

A German view of the future for sow housing

In Germany we estimate that, each year, a total of 30 000-50 000 new sow-places must be created, to maintain our share of the national market for pigmeat and make up for the continuing loss of smaller breeding units. Expressed differently, this means in theory between 375-625 new sow farms, each with 80 sow-places, would have to be established annually.

For a reasonable income, each herd must not be less than 80 sows. Also, it must produce 20 or more healthy piglets weaned per sow/year, it needs performance-pro-

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In West Germany, pig specialists Dr JOSEF LORENZ and Dipl.-Ing. agr. FRIEDRICH BERKNER have been examining the type of housing and management details which will enable a German unit to be competitive and secure its existence into the 1990's. The following report describes some of their conclusions with regard to housing the breeding herd. In a later issue, their thoughts on finishing-house standards will be detailed.

moting and labour-saving methods for its operation and management (employing an all-in, all-out system) and of course it must have the right type of pig—if at all possible, a hybrid.

It will, in addition, have housing in which no bedding is used. The fact that the labour expenditure per sow/year can thus be reduced to between 15-20 hours is no longer debated and it is generally realised that there is no

other way to free adequate working time for the sow-herd branch of a farm operation.

In Figure 1 we show the details of a pig-house model, for 96 sows in production, with pens included for replacement gilts. Note that all areas are arranged at a right-angle to the house's long axis. Such an arrangement allows the progress of each group of sows to be seen quickly and easily and, what

is more, any gaps in the production sequence to be identified immediately—right from the gilt stage through to farrowing.

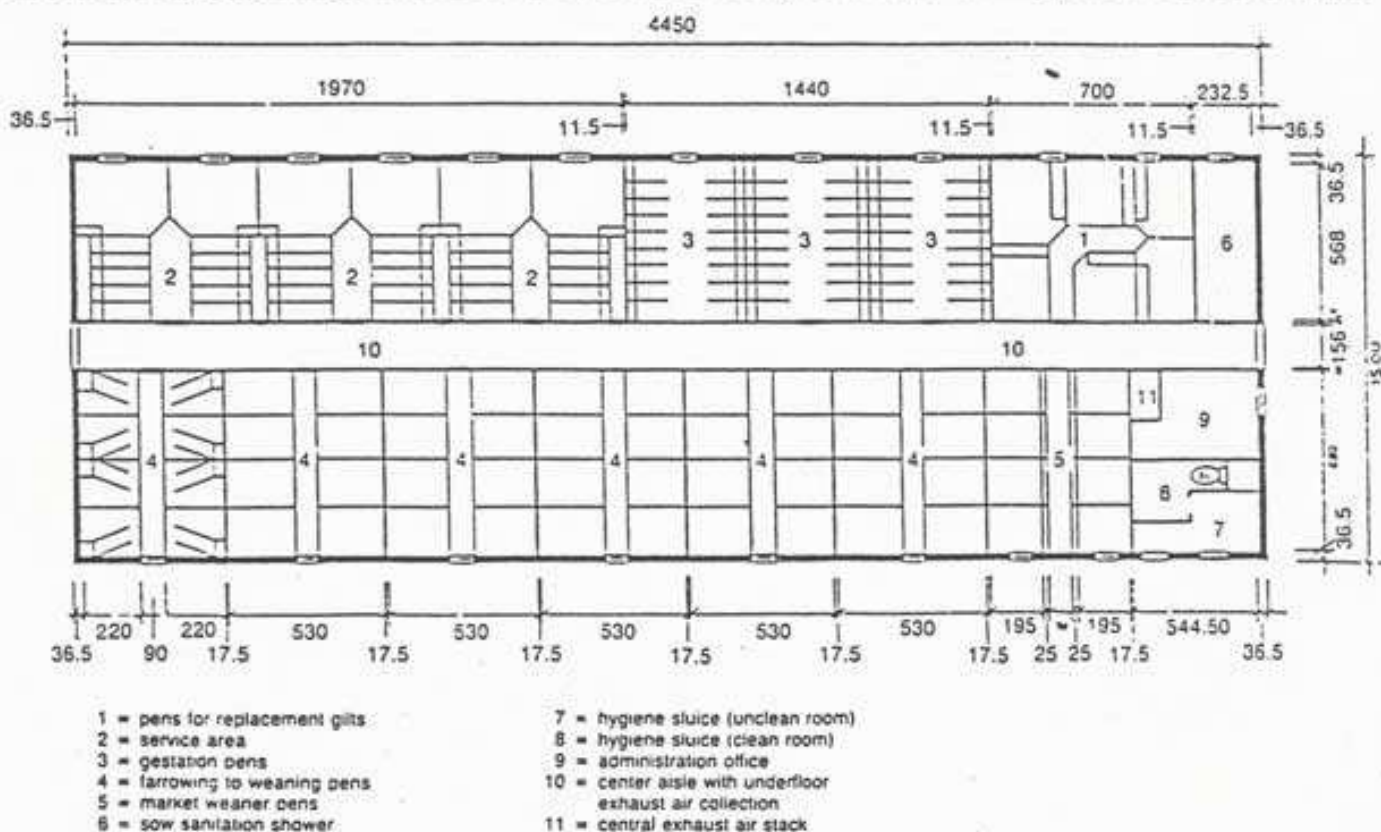
In the design planning, these factors were considered:

- Clearly separated house areas and/or pens for maximum in-house hygiene, precise environment control and a general state of overall quiet inside the housing.

