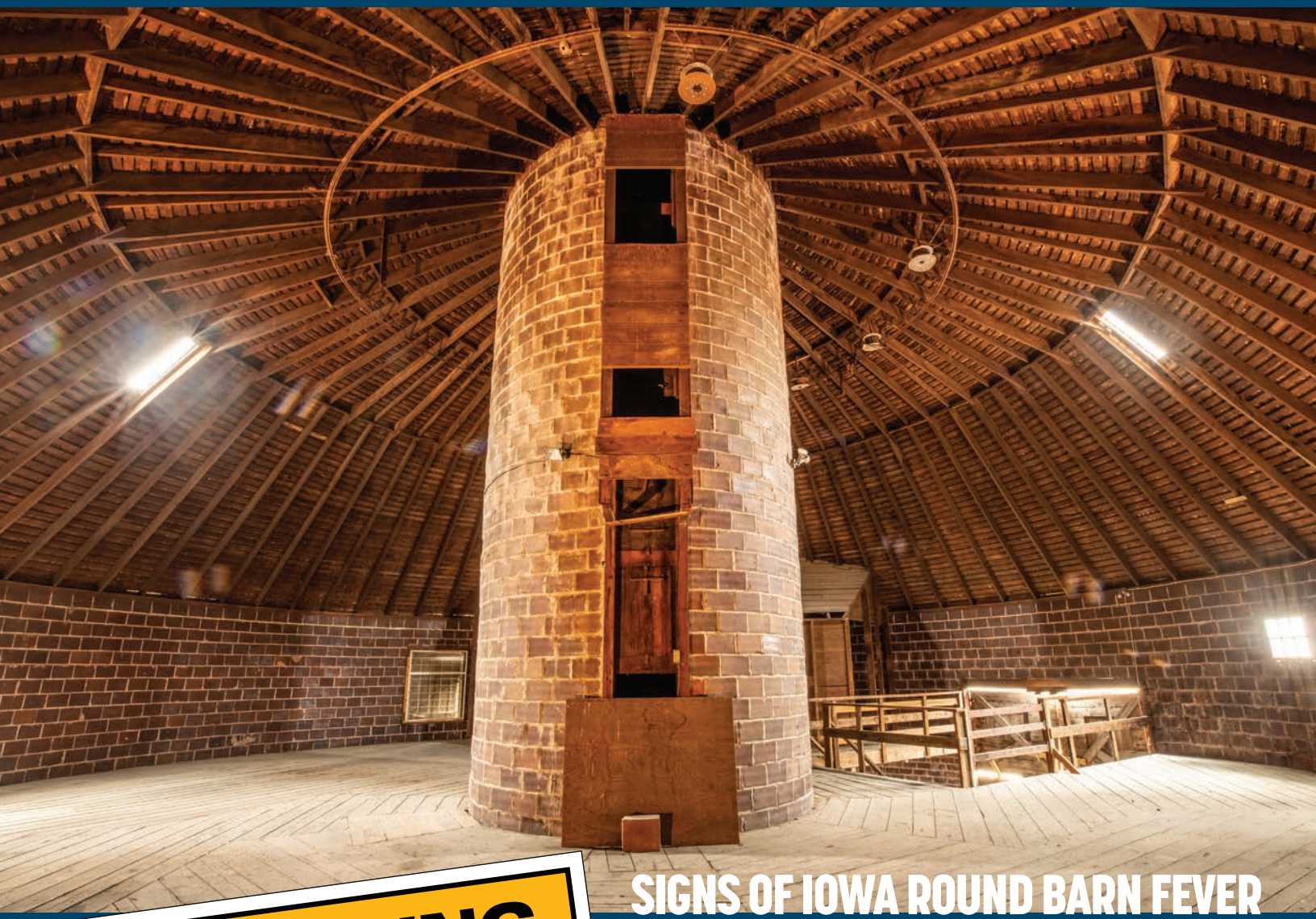
— BY DAVE AUSTIN —

Welcome to our Round Barn Issue!



⚠ WARNING

Reading this issue puts you at risk of catching "Iowa Round Barn Fever!"

SIGNS OF IOWA ROUND BARN FEVER

(one or more of the following symptoms):

[1] You have visited all five of the round barns on past Iowa Barn Foundation Fall Tours - the Dobbin, Hayward, Dighton, Holtkamp and Taylor County round barns.

