

calf housing

Simple steps for good calf housing

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1 Natural ventilation: natural ventilation is used in the majority of calf houses. This works in two ways:

- ‘Stack effect’: this occurs where warm air rises and leaves the building through an opening in the ridge and it is replaced by cooler, fresher air. The recommended roof slope of 15 to 22 degrees is a major help to the stack effect.

- ‘Wind effect’: in this case wind drives fresh air through the building.

Natural ventilation works best when the calf house is positioned at right angles to the prevailing wind and the building is not excessively wide (ideally <12m) or excessively high (3.35m to 4m at the eaves is recommended).

Air inlets can be provided by Yorkshire boarding or vented sheeting. Yorkshire boarding has two staggered lines of vertical timber so it reduces air speed, water entry and the likelihood of draughts. Specification S101 from the Department of Agriculture, Food and the Marine (DAFM) stipulates that the minimum length of the boarding is 1.5m, that the laths are 25mm thick, a maximum width of 75mm with gaps of at least 25mm.

Figure 1: Space boarding on left and Yorkshire boarding on the right

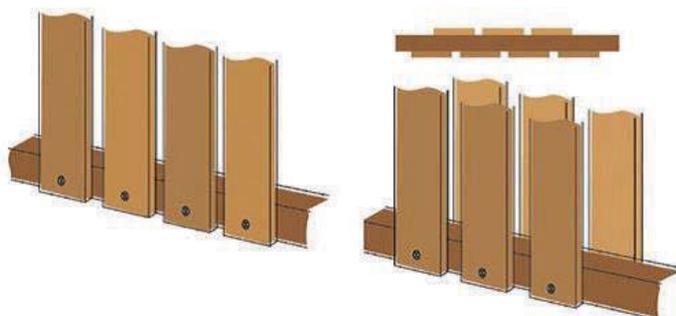


Figure 2: Covered open ridge

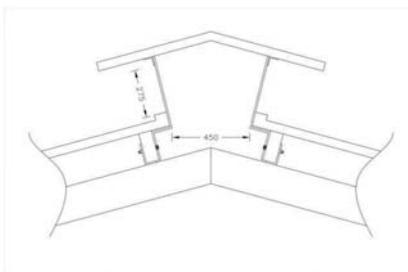
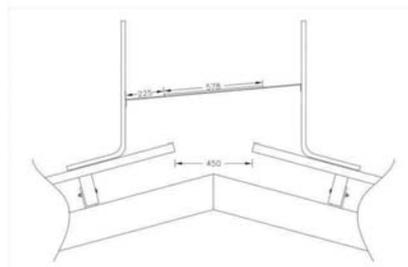
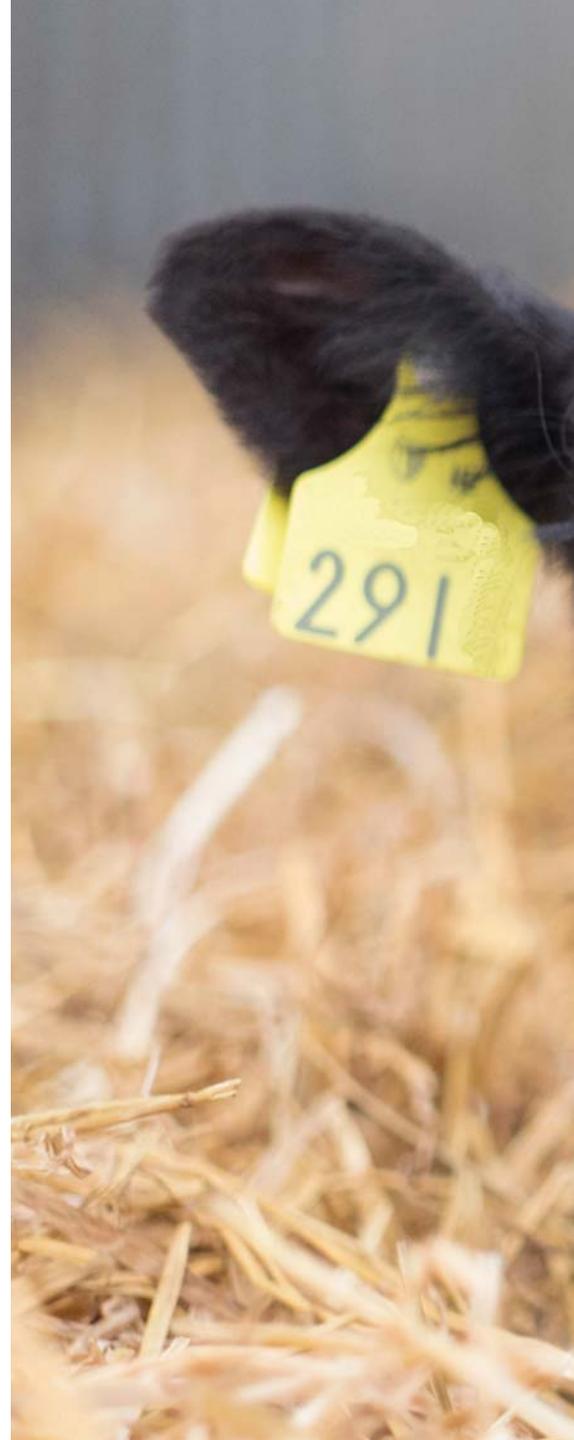


