Evolution of Landscape Architecture
Sustainability in Practice

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Peg Staeheli, ASLA, PLA
PART 1: Design for Function + Aesthetics

PART 2: Integrate maintenance staff/perspective into design process

PART 3: Feedback Loop
PART 1: Design for Function + Aesthetics

- Performance Driven
- Codes
- Layout
- Plant trends
- Soil prep and mulch
- Trees
- Prototypes
Planting Design - Performance

- Is it part of a residential streetscape?
- or part of a downtown streetscape?
Planting Design-function and aesthetics

- Pollinators
  - Plant palettes reflect desire to encourage pollination
- Urban food production
  - Community gardens
  - Edible plants are moving into public space. (blueberries, herbs, apple trees, etc...) where appropriate
Codes: Things to Consider

- Example Streetscapes
  - What are the city standards?
  - Keep sight lines between pedestrian and vehicular traffic open at street corners.
  - Height - CPTED
  - Tree purpose & placement
  - Who maintains?
Codes: Things to Consider

• Setbacks- what space and exposure exists ....and with land use changes what will be there?

• Tree Canopy Coverage – is there above and below space to allow the tree to meet the canopy goal?

• Plant mix- will the approach adapt to changing weather patterns?

• Siting - Is the siting of required natural drainage/green infrastructure techniques (BMP’s) providing multiple function?
Layout: Example Rain Garden Zones

TYPICAL BIORETENTION SWALE PLANTING Z
Rain Garden Zones of Planting
Planting Design-Seasonal Interest – it still matters

• Spring and Summer?

• Winter interest?
Planting Palettes

BULB & INTERSECTION PALETTE (UNDER 24" HEIGHT)

<table>
<thead>
<tr>
<th>PLANT ID &amp; SPECS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mahonia repens</td>
<td>Geranium x 'General' Rozanne</td>
<td>Veronica lirata 'Frisia' Speedwax</td>
</tr>
<tr>
<td>Low Oregon holly-grape</td>
<td>Rozanne hardy geranium</td>
<td>Zone 2,3,4</td>
</tr>
<tr>
<td>JFMAMJASOND Zone 4 / WNW</td>
<td>JFMAMJASOND Zone 3,4</td>
<td>JFMAMJASOND Zone 1/2</td>
</tr>
<tr>
<td>Helictotrichon sempervirens</td>
<td>Narcissus Dutch Master' or 'King Alfred'</td>
<td>Cornus sericea 'Kiebitz'</td>
</tr>
<tr>
<td>Blue oat grass</td>
<td>Daffodil</td>
<td>Dwarf redtwig dogwood</td>
</tr>
<tr>
<td>JFMAMJASOND Zone 4</td>
<td>JFMAMJASOND Zone 3,4</td>
<td>JFMAMJASOND Zone 1/2/3</td>
</tr>
<tr>
<td>Eucryphia fortunei 'intermedia'</td>
<td>Carex daniellii 'Kanmatsuse' or 'Kranz'</td>
<td>Juncus effusus 'Spiralis'</td>
</tr>
<tr>
<td>Blamily winter creeper</td>
<td>Gold fountain sedge</td>
<td>Corscrew rush</td>
</tr>
<tr>
<td>JFMAMJASOND Zone 3,4</td>
<td>JFMAMJASOND Zone 3,4</td>
<td>JFMAMJASOND Zone 1/2</td>
</tr>
<tr>
<td>Potentilla fruticosa 'Sunset'</td>
<td>Iberis sempervirens 'Snowflake'</td>
<td>Juncus patens 'Elk Blue'</td>
</tr>
<tr>
<td>Frothy potentilla</td>
<td>Snowflake candytuft</td>
<td>California gray rush</td>
</tr>
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<td>JFMAMJASOND Zone 1/2</td>
</tr>
<tr>
<td>Eucryphia fortunei 'Kawasaki'</td>
<td>Wintercreeper euonymus</td>
<td>Eucryphia fortunei 'Kawasaki'</td>
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<td>Wintercreeper euonymus</td>
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</table>

Bulb & intersection palette characteristics:
- Bright foliage
- Medium sized leaves
- Vibrant colored flowers
- Low for visibility

FOLIAGE PERIOD
BLOOM PERIOD
FALL / WINTER INTEREST
NWLN = NORTHWEST NATIVE OR CULTIVAR
Plants Trends

- Choose plants that have been tested
  - Many new varieties are beautiful...
  - Vet in real situations to determine if they are hardy, have year round viability and don’t cause unnecessary maintenance
  - Please specify new varieties but mix them in with reliables
Soil Preparation and Mulch

• **Mulch**
  – One word does not fit all
    • Compost
    • Mulch
    • Wood chips
    • Arborist wood chips
    • Hog fuel
  – Know what you need
  – Specify carefully
  – Request certification

• **Soil preparation**
  – It is now code driven
  – It service both a drainage and a plant function
  – Testing best but not always funded
  – Results definitely
Trees: slowly being recognized for multiple functions

- Trees provide flow control via interception, transpiration, and increased infiltration. (Ecology 2012 Stormwater Manual)
- Trees reduce heat island affect
- Trees as carbon offsets
Prototypes: From Innovation to Standard Practice

City of Seattle-DPD Tip #532
GSI Bioretention Cells
PART 2: Integrate maintenance staff/perspective into design process

- Reciprocal sharing design ↔ maintenance
- Who maintains?
- How to get the perspective?
- How to give the perspective?
Plant Maintenance

• Start thinking about maintenance at the beginning of the plant design process.

• What is the level of effort that fits the project budget and staffing?

• Will the project be maintained long term by paid staff with an annual budget or will this be maintained by volunteers?

• What tidiness level is appropriate for the location and type of plantings?

• Will plantings be hand watered or automatically irrigated?
Plant Maintenance Basics

• Plan for a high level of maintenance during the first two years.

• A minimum of two years of watering is necessary to establish plantings, even drought tolerant species.

• Weeding regularly from the time of planting until plants have filled is important to stay ahead of the weeds. Weeds also love the rich bioretention soil.

• Select plant species with an annual maintenance schedule in mind.

• Considered the experience and plant knowledge of those maintaining the rain garden when selecting and laying out plants.
### Maintenance Schedule

- Develop a maintenance schedule at-a-glance – starting during design.

- This will help identify level of effort and assist in matching your planting design to maintenance capacity.

- This also provides a tool to discuss maintenance with your client.
PART 3: FEEDBACK LOOP

• Follow up-
  • designer with contractor
  • designer with owner/maintenance staff

• Transition to maintenance and coordination with operations (as applicable)

• One year check in

• Three to Five year observations

• Mature Landscapes and adaptation

• Share
Follow up: Designer & Contractor
Transition to Maintenance and Coordination with Operations

Example: Discuss Level of Service Acceptable / Unacceptable

Acceptable Maintenance:
- Mostly healthy vegetation with good appearance
- Appearance is good
- Occasional weedy species (5-10%)
- Some erosion and bare spots (0-6%)

Unacceptable Maintenance:
- Debris buildup
- Appearance is poor
- Weedy
- Overgrown
One Year Check In

High Point Sylvan Way SW
High Point Lanham Place SW
Ballard 28th Ave NW
Portland

AT INSTALLATION

1+ YEARS AFTER INSTALLATION

Photos were taken during the summer. Conditions vary with seasons.
Three to Five Years
Observe for feedback
Mature Landscapes
Intent & Adaptation
at planting

9 years later
Ask questions
Search the internet
and
Share your knowledge
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