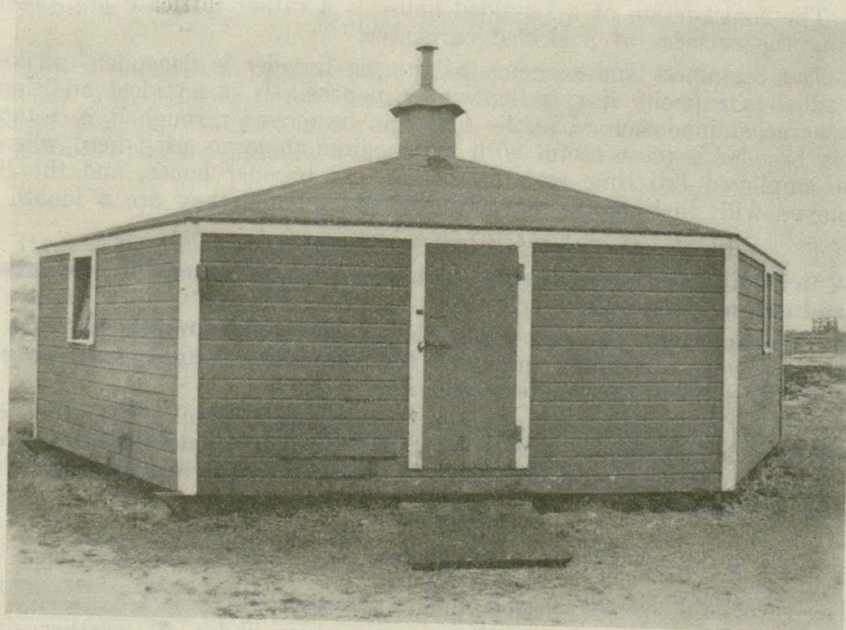




THE HEXAGONAL PIG BROODER HOUSE



A pig brooder of the Hexagonal type.

The pig brooder has been developed for the suitable housing of pigs during the farrowing and suckling periods in cold weather. It was tried out by a few practical pig raisers in Alberta, and was later experimented with on the Dominion Experimental Stations at Rosthern, Saskatchewan, and Lacombe, Alberta.

Essentially, the pig brooder is a six-sided building, designed particularly for the farrowing and brooding of pigs during the season when artificial heat is most needed.

630.4
C212
WPS
SP

Authority of HON. J. G. GARDINER, Minister of Agriculture, Ottawa.

Advantages

Of the many advantages of the pig brooder, the following may be cited:—

1. The pig brooder saves pigs—an important item in every pig raiser's business.
2. It assists in the two-litter-a-year program, enabling the producer to market pigs at off seasons, for winter farrowing can be made a success by this means.
3. The 500-chick brooder stove is an economical means of heating a building accommodating six sows and their litters.

Limitations

There are certain limitations which should be considered by anyone contemplating the building of a pig brooder house.

1. The pig brooder is a fairly expensive structure, considering the amount of service which it renders.
2. It is a specialized building not particularly suitable for any other live stock. It can be used to house growing and finishing pigs, but the pen arrangement makes it rather unhandy for feeding large numbers.
3. The construction of a six-sided house is a rather intricate job, possibly requiring the services of a skilled carpenter.
4. The usefulness and economy of the pig brooder is dependent on keeping it filled to capacity during the winter months. It is an ideal addition to the swine accommodation when the sows can be moved through it in rotation. The pig brooder is most useful with the medium to large sized herd where it can be employed full time as a farrowing and brooder house, and the little pigs moved with their mothers to other quarters when they are a month old or less.

A well-built, sanitary piggery is an essential to successful year-around pig production in Canada.

As a supplement to such a piggery or other accommodation, the pig brooder provides excellent quarters for the early winter farrowing of litters and has been proven to save pigs.

However, the pig brooder cannot be expected to take the place of a piggery, and is suggested merely as a practical and economical arrangement for the winter handling of brood sows at farrowing and for about a month afterwards.

Operation

The successful use of the pig brooder depends on:—

1. The maintenance of a uniform temperature under all weather conditions.
2. Sufficient ventilation to overcome dampness and provide fresh air in the building.
3. A heat differential or variation in temperature between the pens and the pig nests.

