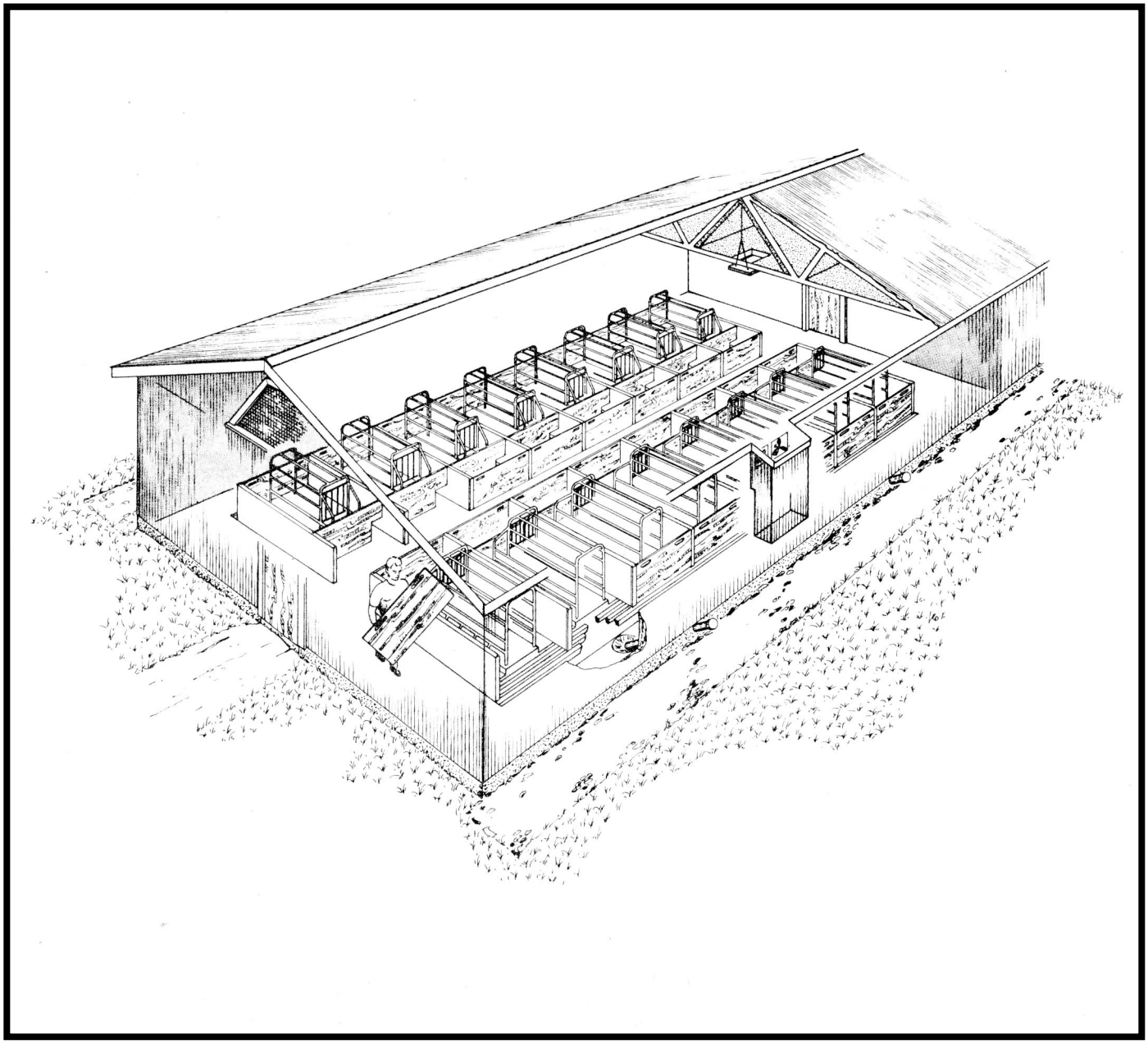
BRITISH COLUMBIA Ministry of Agriculture, Food and Fisheries
Agricultural Building Systems Handbook
PLAN
362-31

ONE - ROOM CONTINUOUS FARROWING SYSTEM – 50 SOWS, FRONT CREEPS



DEVELOPED BY CANADA PLAN SERVICE

362-31

ONE-ROOM CONTINUOUS FARROWING SYSTEM – 50 SOWS, FRONT CREEPS

CPS
PLAN 3302 REVISED 9:77

This plan, which replaces plan 3017, gives details for a barn to house two rows of farrowing pens with baby pig creeps at the front (see plan 3802). Two rows of these pens arranged head-to-head fit conveniently into a 28-ft. clear span building. If you prefer shorter pens with creeps at the sides of the sows, see plan 3301 which is 24 ft. wide.

Sows, baby pigs (and sometimes weaned pigs) are housed continuously in the same room, so this plan is not ideal for disease control; it is best suited for a producer with a herd of 50 sows or less.

