



# The Dairyland Initiative



Food Animal Production Medicine Section  
School of Veterinary Medicine  
University of Wisconsin

<http://TheDairylandInitiative.vetmed.wisc.edu>

**Optimal dairy cow health and performance happen when she is given an optimal physical, nutritional and managerial environment in which to live and produce.**

The Dairyland Initiative, developed by Drs. Nigel Cook and Ken Nordlund at the School of Veterinary Medicine, University of Wisconsin-Madison, combines dairy animal health, production and behavior research with years of field experience in housing design into an information center and building plan assessment program to help create that environment.

The comprehensive resource begins with building decision trees – called the “Wisconsin Blueprint” – utilizing up-to-date design standards (see box). It collects research-supported biological ideas and standards used to produce an economically viable and competitive dairy industry, with optimal animal well-being as the No. 1 goal.

### Virtual tours

Each dairy has specific needs, desires and resources. From the comfort of their farm office, producers and their facility design team can tour dairies that have already built facilities with animal comfort in mind. Over 20 virtual tours are featured on the site, covering facilities for transition cows, milking herds, nursing and growing calves and breeding-age heifers, as well as small freestall, remodeled and tiestall barns. The virtual tours provide interactive guides of new facilities, including floor plans, stall dimensions,

photographs, key performance measures and streaming video.

### Building a team

The Dairyland Initiative website gives all members of a dairy facility team – producer, consultant, lender and builder – an instant-access guide to planning new facilities, as well as troubleshooting problems in existing facilities. It offers engineering, construction, supplier and financing information, helping producers find professionals to complete building projects. Those engineers, contractors, suppliers and lenders listed on the site aren’t an indication of endorsement, but will help connect dairy producers and participating professionals, and

help builders showcase buildings and materials in one place, with greater access to producers. The site also provides builders with access to the latest design standards, allowing them to compete on a more level playing field for bids as design standards will become more uniform.

### Risk assessments

When the builder finishes the job and cows enter the new barn, the lender and dairy producer must live with the consequences. Poor facilities lead to poor results. The Dairyland Initiative aims to prevent this situation – before any money is spent on a building – through the use of a risk assessment. When a

## Dairy Facility Design Decision Trees

The main goal of The Dairyland Initiative is to incorporate as many research-supported biological standards as possible to enhance current engineering practices while producing an economically viable and welfare-friendly facility.

### Adult cow housing decision tree

1. Manure handling
2. Transition cows
3. Group size
4. Bedded pack
5. Barn layout
6. Stall layout
7. Overstocking
8. Ventilation
9. Roof insulation
10. Alleyway dimensions
11. Flooring
12. Water needs
13. Feed bunk
14. Heat abatement
15. Lighting systems

16. Stall surface
17. Mattress to sand remodeling
18. Freestall dimensions
19. Brisket locators
20. Divider loops
21. Neck rails
22. Tiestall remodeling
23. Robotic milking systems
24. Milking parlor holding area
25. Footbath design
25. Other Questions & Answers

### Replacement heifer housing decision tree

1. Facility needs
2. Nursing calf housing
3. Automatic group nursery barns
4. Bedding
5. Calf pen design
6. Air hygiene
7. Ventilation
8. Groups
9. Feed and water space
10. Bedded packs
11. Freestall dimensions
12. Design for management

*The Dairyland Initiative is funded by the Ira & Ineva Reilly Baldwin Wisconsin Idea Endowment and partner sponsors*





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producer and his team submit building plans and pertinent information, program coordinators perform a cow or calf comfort risk assessment and highlight design areas of high risk to cattle well-being and productivity. Risk assessments are performed for a fee of \$250. The risk assessment examines the barn layout, stall design, feed and water space, transition cow management and many more areas affecting the performance of the facility. The producer are then alerted to design issues and improvements can be made before construction begins.

## Web-based tools

In addition to the Blueprints' answers to common construction questions, interactive tools help in the design process:

- **Transition Cow Pen Size Calculator** Estimate current and future housing needs for dry cows through post-fresh pens, based on herd size and management practices.
- **Transition Cow Facility TCI Partial Budget Calculator** Estimate how much barn you can buy based on estimates of improved Transition Cow Index™-related production parameters.
- **Mattress vs. Sand Bedding Partial Budget Calculator** Compare sand and mattress stalls, using a herd's production and health data.
- **Heifer Facility Needs Calculator**
- **Stall Remodel Partial Budget**
- **Footbath Dose Calculator**

*And more in development!*

## The most up-to-date resource

The Dairyland Initiative website is continually updated. Wisconsin dairy farmers have free access to the website by logging on with the first 6-digits of their dairy producer license number or registering on the website. Construction-related businesses, lenders and Wisconsin extension & educators can register online for free access. Veterinarians across the globe may register for a free subscription, thanks to Pfizer Animal Health. Others may purchase a two-year web access subscription for \$100.

## Dairyland Initiative Workshops

Workshops are held at least annually to bring together producers, builders and professionals from many parts of the dairy industry to learn and discuss how to build and remodel barns for optimal well-being and performance. Topics include:

- **Designing Positive Pressure Ventilation Tubes**
- **Transition Cow Facility Design**
- **Remodeling Dairy Barns**

## Staying Connected

Quarterly newsletters, a Facebook page and Twitter keep participants up to date on webpage updates, upcoming events, and other welfare-friendly dairy cattle housing news.

## Virtual Tours

### Transition Cow Barns

#### Ripp's Dairy Valley

- Pre-fresh pen, weekly additions
- Sand stalls, 50" wide, 10' long in a 2-row H/T layout
- 30" headlocks
- 3 calving pens for just-in-time calving
- 3-row far dry pen



### Adult Cow Barns

#### SunBurst Dairy

- New lactating cow barn
- 6-row barn, four 3-row pens
- 50" wide stalls
- Stalls 10' along sidewall
- 17' H/H platform
- 14' feed alley and 14' crossovers
- Pack Mat stall base with 2 inches of sand bedding
- Concrete brisket slope



### Small Freestall Barns

#### Split Rail Acres

- Built to improve adult cow Housing, expand from tie stalls
- One-sided barn, three-row pen
- Brisket slope, deep sand stalls
- Drive-by feeding with an 8-foot cantilever covering
- Additional feed space provided outside



### Nursing Calves

#### Kellercrest Registered Holsteins

- 52 individual pens
- Individual pens become small group post-weaning pens
- Concrete floor with a cut-out, rock-base drainage area within pens
- Solid PVC-sided pens, open wire backs, gated fronts
- Positive pressure ventilation tubes



### Remodeled Barns

#### Majestic View Dairies

- 6-row barns remodeled from mattress stalls to deep sand
- 18-inch lunge space addition
- H/H stall platforms extended
- 4x4-inch treated lumber bedding retainer anchored to existing stall platforms
- Single beam-mounted divider loops, 50" on center for mature cows; 48" o.c. for first lactation cows



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