By firing the brooder stove sufficiently to maintain a temperature of 50° F. at the outer walls, the sows will be quite comfortable in the pens and the higher temperature in the nests near the stove will entice the little pigs to remain there for the first few days; except when being nursed by the sows.

The burning of 35 pounds of low-grade coal per day will keep this pig brooder dry and reasonably warm even in severe winter weather.

It is important that a fire be kept in the stove even when some mild weather occurs. Without heat in the stove there is no attraction to keep the pigs in the nest and one can then expect the same losses from trampling, crushing, and smothering as would occur in any other design of house.

Construction of the Hexagonal Pig Brooder House

The building is six sided, with six pens arranged around a central brooder stove. The pen partitions are not run to each corner of the building, but to the centre of each side wall. A narrow passage leads from the entrance door, which should be on the south side, to the "cat walk" around the stove. There should be windows on all sides except the north, with two windows on the south side, although the latter are not shown in the photograph.

Setting Out

A diagram on the plan shows a method of setting out the hexagon. The house with 13 feet 6 inch sides, measures 23 feet 4½ inches from each side to the opposite side, and 27 feet from each corner to the opposite corner. The mitre cut for the corners may be obtained by placing the blade of the steel square at an angle across the end to be cut, with 7 on the blade and 12 on the tongue intersecting the edge of the scantling.

Moving the Building

This is intended to be a portable brooder, and should be moved occasionally to a new site. Either build directly on the skids or insert the skids at the time of moving. Corners not resting on skids should be blocked up from the ground when the building is in use.

Brooder Stove

Heat is provided by a 500-chick, coal burning, brooder stove. This stove should have a removable type of canopy, to permit easy clearing of any straw that might work through the wire netting. The stove should be provided with thermostatic control equipment, which opens and closes the dampers automatically to suit changes in the weather.

As the diameter of the galvanized iron canopy or hood of the various makes of stoves varies from around 52 to 60 inches, this should be checked with the plan before starting to build. The location of the interior posts and the diameter of the open space inside the "cat walk" may then be determined.