[2] You own a copy of the book *Barns Around Iowa* by Deb Schense and Luella Hazeltine.

[3] You own a copy of the book *Without Right Angles - The Round Barns of Iowa* by Lowell Soike.

[4] You are a member of the *Round Barns of the US* Facebook Group.

[5] You have researched Iowa round barn locations at dalejtravis.com.

Christy Dobbin Chambers and husband Jonathan Chambers received an Iowa Barn Foundation Restoration Grant to assist with restoring their 1919 round barn, which was a Gordon-Van Tine pre-cut mail order model. The original 1915 catalog page touts the economic advantages of the design (see page 6).

Without Right Angles and Barns Around Iowa are essential reading for any Iowa Round Barn enthusiast.

First, I must start with a confession. Despite living in Iowa for over 25 years, I did not discover the Iowa Barn Foundation until I went on the 2018 Spring Barn Tour. When I looked at the 2018 Fall Barn Tour lineup, I saw three round barns. While I grew up on a dairy farm and have worked in agriculture my whole life, I had never been inside a round barn. I was curious… So, I spent 12 hours on the first day of the Fall Tour visiting and photographing all three round barns – the Dobbin, Dighton, and Hayward barns. My day was measured in hours per barn, versus barns per hour as I tried to capture every unique characteristic of these amazing structures from top to bottom. To me, they were more than just functional farm buildings…they were also works of art.

Needless to say, I was hooked! That is when I realized I had come down with a serious case of *Iowa Round Barn Fever*! Since then, I've spent many weekends traveling the state visiting and photographing as many of the remaining round barns as I can. I've also spent time seeking out round barns that have been beautifully restored by their owners for the Iowa Barn Foundation Award of Distinction program (including two new recipients on the 2023 Fall Barn Tour). My personal goal is to get as many of these amazing round barns onto the IBF Spring and Fall Barn Tours for barn lovers to see first-hand. They are too amazing not to share!

If you want to get up to speed on Iowa's round barns, I highly recommend obtaining copies of the two books dedicated to Iowa's round barns. *Without Right Angles* by Lowell J. Soike, published in 1983 (second edition in 1990), provides an in depth history on round barn construction in the US with a catalog of Iowa's round barns. *Barns Around Iowa* by Deb Schense and Luella Hazeltine followed in Lowell's footsteps expanding the Iowa round barn catalog with color photos and expanded descriptions. My copy of *Barns Around Iowa* is pretty beat up as it was my guide as I navigated the state seeking out round barns to visit and photograph (note – please be respectful of private property and request permission before entering any barn). While out of print, both books can be found with a little searching online at book resellers. I consulted both books in the writing of this article, and I salute the authors for their passion to research and document Iowa's round barns.

Many folks have not set foot inside of a round barn for one simple reason - they are rare in comparison to their rectangular siblings. John T. Hanou Research is the most current source for statistics on round barn construction and remaining structures in the United States and Canada. John continues to scour old newspapers, ag journals, and aerial photos to update national round barn counts, tracking both date of construction and destruction. Of the 2,462 round barns known to have existed in the United States, only 627 remain today…nearly 75% are gone forever. The states with the most round barns built (in order) are Illinois, Wisconsin, Indiana, and Iowa.

