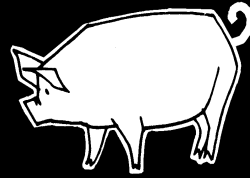




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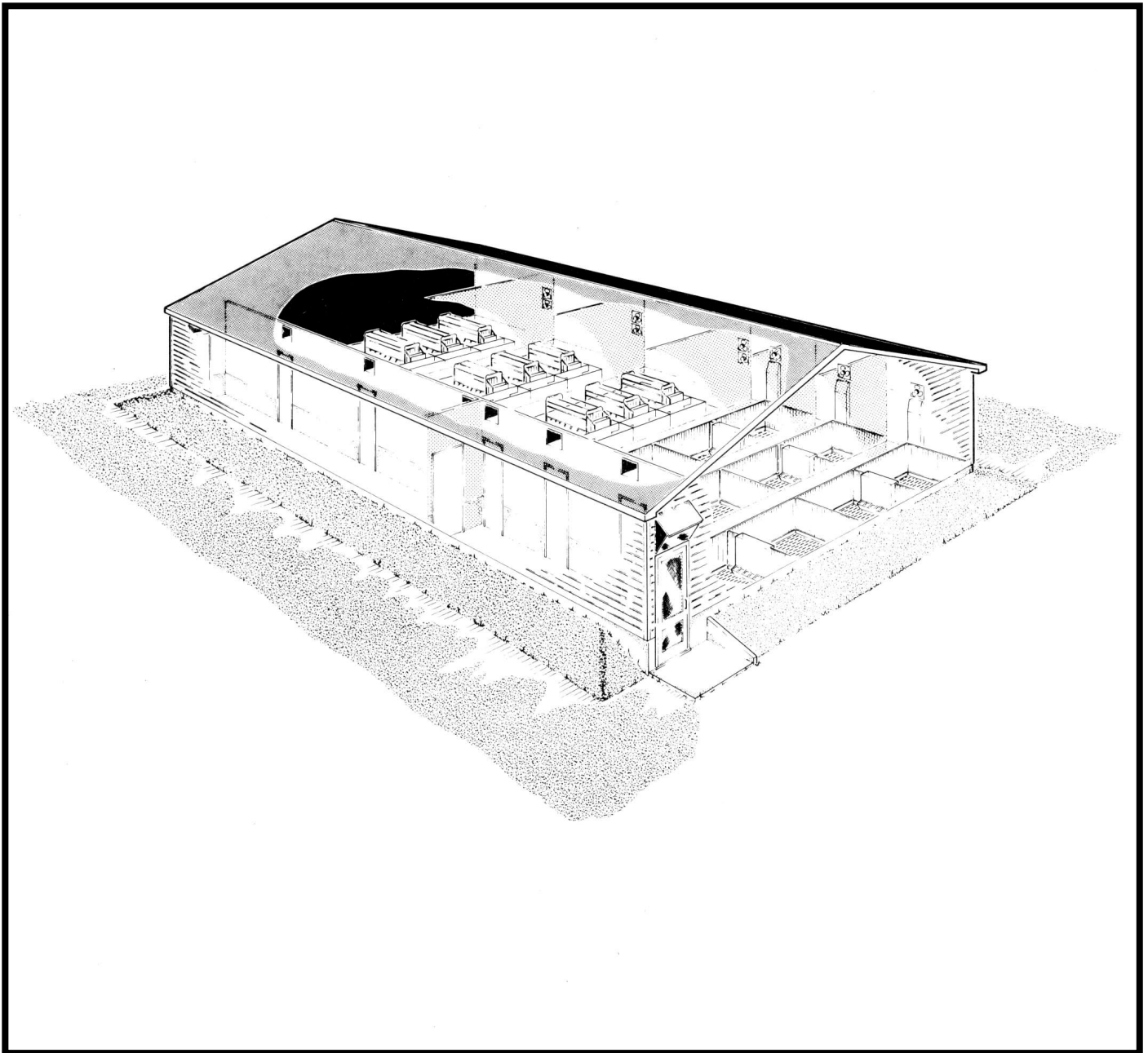
Agricultural Building Systems Handbook



PLAN

362-32

THREE – ROOM FARROWING, THREE – ROOM WEANLING UNIT



DEVELOPED BY CANADA PLAN SERVICE

THREE-ROOM FARROWING, THREE-ROOM WEANLING UNIT

CPS
 PLAN M-3303 NEW 84:12

With larger sow herds (75 sows and more) it is better to use all-in/all-out (or multiple-room) housing for the farrowing and weanling unit. This has several advantages:

- more thorough cleaning for disease control;
- easier cleaning and sterilizing since the room is empty (no concern about spraying occupied pens nearby);
- ventilation, heating and even lighting can be adjusted to the exact needs of each stage of growth.

