

A Producer's Perspective on Best Practices in Robotic Barn Design

Anton Borst

Halarda Farms. Email: office@halarda.ca

▪ Take Home Messages

Robots can do a great job of milking our cows and they can provide a lot of data for management. Farmers often transition to robotic milking with the goal of having significant labour savings. These goals are not always achieved. To be able to achieve labour savings many factors must be considered when retrofitting or building a new barn. When robots are only used for replacing the labour that would otherwise be assigned to milking then this is a missed opportunity.

Many factors as they relate to the planned future management strategies can affect layout and all factors should be considered before a design is decided upon.

When we are in the planning stages before construction or the retrofit process starts, we can adopt the barn design to fit the management style and preference of the farm. After construction is completed, we are forced to adapt the management style to the layout that we have. Pre-planning includes the cow traffic style that is chosen for the barn. Management preferences may help us choose our cow traffic style or our cow traffic choice will determine how we will need to manage the barn.

The correct layout for each farm depends on several factors

- ▶ New vs. retrofit
- ▶ Size and layout of existing facilities
- ▶ Future planning/ goals of the farm
- ▶ Cow management strategies
- ▶ Group sizes and strategies
- ▶ Installation challenges

The correct layout depends on the producer's management goals

- ▶ Labour
- ▶ Cows, including cow touches and training
- ▶ Cleaning and chemical use
- ▶ Stall maintenance and bedding
- ▶ Manure handling
- ▶ Feeding
- ▶ Footcare and footbaths
- ▶ Fetching/cow traffic

Using the data from the robots to create action lists and management by exception (the practice of focusing management attention only on the animals that are not performing as expected) in conjunction with adequately sized and well-designed separation pens allows producers who adopt these strategies to have success with significant labour saving compared with that in parlour herds.

Many choices must be made when it comes to robot layout and cow traffic. An on-farm trial at Halarda Farms Ltd. that included free, guided and hybrid traffic provided some insights in how cows responded under these different systems. Hybrid cow traffic is a cow traffic layout that combines many of the benefits for the cow of free cow traffic with the labour savings of a guided traffic barn without the negative effects of having all animals that need to be milked going through a commitment pen. During the trial it became apparent that all systems can work yet there were clear differences in cow behaviour when running them all at the same time.

In addition, robot box layout configuration in the pen will have an impact on cow behaviour. There are some clear improvements in cow traffic with robots set up in tollbooth configuration in conjunction with hybrid cow flow and making sure that cows that have just exited the robot box move away from that area and go to the feed bunk. With this configuration many negative animal interactions can be eliminated as well as many refusals or unnecessary robot visits by cows that do not have milking permission.



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- PRODUCE THE RIGHT NUMBER OF HEIFERS FOR YOUR NEEDS.**
- MAXIMIZE THE GENETIC POTENTIAL OF YOUR HERD.**
- INCREASE THE VALUE OF YOUR BULL CALVES.**



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