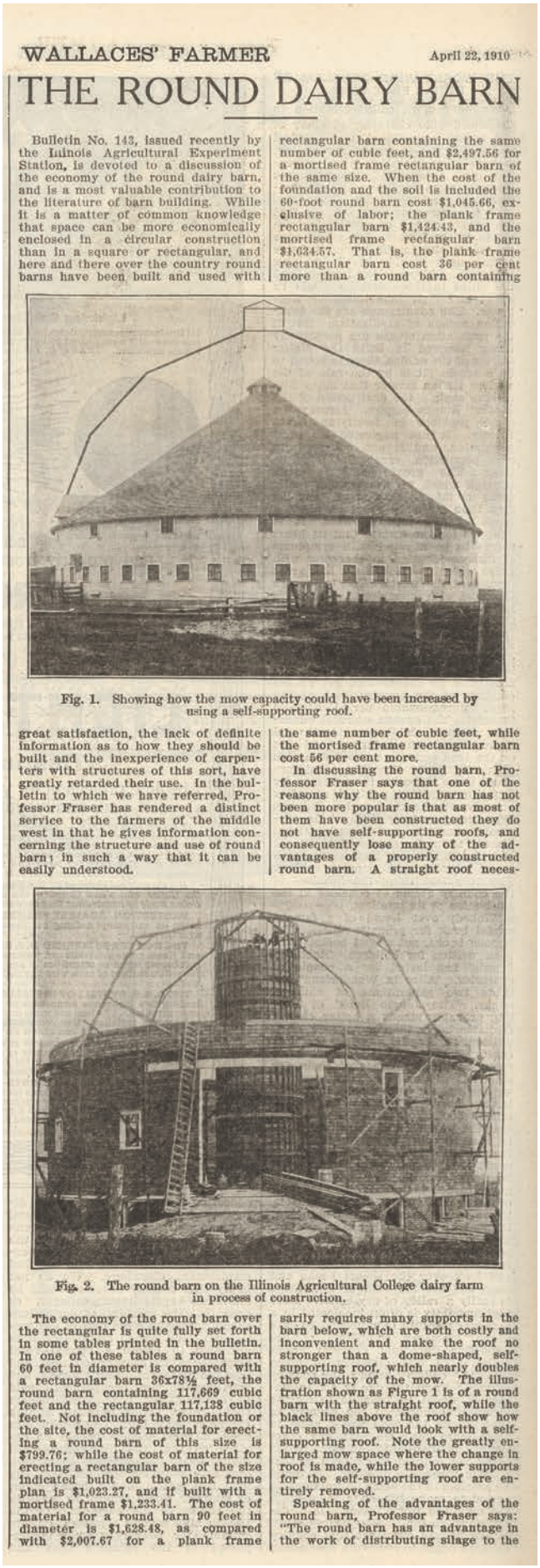
Based on John T. Hanou Research data, Iowa had 250 round barns (including octagonal and multi-sided) built between 1867 and 1927. Iowa saw two surges in round barn construction, which both coincided with an overall increase in barn construction. The first smaller surge occurred in the 1880s when there were 14 octagonal barns constructed in the state. These were typically built by wealthy landowners who could afford to build the distinctive "showcase" structures. A great example is the 1883 Secrest Octagonal Barn in Johnson County, which is the subject of its own article in this issue of the *Iowa Barn Foundation Magazine*. The second surge came in 1910-1920, when 121 round barns were constructed. Over 70% of the round barns built after 1900 were true-round barns, with the remaining 30 percent consisting of octagon as well as other multi-sided designs.

Only 74 of these round barns remain standing in our state today (less than 30% of those built), and many are in serious states of disrepair. When you consider that Iowa had approximately 200,000 barns, round barns represent just 0.13% of all barns built in the state. This is why the Iowa Barn Foundation is extremely excited to have eight round barns on our 2023 Fall All-State Barn Tour scheduled for September 16-17 (see tour guide in this magazine for more details). The tour includes over 10% of the round barns remaining in the state, and we are fortunate to have a diverse array of designs and construction methods represented in the group. We have created a special 2023 round barn tour page on our website to aid anyone with Iowa Round Barn Fever to map their route to visit all of them September 16-17 - https://iowabarnfoundation.org/barn-tour/2023-iowa-round-barn-tour-september-16-17.

The origin of the true round barn design came from an expected source for this Wisconsin dairy farm kid – the Wisconsin Agriculture Experiment Station. Professor Franklin H. King is credited with designing the first generation of true round barns in the 1890s featuring a central silo and a non-self-supporting conical roof, designed to house dairy cattle.

Then during the early 1900s Indiana builders, Isaac McNamee, Benton Steele and Horace Duncan perfected the true-round barn with a self-supporting gambrel roof. This idea caught the attention of the University of Illinois when Professor Wilbur J. Fraser and H.E. Crouch hired the Indiana builders to construct three round barns on its Urbana South Farm between 1907 and 1913.

A key catalyst for the surge in Iowa's true round barn construction was Fraser's University of Illinois Bulletin No. 143 Economy of the Round Dairy Barn published in February 1910 which described in



WALLACES' FARMER April 22, 1910

THE ROUND DAIRY BARN

Bulletin No. 143, issued recently by the Illinois Agricultural Experiment Station, is devoted to a discussion of the economy of the round dairy barn, and is a most valuable contribution to the literature of barn building. While it is a matter of common knowledge that space can be more economically enclosed in a circular construction than in a square or rectangular, and here and there over the country round barns have been built and used with great satisfaction, the lack of definite information as to how they should be built and the inexperience of carpenters with structures of this sort, have greatly retarded their use. In the bulletin to which we have referred, Professor Fraser has rendered a distinct service to the farmers of the middle west in that he gives information concerning the structure and use of round barns in such a way that it can be easily understood.

