A Quest for Resilience: Adaptive Strategies for Sustainable Planting Design

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Factors that contribute to resilience in planting design:

- Genetic diversity
- Species diversity
- Ability to successfully reproduce
- Mutually-supporting species combinations

Planting design principles for building resilience:

A. Source seed-grown plants in lieu of vegetatively-propagated plants
B. If possible, select species ecotypes that best fit the needed performance for a site
C. Allow plants to reproduce:
   - reproduction represents renewal and recovery even in a designed plant community;
   - consider self-seeding ‘patch kit species’;
   - Incorporate volunteer plants from the seedbank, when you’re fortunate enough to discover good ones. Seedbanks can arrive in potting soil, and in purchased soil amendments, in addition to on-site soils. Buy your plants from responsible growers!
D. Include a diversity of plants, organized in functional community-based arrangements
   - Consider a vertically-layered herbaceous planting structure, including a ground-hugging layer below a herbaceous matrix layer, in addition to woody plants.
   - Consider horizontally integrated plant combinations, with mutually-supporting species interwoven within a planting zone
   - Consider supplemental overseeding for additional species / varieties not available as live plants
   - Consider conservative (specialized) species as appropriate, in addition to generalist species

Incorporating these principles into cultural settings:

A. Planting designs as tapestry: organizing diversity into recognizable pattern
B. Importance of neat, well-maintained edges
C. Provide close-up contrast between ‘natural’ and ‘manicured’ landscape areas
D. Include contrast between soft, ‘chaotic’ plants and the clean lines of hardscape
E. Consider when pattern is functionally (ecologically) driven and when it is a cultural expression. Exploit the difference. Use cultural pattern within natural plant arrangements to communicate design intent.
Suggested changes in planting design process:

A. Adaptive, flexible approach over a fixed plant arrangement
B. Taking advantage of timing. Attention to strategic timing can open up options.
C. Introduce ongoing dialogue between designers / ecologists / horticulturalists and the staff doing the grounds care. Consider how design can be integrated into ongoing stewardship rather than be confined to a single discrete event that is handed off to maintenance.

Resources:


Floristic Quality Index / Plant Stewardship Index

- Universal Floristic Quality Index Calculator: universalfqa.org
- Pennsylvania Land Trust Association, information on the Plant Stewardship Index: http://conservationtools.org/guides/33-plant-stewardship-index
- Penn State Riparia, Floristic Quality Index calculator: http://apps.cei.psu.edu/fqacalc/