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