Insulation

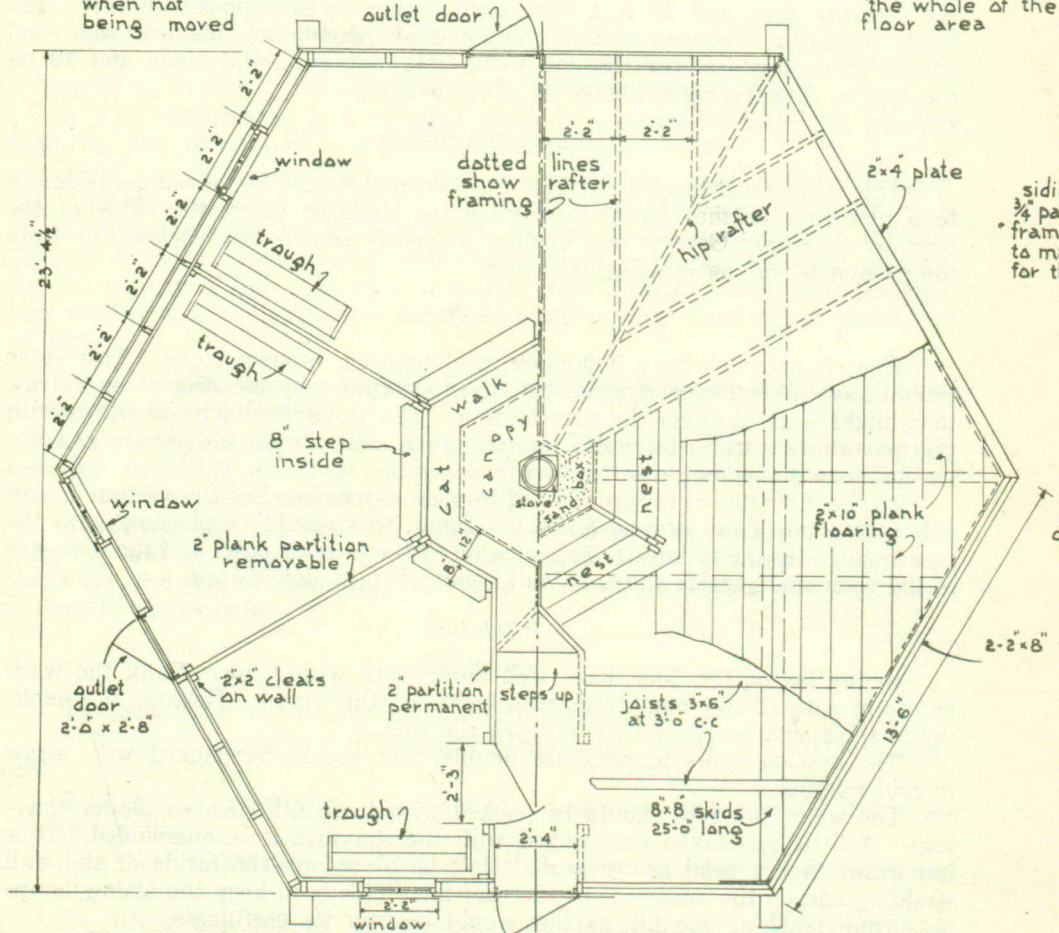
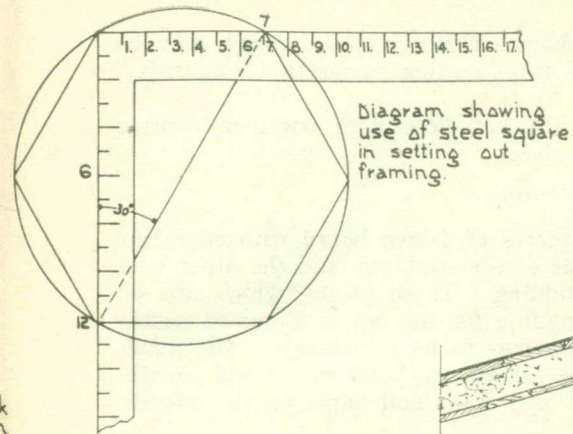
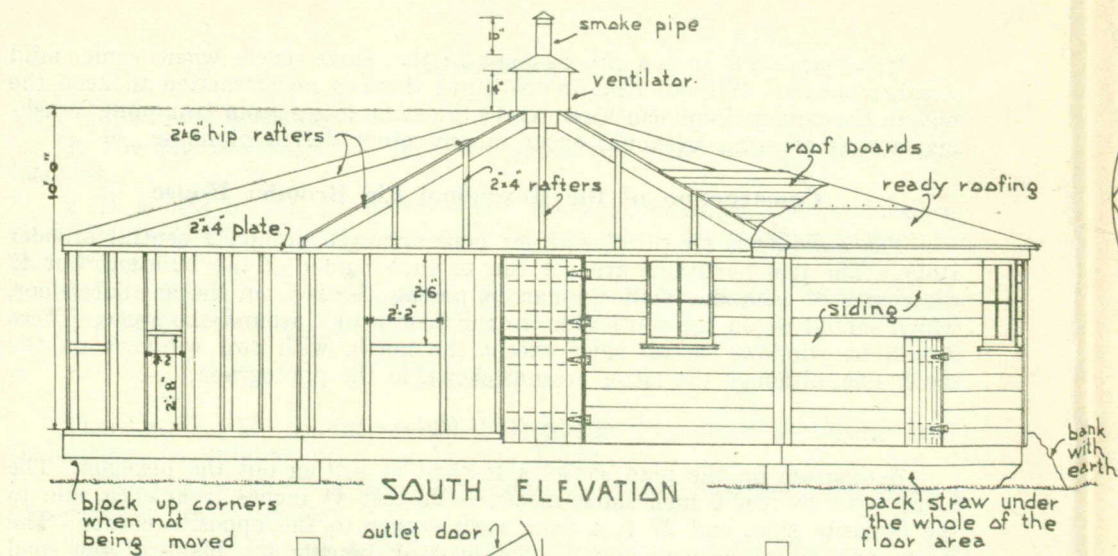
Before laying the floor, pack well underneath with straw. Bank the walls carefully with strawy manure or with earth for the winter. Remove the banking in the spring to permit air to reach the sills.

The outside doors to pens are double, and should be packed with straw in cold weather.

