

BY DESIGN

Retrofitting buildings for sick pens or doctoring facilities

by Erin Cortus, University of Minnesota



Winter or inclement weather often prompts us to look at opportunities to move our

sick, injured or special-need cattle under roof and out of the weather. Repurposing all or parts of existing buildings, temporarily or permanently, may reduce initial capital costs; but extensive renovations, inefficient energy use, or decreased cattle productivity can hamper this venture.

When looking at repurposing or retrofitting a barn, there are numerous considerations — accessibility, biosecurity, space, safety, temperature, airflow and, of course, cost. Unfortunately, the numerous considerations are intertwined, and one decision can have both positive and negative outcomes.

For example: Will doors on the barn be kept open to allow continuous access? If so, will airflow through the door cause a draft on any young cattle? Does an opening on the opposite wall support heat and moisture removal? Similar considerations apply when designing

a new facility — though there are more opportunities to optimize layout, equipment, etc.

As you review your options, here is a process that can help sort through ideas. These steps benefit from multiple perspectives, including those who work the cattle, veterinarians, and construction or engineering expertise.

1 List your constraints. What *must* the option provide or meet? If an option or idea does not meet these constraints, the idea is not a viable option, or it should be refined until it meets the constraints. Some example constraints:

- ▶ A permanent space for treating sick or lame cattle.
- ▶ The shed must house at least three cows at a time.
- ▶ There must be a safe working space.
- ▶ The renovation must cost less than \$5,000 (or other amount).

2 List your criteria for an ideal option. This is a list of what *would be nice*. Place the criteria in order from most important to least important. Some examples:

- ▶ Lower cost.
- ▶ Cattle can walk up to and into the building (i.e., minimize use of a trailer).
- ▶ Sidewall openings are adjustable to control airflow.
- ▶ Larger separation distances between sick cattle.

3 Brainstorm and list options that meet your constraints.

The table provides an example of three options for five criteria to move sick and injured cattle from a nearby pasture to a roofed area with some protection from the elements and separation from healthy animals.

4 Weigh your options. Starting with your first criteria, rank each option against each other with respect to the criteria. If there is no difference between options, assign them the same rank.

5 You are looking for the option with higher ranks throughout (or lowest total). In the example table, Option 1 has the greatest number of “1s,” and the lowest total score. However, if Criteria 1 (or a combination of

Does the existing space give you ...

- ▶ Accessibility by cattle and humans?
- ▶ A cost-effective solution?
- ▶ Appropriate temperature and airflow considerations?
- ▶ A safe working environment?
- ▶ The right amount of space for the flow of cattle?
- ▶ Options for biosecurity to prevent the spread of disease?

the top few criteria) outweighs all other criteria for what you want to accomplish, options 2 or 3 may be the better option.

This approach does take time, but it can help you settle on an option, knowing you have considered all the alternatives. Thinking through the priorities and options in a systematic way can also help you justify the decisions to others. |

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Table 1: Options for moving sick and injured cattle under roof

	Option 1: Empty the lean-to shed; add a fence around it and bedding	Option 2: Empty the lean-to shed; add a fence around it, bedding and pen gating	Option 3: Convert the tie-stall dairy barn into sick pens
Criteria	Options are ranked 1 (best) to 3 (worst) with respect to each other for a given criteria		
Separation distance between cattle (more is preferable)	3	2	1
Lower cost (less is preferable)	1	2	3
Cattle can walk up to and into building (less walking and/or no trailer use is preferable)	1	1	2
Adjustable sidewall openings to control airflow (adjustable openings on prevailing wind side is preferable)	2	2	1
Feed delivery (less time and energy to feed cattle in this barn is preferable)	1	2	3
Total	8	9	10