

# Methodology

## Botanic Gardens as Agents of Change in the American Landscape

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Throughout Europe, particularly in Great Britain, the aggregation of small-scale vegetated sites integrated into the urban fabric has had a significant role in maintaining biodiversity and ecosystem functioning (Thompson et al 2003, Davies et al 2009, Goddard et al. 2010).

Unfortunately, in the United States, a predominantly scenic aesthetic has resulted in reductionist landscapes which neglect the rich possibilities of sites to support socio-ecological relationships (Cronon 1995, Hitchmough 2008). Contemporary and traditional American attitudes towards landscape are a strong cultural barrier separating social and ecological systems (Cronon 1995, Gobster 2007, Ellison 2013).

In order to effect widespread change of landscape understanding, it becomes important to change the cultural understanding of landscape aesthetics. Various methods for widespread change of landscape aesthetics have been proposed, including policy change and increased environmental education (Nassauer 1995, Gobster 1999, Gobster et al. 2007). However, one of the primary obstacles to deepening of socio-ecological understandings is the lack of what Gustavsson terms “reference landscapes”, places where people can go and observe a wide range of interaction between social and ecological systems (Gustavsson et al. 2005).

Currently, botanic gardens are the primary sites dedicated to relationships between human and vegetative systems (Rakow & Lee 2011). As centers of knowledge that curate living collections, botanic gardens could already be seen as “reference landscapes”, mediating between their scientific and artistic functions. Many botanic gardens have already been instrumental agents of landscape change within their communities through education and public outreach efforts (Gough and Accordino 2011).

Unfortunately, the physical planting design of many botanic gardens continues to reflect outdated ways of thinking, fostering the notion of planting as a free art or pure restoration to prehistoric ecologies. Other centers of knowledge - art and history museums, in particular - utilize a wide variety of technologies and design strategies to establish learning experiences for their visitors. According to Barry Lord, “the purpose of a museum exhibition is to *transform* some aspect of the

visitor's interests, attitudes, or values *affectively*, due to the visitor's discovery of some level of meaning in the objects on display - a discovery that is stimulated and sustained by the visitor's confidence in the perceived *authenticity* of those objects (Lord 2002).“ In order to have full agency as a living museum about the relationships between people and plants, botanic garden plantings must be *transformative, affective, and authentic*.

To be **transformative**, a planting design challenges existing landscape norms by affording new or unexpected possibilities in the relationships between human and other biological systems.

To be **affective**, a landscape affords human pleasure through appealing the senses and proffering potential for action.

To be **authentic**, a landscape embraces the realities of site and expands affordance to larger biological systems.

### **Framework Development from Literature**

Review of a body of literature including recent texts on environmental aesthetics, planting design, and ecophysiology will inform a framework that will enable designers and gardeners at botanic gardens understand the social and ecological impacts of their planting design decisions. Based on the understandings developed through literature review, a framework of strategies will be developed that lists possible design strategies for creating planting designs that are transformative, affective, and authentic. Knowing how different planting strategies support human or ecological systems will give designers a basis for decision-making about planting. Initial literature review has revealed the following as preliminary strategies for the framework:

### **Transformative (challenging landscape norms and showing productive relationships between human and natural systems):**

- reflect new understandings of socio-ecological systems (McLuhan 1967)
- show that human and landscape systems can relate productively (Cronon 1995, Jones and Nichols 2012)
- challenge existing landscape types (Nassaeur 1995)
- frequently changing - not static - exploit temporality (Diaconu 2011a, 2011c)

### **Affective (rich multi-sensual experiences for humans - afford a variety of relationships):**

- mediate between coherence/complexity; legibility/mystery (Kaplan 1979)
- “work”/“read” at a variety of scales (Kaplan 1979, Kingsbury 2013)
- provide full satisfying narrative journeys (Potteiger 1998)
- provide multi-perspectival experiences (Kaplan 1979, Diaconu 2011b),
- capture fleeting ephemeral effects (Dee 2012)
- strategically design for multi-sensual qualities (Diaconu 2011, Pallasmaa 2011)
- provide for human comfort