The walls and roof should be packed with loose fill, such as planer shavings. A little air-slaked lime mixed with the shavings is recommended. It is important that a good heavy asphalt felt be placed on the inside of the wall studding and on the underside of the roof fill. This is to keep the inside dampness from reaching the fill, as this would destroy its usefulness.

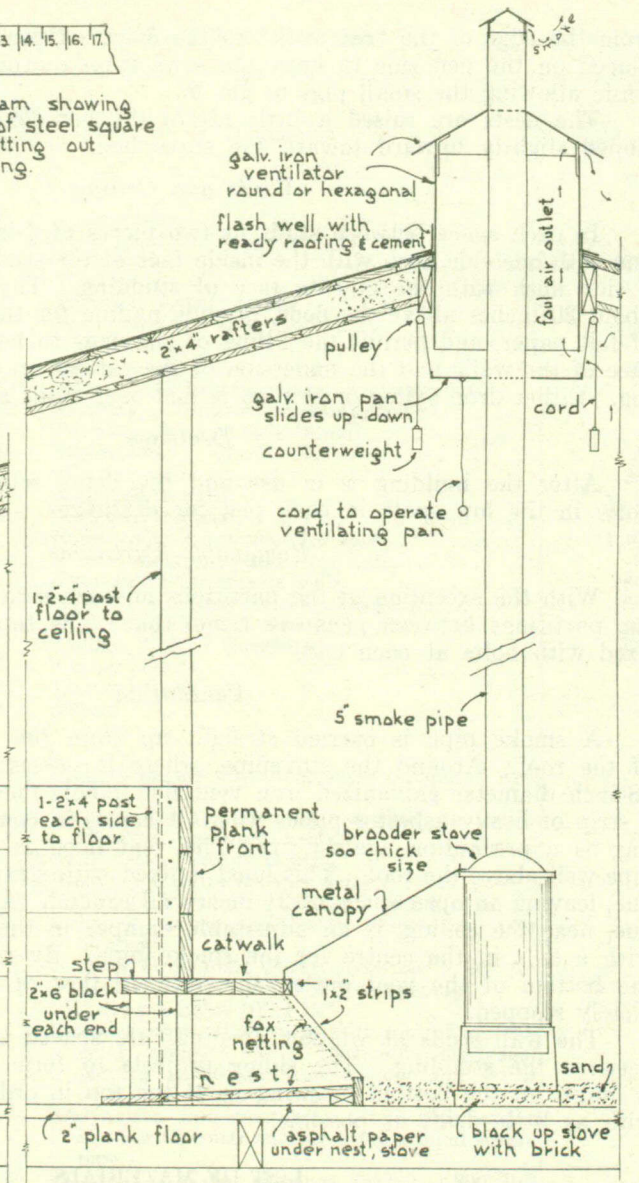
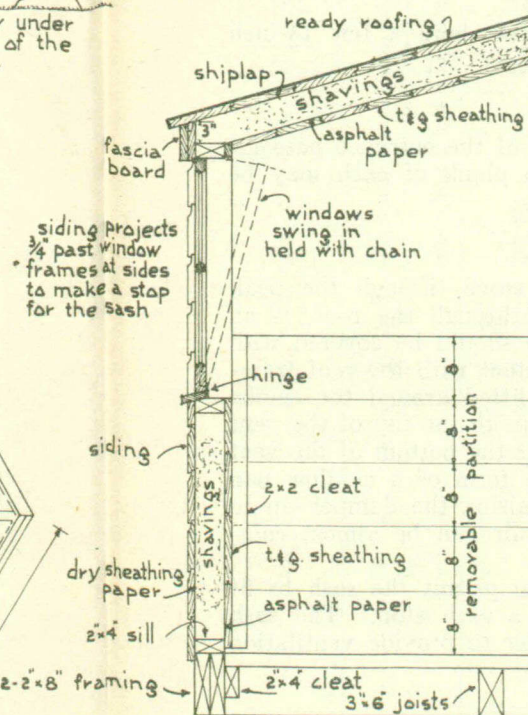
Nests

The nests for the young pigs around the brooder stove are separated from each other by plank partitions in line with the pen partitions. They are protected on top by the "cat walk," and on the stove side by wire netting stretched