COMPONENT BUILDINGS FOR A SWINE PRODUCTION SYSTEM

Plan 362-31 may be built separately or in connection with other units; the latter is preferred in Canada for visitor control, weather protection and easier installation of services (feed, water, electric power, central heating, etc.). The plan shows one end connected to a service vestibule, weanling area or some other part of the operation. Refer to Publication 1451, ***Confinement Swine Housing***, for more information on planning the complete swine housing system including breeding/gestation, weanling, growing/finishing and service sections.

This plan may be altered to accommodate various herd sizes and to meet the requirements of various breeding and management schedules affecting the number of farrowing pens needed. The following calculation shows how to estimate pen requirements; for other programs, substitute your own figures and recalculate:

$$\text{no. of farrowing pens} = 50 \text{ sows} \times 2.0 \frac{\text{litters}}{\text{year}} \times \frac{8 \text{ wk pen cycle}}{52 \text{ wk/year}} = 15.4 \text{ pens (make 16)}$$

The plan is drawn 28 x 48 ft to fit the 16 pens; be careful to adjust heating and electrical requirements, ventilation fan capacities, manure storage and other design factors if the building is increased or decreased.

SANITATION AND VISITOR CONTROL

Careful managers exclude visitors, or at least insist on a change of outer clothing and boots before they are admitted. Lock all exterior doors for visitor control; access should be only through the office or vestibule.

Other doors such as emergency exits and emergency ventilation doors should be secured with barrel-bolts or turnbuckle hooks from inside.

Good sanitation also calls for disinfecting footbaths at strategic points; at the visitor entrance, use an easily cleaned plastic footpan containing fresh disinfecting solution. At other locations (room entrances, etc.) where wheeled feed carts must pass through, make a wide, shallow footbath in the concrete floor. Slope the edges so that the cart wheels don't bump, and provide a drain and stopper for easy draining and refilling with fresh disinfectant.

Clean and sterilize each farrowing pen and give each sow a good bath before she is brought in for farrowing. Even with this care, disease problems will probably increase with time; a complete shutdown is recommended once each summer to permit a thorough cleaning and disinfecting job.

VENTILATION AND HEATING

Farrowing facilities are especially difficult to ventilate properly for the full range of seasonal climate in Canada. Summer cooling requires at least 280 cfm per sow and litter. On the other hand, cold winter weather calls for step 1 ventilation of only 15 cfm/sow, otherwise the heating load will be enormous. It is very difficult to find reliable agricultural exhaust fans small enough for this step 1 rate; in this case, 16 pens x 15 cfm/pen = 240 cfm only. One solution is to control the step 1 fan with an inexpensive 10-minute-cycle time clock with the 'on' period adjustable from 0 to 10 minutes. To get an average ventilation of 240 cfm from a fan rated at 600 cfm, for example, set the time clock

$$\frac{240}{600} \times 10 \text{ minutes}$$

to run the fan $\frac{240}{600} \times 10$ minutes, or 4 minutes of each 10-minute cycle.

This method gives precise control for the lowest ventilation rate, and offers the further advantage that it can be easily reduced if the barn isn't full, or increased if it is too humid. Be sure the ceiling air inlet is adjusted to be almost closed, to minimize backflow and condensation in the insulated attic ventilation duct during 'fan off' periods.

Bypass the time clock with a thermostat set at the desired room temperature (say 60°F) so the fan will run continuously to give the step 2 ventilation rate whenever the room is up to temperature. It is also possible to control heating with the same step 2 thermostat; connect this thermostat so it is interlocked to switch the space-heating system off when step 2 ventilation comes on, and vice versa (see CPS Leaflet 9701). If a mechanical gutter cleaner is used, the step 1/step 2 fans should be located to exhaust from the gutter cleaner wall opening; this prevents freezing of the gutter cleaner and keeps cold air out of the gutter area.

Another bigger fan, controlled with a second thermostat set at about 70°F, gives the extra ventilation for summer cooling. With this system, the operator must anticipate the approaching weather conditions and adjust the ceiling air inlet slots to give an air jet velocity of at least 800 ft/min across the ceiling to prevent drafts at floor level.

Another possible way to get this wide range of ventilation rate is to use one of the commercial recirculation systems where the amount of fresh air introduced can be adjusted according to weather.

MANURE SYSTEMS

This plan gives 3 choices for manure removal:

Manual - (1) gutter behind stalls, clean with a shovel

Mechanical - (2) gutter behind stalls, mechanical gutter cleaner to storage

Liquid - (3) slotted floor and deep gutter under rear of stall, clean with vacuum tanker through draw-off pipes in walls

If considerable bedding or coarse bedding such as uncut straw is used, systems (1) or (2) are best; for bedded manure, provide a paved slab big enough to stack manure and retain liquids for the maximum storage period required (usually at least 6 months' production). The liquid manure system (3) also requires additional long-term storage such as a manure-tight tank or storage pond.

Obtain ***approval of your plans from proper local authorities*** before starting construction

.