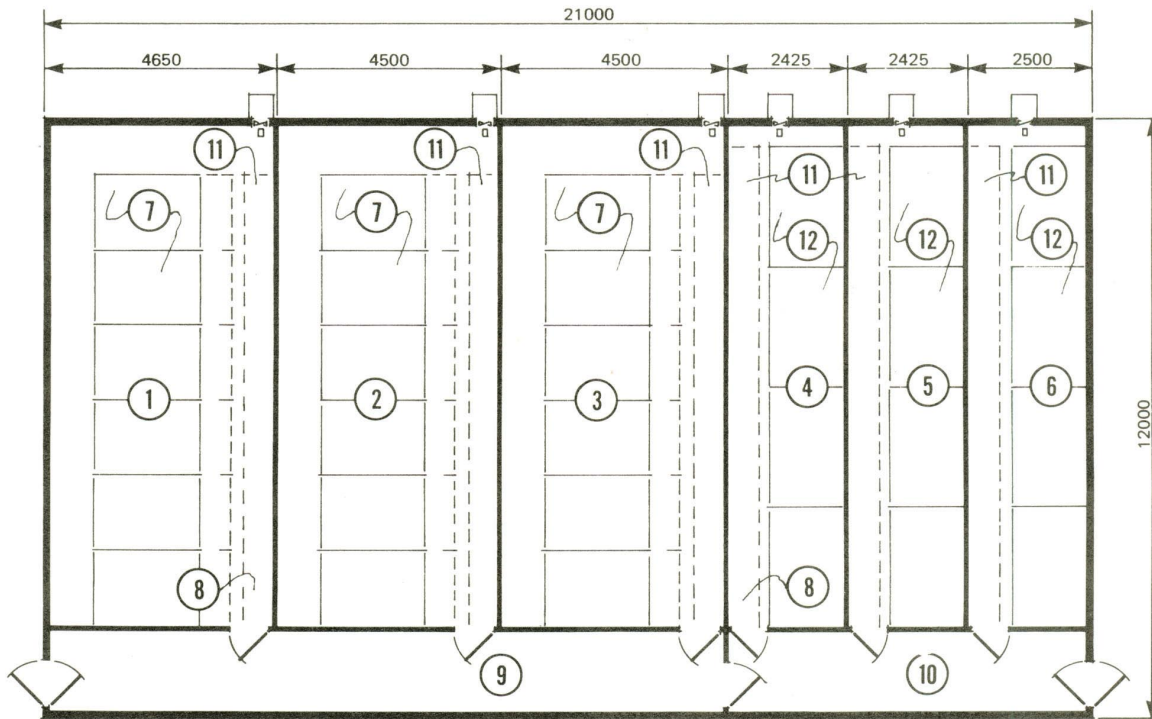
Ideally, all-in/all-out requires five farrowing rooms (4-week weaning) and six weaner rooms (weaning to 10

weeks of age). However, for medium-sized herds this is expensive because of the extra alley space, doors, walls and separate heating/ventilating systems.

Thus three-room farrowing/three-room weanling is a compromise, best suited for the medium-sized herd of about 75 sows for which this plan is designed. It retains the all-in/all-out idea but in a simpler and cheaper form.

WORK ROUTINES

Three work routines can be followed with this plan; each has its own advantages and drawbacks.



- 1-2-3 farrowing section, 3 rooms x 6 pens = 18 pens; 3 farrowings per week, 75-sow breeding herd
- 4-5-6 weanling section, 3 rooms x 4 pens = 12 pens
- 7 farrowing pens with front creeps (1.5 x 2.7 m) or with side creeps (1.5 x 2.1 m)
- 8 feeding and service passage
- 9 side halls, preheated air supply to ① ② ③
- 10 side halls, preheated air supply to ④ ⑤ ⑥
- 11 air inlet duct at ceiling, from ⑨ OR ⑩
- 12 weanling pens 2.4 x 1.5 m = 3.6 m², 12 weaner pigs @ 0.3 m²/pig

