HOW TO BUILD FARM BUILDINGS THAT LAST LONGER!
Outside shelters of a "near miss" nominal atomic bomb should be located away from fire. A buried or surface shelter and can be made, alternatively, for a well in culverts has straout failure. Wood

Tentatively, shelter per square foot protection against blast of at least 2 feet against ionizing radiation. Dead load should be provided. The air tight. Doors pressure of 500 psi seals in the frame. At least two means of entrances.

Shelters vary with the above; the following should be provided:

VENTILATION
Mechanical ventilation
Hand-powered ventilation

GENERAL
Telephone batteries
Light system in the shelter
Power plant in the shelter
Benches
Bunks wherenot. Chemical toilet
Drinking water

In either type of structure, adequate foundations, good bracing and strong joints pay off in better service and longer building life.

The following pages deal with principles of good construction which, in some cases, should be modified to meet local conditions.
FOUNDATION FORMS

Grade nails on inside of form indicate top level of foundation.

Block is same thickness as building sill, same length as spacers.

\( \frac{3}{4} \)" or \( \frac{1}{4} \)" anchor bolt extends at least 12" into concrete. Bolts are placed four to eight feet apart.

Spacers are to be removed as concrete pouring progresses.

Boards lightly nailed to studs for easy removal.

Studs every two feet.

Braces fastened to studs every four feet to six feet.

Tie wires twisted to force forms against spacers.

2x4 stake holds forms up from trench bottom allowing for footing.

Foundation trench serves as form for footing. Remove loose dirt before pouring.

DESIGN OF FOUND HOUSING
Outside shelters of a "near miss" nominal atomic blast should be located out of direct fire. A buried or encapsulated surface shelter and can be made radiation-proof, for a while in culverts has stood up well without failure. We will use the diagram of a shelter per square foot protection against blast pressure of at least 2 feet against ionizing radiation. Dead load should be provided. The shelter must be air tight. Door pressure of 500 pounds per square inch seals in the frame. At least two means of entrance should be provided.

Shelters vary in size, but will be more extensive than the diagram following should indicate.

VENTILATION
Mechanical ventilation
Hand-power ventilation

GENERAL
Telephone battery
Lights—battery operated
Light system in the shelter
Power plant will be part of shelter apparatus
Bunks where possible
Chemical toilets
Drinking water

WALL BRACING
Diagonal braces at approximately a 45° angle—not the horizontal and vertical framing members—provide resistance to wind pressures and prevent racking.

DIAGONAL WALL BRACES in post and girder buildings are continuous from the top to the bottom girr. These braces should be heavily spiked or bolted at ends and intermediate girts.

Steel straps with bolts or lag screws

COMBINATION BRACES tie down the roof as well as bracing the wall against leaning.

KNEE BRACES, used to brace building openings, should be as long as possible without restricting the opening.
PREFABRICATED ROOFS

Curved rafters, prefabricated of glued laminated lumber, are dependable and convenient to use. Ask your retail lumber dealer for information about them, as well as for information about fabricated trussed rafters.

Diagonal bracing for curved rafters extends from the plate to the ridge, nailed to the underside of rafters.

Prefabricated trussed rafters are designed for buildings without interior posts or partitions. Carefully fitted, securely fastened joints assure a strong and rigid roof.

FASTENERS

Bolts and ring connectors are used in the joints of larger fabricated trusses.

Trip-L-grip framing anchors make stronger connections.

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Richard, Commissioner
Outside shelters of a “near miss” nominal atomic fire. A buried protection from a surface shelter and can be made alternatively, for a waist in culverts has stood out failure. We Tentatively, square feet protection against blow of at least 2 feet against ionizing. Dead load should be provided. The air tight. Door pressure of 5000 seals in the frame at least two means. Shelters vary will be more extended the following should VENTILATION Mechanical v Hand-power GENERAL Telephone back Lights—batten Light system in Power plant 4 part of shelter a. portion of shelter Benches. Bunk house Chemical toilet Drinking water.
CORNCRIBS

Crossties between studs resist outward pressure of corn. Ends of crossties should be heavily nailed or bolted. Bottom of crossties should be high enough for a man to walk under. Must be designed to support load of settling corn and spaced not closer than 4 feet.