rectangular barn containing the same number of cubic feet, and $2,497.56 for a mortised frame rectangular barn of the same size. When the cost of the foundation and the soil is included the 60-foot round barn cost $1,045.66, exclusive of labor; the plank frame rectangular barn $1,424.43, and the mortised frame rectangular barn $1,634.57. That is, the plank frame rectangular barn cost 36 per cent more than a round barn containing the same number of cubic feet, while the mortised frame rectangular barn cost 56 per cent more.

In discussing the round barn, Professor Fraser says that one of the reasons why the round barn has not been more popular is that as most of them have been constructed they do not have self-supporting roofs, and consequently lose many of the advantages of a properly constructed round barn. A straight roof necessarily requires many supports in the barn below, which are both costly and inconvenient and make the roof no stronger than a dome-shaped, self-supporting roof, which nearly doubles the capacity of the mow. The illustration shown as Figure 1 is of a round barn with the straight roof, while the black lines above the roof show how the same barn would look with a self-supporting roof. Note the greatly enlarged mow space where the change in roof is made, while the lower supports for the self-supporting roof are entirely removed.

Speaking of the advantages of the round barn, Professor Fraser says: "The round barn has an advantage in the work of distributing silage to the

Fig. 1. Showing how the mow capacity could have been increased by using a self-supporting roof.

Fig. 2. The round barn on the Illinois Agricultural College dairy farm in process of construction.

The economy of the round barn over the rectangular is quite fully set forth in some tables printed in the bulletin. In one of these tables a round barn 60 feet in diameter is compared with a rectangular barn 36x78⅓ feet, the round barn containing 117,669 cubic feet and the rectangular 117,138 cubic feet. Not including the foundation or the site, the cost of material for erecting a round barn of this size is $799.76; while the cost of material for erecting a rectangular barn of the size indicated built on the plank frame plan is $1,023.27, and if built with a mortised frame $1,233.41. The cost of material for a round barn 90 feet in diameter is $1,628.48, as compared with $2,007.67 for a plank frame

REPRINTED WITH PERMISSION BY WALLACES FARMER

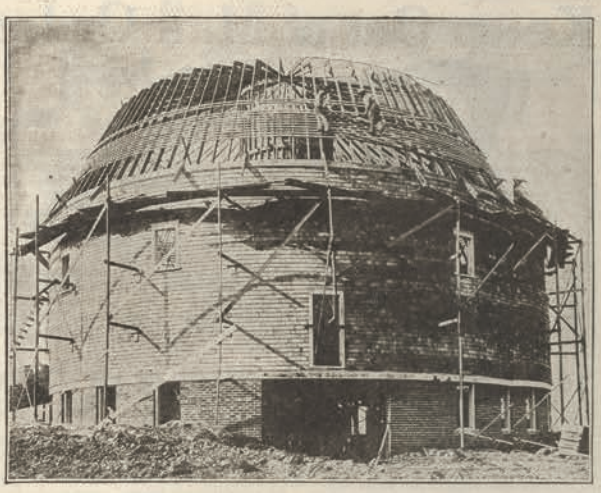


Fig. 3. The rafters in place.

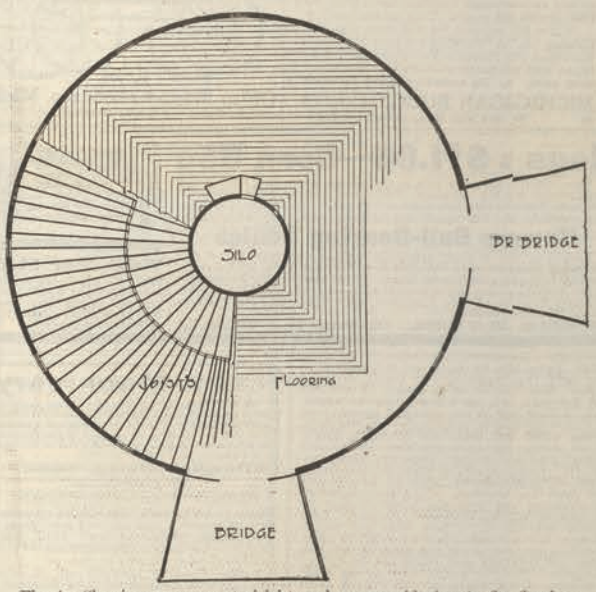


Fig. 4. Showing arrangement of joists and manner of laying the floc flooring.

