LIVESTOCK

General Housing

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SECTIONS

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INTRODUCTION

Having the right housing and facilities is a basic part of good livestock management. Appropriate housing helps to keep animals healthy, comfortable, and performing well. Each species has different housing needs. Housing should be designed with specie needs in mind.

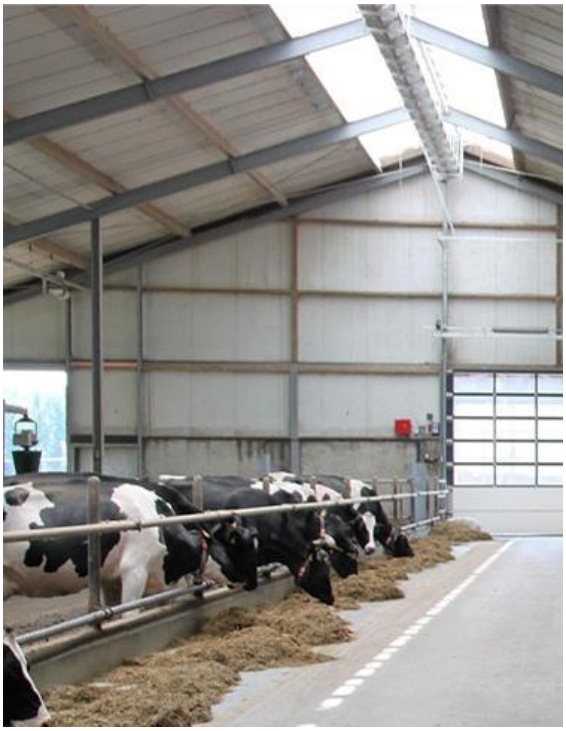
For example, dairy cows benefit from free-stall barns with proper ventilation for comfort and cleanliness. In contrast, beef cattle are often kept in open or semi-open sheds with designated pens. Pigs may be housed in indoor systems with slatted floors to aid waste management or raised on pasture systems emphasizing natural behaviors. Similarly, sheep and goats thrive in sheds with good airflow and lots or pastures with ample room to move. Poultry generally requires controlled environments such as coops or aviaries to maintain optimal temperature and light conditions. A thoughtful start in choosing the right type of housing sets the stage for efficient, humane, and sustainable livestock management.

How To Get Started

Before building or changing existing livestock housing, make sure you have a solid plan and understand the needs of your chosen species. This will save you time and resources as you progress in your livestock journey. The housing system should match farm size, labor capacity, and long-term goals. Here are some items to consider:

- Animals need access to fresh food, clean water, and good air flow. There are many methods that can be used in animal housing systems, ranging from automated to manual, such as feeders and waterers.
- Ventilation is essential; it keeps air moving throughout the structure and helps prevent health issues. Waste management should also be a consideration. Manure pits or compost setups can help keep the housing area clean and reduce odors and harmful gases.
- Bedding and flooring choices are also important. Bedding can help regulate temperature, enhance animal comfort, absorb moisture, and reduce odors. Bedding materials such as straw or sawdust absorb waste and keep animals comfortable, while concrete floors or rubber mats make daily cleaning easier. Producers must choose the appropriate bedding and flooring materials based upon the species and facility type.

- Disease control should also be considered. Implementing biosecurity practices such as a place to disinfect boots and tools, and limiting visitors in your facility may help reduce risk of disease transmission.
- Animal handling devices such as using sturdy gates, chutes, or headlocks are also important. Strategically placing these items throughout your facility can increase efficiency and improve animal wellbeing in regards to handling and movement.



- Adequate lighting is an often overlooked but important design component for facilities. Lighting is not only important for visibility, but also helps animals maintain their circadian rhythm and can be used as a breeding management tool. Placing lighting in corners and alleyways as well as main isles will increase visibility for producers and animals throughout the facility.

SECTION 1

Housing Requirements

Providing adequate space is essential for animal health, growth, and production. Each species will have different space requirements depending on life or production stage. The following table can be used as a guide for providing the appropriate minimum space.