- Separation into a so-called 'cold area' (including mating pens, gestation, area for replacement gilts, sow shower station) and a 'warm area' comprising farrowing/weaning/rearing pens and those for market-weight weaned pigs, where artificial heating is employed.

- Compact construction featuring a dual-chamber arrangement allowing possibil-

FIGURE 1: Suggested single-unit house for herd of 96 sows in production, including pens for replacement gilts.



ity for expansion in all areas.

- Liquid manure management, incorporating a central pipe discharge system and external storage.

- Ventilation by taking air into rooms from the central corridor using branch ducts above the ceiling; stale air pulled by negative pressure below the corridor and blown out at high velocity over the house's ridge, through a central discharge chimney. Such a system permits easy incorporation of heat recovery to warm incoming fresh air.

- Organised work-flow allowing a clear overview of all operations.

- Entry to the house for farm personnel is only possible by passing through the office and changing room, with toilet and washing facilities.

To describe the areas inside the house, the pens for replacement gilts (marked 1 on the plan) provide at least 0.6m² of floor area per animal, with the long side of the pen being not less than 2.1m in length. The floor is of concrete slats 8.5cm wide with

gaps 1.7cm. There are passages 60-80cm in width for moving gilts and a main aisle 120-150cm wide for control and testing. Partition walls are 120cm high and doors/gates are fitted with quick-closing handles.

A transverse double trough is provided—an alternative could be an automatic feeder—on the basis of 2 gilts per feeding place up to 50kg liveweight and a 1:1 ratio after that. Nipple drinkers are 50-70cm above floor level, their height being adjustable.

For the mating area, the standards in future should see sows housed individually in purpose-built pens arranged in blocks to accommodate distinct groups or batches. Each block should have 15-20% extra places for those females failing to conceive at first mating insemination. While the concrete slats for the sows are the same as those for gilts, in the boar pens their gaps should be only 1.3cm wide.

We stipulate a feeding passage 50cm wide and the

sow-moving aisle to be 130-180cm. Directly adjoining the sow-group pens should be the boar pens and those for problem sows/gilts, measuring at least 2.4m x 2.5m.

In this all-under-one-roof system, the gestation area has a sort of comb pattern of blocks of tie-stalls. These are 100cm high, separating sows restrained by adjustable girth tethers attached to the side division. Their troughs are 40cm deep, the stalls themselves are 62.5-65cm wide and they provide a lying area 180cm long behind the trough. As for the floor, for a distance of 80cm from the trough it is of concrete slats 5cm wide with 13mm gaps; in the rest of the surface, slat width is 8.5cm while gaps are 15-17mm.

To optimise space, in the farrowing rooms there are no feeding passages; instead, the pens with diagonal crates face outwards from the single aisle and each crate is equipped with a feed dispenser holding the metred ration for one day. Pen width is between 165-180cm and

they are 210-220cm deep; the sow's trough is raised and the crate tilts up when not needed.

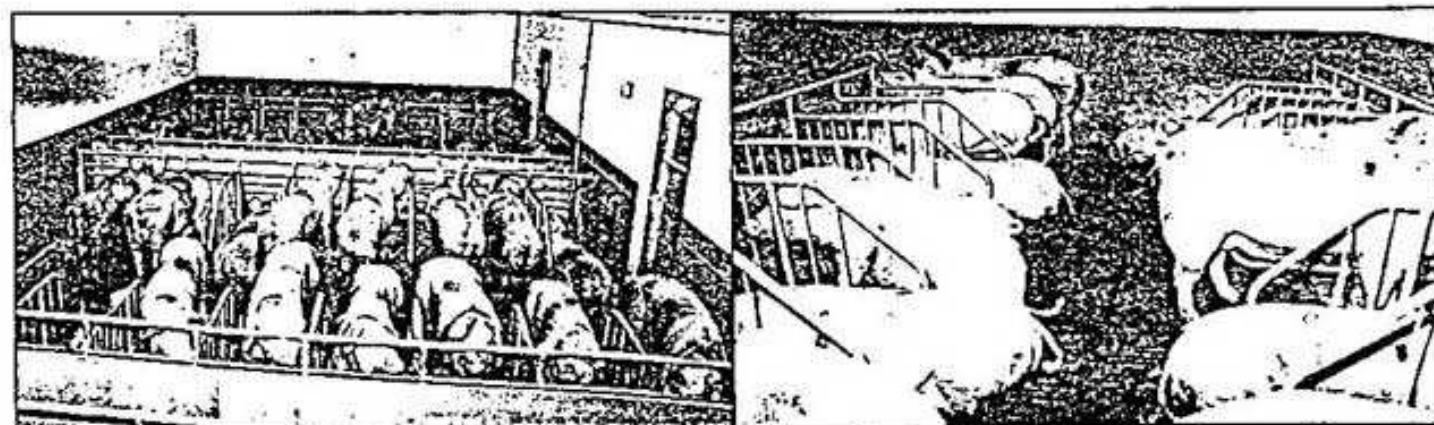
The floor of the farrowing pen is either of cast-iron slats or of PVC-coated wire mesh. Gaps should be 9mm wide and the treading surface of the slats about 12mm. In the creep area, piglets have an inlaid and insulated lying panel.