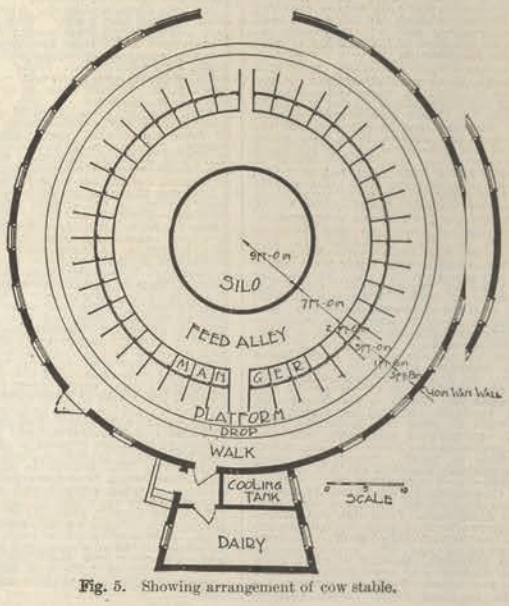


Fig. 5. Showing arrangement of cow stable.

cows. The feeding commences at the chute where it is thrown down near the center of the barn and is continued around the circle, ending with the silage cart at the chute again, ready for the next feeding. The same thing is true in feeding hay and grain. Still another advantage is the large, unobstructed hay mow. With the self-supporting roof there are no timbers whatever obstructing the mow, which means no dragging of hay around posts or over girders. The hay carrier runs on a circular track around the mow, midway between the silo and the outside wall, and drops the hay at any desired point; thus in no case does the hay have to be moved more than a few feet, which means a saving of much labor in the mowing. The circular construction is the strongest because it takes advantage of the lineal instead of the breaking strength of the lumber. Each row of boards running around the barn forms a hoop that holds the barn together. All exposed surface of a round barn are circular, as both the sides and roof are arched, which is the strongest form of construction to resist wind pressure. Besides, the wind in striking it, glances off and can get no direct hold on the walls or roof, as it can on the flat sides or gable ends of a rectangular structure."

The bulletin describes the manner in which a round barn was constructed on the dairy farm at the Illinois Agricultural College. This barn is located on the side of a hill, making it necessary to excavate more than when built on level ground. The footing for the foundation is 18 inches wide. A 10-inch brick wall was carried up nine feet above the lower floor. Figure 2 shows the barn in the process of construction, the silo being very nearly completed, while Figure 3 shows the barn with the siding completed and the rafters in place. The sill of this barn is 6x6, made up of 1x6's, built on top of the wall. The joists are 2x12's, notched 6 inches to fit the sill so that the outer ends rest on both the sills and the brick wall. The outer stand of joists is 14 feet and the inner ends of these joists rest on a similar sill built of 1x6's on top of the 4x4 supports at the stanchions. The inner stand of joists between the stanchions and the silo is 8 feet, the outer end resting on the sill over the the stanchion and the inner end on a 1x6-inch band made up of three ½x6-inch pieces running around the outside of the silo. These joists are placed 2½ feet apart at the outside of the barn, and half as many joists are used in the inner stand, making the joists at the silo one foot apart. The studs are 2x6's, twenty feet long.

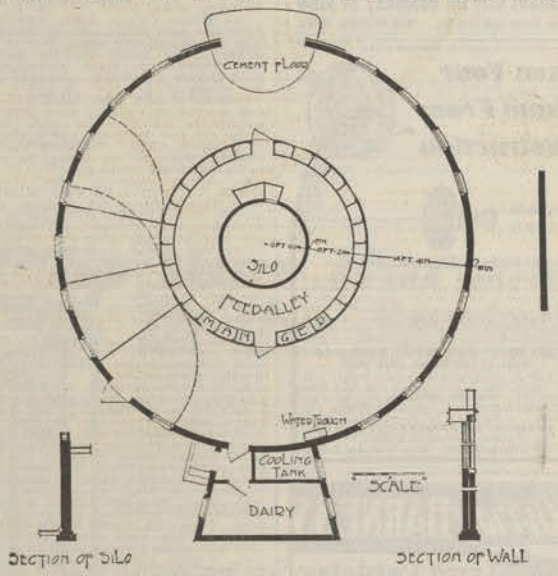


Fig. 6. Showing how this barn could be arranged to accommodate forty cows in stalls.

