



Flow to Build a Concrete Ice House

There are few improvements possible which do more to make farm life pleasant than an ice house. Its stored blocks not only make it possible for the farmer to increase his profits by improving the market value of his dairy products, but also, to enjoy the comforts of a home supply of ice.

It is so easy and inexpensive to have an abundant supply of ice all summer that it is really surprising that every farm is not provided with an ice-house. The spread of concrete construction on the farm has been followed by the erection of such buildings in all parts of the United States and Canada, and it is the purpose of this article to give some suggestions which may help those who have not yet built, to plan their ice-houses.

Concrete, being indestructible and not easily penetrated by heat or cold, is a splendid material for the walls. It has the added advantage of being comparatively cheap, since sand, stone, gravel and water are usually available on the farm, and the work can be done by the farmer or his assistant, at seasons of the year when spare time is plentiful. Moreover, concrete walls are not affected by the continual dampness and do not rot like wood. The saving in painting and repairing is so nothing of superior ice-keeping qualities, in a few years amounts to more than the first cost of the concrete building.

The materials may be hauled to the site at odd times, and piled so as to be convenient for working.

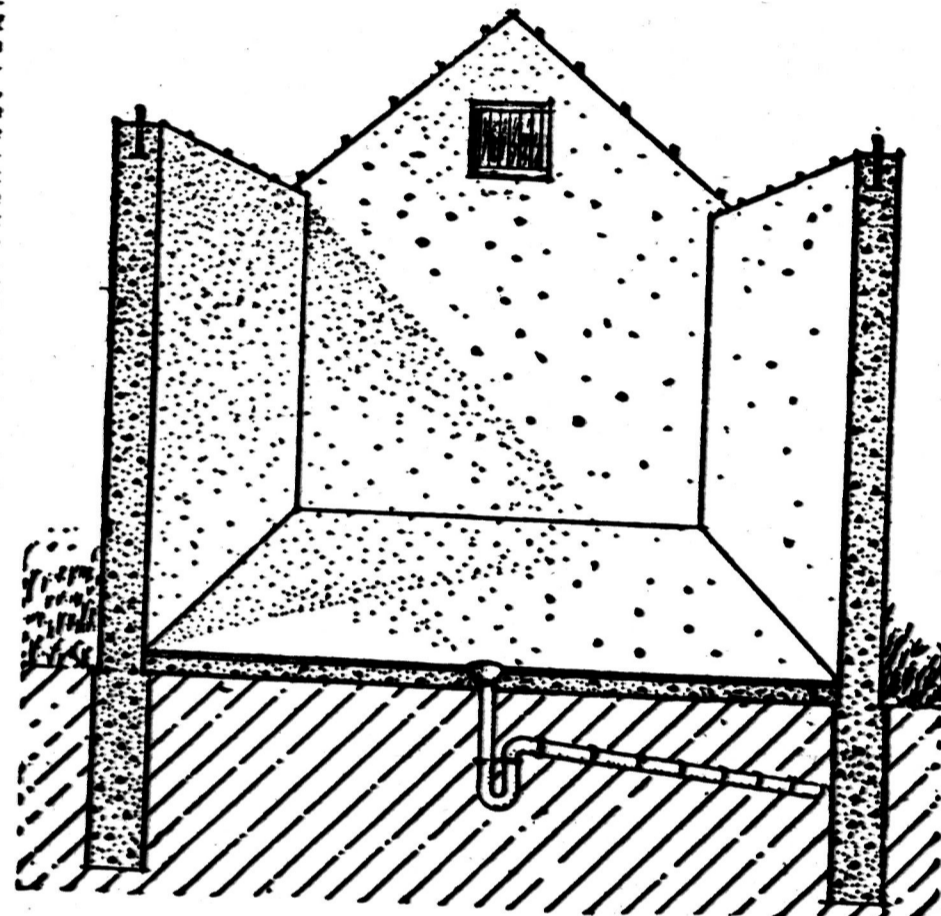
The wooden forms for the concrete may be either fixed or movable. Fixed forms are merely two boxes without top or bottom, which fit one within the other with an 8-inch space between for the concrete. Such forms are made of 2 by 4 inch studding spaced two feet and sheathed next to the concrete wall with 1-inch siding. The forms should be held in place at the bottom by timbers called "liners," and should be well braced. To save lifting the concrete, the outside boards may be nailed on as the concrete is placed in the forms. Movable forms require less lumber than the fixed variety. Such forms are built in sections 2 to 4 feet high and in lengths convenient to handle, usually 8 to 16 feet. The 2 by 4 inch uprights are spaced three to four feet. Cross-cleats at the top are provided in forms eight inches apart. Near the bottom twisted wire ties are used to draw the forms up tightly against the previous day's concrete work. Each

Concrete for the foundation should be made mucky wet and filled in the trenches to the ground level.