General Space Requirements per Species

Species	Indoor Space per Animal	Notes
Dairy Cows	100–140 sq ft	For comfort and feeding, greater sq ft is needed for late gestation and recovering cows.
Dairy Calves	Young calves - 35 sq ft 650 lbs - 40 sq ft 850 lbs - 50 sq ft 1100 lbs - 60 sq ft	Based on age and size of animal for a bedded pack resting space only, feed area not included (Source: DCHA).
Beef Cattle	25–50 sq ft (feedlots)	More space for pasture
Pigs	8–12 sq ft	Based on age/weight
Sheep/Goats	12–16 sq ft	More in pasture systems
Poultry (standard sized birds)	2-3 sq ft coop space per bird; 10 sq ft outdoor run space per bird	Provide 8-12 inches of roosting space per bird Provide one nesting box for every four hens

Process for Getting Started

Understanding housing requirements is an essential first step. Each species has specific needs regarding space, shelter, ventilation, and protection from weather, and predators. Producers should start by deciding which species they want to raise, then learn about the basic housing needs for those animals. Good housing should keep animals comfortable and healthy, allow for easy feeding and cleaning, and comply with local rules and regulations. Starting with a simple setup that meets the animals' basic needs and allows for future growth is a smart approach.

GENERAL HOUSING

COMMON QUESTIONS

01 Is indoor or outdoor housing better?

There is no one-size-fits-all answer; it depends on the livestock you're raising, the local climate, and your overall goals. Indoor housing gives you more control over temperature, ventilation, and cleanliness, which can be a significant advantage in extreme weather or for animals that are more sensitive to environmental changes.

Keeping animals outdoors or on pasture typically costs less for set up and maintain. By using recommended space requirements and stocking densities, pasture systems can provide animals with space to move around and exhibit natural behaviors. A potential challenge to pasture systems is that they require more land and can be more challenging to keep animals safe from adverse weather conditions and predators.

Many producers use a mix of both systems; maintaining animals indoors during bad weather or for specific stages of production and letting them out on pasture when conditions are right.

02 What is the role of bedding and flooring in livestock housing?

Bedding plays a significant role in keeping animals healthy and comfortable. Good bedding, like straw, wood shavings, sand, or sawdust, helps absorb moisture, provides insulation, and gives animals a dry, clean place to rest. This is especially important in colder climates, during specific production times, or when animals are housed indoors for long periods of time.

Flooring such as concrete or dirt are options. Concrete is preferred because it is durable and easy to clean, but it can be hard on animals' legs if there's not enough bedding available. Rubber mats or slatted floors can provide better footing and reduce the risk of injuries, especially in high-traffic areas such as milking parlors or feeding stations.

Bedding and flooring choices should match the waste management system. Various waste management strategies such as composting or using a liquid manure system will determine the type of bedding materials that can be used.

03 Do I need to provide shade to my animals on the pasture?

Although Michigan does not have laws requiring livestock to have shelter while on pasture, it is suggested that animals have access to shade, wind breaks, or indoor environments during hazardous weather conditions, such as extreme heat, heavy rain, and snowfall. The absence of shade can lead to serious health issues or death for any species. Extreme temperature events (heat and cold) can cause decreased feed intake, poor weight gain, lower milk or egg production, and reduced fertility.

04 How far should animals have to walk to access water?

Livestock should always have easy access to clean, fresh water and, ideally, should not have to walk long distances to reach it. For optimal health and performance, water should be located within 300–500 feet for cattle, 200–300 feet for pigs, and no more than 600 feet for sheep and goats. Poultry need waterers placed just a few feet away, as they won't travel far to drink. When animals cannot easily access water, they will consume less, which can lead to dehydration, heat stress, and reduced productivity. Placing water sources strategically in pastures or near shade helps encourage regular drinking and supports animal well-being. In rotational grazing systems, consider moving water with the animals to maintain consistent access to water.

05 Do spacing requirements change during different stages of growth or production?

Spacing requirements change throughout various stages of growth and production for all livestock species. Animals need more space as they grow, and their space needs also shift depending on whether they are breeding, gestating, parturition, nursing, or finishing. Having the correct amount of space is vital for supporting animal health, reducing stress, and promoting natural behaviors.

Young animals require smaller areas early in life. Still, their need for space increases significantly as they grow. Breeding animals often need additional room to reduce aggression, allow for safe movement, and support natural mating behavior. Lactating animals need more space to lie down comfortably, care for their young, and access feed and water without competition. Finishing animals raised for meat also benefits from more space to improve feed efficiency and reduce injuries from crowding. It is essential to understand each species' production cycle and adjust the living space accordingly.

Animals that are overcrowded at any stage can lead to poor growth, increased disease risk, stress, and aggressive behavior. This is a critical aspect of responsible management, necessary for maintaining animal welfare and productivity.

Necessary resources and Partners – Please see Livestock Resources and Partners Appendix at the end of this chapter.