Figure 3: Protected ridge with upstands



The two lines of laths are 40mm to 50mm apart.

Space boarding can be satisfactory on the sheltered side of a calf house in a suitable site. If in doubt, use



Yorkshire boarding because wind direction can change and calves are sensitive to draughts. A draught is essentially excessive air movement (air speed >0.5m/s) at calf level. A capped ridge outlet is recommended with flashing, as required to prevent wind driven rain getting in. Two alternative designs are shown in Figures 2 and 3. An adequate roof slope will ensure that the outlet is at least 1.5m above the inlet.

The recommended pen area per calf is 2.3m² (at least 2m²).

Individual pens

These are generally not recommended since they add to the workload (although some farmers find them useful for training calves to drink). Individual calf pens are 1m wide and 1.5m to 1.7m long. Calves must be able to see neighbouring animals and can't



be kept in isolation unless there is a veterinary imperative. A useful alternative to individual pens is to train young calves in small groups of two or more calves in small pens.

2 Dry with good drainage: calves spend 80% of their time lying down so they need a dry bed. A dry environment will also reduce the spread and growth of bugs. All calf houses should be built with a damp proof course to provide rising dampness.

A slope of 1:20 in the calf pen area is recommended (Specification S124 DAFM). A split drain (drainage channel) as shown in Figure 4 (page 34) has the advantage that has the advantage that it will get urine and associated smells out of reach of calves quickly. This drain should be positioned approximately 0.8m inside the feed

barrier. In large pens, typically where automatic calf feeders are used, there is merit in having this drain approximately 3m within the pen. The front of the pen can fall into the channel so it will make it easier to achieve the 1:20 fall and it will provide ample room for calves to socialise while reducing the use of bedding. This area will, however, have to be cleaned at least daily, preferably with a “hand yard scraper” since any use of water within the building should be kept to a minimum to keep down humidity.

3 Clean and cleanable: floors and walls should be easily cleaned. Floors can be laid in bays of not more than 4.5m by 6m to avoid the need to make contraction joints. Floors of concrete that is well compacted need to be well cured to avoid plastic shrinkage, cracks, etc

(spray the freshly poured concrete with a fine mist of water until it is ready to take a new sheet of polythene and leave covered with this sheet for 10 days.). When calves are in the shed, the use of water should be kept to a minimum. When the shed is emptied, clean out as soon as possible and clean with a power washer or steam cleaner and appropriate disinfectant. A long rest period will help to eliminate bugs.

