This plan is for a 26' x 134' building housing 177 gestation stalls for sows, 9 stalls for boars, and 5 pens for sows ready for breeding and young boars. The building is completely ventilated by fans with both variable speed and single speed fans. Supplemental heat is provided to maintain a minimum winter temperature of 65°F to 60°F. In addition, the design calls for evaporative cooling pads to be installed to moderate the extreme hot summer weather. Research has shown that conception rates can drop below 50% during late summer if the producer does not take steps to keep his sows and boars cool. Near total control of the environment should prevent monthly variations in breeding performance from environmental causes.

The plan calls for gestation stalls for the sows and boar. Research has shown that animals remain productive long when confined to stalls. The producer can better control feed intake and should have fewer problems that are normally associated with fighting and group handling of sows.

The breeding area is designed to accommodate hand matings with a minimum of labor; each estrus sow is backed from her stall into the breeding area immediately behind her.

The breeding area is gated so that 5 matings may take place at once. It should be very simple for a producer to expose every sow within a group to a boar twice daily from weaning until mating. The number of boar stalls may seem excessive; however, direct boar-sow contact should hasten the onset of estrus and many breeding problems observed in the field have been due to insufficient boar power.

Electrical power outages:
Serious problems can be encountered in totally enclosed swine buildings during an electrical power outage, when the ventilation fans stop. To avoid possible problems an enclosed swine building should be equipped with an automatic warning system to alert you when a power failure has occurred and a standby electrical generator should be available.

Thermostat adjustment:
The thermostat settings given above allow the building temperature to vary from a minimum of 60°F in the winter to a maximum of 85°F in the summer.

Thermostat

| Fan B (Low Temperature Cut Off) | 65°F |
| Heater | 60°F |
| Fan B (Set Point on Variable Speed Controller) | 65°F |
| Fan A | 70°F |
| Fan C | 70°F |
| Cooling Pad Pump and Motorized Shutter | 60°F |

Note: Check the air temperature at the level of the pigs and adjust the thermostats if your reading is substantially different from the desired temperature. Does not apply to cooling pad pump thermostat.

Waste storage requirements:
0.50 cubic feet of storage per day per sow. This facility provides 80 days of manure storage per useful foot of pit depth; 90 days storage total.

Note: Two feet of pit depth is generally not considered usable storage volume, because some of the solids are not removed during cleaning and the liquid level should not be allowed within one foot of the bottom of the slats.

Design ventilation rates and supplemental heat:
Minimum 15 CFM per sow
Maximum 20 CFM per sow
Supplemental heat 450 BTU per hour per sow

Feed and Water requirements:
Feed: 4.8 lb per sow per day; 12000 lb total per week
Water: 4.0 gal per day per sow
675 gal per day total
Minimum pumping rate: 8 gal per minute

Water lines:
Water lines are generally installed by attaching them below the ceiling.

Slats:
Slot opening: 1 inch
Slat top width: 5 inch maximum

Estimated material list:
1/2" EXT. PLYWOOD: 228 PC.
3/8" EXT. PLYWOOD: 10 PC.
LUMBER (EXCLUDING TRUSSES): 5642 BF.
26" TRUSSES: 42/4' PITCH: 78 BF.
6" LIGHT WEIGHT CONCRETE BLOCK: 1630
8" STANDARD WEIGHT CONCRETE BLOCK: 2046
12" STANDARD WEIGHT CONCRETE BLOCK: 1848
CONCRETE (FLOOR, FOOTINGS & BLOCK FILL): 140 YDS.
6" INSULATION (CEILING & WALLS): 7680 SQ. FT.
10' SLATS: 1500 SQ. FT.
METAL ROOFING & SIDING: 2700 SQ. FT.
6' SLATS: 918 SQ. FT.

Cooling pad system:
It is important that you contact the pad manufacturer for detailed design assistance and proper installation procedure.

Cooperative Extension Work in Agriculture and Home Economics
United States Department of Agriculture Cooperating
KENTUCKY BREEDING & GESTATION BUILDING
KY. '80 EX 6333 SHEET 1 OF 4
Based on University of Kentucky Plan No. 11-726-36
FLOOR PLAN, ELECTRIC, PLUMBING, HEATING, COOLING & VENTILATION LAYOUT

FAN TYPE AND RATING:

<table>
<thead>
<tr>
<th>FAN</th>
<th>TYPE</th>
<th>CFM RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SINGLE SPEED</td>
<td>10,000</td>
</tr>
<tr>
<td>B</td>
<td>VARIABLE SPEED</td>
<td>2,100-10,000</td>
</tr>
<tr>
<td>C</td>
<td>SINGLE SPEED</td>
<td>10,000</td>
</tr>
</tbody>
</table>

SUPPLEMENTAL HEATERS:

MINIMUM REQUIREMENT: 120,000 BTU PER HOUR PER 34 KW TOTAL
60,000 BTU PER HOUR PER HEATER OR IF 17 KW

HEATER FANS SHOULD PROVIDE A 30 FT. THROW AND HAVE A FLOW DIVIDER INSTALLED IN THE OUTLET.

COOLING PAD

CONSULT MANUFACTURER

MOTORIZED SHUTTER

MINIMUM REQUIREMENT: ONE SQUARE FOOT OF SHUTTER OPENINGS PER SQUARE FOOT OF FAN OPENING.

THERMOSTATS:

<table>
<thead>
<tr>
<th>THERMOSTAT</th>
<th>TYPE (FOR LINE VOLTAGE APPLICATIONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT</td>
<td>OPEN ON RISE</td>
</tr>
<tr>
<td>FAN A</td>
<td>CLOSE ON RISE</td>
</tr>
<tr>
<td>FAN B</td>
<td>SOLID STATE CONTROL, WITH MINIMUM CUTOFF</td>
</tr>
<tr>
<td>FAN C</td>
<td>CLOSE ON RISE</td>
</tr>
<tr>
<td>COOLING PAD PUMPS</td>
<td>DUAL ACTION (SINGLE POLE DOUBLE THROW)</td>
</tr>
<tr>
<td>MOTORIZED SHUTTER</td>
<td>DUAL ACTION (SINGLE POLE DOUBLE THROW)</td>
</tr>
</tbody>
</table>

THERMOSTAT LOCATION:
NEAR CENTER OF BUILDING AS LOW AS POSSIBLE BUT OUT OF ANIMAL REACH NOT IN A DIRECT LINE WITH THE HEATER OUTPUT

*a* THE COOLING PAD PUMP AND MOTORIZED SHUTTER THERMOSTAT SHOULD BE INSTALLED OUTSIDE IN A LOCATION PROTECTED FROM DIRECT SUNLIGHT AND RAIN