Features of the rearing pens, for piglets up to 30kg liveweight are that they are as square as possible—giving a 1.75m x 1.75m floor area for 10 pigs. Partitions, 83-85cm high, are made of vertical pipes 5cm apart. The floor is of cast-iron grating or PVC-wiremesh. There is an automatic feeding mounted on the pen door, to be outside the actual pen area, and it must be easily removed for cleaning. As for the one nipple drinker per pen, its height is adjustable over a range 25-53cm.

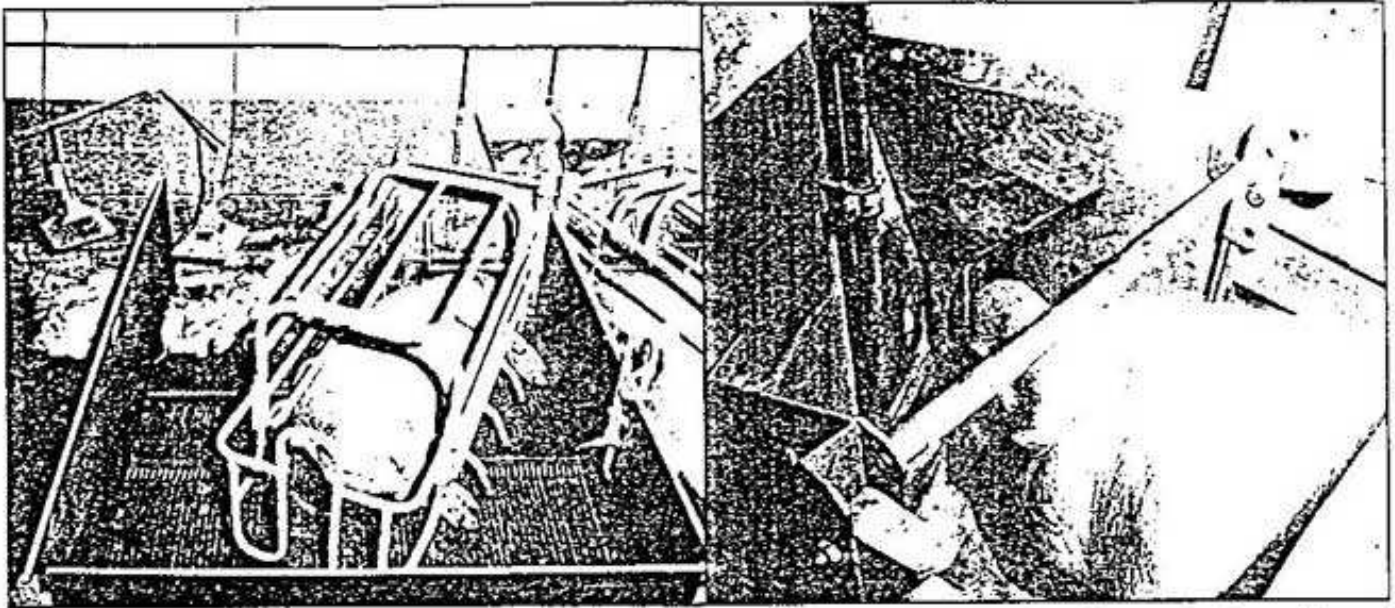
There remains only to mention the sow shower station. One week before farrowing, sows are moved into



This mating room contains stalls specially designed for artificial insemination.



LEFT: Room system for pregnancy, introducing fresh air through the ceiling and extracting through the slatted floor. RIGHT: Sows held by girth tethers in stalls for pregnancy.



LEFT: Diagonal tilt-up farrowing crates on fully-perforated cast-iron grates, with a lying pad for piglets under the gas infra-red heater. RIGHT: Hopper feed dispenser for a nursing sow. This meters out her ration for one day's feeding.

the farrowing quarters after having been thoroughly showered and disinfected. This procedure is repeated before they are moved from the farrowing quarters to the mating area.

Still on procedures, when

sows have been checked for conception the idea is that they go in groups from the mating area to the gestation rooms. At the same time, the group prepared for parturition is taken to the farrowing pens.

After farrowing, while the piglets remain in the pen, the sows are again moved to one block in the mating area, where they may be joined by any additional females which failed to conceive at the time of first mating.

Thus, always depending on the weekly weaning cycle employed, a rotational moving scheme is strictly adhered to. It incorporates an all-in, all-out system in terms of the employing and re-filling of blocks of sow-places. 