Landscape Design: Landscape Architect’s design process, predilections and priorities

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The purpose of the session

- What landscape architects wish ecological engineers do
- Introduction to Landscape Design
  - To help communicate with landscape architects
- Cases
  - Cheonggye River
  - World Cup Park
  - Zhangjia Gang Jiyang Lake
What landscape architects wish ecological engineers do

- LA’s perspective of engineers: problem solvers
- Ecology should be more effective at communicating connections between the needs of human society and the understanding of ecological principles, patterns, and processes
- Consider multifunction and multiuse
- Include human factors
- Consider aesthetics
- Consider multi-dimensional solutions to ecological problems
- Involve citizens early in the process
Landscape Design Definition

- Landscape Design is the art of arranging or modifying the features of a landscape, an urban area, etc., for aesthetic or practical purposes. Both landscape designers and landscape architects practice landscape design.
Landscape design is the creative arrangement of space to achieve harmony, utility, and beauty between man and nature.

http://www.afcee.brooks.af.mil/ldg/s01LandscapeDesign/c03LandscapePlanning.html
Design is about how places work

Design Matters

Good Design should:
- Address the connections between people and places
- Create places everyone can use and enjoy
- Consider impacts on the natural environment

Good ecological design blends ecology and culture toward evocative and profoundly moving landscapes that reveal and celebrate ecological processes
Imagine designing a city plaza as a meeting place for local artisans and shopper, which also attracts sequential waves of migrating songbird in season.

Imagine restoring a streaming and designing a path along it to attract joggers and bird watchers.

Imagine designing wetlands that can also be used as an educational place as well as serving its role as habitats.
Principles of Good Landscape Design

- Principle 1: Everything Must Have a Purpose
- Principle 2: Design Must Be for People
- Principle 3: Both Function and Aesthetics Must Be Satisfied
- Principle 4: Establish an Experience
- Principle 5: Satisfy Technical Requirements

Source: Anatomy of Park
Site Design Process

- Goals/Objectives
- Program Development
- Analysis
  - Program Relationships
  - Relationship Diagrams
  - Site Analysis
- Synthesis
  - Design Concept
  - Refined Plan
  - Final Plan
Project programming

- The project program analyzes requirements, priorities, and user needs.
- Input is obtained from personnel who have an association with the project. For example, the user may require an on-site recreation area, a place for employees to gather for organizational functions, or additional screening to shield outdoor storage.
- This information and feedback form the basis of the project program requirements and determine the various activities or functions that need to be addressed.
Figure 15-7: Matrix of One-on-One Functional Relationships

Figure 15-8: Desired Relationships Between Program Element and Environmental Condition
Figure 15-9: Functional-Relationships Diagram

Figure 15-10: Bubble Shapes and Implied Character

Figure 15-11: Spatial Relationships

Figure 15-12: Composite Functional-Relationship Diagram
Site Analysis

- The detailed site analysis focuses on site characteristics that help define the final design. Some of the evaluation factors at this stage include the following:

  - **Views**
    - Highlight good views
    - Screen objectionable views

  - **Existing conditions**
    - Preserve mature trees
    - Protect unique vegetation
    - Preserve natural and historic features

  - **Soils**
    - Identify poor soils
    - Identify suitable soils
    - Identify wetlands

  - **Topography**
    - Stabilize steep slopes
    - Integrate abrupt grade changes

  - **Drainage**
    - Integrate runoff patterns
    - Locate potential ponding areas

  - **Vehicular and pedestrian circulation**
    - Identify need for and location of ramps
    - Determine if screening of parking area is required

  - **Noise**
    - Mitigate exposure

  - **Security requirements**
    - Determine special needs
SITE ESSENCE

A Dense Post Oak - Yaupon Thicket; Generally Closed at Eye Level; Poorly Drained Soils on Flat Slopes Will Present Drainage Problems; Site Generally Lacking in Summer Ventilation: But Offering Potential for Evaporative Cooling