This half of FLOOR PLAN shows pen layout catwalk etc. - repeat other side

This half of FLOOR PLAN shows floor construction. also rafter layout



EXPERIMENTAL FARMS SERVICE
DEPARTMENT OF AGRICULTURE
OTTAWA CANADA

PIG BROODER

SCALE DATE DEC. 1939 DRAWN BY G.W.H.
PLAN: SECTION: DETAILS
CHECKED ARCHITECT NO. 1 OF 1 SHEETS
APPROVED FILE NO. SERIAL NO.
J-4-3 795

from the edge of the "cat walk" to the floor. A pig creep, or guard, may be placed on the pen side to keep the sows from rooting under the "cat walk," while allowing the small pigs to get in.

The nests are raised a little above the pen floor with one-inch flooring sloped slightly upward toward the stove box.

Walls and Ceilings

In each space between studs fit two pieces of $\frac{7}{8}$ -inch board with edges up, one with one side flush with the inside face of the studding, and the other with a side flush with the outside face of studding. These pieces, which are set about 30 inches above the floor, provide nailing for the lap of standard widths of felt paper, and permit the filling of shavings to be continuous. The inside face of the walls and the underside of the rafters are lined with wood sheathing. Either drop siding or shiplap is laid over studs and paper on the outside.

Drainage

After the building is in use and the floors settled, bore a few $1\frac{1}{2}$ -inch holes in the low spots in each pen for drainage.

Removable Partitions

With the exception of the partitions on each side of the entrance passage, the partitions between pens are removable. The top plank of each may be fixed with bolts at each end.

Ventilation

A smoke pipe is carried straight up from the stove through the peak of the roof. Around the stovepipe, where it passes through the roof, is an 18-inch diameter galvanized iron vent flue. This flue should be covered with a strip of heavy asbestos paper where it comes in contact with the roof framing, as a precaution against fire. The vent hood is fitted around the smoke pipe well above the roof. This hood is fixed with straps to the top of the vent flue, leaving an open space of $2\frac{1}{2}$ inches all around. At the bottom of the vent flue, near the ceiling, is an adjustable damper in the form of a shallow pan with a hole in the centre for the smoke pipe. By raising the damper up to the bottom of the vent outlet, the outward flow of air can be almost completely stopped.

The wall studs at window openings are spaced to permit the sash to fit between the studding. The siding projects to form a sash stop. The sash is hinged at the bottom to swing in at the top in order to provide ventilation with as little draft as possible.

LIST OF MATERIALS

No. of Pieces	Size Inches	Length Feet	Description	Feet B.M.
2		25	Skids.....	
12	2 x 8	14	Floor framing.....	224
4	2 x 6	12	Cat walk.....	
2	2 x 8	12	Cat walk.....	
1	2 x 8	12	Cat walk supports.....	80
1	2 x 6	12	Cat walk supports.....	
14	2 x 8	8	Pen fronts.....	28
1	2 x 8	14	To cut for passage ramp and steps.....	129
6	2 x 4	14	Cleats on floor framing.....	19
4	3 x 6	12	Floor joists.....	56

