

The Barn: New Building or Renovation?

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Decisions to Make....

- New Code of Practice requires group housing of gestating sows and gilts by 2024
- A lack of investment in existing facilities in the recent past
- Recent return to profitability within the industry
- New building? Renovate? Combination of both??
- Balance health, productivity and management



Presentation Outline:

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- Systems and management considerations
 - Construction Considerations
 - Assessing existing facilities
 - Regulations and timelines
 - Summary and Roadmap
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Systems and Management Considerations

- Match barn, herd size, management style to cost, space requirements, group sizes and management requirements
- Balance sow health and productivity to profitability and overhead
- If not balanced, you will be disappointed!
- Management of sows housed in groups is different than sows in stalls
- Initial decisions have to be made...

Pig Flow Comparison:

- “Conventional” gestation stalls:
 - Sows are either in the farrowing room, or in the gestation stall
 - Typically one gestation stall per sow
 - Always a place for each sow
- Group Housing
 - Sows go from the farrowing room, to a gestation stall, to loose housing in each cycle
 - Maximum 6 weeks in farrowing room
 - Maximum 4 weeks (plus 1 week for mixing) in gestation stall
 - How to minimize capital cost, but have a space for each sow??

Pig Flow in Loose Housing - Example

- 1 week batch, 3 week weaning:
 - 20 “groups” of sows
- If 4 weeks in the gestation stalls
 - 4 groups in farrowing rooms
 - 4 groups in gestation stalls
 - 13 groups in loose housing
- If 5 weeks in gestation stalls
 - 4 groups in farrowing rooms
 - 5 groups in gestation stalls
 - 12 groups in loose housing
- Need to include conception rate (groups include the number of sows required for desired farrowing)
- Need a gilt area for introduction and training
- Need a relief area
- Need heat-check/boar pen
- Option:
 - 4 farrowing rooms
 - 5 group spaces in stalls
 - 13 group spaces in loose housing

Sow Groups and Mixing: Static or Dynamic?

- Static Groups:
 - Similar size and parity and remain together through gestation
 - A number of separate pens with access aisles
 - Generally suited to small groups
- Dynamic Groups:
 - Can be a large area with dividers for hiding and escape
 - Generally suited to large groups
 - Introduction or mixing pen may help with aggression
 - Dynamic Groups need to stay dynamic!
- Generally, more space means less aggression

Feeding Systems:

- Each has different initial cost, floor space requirements, group size limits and management requirements
- Ability to manage individual feed intake is different
- Linked to static or dynamic grouping and mixing
- Two basic categories of feeding systems:
 - Competitive systems
 - Non-Competitive systems

Competitive Feeding Systems

- Generally suited to smaller groups (5 to 30 sows per group)
- Groups must be uniform to limit aggression
- Require more hands-on management (monitoring health and body condition)
- Initial cost can be less expensive
- More feed is typically used so subordinate sows get sufficient amounts – individual feed curves not possible
- Typically static groups

Floor Feeding



Floor Feeding System—Guelph University

From Prairie Swine Centre Factsheet

Shoulder Stalls or Short Stall Feeding



From Prairie Swine Centre Factsheet

Non-Competitive Feeding Systems

- Gaining feed through aggression is limited
- Some systems allow for individual feeding of sows
- Some competition may occur for access to the feeder
- Need appropriate number of sows per feeder, and layout to minimize repeat feeding
- Need some level of training for gilts and sows
- Can be used in static or dynamic groups

Electronic Sow Feeders



From Prairie Swine Centre Factsheet

Free Access Stalls



From Prairie Swine Centre Factsheet

Free Access Electronic Sow Feeders



From Prairie Swine Centre Factsheet

Comparison of Feeding Systems

System	Floor Type	Floor Space Required	Initial Cost	Management Input
Floor Feed	Some solid required	Low	Low	High
Shoulder (Short) Stall	Any	Medium	Low	High
ESF	Any	Low	Medium	Medium
Free Access Stall	Partial or Full Slats	High	High	Low
Free Access ESF	Partial or Full Slats	Medium	Medium	Medium

Adapted From: NSHCP Website

Pig Behaviour and Floor Space

- Aggression – Place to hide or get away
- Laying – Comfort, short walls or bedrooms
- Feeding area separate from dunging area
- Aisles 10ft minimum
- Enrichment!

- The more space, the better!