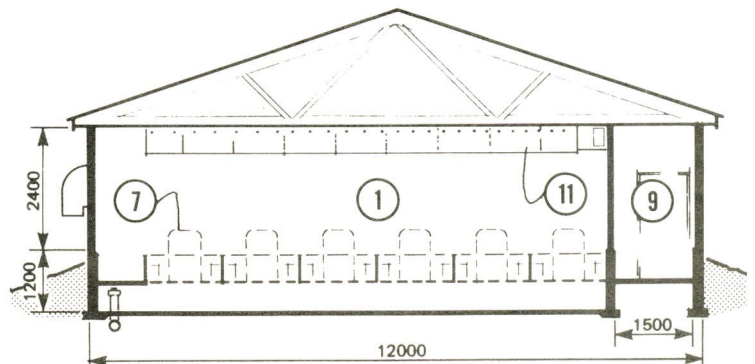


Figure 2 Small multiple-room farrowing/weanling unit

BI-WEEKLY ROUTINE With this, six sows are weaned every other week (usually on Thursday to avoid weekend breeding). The baby pigs are left in the farrowing pen for an extra week, then they are moved to a clean weaner room. The piglets should average 5 weeks old when moved and will stay in the weanling room for another 6 weeks. The work routine is shown in Table 1. Farrowing rooms ② and ③ would be filled 2 and 4 weeks later (respectively) than farrowing room ①. Similarly, weanling rooms ⑤ and ⑥ would follow weanling room ④ at 2-week intervals.

You might choose to move the weanlings out at the same time as the sows, although this causes more stress. If this is done after the piglets are 4 weeks old, the room could stay empty for a week; if done after 5 weeks old, the room will be empty for only a day but the piglets will be a week older.

TABLE 1 BI-WEEKLY ROUTINE, 3-ROOM FARROWING

Week	Day	Farrowing room①	Weanling room④
1	Wed		empty & clean
	Thur	empty & clean	fill
	Fri	fill	
2		farrow	grow
3		nurse	grow
4		nurse	grow
5		nurse	grow
6	Thur	wean	grow
7	Wed		empty & clean
	Thur	empty & clean	fill
	Fri	fill	
8		farrow	grow
9		nurse	grow
10		nurse	grow

With this bi-weekly routine, you are dealing with larger group sizes (six sows, six litters), which has several advantages:

- Piglets are closer together in age and size, so the farrowing room (and especially the weanling room) can be more accurately tuned to their needs.
- You are likely to be more conscientious. With the smaller group size of the weekly routine (described later), chores can become more of a nuisance than a challenge.

A disadvantage of the bi-weekly routine is that six sows weaned on the same day will likely all come into heat five to seven days later, which places greater demand on 'boar power'. This can be overcome by using A.I., or extra boars, or by following the weekly routine.

WEEKLY ROUTINE The six sows in a farrowing room are treated as two groups, A and B, of three sows each. Group A farrows and the piglets from Group A are weaned one week before B. Group A piglets (after weaning) stay in the farrowing room for the extra week,

at which time group B piglets are weaned and all six litters go to a weanling room. The work routine is shown in Table 2.

Similarly, farrowing rooms ② and ③, and weanling rooms ⑤ and ⑥, follow two and four weeks later respectively.

CONTINUOUS SYSTEM This routine is run as if all pens were in the same room. Easy and thorough cleaning is sacrificed in favor of faster throughput with less management required for scheduling. Even so, the separate rooms give the advantage that an operator can ease into all-in/all-out management from time to time (every six months), or whenever the disease level gets too high. This is very difficult to do with single-room farrowing without a major breeding shutdown.

TABLE 2 WEEKLY ROUTINE, 3-ROOM FARROWING

Week	Day	Farrowing room①	Weanling room④
1	Wed	Group A 3 sows	Group B 3 sows All 6 litters
	Thur	empty & clean	fill
	Fri	fill	empty & clean
2		farrow	grow
3		nurse	grow
4		nurse	grow
5		nurse	grow
6	Thur	wean	grow
	Wed		empty & clean
	Thur	empty & clean	fill
7	Fri	fill	
	8	farrow	grow
	9	nurse	grow
10		nurse	grow

