to meet demand," says engineer Tom Wrangell who helped develop his company's new precast concrete bunker silo.

"We believe there is no cheaper way to ensile — and our sales are proving it," Wrangell told FARM SHOW. Since the Utility Vault Co., headquartered at Guelph, Ont., introduced their new wrinkle in storing silage, the plant's entire production has been sold within a hundred mile radius of the plant.

"Our design is so simple that most any concrete plant could easily copy and produce it for customers in their area," says Wrangell, who adds that he'd be more than willing to work with other plants since his company has no plans to patent the silo design.

It features unique L-shaped concrete sections that fit together to form any size bunker silo. Individual L-shaped sections are 8 ft. wide, 12 ft. high and have a 7 ft. long base. They're butted against each other to form an open-end bunker, then sealed together with Butyl rubber. A concrete floor then ties the whole enclosure into one solid unit.

Individual wall sections are 4 in. thick at the top and 8 in. thick at the bottom. The entire 7 ft. long base is 7 in. thick. A 1/2 in. reenforcing bar runs through each section at 4 in. intervals. In other words, there are 24 bars in each 8 ft. section. The bars are formed in the same L-shape as the walls, with a backwards loop in each corner where the walls and base met. This gives the walls a spring-like strength that enables them to withstand the pressure of thousands of tons of silage, and the heavy machinery used to pack it.

Each 12 ft. high section is free-standing and does not need backfill or trusses for support, according to Wrangell. In fact, one of the main advantages of the cantilevered walls is that you have a free wall to build against if you want to add on a lean-to or other structure for livestock, or for machinery storage.

To combat the effects of silage acids on the concrete, the company uses more than 5000 psi to entrap at least 7% air in the concrete, Wrangell explains. In addition, the sloping grade of the silo allows acids to drain away. The company's "specs" on the cement being used are readily available, along with the recommended mixture for pouring the silo floor.

"We had two ideas in mind when we designed the system," explains Wrangell. "One, we wanted to deal directly with the farmer and eliminate the costly middleman. Two, we wanted the system to allow the farmer to do most of the work himself without placing too severe a demand on his time. We provide whatever guidance the farmer needs to construct the silo," Wrangell points out.

Once a farmer contacts the Utility Vault Co., company engineers visit the farm and advise him on developing the grade and drainage around and away from the site. The silo needs a solid base and at least a 2 in. grade for proper drainage, Wrangell points out.

The largest bunk silo Utility has constructed so far was 80 by 115 feet, enough to hold 2,000 tons of 65% moisture corn. It took 2½ days to assemble, using the company's heavy duty trucks and cranes to move and position individual 7½ ton sections. Another 32 by 80 ft. structure, designed to hold 600 tons, took 1½ days.

The new-style silos cost farmers in the Guelph area $62 per running foot. That makes each section $496 and a 32 by 80 foot silo made to hold 600 tons of silage right at $12,000. These costs include engineering help in laying a solid foundation, delivery and installation of the wall sections and technical advice in completing the rest of the floor and setting up a feeding system.

Stress tests are now being conducted by the University of Guelph in Ontario to verify claims by the company regarding strength of the new-style silo.

For more details, including "how to build" construction tips, contact: FARM SHOW Followup, Tom Wrangell, Utility Vault Co. of Canada, Route 3, Guelph, Ont., Canada N1H 6H9 (ph 519 836-8250).

Owatonna's new model 595 big round baler is equipped with 21 rollers, each measuring 12 in. in dia.

Owatonna Unveils Big Round Baler

Latest new big round baler on the market is a "beltless" model designed and manufactured by Owatonna Mfg. Co., headquartered at Owatonna, Mn.

"Unlike other balers on the market, our new model 595 uses 21 rollers instead of chains or belts to make a tigher, smoother and better formed bale, yet is designed so each bale has a soft center," a spokesman told FARM SHOW. "As hay enters the bale chamber, it sets up a tumbling action until the bale is up to about 600-700 lbs. At that point, compression is applied to produce a tight, well formed bale. Its roller design allows it to handle high moisture hay that's too wet for belt-type big round balers to handle. It'll also handle straw, and virtually all kinds of hay."

Each of the 21 rollers is 12 in. in dia. and operates at 140 rpm. The pto-driven machine, designed for use with tractors in the 70 hp. range, makes bales 5 ft. wide, 6 ft. in dia. and weighing approximately 1,500 lbs. The machine itself is 9 ft. wide, 8 ft. long and weighs 4,178 lbs.

Estimated list price on production models slated for introduction early next spring is "approximately $7,400". The machine stores 4 bales of twine and is available with manual (standard) or electric tying.

For more details, contact: FARM SHOW Followup, Owatonna Mfg. Co., Box 547, Highway 45 N., Owatonna, Mn. 55060 (ph 507-451-2860).