Natural light

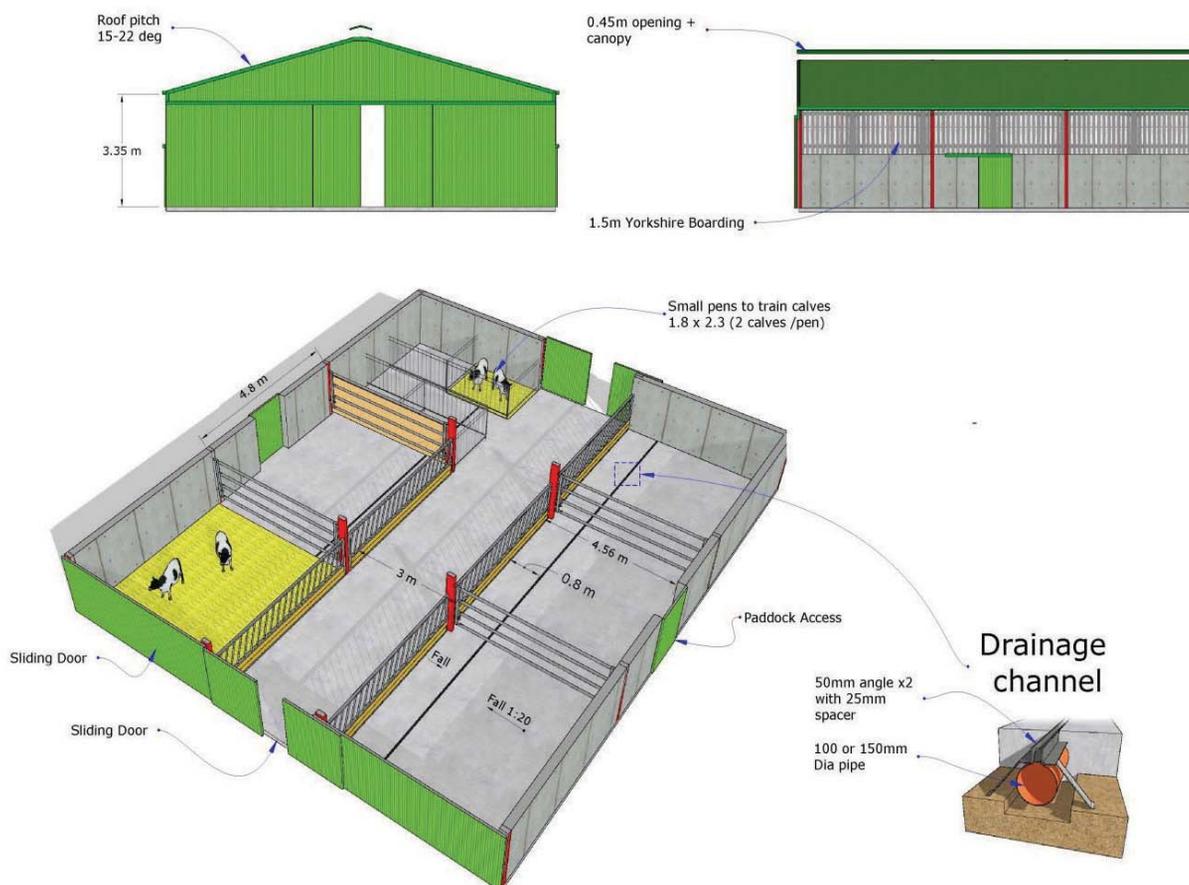
Natural light is conducive to good animal health and provides for a good working environment. Fifteen per cent of the roof area as translucent sheets is recommended (as listed on DAFM S.102).



Continued on p34

calf housing

Figure 4: Calf house for teat/bucket feeding (10 calves per pen @ 2.2m² per calf)



From p33

Calf shed for teat, bucket or trough feeding

Figure 4 shows a calf shed that is suitable for a range of calf feeding methods. Each pen holds 10 calves, so a 12-teat calf feeder would be very suitable (having more teats than calves facilitates the calves in their rush to get the milk).

Bucket or trough feeding can also be carried out in this shed arrangement. Using 1.5m length of Yorkshire boarding (75mm boards with 25mm gaps and 40mm between the rows) will give 0.18m² of inlet per calf. A ridge opening of 450mm will give an air outlet

of 0.11m² per calf. The split drain is positioned 0.8m inside the pen. The calves' feet should not be standing on the drain opening during feeding. It is not desirable to have a drain directly underneath feed troughs/buckets. Farmers have found that there is no need for a plank to keep straw at the back of the pen ('this was just a nuisance at cleaning out'). There is also, no need for a canopy at the back of the pen when a suitable air inlet like yorkshire boarding, that baffles air speed, is used.