Set up the forms, and during the erection, in the center of one of the end walls, place a door frame (2 1/2 by 6 feet clear) within the forms. Brace it well so that the concrete will not bulge it out of shape. Place the concrete in layers 8 to 10 inches thick, carried around the entire building in the concrete walls of each gable end set a frame for ventilating doors (2 1/2 by 2 1/2 feet) in the same way as the large door frame was placed.

As the forms are filled, at intervals of 18 inches, embed bent iron rods or twisted wire in the concrete around the corners of the building. Likewise put two 3/4-inch rods or an old wagon tire in the concrete 1 1/2 inches above the door opening. When the side and end walls have reached their full height and while the concrete is yet soft, set 3/4-inch bolts, 8 inches long, 32 inches apart. To these bolts will be fastened the 2 by 4-inch plates for the roof.

After the building is a week old, the forms may be removed and the 4-inch concrete floor built directly on the ground. Begin at the back of the building and slope the floor 3/4-inch to the foot in the direction of the drain tile at the door. Lay the last few rows of the 5-inch drain with well-cemented joints and include a tile, known as a "trap," having a bend which always contains water. The water acts as a seal to keep out the rain. Cover the floor end of the drain with a trash strainer.



SHOWING CONSTRUCTION OF CONCRETE WALL FOR ICEHOUSE.

Location. In determining the location of the ice-house, a place should be chosen where the building can be well drained by an underground line of drain tile. If possible, it should be placed where the shade of large trees, or larger structures, will protect it from the heat of the mid-day sun.

The concrete for the walls should be made of Portland cement, clean sand and a hard crushed rock or screened gravel.

Instead of the sand and rock, clean bank-run gravel may be used.

Naturally, the size of the ice-house will depend upon the number of pounds needed daily and the number of days ice will be used. A cubic foot of ice weighs about 57 pounds, and a ton, with 10 per cent allowance for seams between the cakes, occupies 28 cubic feet. It is not necessary to pack the ice between the cakes, but on the floor, around the sides of the building and on the top of the ice there should be placed 12 inches of sawdust, well rammed. An 18-inch thickness of prairie or marsh hay may be used instead of the sawdust, provided it is well weighted down on top of the ice. Making allowance for sawdust packing and 8-inch concrete walls, a house 10 feet square (inside measurement) and 8 feet to the eaves, will hold 10 tons.

On an air-tight, heat-proof building: On trappers or to keep out warm air; On careful and thorough packing of the ice; On well regulated ventilation in the roof space over the ice.

A well-built concrete ice-house fulfills these conditions. Every year it is ready for use without repairs. And because of less farm life can not only be made more comfortable and attractive, but fruit, poultry and dairy products can be marketed to better advantage.

For an ice-house 10 by 10 feet, 8 feet to the eaves and 12 feet 8 inch roof peak, with 8-inch walls, 4-inch floor, and a foundation 10 inches by 12 inches wide, the following materials will be required for the concrete:

Crushed rock, 18 cubic yards.
Sand, 7 1/2 cubic yards.
Portland cement, 31 barrels, and 16 1/2 by 8-inch round head bolts.

In mixing the concrete a tight wooden platform should be used. The proportions are one part Portland cement to 1 1/4 parts sand to 3 parts crushed rock. Or one part cement may be used to 5 parts bank run gravel. In measuring, count one bag of cement equal to one cubic foot.

MEANING OF THE CROSS

This cross (in red) has been adopted in Canada and all over America as the emblem under which the Crusade against Consumption is carried on.

Every reader knows of the ravages of this disease; how, too often, the bread-winner of the family falls a victim, or the young man or young woman, with a promise of a happy and useful life, is stricken down.

This modern Crusade, like the one of old, is a winning fight. The death rate from Consumption in this province shows a decrease of over 25% in the past few years.

Nearly 6000 of these poor sufferers have been cared for in our Consumptive Homes in Muskoka and near Weston. To-day we have 300 patients under treatment—patients who, if they had the money, could not through fear of contagion gain admittance into other hospitals.

In the Muskoka Free Hospital alone we are now caring for 156 patients. 128 of these cannot pay a single cent for the cost of their maintenance, 15 pay 70c. per day, 1 pays 57c. per day, 12 pay 50c. or less per day.

