Design of the partitions, made of "black cement", creates a "deconfinement" environment.

All you do is tell driver which number of the dial marks the depth you want the disk to run.

HELPS CAPTURE FREE SOLAR HEAT

Look What He's Doing With "Black Cement"

Here's an energy saving idea from an Iowa farmer who's figured out a way to heat livestock barns with concrete — not by burning it but by coloring it black and putting it where it will absorb free heat from the sun.

Art Nehring, Iowa Falls, hit on a low-cost source of solar heat when he put "black cement" walls and partitions inside his well-lighted confinement building. He also virtually eliminated slime and moisture, creating a dry, healthier environment for his hogs.

"The black concrete walls stay about 23° warmer than regular concrete, and heat is held in the building when the sun goes down," Art told FARM SHOW. "Just ask your ready-mix company to add black pigment to the concrete while it's being mixed. It's one of those simple improvements in building design that doesn't cost much but pays off big."

"Black cement" can be used on anything that needs to be kept warm and dry in the winter, including concrete waterers and feeders, feeding floors, slats, driveways, etc. Black pigments (or almost any color you want) can be bought in small quantities for do-it-yourself mixing, or in 50 lb. bags for ready-mix trucks.

The cost to color Nehring's cement black was $10 per yard, using a liquid dye, plus $1.25 a yard extra for truck cleanup, according to Art Axle, Iowa Falls, who was Nehring's contractor. Axle notes that if any dye is left in the truck it could cause streaks in a subsequent job. More or less dye can be added to each load for lighter or darker shades.

A spokesman for Brock-White, a Minnesota company that sells pigments, says most ready-mix companies stock, or know where to buy, pigments of any color. But, if you can't find any locally, contact: Brock-White Co., 755 Florida Ave. S., Minneapolis, Minn. (ph. 612 544-0123).

"Using black concrete walls like we did won't do much good unless you let the sun in," says Nehring, whose $250,000 hog building has no source of heat other than the sun. The 40 by 327 ft. building features dozens of other innovations, including a unique "deconfinement" design that has stopped the usual cannabilism problem with hogs in confinement, and has helped create an environment geared toward making hogs "psychologically comfortable".

South-facing walls open automatically when sun comes up, close when it goes down at night.

The south side of the building is covered with transluscent fiberglass that lets in the sun. Having a solar vertical wall rather than the normal slanted roof is the key, says Nehring. "In the winter the sun is toward the south horizon, and virtually all the sun's rays enter the building. When the sun is directly overhead in the summer, the roof design provides shade, cooling the building. It's a mistake to build solar systems on a slanted roof, as is usually done, because you'll suffer in the summer from heat," explains Nehring.

A unique feature in the building is the south side swinging walls which open automatically when the sun comes up, and close when the sun goes down at night, trapping all collected warm air inside. Walls are lifted up against the roof by electric motors and cables activated by a light sensor. On the coldest nights last year, more than 20° below zero, the barn never went below 65°.

Of all his innovations, Nehring is most proud of his "deconfinement" system. "Hogs aren't meant to be cooped up anymore than dogs are," he points out, "and hogs need to run just as much. When they can't, they turn on each other, fighting and picking on the smaller animals."

His system breaks up pens into mazes with T-shaped partitions. He connects four or more pens containing up to 800 pigs, so theoretically, a hog can run forever and not reach a dead end. "The hogs are happy and clean. And you don't use any additional cement to do it — just rearrange your walls."

Nehring, who plans to produce some 20,000 slaughter hogs in 1980, has built two sun-powered (327 ft. by 40 ft.) buildings and plans to build another. In the winter he figures he saves more than $500 per month per building on heating costs.

He'll sell complete plans for his building for $500.

For more information on black cement or Nehring's "solar" building, contact: FARM SHOW Followup, Iowa Falls, Ia. 50126 (ph. 858-5722).

ELIMINATES GUESSWORK

Build Yourself A Disk Depth Gauge

Now, thanks to a simple depth gauge you can build in your own farm shop, you can send anyone out to disk — including a young, inexperienced driver — and not worry about whether the disk will be operated at the desired depth.

This home-built depth gauge, designed by South Dakota farmer Ervin Jensen, of Beresford, eliminates guesswork. It's tied to a large dial with numbers which are easily read right from the cab. All you do is tell the driver which number on the dial marks the depth you want the disk to run. Then, all the driver has to do on every turn in the field is adjust the hydraulic control lever until the depth gauge dial points to the right number.

The half-circle dial is 30 in. in dia. and marked with 2 in. high numbers. With the arrow pointing to No. 1 on the dial, the disk is out of the ground. The higher the number, the deeper the setting, with No. 9 designating maximum depth.

Jensen believes his home-built gauge, which he made entirely out of scrap iron except for the sheet metal piece he bought to make the half-circle gauge, will adapt to most any make of disk.

For more details, contact: FARM SHOW Followup, Ervin Jensen, Route 1, Beresford, S. Dak. 57004 (ph. 605 253-2644).

Close-up photo shows how home-built dial is hooked up to constantly monitor depth.