Feeding System and Floor Space

- Code of Practice – 19 to 24 sqft per sow
- “Conventional” gestation stalls – 19 sqft per sow including the alley
- Floor Feeding – aggression during feeding
- Short Stall Feeding – approx. 20’ clear between
- ESF Feeding – space for feeder
- Free Access Stalls – 8-14 sqft + stall = 24 to 30 sqft
- Free Access ESF – more stations than ESF

Management and Floor Space

- Aisles, walkways or open
- Sorting areas
- Relief pens
- Heat-check and boar pens
- Gilt introduction and training
- Introduction or mixing pen
- Shipping & Receiving (culls and gilts)
- Gestation stalls

Construction Considerations

- Before a barn gets laid out the decisions on feed systems, group size and dynamic or static need to be made
- If the a structure is being added to an existing building or group of buildings existing site plans are needed to consider the impact on these structures
- What we have been seeing is, building new farrowing barns and then renovating the existing into dry sow housing to add extra square footage
- The new farrowing barns have larger farrowing floors to accommodate the larger litter size and more crates to raise weaning age

Construction Considerations

- Many farrowing facilities need new equipment due to age so it solves several common problems
- The downside is it is the most expensive facility to build
- Most builds are a combination of new and renovations to existing
- There are many moving parts to a job like this so planning and timing become key
- With a good plan and some luck production can continue and biosecurity can remain a priority

Construction Considerations

- New construction, structure only, is approx. 30 – 35 dollars a square foot regardless of the usage so dry sow/farrowing/loose
- Renovations are all over the map, as low as 7.50 and as high as 25 dollars a square foot depending on what needs doing
- There will be compromises in a renovated structure such as solid areas where you don't want them, not perfect pen sizes or alleys that are awkward, each producer will have to face the tough decisions of spending the money or living with these decisions

Construction Considerations

- It depends on where you are starting as to what costs are incurred, but also that renovations can be an effective option

Assessing Existing Facilities

- When you are incurring the high costs of a renovation it is imperative that an assessment of the existing facility be done before you even consider it
- You assess an existing facility the same way you would build new, bottom up
- Footings, foundation wall, pit walls, slats, upper perimeter wall, ceiling, insulation, trusses and truss plates, roof cladding
- Most renovations to loose sow housing include pit work, new slats and interior walls so the remainder of the barn needs to be in working condition

Assessing Existing Facilities

- Walk the perimeter looking for significant cracks
- With a good flashlight lift the pit covers and have a good look at pit wall, inspect pit walls from inside where slats meet
- Get in the attic and look at those trusses
- If the insulation is discoloured the roof is leaking
- Get on the roof and look at the cladding and fasteners
- Do this stuff safely or get some help from qualified people

Assessing Existing Facilities

- Draw up a floor plan on the existing facility
- Include perimeter walls, doors, windows, interior walls, **load bearing walls, support posts and beams**, backfilled areas or non slatted areas
- Make ten copies and start overlaying what you think you want with the limitations imposed
- Listen to your gut, its your barn and you know it best
- Get some help as to what is and isn't possible, sometimes its surprising what can be done
- Make sure an engineer is involved at some point as a third party

Regulations

- Triggered by a building permit:
 - Minimum Distance Separation
 - Nutrient Management (Plan or Strategy)
 - Code of Practice
 - Ontario Building Code / National Farm Building Code of Canada
- Other:
 - Electrical Code
 - Gaseous Fuels Code

Timelines - Approvals

- Building design takes time!
- Nutrient Management Strategy
 - Time to prepare
 - Time for approval
- Building permit – up to 20 days after submission (must be complete!)
- Add time to make your decisions!
- Don't forget about financing!

Timelines - Construction

- Contracts to prepare and sign
- Ordering of materials and equipment
- Mobilization to site
- Existing conditions in renovations
- Biosecurity
- Staging of work
- Weather

- Don't forget Murphy's Law – there will be surprises!

Summary

- Many decisions to make
- Adjustment in management style
- More space will generally be required to maintain the same herd size
- Options to renovate, expand, convert, all of the above
- Be critical about existing facilities – you'll be living with them for years
- Some regulations to satisfy

Road Map

- Decide on your final herd size
- Research and choose a feeding system (or two). Visit other producers who have made the change
- Take a critical, realistic look at your existing facility. Have a professional review as well
- Draw a plan of your existing facility
- Do you have enough space? Add what you need and evaluate
- Estimate the costs, and compare to a new building
- Finalize your decisions
- Work with your contractor, NM consultant, Building Official
- Submit for approvals
- Financing and construction
- Adjust to new management style