Our Trustees, having faith in the generous-hearted people of Canada, have continued to carry on this work during the past year.

Money to pay doctors, food, nursing and caring of these sick ones, is urgently needed. Will your readers help and have the joy of sharing in a work that has the promise of the Master's reward?

W. J. GAGE
Chairman Executive Committee, National Sanitarium Association

54 SPADINA AVE.
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A SULTAN'S SEVEN BEDS.

Abdul Hamid Changed His Sleeping Place Every Night.

An interesting reminiscence of Abdul Hamid, the former sultan of Turkey, who was known as Abdul Hamid the Great and by several other names or less important titles, is given in the description of a visit to Hildia Eliaz by Colonel (Quint) Glendon in the Household Brigade Magazine.

"The house was a perfect labyrinth of small rooms," he writes. "In no fewer than seven of these rooms were beds on which the sultan used to sleep—each ordinary bed, but large enough, dipping at a comfortable angle from the head end downward, and that, covered with a quilt or two, his majesty could sleep in a semi-upright position and seeing up at a moment's notice to be ready for anything."

"One knew in which of the seven rooms the sultan was going to sleep, for he changed his resting place every night for fear of hidden dangers. Along the main passage which led past many of these rooms a most ingenious arrangement existed for giving warning of the approach of any one. The floor was composed of loose planks under the carpet, so that merely to walk along it started a clanking sound which must inevitably have waked a light and nervous sleeper."

OYSTER ISLANDS.

Their Growth is Exactly Analogous to That of Coral Reefs.

Oyster islands similar to those formed of coral are found in several parts of the world. The islands in Newport river and Buzzard's Bay, North Carolina, says a writer in the Century, have been discovered to have on them a reef to which the oysters were attached and above this layer open layer of oysters, vegetable growth and debris brought by the action of the waves and winds, all of which finally grows high enough to rise above the surface of the water. This growth is exactly analogous to that of the coral islands of the Pacific.

The islands near the mouth of the river Saguenay, in Portugal, are said to have been built up in this way also. Here, where there is such a quantity of oysters that 200,000,000 a year would scarcely be enough if they were removed, the oysters form a wall just beyond the river's mouth in dotted with oyster islands. As in the case of the coral reefs, which on the seaward side may be covered with living, growing coral, live oysters thrive in the same manner, when the accumulation of dead generations has succeeded in forming the islands.

Muscles May Move Themselves.

Albert von Haller, a Swiss surgeon of the eighteenth century, was the first to point out that the muscles of our bodies have an automatic action. In his time it was believed that the muscles could not contract or relax of themselves, but were drawn up by the nerves of volition. Haller discovered that this is not so, but that a muscle, if irritated, will draw itself together automatically, even when it is quite separated from the nerves, and this has since been proved to be true by a great number of experiments. He found, though it is true our nerves are the cause of our moving, because they excite the muscles and so cause them to contract; yet the real power of contraction is in the muscle itself. The body of man is full of wooden, not the least of which is this automatic power of contraction in all muscles. — Louisville Courier-Journal.

The Composer.

The point on which most writers are at odds with the composer is the composer's penmanship. He takes a delight in breaking up the flow of a sentence with his artificial pauses. We all say, "Why then did you do it?" in one breath. It is the composer who says, "Why, then, did you do it?" It is possible to be too hard on the composer. It has its unfortunate uses. Edward Child in his memoir of Grant Allen tells the story of a composer who dissented very strongly from that writer's moral philosophy and had to "set up" an interview with Allen in which the sentence occurred, "He is happily married." He saved his conscience by printing it "He is happily married." — London Chronicle.

A Cheerful Lion.

One time the late mayor of Afghanistan asked the English diplomatic agent at his court to give a description and a circle of Afghan boys of the largest lion in England. The Englishman described the lion to him, and when he had finished the answer observed to his admiring subject: "I have seen a lion the carriage of which was as large as the gun which has just been described to you." It would never do for an answer to be so untruthful, much less to contain himself brutal.

One Idea Developed.
Browning: How is your new club for the exchange and development of ideas getting along, old man? Growing. Not so rapidly as we had expected. We for it has developed the idea in each member that he is the only man in the bunch who has any ideas worth while. — Chicago News.

Good Qualifications.
"Mrs. Trent would make a great business partner."
"What makes you think so?"
"Why, the other night she caught me instead of leaving home and put this out." — Exchange.

True men and women are all proud to make us well. — A. A. S. S.

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