

OPTIHOUSE CALF HOUSE MODIFICATIONS



Calf house modifications: a quick guide to easy fixes

What is the desired outcome?

- Quick fix to get through a difficult season
- Improvement with a 5 year horizon
- Permanent restructure: check the Calf House Design Guide.

Itemise the current factors that are limiting calf health and/or growth. Is it:

- Overstocking (lack of space, or the quality of the available space)
- Persistent scour issues (hard to clean the pens correctly, poor drainage)
- Recurrent pneumonia issues (poor air quality, lack of appropriate ventilation throughout)
- Too high labour requirement (poor layout, lack of facilities on site, difficult to clean)

Every case on every farm will have different solutions. Be realistic about the priorities for calf health and what the current financial losses are. Discuss with your vet or adviser.

All changes will take time and money, and decision-making is greatly helped by addressing both time and money. The important business detail is the value of any changes made, not merely the cost of any possible changes.

Floors

If a floor is not helping because of lack of appropriate drainage or pitted/broken surfaces, the situation will never improve.

Short-term: improvements less likely to happen but cutting channels in existing concrete with a Stihl saw and casting a simple drain will have a major impact on the area of floor where dirty water is out of control. Create a barrier on the surface of existing concrete using epoxy resin mortar to deflect dirty liquids towards a drain.

Mid-term. As above.

Long-term. Recast a concrete floor on top of the existing floor, creating slope where it is needed and drainage channels. Consider the cost/benefits. The floor space for 40 calves at a generous 3m² per calf and an added 50% for space outside the pens is 180m². The cost of a 100 mm or 150mm deep ready mixed concrete floor on this area would be in the region of £1,600 and £2,400 respectively. This sum is equivalent to losses on farm of 2 dairy heifer calves injected twice or more during the pre-weaning period. The payback on investment is rapid.

New concrete on old: preparation is key. Old floors need to be pressure washed and degreased; old floors must be clean. A primer of 1:7 water / cement or a bonding adhesive should be used before laying the new concrete floor. Curing time will be 5 – 7 days and any shortening of this will reduce the longevity of the whole slab.

Drainage channels can be set in the new floor. A sump can be created in difficult areas, for example near automatic calf feeders, emptied using commercial submersible pumps.

Walls

The target is to provide a dispersed inlet area for wind driven fresh air ventilation without draughts.

The short-term potential for fixing solid walls is limited but the solution is not difficult. Most calf housing including new-builds need a PPTV system to provide reliable fresh air delivery. The fan component of a PPTV system can be re-used in another or later building, and will require only a new duct (for - £300) to provide a competent fresh air delivery system in a different building.

A mid-term solution depends on the building size. The best solution is to provide or recycle a different wall cladding above animal height on the two long sidewalls. The requirement is for a minimum of 0.04m² per calf in each sidewall above calf height, which can be provided by removal of individual bricks or blocks below eaves height. Replacement of solid sidewall cladding with a slotted tin product on both sidewalls is a good investment as the product can be used again on a new-build if needed.

Roof

All livestock buildings need some form of outlet in the roof to prevent moist, stale air accumulating within the building.

The ballpark outlet area in the roof of calf buildings is 0.04m² per calf.

Some designs of older buildings have rooflights/windows, many of which are rusted shut. Open them. The impact of rainwater ingress is overstated, but can be eliminated by fitting a cowl of marine plywood or galvanised tin.

The optimum solution for calf houses and all naturally ventilated livestock buildings is to take off the ridge tiles and retrofit a covered open ridge or open ridge.

The gap width in the ridge of most calf housing needs to be 100mm or less, and should always be fitted with an upstand. DIY cost is <£30/m of ridge outlet, and products from manufacturers in the region of £55 /m for covered open ridge.

ALL ROOFWORK IS INHERENTLY DANGEROUS. ONLY PROMOTE ROOFWORK IF PERSONS INVOLVED HAVE KNOWLEDGE OF THE RISKS AND HOW TO MANAGE THEM.

Pens and Feeders

Aged pen divisions and feeders of metal or wood are frequently covered in biofilm which provide a protective environment for pathogens. Cold water power washing and use of disinfectants do not eliminate pathogens in biofilm. The optimum is steam cleaning and the use of detergents before disinfection. Check whether pen divisions are fit for purpose or a disease risk. Solid sided pens reduce the risk of spreading disease. Use rubber strips at base of gates and pens to get rid of draughts.

Temporary or alternative accommodation

Financial losses from the impact of overstocking or persistent chronic health or growth problems are severe. A short term fix can have a very positive impact on calf health. One example is to make more space for calves on a temporary basis so that the existing calf house can be cleaned thoroughly or maintenance work such as fixing a new floor can be carried out within a reasonable time period.

Factor	Benefits	Consideration
Disease control	Can be used for rapid interventions when e.g. biosecurity issues arise. Can be used to facilitate deep cleaning of main calf house facilities. Can be single use.	May require relocation of feed preparation and cleaning areas. Should be disposable or of a material that is completely cleanable before re-use.
Ventilation	Can use natural ventilation when located outdoors. PPTV can be used in temporary structures, and reused elsewhere.	In some existing buildings, ventilation may require improvement. Can be difficult to ventilate naturally without draughts. Layouts can be inflexible.
Shelter	Basic structures can be easy to manage.	Can be exposed to extreme weather. Need to be realistic about losses to environmental factors.
Location	Flexibility on the location.	Not suited to exposed sites.
Hygiene	Can be located on clean ground promptly. Straw bales make good temporary pen dividers but should be changed between batches of calves.	Less likely to have cleanable surfaces. Drainage unlikely to be suitable. Old walls will need rendering. May prove difficult to clean out mechanically.
Cost	Minimal initial financial outlay.	Be cautious about the additional costs required in time and feed efficiency costs.
Labour	Variable.	Labour intensive on daily routines. Labour requirement to keep all the various parts of the structures working effectively and possibly to clean and disinfect thoroughly.