Corner braces tie wall sections together.

For corncribs with walls 10 feet high, this type of brace is placed every 8 feet. 2x6 ceiling tie keeps upper plate in alignment.

1x6 diagonal forms a truss and makes building more rigid.

2x4 supports center of ceiling tie.

2x6 ties opposite walls together.

For cribs with walls 14 feet high, this type of brace is spaced every 6 feet. Mem-
Outside shelters of a "near miss" nominal atomic should be located fire. A buried protection from surface shelter, and can be made, tentatively, for a wide culverts has strain failure. We Tentatively, shelter per square foot protection against blast of at least 2 feet against ionizing rays. Dead load should be provided. The air tight. Door pressure of 500 pounds per square inch in the frame, at least two means.

Shelters vary will be more extensive. The following should be considered:

VENTILATION
Mechanical
Hand-powered

GENERAL
Telephone battery
Lights—batte Light system
Power plant
Part of shelter a portion of shelter.

Benches,
Bunks where
Chemical toilets,
Drinking water

Wood granaries protect against driving storms. They should be rigid and weatherproof. Double wall construction gives a sturdy building, assuring years of service and protection for crops.

Diagonal sheathing makes the building rigid and gives additional protection against weather.

Weatherproof building paper keeps out wind-driven moisture.

Siding should extend 2" below top of foundation wall.

A cant-board between studs makes granary cleaning easier.

WALL TIES TO WITHSTAND GRAIN PRESSURES
Metal flashing covers beam and extends at least 6" under siding.

Rods or heavy wire ties extend from wall to wall.
PROTECTION
Against Rodents and Weather

RAT-PROOFING

Metal strip 8" wide around the building.

Heavy wire mesh 24" wide around the building.

Floor is protected with wire mesh or metal strip.

Lower edge 2" below top of foundation.

WEATHER-PROOFING

Use metal flashing above all openings and at junctions of roof surfaces. Flashing should extend at least 6" underneath siding for maximum protection.

Gutter placement important to catch maximum roof drainage.

Building paper under shingles should extend three feet back from eaves.

Sufficient downspouts and drain tiles to carry water away from the building and prevent undermining foundation.
Some lumber, such as Western Red Cedar, has natural decay resistant qualities making it well suited for certain uses such as sills, skids, posts and splash boards. Other lumber put to such use should be pressure-treated in order to resist barnyard acids and remain durable in or on the ground.

Apply three coats of hot preservative liquid to cuts and holes drilled in pressure-treated lumber and poles to help re-establish protective shield. Pressure-treated lumber is available through your retail lumber dealer — ask him for details.

IT PAYS TO KEEP A WORKING STOCK OF LUMBER which can be used over and over again. Stored in a dry place, it is as good as money in the bank, always ready when needed. You can save time and money by keeping extra lumber on hand. Shown here is one method of building a storage rack.
PROPER PLANNING

Farm building plans designed to meet the needs of your locality can be obtained from your State Extension Service, County Agent or Retail Lumber Dealer. Careful compliance with these plans will insure maximum service from your buildings at minimum dollar cost.

Helpful bulletins on farm planning and construction are available at nominal cost from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Carpentry ................................ (T. M. 5-226) 55c
Farm Fences ............................. (Farm Bul. 1832) 20c
Farm Plumbing .......................... (Farm Bul. 1426) 10c
Foundations for Farm Buildings (Farm Bul. 1869) 15c
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THE FARM BOOK $1.00
A Guide to Better Farming With Better Buildings

A comprehensive reference — 96 pages packed with facts and suggestions on how you can save time, work and money. If your retail lumber dealer cannot supply you, send $1.00 to West Coast Lumbermen's Association, 1410 S. W. Morrison, Portland 5, Oregon.

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Farm buildings of West Coast Woods have stood the test of time. Adaptability and ease-of-use make West Coast Woods the most practical of all farm building materials. The economy and efficiency of farm buildings of West Coast Woods has been proved over the years by relatively low initial cost, inexpensive maintenance and long life — just a few of the reasons why 90% of America’s farm buildings are built of wood.

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