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Some Farm / Lodge Development Tips

Introduction

If you are considering upgrading your dairy farm to improve land yield and milk output, and reduce feed costs and effluent problems, then you will inevitably want to consider controlled feeding and cow housing. i.e. typically feed-pads and barns. The Marsdezyn Cow Lodge System is designed to manage this transition painlessly; please refer to the attached generic sales drawings and introductory description to understand how it works.

To get started, you will need to make some decisions about the new facility's size, location, configuration, project timing, and so on; the following tips will help you to get a feel for what will work best on your own farm. Our Cowculator will then put some rapid cost estimates together for you for your various project options and stages, to help you build up an attractive financial plan.

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Creating a Strategic Development Plan:

Don't start with what you need now, and then try to work out how to build on that later.

Instead, start with what you want to end up with, the ultimate plan, and then whittle off the parts that you can't afford yet, to decide what to do today... and tomorrow. Your development plan is your roadmap, showing what you need, in what order, and where to put it, to avoid making expensive mistakes. The Marsdezyn Cow Lodge System is specifically designed to fit into this strategy, being progressively constructed in a variety of flexible configurations and stages, from a bare feed pad (Stage zero) to full accommodation (stage 3B).

Cows: The bigger the better. It costs almost identical capital investment to house and milk a large cow, as a small one; but the large cow gives more milk and hence faster payback.

Calves? A Lodge need not be entirely devoted to cows; an area left free of stalls can be used for pens. If required at a later date, stalls can be retrofitted. However, the reverse is not practicable—stalls require a lot of permanent concrete.

Size: A Cow Lodge project has fixed cost elements e.g. permits, effluent wedge and flume, the building end walls, etc, that cost much the same regardless of project size. The variable cost elements are those proportionate to size such as the number of building bays or cow stalls (e.g. 200 cows = 200 stalls, 350 cows = 350 stalls, etc). The larger the project, the more the fixed costs are "diluted" by the variable costs; bigger is generally cheaper, in \$/cow.

However, this only applies up to the point where the simple End-Exit design configuration becomes unacceptably unwieldy for herding cows and for dung removal, at around 550 to 650 cows. A longer building (up to 1000 cows) requires changing the layout to a central effluent channel and central exits. This causes a step-increase in fixed cost, adding machinery and traffic control complexity, consuming building space, and compromising hygiene management. This the point to consider breaking the building up.

One or Two Lodges? If you have more than 600 cows to house, consider the pro's and con's of breaking the Lodge into two separate buildings; it is still 3% to 4% dearer than a large "middle exit" Lodge, but there are advantages. A short, End-exit Lodge, has all of the machinery and effluent collection (shared) at one end, leaving the other end free to stretch the building later with only a modest cost penalty. However a long building with a middle exit/effluent channel, and machinery at both ends, will not be economically stretched. Twin buildings make herd movement easier and distance to milking shorter.

You can stage the project more readily by constructing one small building at a time, than half of a large building.

The scraping machinery for a long building is heavier and more complex, requiring more maintenance, and increasing potential hazards such as where scrapers pass under gates.

Centre exits require cows to walk where the scraped dung is deepest, nearest to the effluent removal flume, and then cross the hygienic feed alley; cleaning is increased to maintain hygiene.

Land: The buildings are large and require a flat, level platform to build on. Sloping land can cost a lot to excavate and fill; even if it looks flat, it is the fall from end-to-end that costs. Where possible, arrange the building/s to cross a slope rather than run with it, to minimise fall.

Firm ground and a low water table are also factors to aim for, to avoid excessive soil replacement, and expensive drainage/stormwater management. A low water table may also allow use of a cheap pond for effluent storage, rather than an above ground tank—housed cows produce a lot of effluent to store. (However, the pond need not be near the Lodge, see below)

Layout: The land factors above influence layout choices, but the main layout consideration is traffic flow. Cows need easy access to milking, but avoiding crossing the tanker route or the feed vehicle route. Tyres collect poo and transfer it into the tractor alley, which is the cow's dinner plate. The facility must be at least 20m away from the milking shed, and well away from boundaries and water supply source (bores etc).

If all of the above is resolved and there is still room for choice, then aim to align the building with the cow exit end facing north, for optimum shelter and ventilation.

The effluent collection flume and sand trap wedge ideally should be remote from neighbours and close to your effluent plant/pond; however, effluent can be pumped some distance for a relatively small cost and so should not compromise the other factors. The Wedge always includes a pump, and so the only extra cost is the pipeline length.

When to Invest: There is never a right time to invest; finance is always tight, milk returns are never quite high enough or stable enough... Waiting for the right time is like waiting for the Titanic to arrive. A large, complete project has the advantage of avoiding repeat costs such as permits and contractor set-up, but the financial hurdle may prevent it from ever getting started. If your finances are limited, try breaking the project into "stepping stones"—a series of sub-projects that build toward the final plan. Spend what you can afford now on the next stepping-stone project; the returns from that then finance the next project, until you reach the end goal.

Smaller investments are less difficult to finance and may avoid the time trap—where the availability of cash and the seasonal project timing never seem to align, turning construction projects into a stressful and expensive stampede to beat the calendar.

Haste makes Waste: Getting started early will incur a small interest cost, but avoids the seasonal rush, gets better pricing, and avoids the risk of a late finish or compromised quality.

Example 1: Earthworks can be performed cheaply by large, heavy machinery—but only on relatively dry ground, which means waiting on the weather. If forced to work to a tight timetable, costs can rise 50% due to having to use light machinery and/or temporary drainage instead, for wet conditions.

Example 2: Steel can be purchased from the run-of-the-mill pre-cut to the exact lengths required to build a Lodge, saving labour and eliminating expensive off-cuts. Tightening the program kills that opportunity, adding up to 30% to the cost of materials and cutting. Other materials such as chain and bedding, can also be bought more cheaply on long delivery indent or off-peak production.

For the most economic manufacture of a complete Lodge 7 months is required; with a shorter time frame these cost factors become an unpredictable lottery or a lost cause, and the price may rise accordingly.