Figure 5: Calf shed suitable for an automatic calf feeder

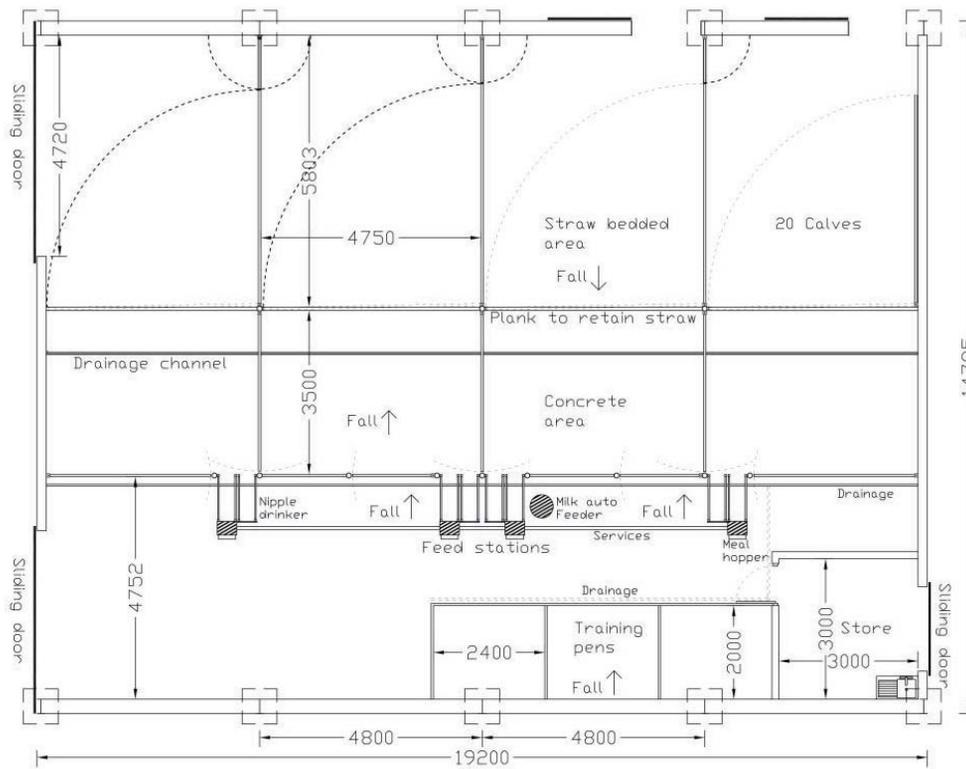


Figure 6: Cross section of calf shed suitable for an automatic calf feeder

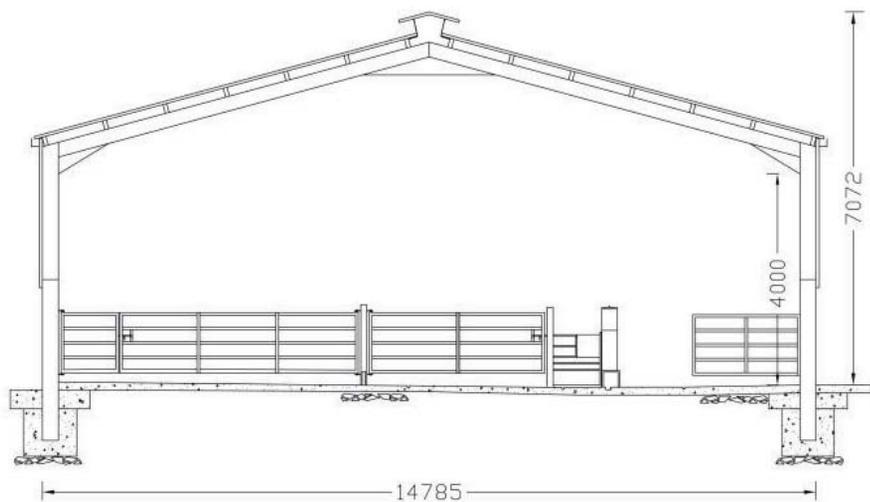


Figure 5 shows a suitable layout when calves are to be reared on an automatic calf feeder. Approximately 3.5m of the pen is not bedded. This facilitates a reduction in straw usage and normal social behaviour among calves. Placing the split drain about 3m from the front of the pen helps to divide the fall across the shed (a 1:20 fall can be hard to achieve in practise). This non-bedded area has to be cleaned at least daily. A hand scraper would be suitable for this purpose. This calf house can accommodate over 80 calves. Three training pens, each capable of holding three small calves are included. A store with its own air space and access to receive a pallet of milk replacer is recommended as recommended by DAFM specification S124. Two of the calf pens have small doors to allow calves access to a field, if desirable.

A cross section of this calf house is shown in Figure 7. It does not have to be a portal span. In fact, using internal stanchions will reduce the cost of construction. 6.4m bays could be used allowing more calves per pen so the farmer can get better value from the automatic calf feeder.