Figure 15-16: Site Essence

SITE INVENTORY

SITE ANALYSIS

SITE ESSENCE

Figure 15-17: Site-Analysis Process
Current constraints

Current opportunities

How the development will respond to these
Concept Design

- Using the installation landscape theme, plant list, and analysis of the existing site conditions, the designer develops the concept design drawings.
- A concept design delineates the project elements in a highly graphic and detailed drawing. The designer has the responsibility to communicate the character and feel of the project to the users.
- Once concept design is finalized, designer develop the final design and construction documents.
"ON POND'S EDGE"
A Series of Barnlike Rustic Weathered Buildings Set into the Woods, with an Extended "Walk-Through-The-Woods" Entry Sequence, and a Series of "Outdoor Rooms" Adjacent and Perched "On Pond's Edge"
This plan shows the basic layout at the master plan stage.
Plant material in design
Figure 5-45: Plant Materials and Microclimate
Figure 5-46: Edge of Planted Mass as "Line"

Figure 5-47: Plant Material as Line That Links Elements

Figure 5-48: Plant Form (Redrawn from Design Elements of Landscape Architectural Design, Booth, N. K., Figure 2.40, p. 94. Copyright © 1983, reissued 1990 by Waveland Press, Inc.)
Figure 5-49: Early Successional Plant Distribution

Figure 5-50: Late Successional Plant Distribution

Figure 5-51: Bosque
A 30 ft. high tree mass affects wind speed for 100 yds. in front of the trees and 300 yds. down wind.

Wind current is diverted over tops of trees.

Wind current is reduced and filtered through trees.
Sound waves are diffracted and their intensity is reduced by noise buffering structures.

Sound waves are diffracted and their intensity is reduced by plant masses.

Noise Shadow Zone
Figure 5-56: Large and Intermediate Trees Provide Bulk to Plant Mass

Figure 5-59: Small Accent Tree to Lead the Eye

Figure 5-58: Small Trees and Spatial Enclosure

Trunks Imply Space - Create Foreground; Canopy Implies Space

Foliage Mass at Eye Level Encloses Space

Figure 5-60: Small Trees and Shade

Small Trees Provide Shade from Mid- to Low-Angle Sun
Figure 5-77: Vegetation and Relative Summer Temperature

Figure 5-78: Conifers and Privacy
- Trees and shrubs used to screen parking
- Shrubs define groundplane
- Shrubs used as foundation planting
- Groundcover used to define pedestrian circulation
Shrubs and groundcovers used to accent entry
Glare control

Plants can reduce solar glare and reflection
Spatial Development
Spatial Perception
Enframe and provide background for a building or view
Figure 11-9: Base-Plane Pattern: Relation to Overhead and Edge
Spatial Edge

Figure 11-10: Landform as Base Plane and Spatial Edge

Figure 11-11: Degree and Nature of Enclosure
Figure 11-12: Spatial Edge, Size, and Perceived Scale

Figure 11-13: Edges That Terminate at Eye Level

Figure 11-14: Enframement and Sense of Place

Figure 11-15: Unintended Enframement
Figure 11-16: Edge as Direction

Figure 11-17: Architectonic Edge

Figure 11-18: Porous Vegetated Edge
Figure 11-40: Shadowed Edge as Enclosure

Figure 11-41: Tree Trunks as Implied Spatial Edge

Figure 11-42: Noise Attenuation
Figure 11-43: Element and Space of Similar Character

Figure 11-44: Complement Through Contrast
Cheonggye River Restoration
World Cup Park / Haneul Park
Sources

- [http://www.afcee.brooks.af.mil/ldg/s01LandscapeDesign/c03LandscapePlanning.html](http://www.afcee.brooks.af.mil/ldg/s01LandscapeDesign/c03LandscapePlanning.html)
- [http://landscaping.about.com/cs/lazylandscaping/g/landscapedesign.htm](http://landscaping.about.com/cs/lazylandscaping/g/landscapedesign.htm)