LIST OF MATERIALS—*Concluded*

No. of Pieces	Size Inches	Length Feet	Description	Feet B.M.
2	3 x 6	14	Floor joists.....	
2	3 x 6	18	Floor joists.....	
2	3 x 6	20	Floor joists.....	228
22	2 x 4	10	Wall studs.....	147
9	2 x 4	8	Partition posts to ceiling.....	48
12	2 x 4	14	Wall plates and sills.....	112
6	2 x 4	12	Rafters.....	
12	2 x 4	14	Rafters.....	160
3	2 x 4	14	To cut 3' 4" long for cleats, pen partitions.....	28
2	2 x 4	14	Framing at window and door openings.....	19
4	2 x 2	12	Partition cleats at outside wall.....	8
6	2 x 6	14	Hip rafters.....	84
36	2 x 8	8	Pen partitions.....	384
4	2 x 10	12	V-shaped troughs.....	80
2	2 x 12	12	V-shaped troughs.....	48
.....	2 x 10	.....	Square edge rough sawn for floor.....	1,100
.....	x 4	.....	T. & G. floor, nest under cat walk.....	60
.....	x 6	.....	Drop siding for outside walls.....	600
.....	x 6	.....	T. & G. or shiplap for roof sheathing.....	660
.....	x 6	.....	Wall lining, T. & G. sheathing.....	520
.....	x 4	.....	Ceiling, T. & G. sheathing.....	660
3	x 6	12	Corner boards.....	
3	x 5	12	Corner boards.....	33
6	x 6	14	Fascia.....	42
1	36"	400 Sq. ft.	Roll 15 lb. dry sheathing paper outside of wall studs.	
4	36"	400 Sq. ft.	Rolls asphalt felt inside of wall studs, underside of rafters, and under nests.	
7	36"	108 Sq. ft.	Rolls heavy "Ready Roofing".....	
.....	.....	36 Sq. ft.	Heavy poultry or fox wire netting.....	
.....	.....	.....	1, T. & G. V-Joint batten door 5' 4" x 2' 4" in two halves, upper and lower. (One-piece door optional).	
.....	.....	.....	8, T. & G. V-Joint batten doors 20" x 30" for double doors at each of 4 door openings.	
6	.....	.....	Windows, 4 lights 10" x 12".....	
1	.....	.....	Brooder stove, thermostatically controlled, 500-chick capacity, with removable hexagonal pattern galvanized iron canopy and seven lengths of 5" smoke pipe.	
1	.....	.....	Galvanized iron ventilator fitted with smoke hood, with collar damper fitted around smoke pipe.	
.....	.....	.....	60 sacks of planer shavings, (about 1,800 lb.) for wall and ceiling fill.	
.....	.....	.....	Hardware:—	
.....	.....	.....	1 barn door latch.....	
.....	.....	.....	2 pairs 5" T-hinges for entrance door.....	
.....	.....	.....	8 pairs 5" T-hinges for small doors.....	
.....	.....	.....	2 pairs 5" T-hinges for doors at passage....	
.....	.....	.....	4 gate hooks 5" for outside doors to pens...	
.....	.....	.....	6 door bolts for inside doors.....	
.....	.....	.....	40 lb. 3½" common nails.....	
.....	.....	.....	125 lb. 2½" common nails.....	
.....	.....	.....	15 lb. 2" common nails.....	

THESE ARE THE RESULTS OF THE INVESTIGATION OF THE
 CASE OF THE DEATH OF THE LATE MR. JAMES
 SMITH, WHOSE DEATH TOOK PLACE ON THE 10TH
 OF APRIL, 1884, AT HIS RESIDENCE, NO. 10
 WEST 10TH STREET, NEW YORK CITY.

THE DEATH OF MR. SMITH WAS CAUSED BY
 A HEART ATTACK, WHICH TOOK PLACE
 WHILE HE WAS IN THE ACT OF
 WRITING A LETTER TO HIS WIFE.
 THE CAUSE OF THE HEART ATTACK
 WAS A Sudden AND UNEXPECTED
 INCREASE IN THE BLOOD PRESSURE,
 WHICH WAS CAUSED BY THE
 EXHAUSTION OF HIS SYSTEM,
 DUE TO THE OVERWORK AND
 ANXIETY OF HIS LIFE.

MR. SMITH WAS A MAN OF
 ABOUT FORTY YEARS OF AGE,
 AND WAS IN THE HABIT OF
 WORKING VERY HARD AND
 LONG HOURS. HE WAS
 A MAN OF A VERY SENSITIVE
 NERVOUS SYSTEM, AND WAS
 VERY EASILY EXHAUSTED.
 HE WAS ALSO A MAN OF
 A VERY HIGH BLOOD PRESSURE,
 WHICH WAS CAUSED BY
 THE OVERWORK AND ANXIETY
 OF HIS LIFE.

THE DEATH OF MR. SMITH
 WAS A TRAGEDY, AND
 WAS CAUSED BY THE
 OVERWORK AND ANXIETY
 OF HIS LIFE. HE WAS
 A MAN OF A VERY
 SENSITIVE NERVOUS
 SYSTEM, AND WAS
 VERY EASILY
 EXHAUSTED.

THE DEATH OF MR. SMITH
 WAS A TRAGEDY, AND
 WAS CAUSED BY THE
 OVERWORK AND ANXIETY
 OF HIS LIFE.