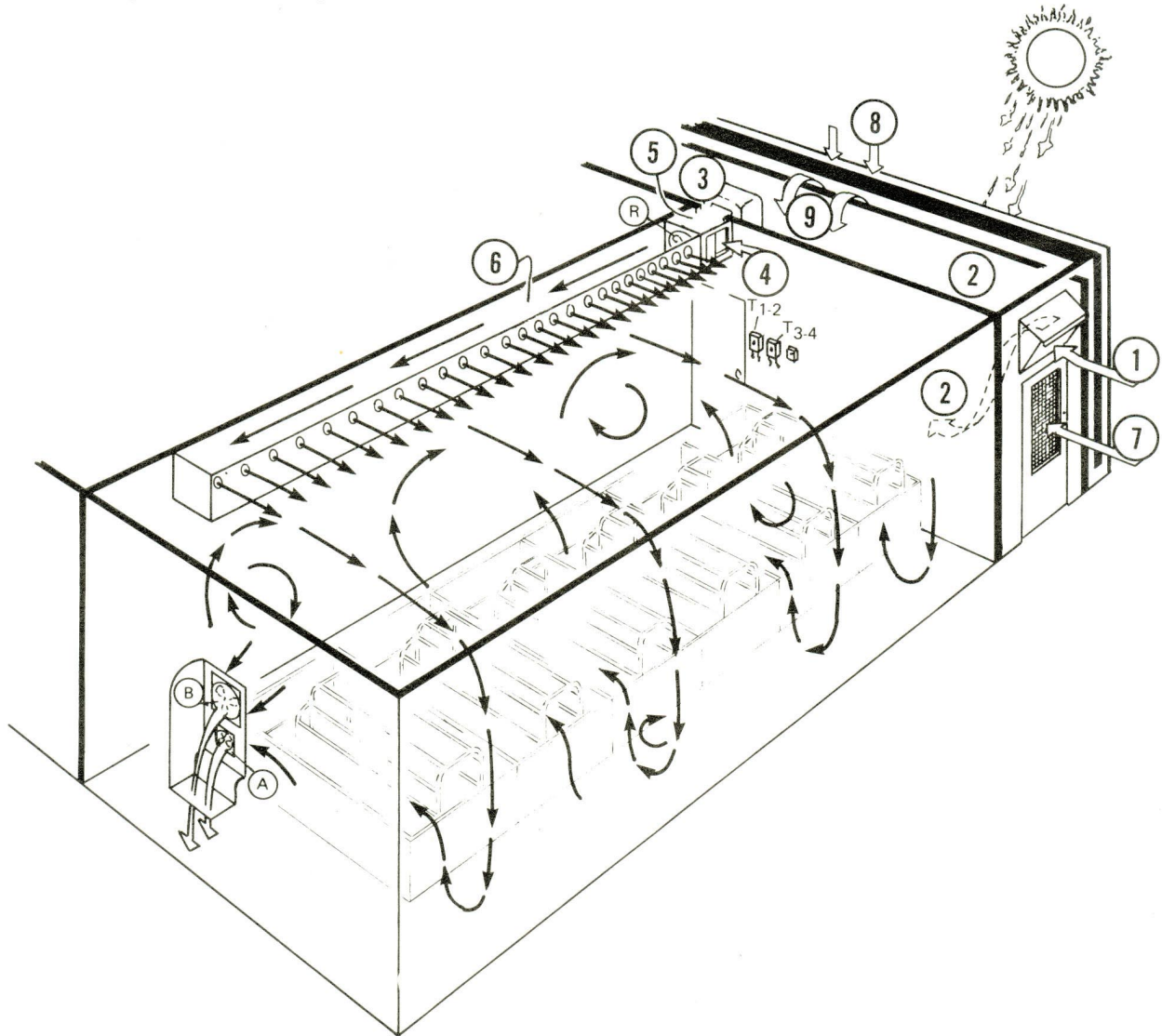
OTHER SOW HERD SIZES For herds other than 75 sows, count on one farrowing per week per 25 sows. Thus, a 125-sow herd has five farrowing per week and requires three farrowing rooms with 10 pens per room.

Large sow herds (150 +) will likely need something more like Plan 362-33, five-room farrowing/five-room weanling.

VENTILATION The multiple-room farrowing and weanling building is only one part of a management package that helps produce more healthy weaned pigs per sow. Another important aspect is the ventilation system. First, a preheat hallway (⑨ and ⑩, Figure 2) is used in winter to warm the outside air to above freezing before it is pulled into each farrowing and weanling room. This hallway may be preheated by fan-forced electric heaters (③, Figure 3), by hot water radiators (black pipe or fin-tube), or even by a solar

collector in the south wall of the hallway ⑨ and ⑩ (see plan M-9732). The hallway is divided by a door between the farrowing and weanling sections so that the part serving the weanling rooms can be kept a little warmer than the serving farrowing rooms.