### **Authentic (physically supporting other biological systems):**

- connect to larger systems (Carlson 2000)
- connected to/valuing existing aspects of site (Dee 2012)
- focus on systems not objects (Berrizbeitia 2001)
- provide real multispecies benefits (involves considering endangered/sensitive species - food/habitat/life cycle) (Sagoff 2005)

### **Precedent Study for Framework Development**

While an initial understanding of design strategies to make botanic garden plantings *transformative, affective, or authentic* can be gleaned from literature, it becomes important to examine how such strategies are being utilized in existing planting designs. Precedents to be investigated include six planting design projects designed as garden experiences open to the public. Each of these projects, in some way, was transformative in its approach to mediating socio-ecological systems. They have been arranged according to Noel Kingsbury's typology of planting design styles outlined in his 2004 *Contemporary Overview of Naturalistic Planting Design*. Precedents to be analyzed include:

**Charles Jencks:** Garden of Cosmic Speculation, Dufries, Scotland (mass planting)

**Piet Oudolf:** Lurie Garden, Millennium Park, Chicago, Illinois, USA (informal planting)

**Oehme van Sweden:** Native Plant Garden, New York Botanic Garden, New York, USA (stylized nature)

**Giles Clement:** Serial Gardens, Parc Andre Citroen, Paris, France (conceptual ecological planting)

**Hitchmough, Dunnett + Price:** London Olympic Park Plantings, London, England (biotope)

planting)

**Darrell Morrison:** Native Flora Garden, Brooklyn Botanic Garden, Brooklyn, New York, USA  
(ecological restoration)

### **Critical Drawing for Comparative Analysis of Existing Planting Designs**

Critical drawing of specific garden areas within each of these precedent designs will be used as a way to get to know and understand the proposed elements for each of these planting designs (Olin 2008, Treib 2008, Dee 2012). Plan drawings will be supplemented with sections, three per project - taken at the primary entry point, (find research supporting critical drawing) Drawings will be conducted primarily in colored pencil, possibly with washes of charcoal, pastel, and/or watercolor. The drawings will be conducted at parallel scales to ensure comparability of conclusions. With a drawn understanding, the proposed relationships between humans and plant material will be revealed, along with the plants' physical characteristics. Following the comprehensive drawings, different attributes will be extracted and patterns isolated according to initial functions revealed through literature review. Such diagramming will be supported through digital technology, including Illustrator and Photoshop.

Following development of the framework, its efficacy for making design decisions will be explored through strategic application at an established planting, The Meadow at Kansas State University, Manhattan, Kansas, and through a complete overhaul of the planting design for Chapman Botanical Garden in Apalachicola, Florida.

### **Application at The Meadow on KSU Campus**

My involvement of application of understandings at the Meadow will be encompassed by three tasks.

- Helping select plants to grow, then assisting with plant placement (and possibly representation of "as built" planting?)
- Helping create a signage system that supports, rather than distracting from, the experience of the site
- Helping create interpretive graphics for a touch table display, located in the adjacent Beach Museum of Art, overlooking the Meadow to create a multiseason coherent experience.

## **Inquiry through Design of Chapman Botanical Garden, Apalachicola, Florida**

In Apalachicola, Florida, the Chapman Botanical Garden is intended to memorialize a Florida botanist, Dr Alvin Wentworth Chapman (Cox 2010). Today, however, the site (approximately 10 acres) is barely a fitting tribute. It lacks interest and has few attributes to attract visitors or support other biological systems. While western Florida is home to many National Forests and other sensitive natural habitats, many of these strictly limit public access. Chapman Botanical Garden offers the potential to transform the human understanding of socio-ecological relationships in an area that has deep ecological and social needs. Chapman Botanical Garden could be a highly utilized resource for both residents of the Apalachicola region and tourists who come to enjoy the beauty of the west Florida coast.

The process for enquiry through design of Chapman Botanical Garden will involve contextual and site research, compilation of base maps, programming, and planting design development.

## **Reflection on Planting Design Framework**

Following testing through application at an established public garden space (The Meadow, Kansas State University, Manhattan, Kansas) and through planting design for an underdeveloped public garden (Chapman Botanic Garden, Apalachicola, Florida), the framework of physical design strategies for expanded agency of botanic gardens will be re-examined. Its efficacy for informing design, both broad-scale and incremental, will be considered and reflections applied.

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