

# **Improving the Aesthetic and Environmental Quality of Your Farmstead by Landscaping**

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## **Basic Program Review:**

This presentation will review some basic landscape design principles, plant material selection, and benefits of landscaped windbreaks/vegetative barriers for your farmstead from a previous talk at the 2008 Cornbelt Cow/Calf Conference. This talk will also delve further into the aesthetic and living quality issues; with the addition of enhanced air quality improvement by planting a landscaped vegetative buffer on a farmstead or animal confinement area. There will be illustrations and examples for each topic.

## **Landscape Design Principles give a perspective on how to lay out your farmstead.**

- Unity
- Repetition and Order
- Rhythm created by Lines
- Balance
- Proportion and Scale
- Emphasis
- Space

### **Unity:**

A landscape has unity when its predominant features have some visual characteristics in common. Forms, colors, and textures create the sense of unity.

### **Repetition and Order:**

Repeating a design pattern, color, or texture in several different locations helps create unity and sense of order.

### **Lines creating Rhythm:**

### **Balance:**

Balance may be symmetrical (formal) or asymmetrical (informal), in which each side attracts the same attention.

### **Proportion and Scale:**

Scale refers to relationships between plants, people, structures, and open space.

### **Emphasis:**

Emphasis is used to accent an area to keep a design's unity and balance from becoming monotonous. A single contrast in color, texture, form, or height can do the trick. It can be a single plant or tree, flower bed, or structure.

## **Space:**

Your entire farmstead can be considered a block of space and should be thought of as outdoor rooms with length, width, & height.

## **Overview of the Overarching Design Principles of Landscaping**

- Form
- Texture
- Color
- Simplicity
- Blending form and function (Define spaces, provide structure, serve as a focal point)
- Sense of place

## **Landscape Styles:**

### **Geometric-Structural –**

geometric structure is primary and plants play a minor role.

### **Geometric-Natural –**

structures dominate, but plants and other natural elements play an important role.

### **Natural-Structure –**

plants, rocks, water, and earth forms dominate, but there is a sense of geometric design.

### **Natural –**

natural elements and materials dominate the landscape and there is no obvious human determined form or structure.

## **The Benefits of Landscaping the Farmstead (There will be pictures of examples throughout presentation)**

- Use trees, shrubs, bushes to make the place beautiful, desirable, and more functional
- Noise control
- Privacy
- Enhance life and environmental quality

## **A series of pictorial landscaping will be applied to a circa 1900 farmstead**

## **Landscaped Windbreaks**

### **Benefits of a Windbreak:**

- Beautification and privacy
- Reduce noise level from nearby vehicles & other sources
- Improve pollution control
- Reduce wind damage
- Provision of fruit, nuts, firewood, posts, and poles
- Wildlife habitat
- Filtering our ‘dirty’ air from nearby fields
- Reducing energy needs for building heating/cooling (10 - 40%)
- Snowdrift control

## **Plant cultivars for windbreaks will be discussed with some pictures/illustrations**

### **Enhanced Air Quality Improvement by Planting Vegetative Buffers**

- Reduced vegetation in the Iowa landscape over the years has increased air pollution
- Vegetative buffers are a targeted approach for capturing airborne particulates reducing odor

### **How does a Landscaped Vegetative Buffer Work to Improve Air Quality?**

- The swaying of trees vertically mixes the atmosphere; enhancing the dispersion of odor
- Leaves and stems intercept and trap odor and particulates
  - Dust, ammonia, and other nitrogen based chemicals stick to waxy surface of plant cuticles
  - Plants also have the ability to absorb ammonia through the stomata; reducing odor
- Reduced wind speeds from tree wind breaks help capture gravitational fall out of odor carrying particles
- Trees surrounding confinement facilities soften the psychological response of people
- Landscaping is highly desirable and socially acceptable improving community relations

### **Environmental Benefits of Trees and Turfgrass:**

- One acre of trees produces enough oxygen for 18 people every day. One acre of trees absorbs enough carbon dioxide per year to match that emitted by driving a car 26,000 miles.
- A single, fully grown sycamore tree can transform 26 pounds of carbon dioxide into life-giving oxygen every year.
- The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day."—*U.S. Department of Agriculture*
- "Landscaping can reduce air conditioning costs by up to 50 percent, by shading the windows and walls of a home." — *American Public Power Association*
- 2,500 square feet of lawn absorb carbon dioxide from the atmosphere, and release enough oxygen for a family of four to breathe.
- The front lawns of eight houses have the cooling effect of about 70 tons of air conditioning. The average home has an air conditioner with just a three or four ton capacity.
- On a hot summer day, lawns will be 30 degrees cooler than asphalt and 14 degrees cooler than bare soil.

### **Habitat Enhancement from Landscaping (pictures included)**

#### **Credits:**

- **Iowa State University Extension**
- **North Dakota University**
- **Iowa State University Horticulture**
- **Wisconsin University Extension**