In ventilating small farrowing and weanling rooms, a frequent winter problem is that the ventilation rate is too low to properly mix the room air. This results in a layer of cooler air that remains near the floor where warmth is needed. Figure 3 shows how a recirculating air duct can be used to overcome this; a two-speed recirculating fan (R) picks up some recirculated warm



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| <ol style="list-style-type: none"> 1. winter air intake to hallway ②, or see ⑧ 2. preheat hallway 3. fan-forced heater (one for each room) 4. recirculated air enters ⑤, opening adjustable 5. mixing chamber, opening from ② 6. air duct at ceiling, bottom opens for cleaning | <ol style="list-style-type: none"> 7. screen door, summer air intake to ② 8. winter air enters top of solar collector (plan M-9732, optional) 9. warmed winter air enters ② R recirculating fan, 2-speed manual control A step 1/step 2, variable 2-speed exhaust fan B step 3/step 4, 2-speed exhaust fan |
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Figure 3 Preheat hallway and farrowing room ventilation system

Air ④ and pressurizes the duct ⑥. A row of round holes jets this blended air from the duct into the room. The two-speed recirculating fan ⑤ is normally set on high speed in summer and low in winter. The hole spacing is varied (close together near the fan end, farther apart near the other end) to give uniform air flow into the long narrow room. The proportion of recirculated versus fresh air can be adjusted for each season by opening or closing a slide valve at ④. In summer, when the duct must handle a much higher ventilation rate, the bottom panel of the duct is lowered on nylon cords to make a tapered slot in addition to the row of holes.

The exchange of air through the room is assisted by the recirculating fan ⑤ and duct ⑥, but is really controlled by exhaust fans ⑦ and ⑧. Fan ⑦ is a small two-speed agricultural fan, with a manual speed control to adjust the low speed. A thermostat (T₁₋₂, Figures 3 and 4) senses room temperature, then switches fan ⑦ to high or low speed depending on whether the room is too warm or too cool. A manual speed control (Figure 4) presets the low (step 1) ventilation rate according to need. For example, if the farrowing rooms are only partly filled, some heat energy can be saved by adjusting the manual speed control to reduce the step 1 ventilation rate accordingly. When setting the manual speed control, check the fan shutters to be sure the small fan can still move some air when blowing against a headwind.

Another energy saving possibility (not shown in Figure 4) is to interlock the air heaters ③ in the hallway, so that when thermostat T₁₋₂ switches to high, it also switches the heater off, and vice versa (see plan 306.460-1). In any case, the thermostat controlling each air heater ③ must be located in the corresponding farrowing or weanling room.

In warmer weather, fan ⑧ starts to run at low speed, and in still warmer weather, it switches to high speed. In effect we have a four-step ventilation rate controlled with only two fans.

MANURE SYSTEM The manure system shown in the detailed plan sheets is the popular 'stop-and-flow' gutter system. With this, manure accumulates in gutters under the farrowing and weanling pens. At the end of the pen cycle (or whenever manure comes to within about 0.3 m of the slotted floor), a drain plug is pulled, flushing the manure into a sewer pipe and through a gas trap into long-term storage.

The stop-and-flow manure system is not ideal, in that manure is held for several weeks under the pens. This can cause some gases and odors. Another option, particularly suitable for farrowing pens, is the cantilever slotted floor, described in plan M-3800 Farrowing Pens.

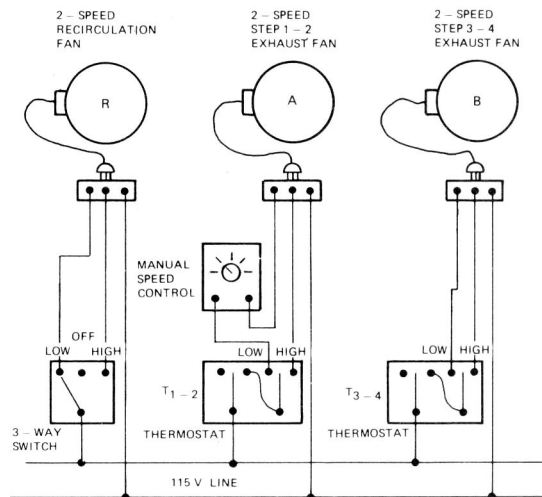


Figure 4 Fan and control wiring diagram, typical of each farrowing and weanling room