The other illustrations are self-explanatory. We have not undertaken in this review of the bulletin to go into the matter in any detail. Our readers who are at all interested are urged to address a note to the Director of the Illinois Experiment Station, Urbana, Illinois, and ask for a copy of the bulletin, which will doubtless be sent to them without charge. Residents outside of Illinois should include postage.

detail the first barn built on the Urbana South Farm and promoted the advantages of round barns. The contents of this bulletin were replicated in newspapers and farm publications throughout the Midwest, including Iowa (see reprint from Wallace's Farmer). Key advantages of round barns cited in the University of Illinois publication:

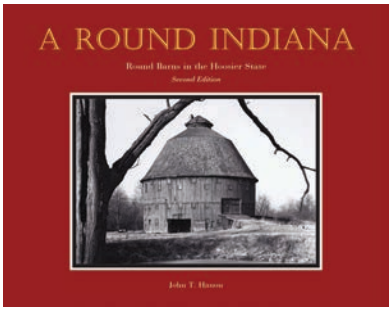
- Material efficiency in construction (less building materials per square foot of useable space compared to rectangular barns).
- Greater structural stability both in construction and ability to withstand greater wind pressure with circular exposed surfaces.
- Could be built with self-supporting roof to create a large unobstructed storage space in the hay mow.
- Circular interior layout was pitched as more efficient for the farmer to work in circular pattern, accentuated with the addition of a central silo.

Additional land grant universities joined in promoting round barn construction, especially for dairy operations which is why many of the round barns during this period featured a central silo. The Iowa State College of Agriculture Experiment Station was no exception. In the 1909/1910 timeframe, student Matt L. King partnered with Professor J.B. Davidson to make an improvement over the Illinois round barn model taking what they had learned from the recently developed "Iowa Silo" which was constructed out of hollow clay tile blocks. The duo substituted the clay tile for wood for the exterior barn wall construction as well as for the interior silo. While the clay tile was more expensive than wood, it was more durable and simplified construction. Three of the round barns on the 2023 fall tour feature clay tile – Holtkamp, Dighton, and Hayward.

However, the round barn enthusiasm would not last. Many of the efficiency claims were largely overstated and offset by the more complicated and expensive construction methods. The barns also required experienced carpenters with unique skills for round barn construction. By the mid-1920s, opinions were shifting against the round barn trend. Even the Iowa State College Experiment Station shifted their position and no longer recommended round barn construction by 1925. By the end of the 1920s, the round barn experiment was largely over in Iowa.

While a few of Iowa's round barns remain in active use as part of farming operations, most stand as important symbols of our rich agricultural history. While they were built for a utilitarian purpose, they also are noted as works of art often reflecting the craftsmanship of the carpenters who built them. Finally, it's been five years since I came down with Iowa Round Barn Fever. So far, I am happy to report that the only long-term effect is a greater appreciation of the innovative spirit that can still be found in Iowa's farmers today as they continue to feed the world.

Editor's Note – I would like to thank John Hanou for his expertise and assistance preparing this article. I recommend you pick up copy of his book for more history on round barns - A Round Indiana, Round Barns in the Hoosier State



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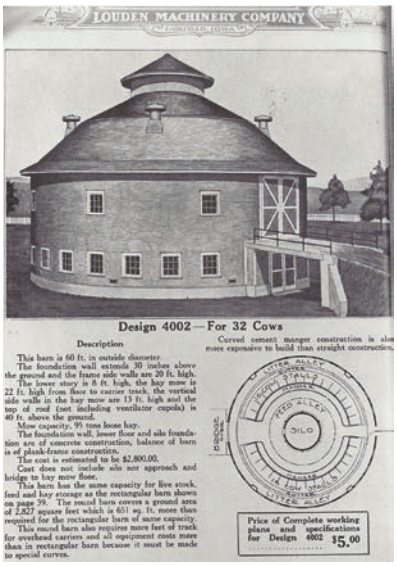

1915 round barn plans available from Louden Machinery Company

Dave Austin
Iowa Barn Foundation
Magazine Editor

The 1916 Johnson Round Barn in Bremer County (2023 Iowa Barn Foundation Restoration Grant Recipient) features clay tile walls and central silo with the original dairy stanchions still in place.