PLANT SELECTION + CARE

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LANDSCAPE PRACTICES TODAY

- Commercial and residential outdoor water use in the United States accounts for more than seven billion (7,000,000,000) gallons of water each day. (U.S. EPA)

- Yard and landscape trimmings contribute approximately 32 million tons to the municipal waste stream, representing more than 13 percent of total municipal waste in the United States. (U.S. EPA, 2006)

- Gasoline-powered landscape equipment, including mowers, trimmers, blowers, and chainsaws, accounts for 16 percent of hydrocarbon emissions and 21 percent of carbon monoxide emissions from mobile sources nationwide. (U.S. EPA, 2003)
SUSTAINABLE LANDSCAPE PRACTICES

RAIN GARDENS:

- Provide valuable wildlife habitat
- Use native plants that are water and climate tolerant
- Add aesthetics to the landscape
- Recharge groundwater sources
- Protect communities from flooding and drainage overflow
- Reduce maintenance costs
- Control stormwater and nonpoint source pollution
NATIVE PLANTS:

- Provide habitat areas
- Reduce the need for irrigation
- Reduce the need for maintenance
- Reduce the use of fertilizer
- Reduce the use of pesticides
- Absorb water more efficiently than turf-style grasses
NATIVE PLANTS

The Highline, NYC

- James Corner Field Operations
  Landscape Architect

- Piet Oudolf
  Planting Designer
PLANTING DESIGN

APPROACH:

- Establish preferred design aesthetic
- Understand site constraints and conditions
- Select appropriate plant palette
- Prepare planting design plan
DESIGN AESTHETICS

Traditional design:

- Shrub bed
- Perennial garden
- Hedges

Naturalized design:

- Butterfly garden
- Meadow (warm season grasses + wildflowers)
- Buffer plantings
SITE CONSTRAINTS + CONDITIONS

Things to consider:

▪ Sun vs. Shade
▪ Exposure + Wind
▪ Soil Characteristics
▪ Hydrologic Conditions
▪ Road Salts
▪ Vehicle and/or Pedestrian Traffic
PLANTING PALETTE

Choose plant species based upon:

- **Suitability to Site**
  - well adapted to existing conditions
    (native plants!)

- **Mature Plant Size**
  - proximity to buildings + utility lines
  - pruning and shaping

- **Seasonal Interest**
  - flowers
  - fall color
  - winter interest

- **Beneficial to Wildlife**
  - flowers for butterflies + insects
  - fruits for song birds
PLANTING DESIGN PLAN

Rain Garden Zones

BUFFER  SLOPE  BASE

Inlet  Outlet

TYPICAL DEPTH
3-8"

MOISTURE LEVELS
dry  moderate  wet  moderate  dry
PLANTING DESIGN PLAN

Rain Garden Zones

WILDFLOWERS AND FERNS

**BASE**
- Blue Lobelia (*Lobelia siphilitica*)
- Blueflag Iris (*Iris virginica* shrub)
- Boneset (*Eupatorium maculatum*)
- Cardinal Flower (*Lobelia cardinalis*)
- Seaside Goldenrod (*Solidago sempervirens*)
- Marsh Marigold (*Caltha palustris*)
- Monkey Flower (*Mimulus ringens*)
- Rose-mallow (*Hibiscus moscheutos*)
- Royal Fern (*Osmunda regalis*)
- Swamp Milkweed (*Asclepias incarnata*)
- Turtlehead (*Chelone glabra*)

**SLOPE**
- Blazing Star (*Liatris spicata*)
- Cinnamon Fern (*Osmunda cinnamomea*)
- Columbine (*Aquilegia spp.*)
- Coreopsis (*Coreopsis*)
- Ironweed (*Vernonia noveboracensis*)
- Joe-pye Weed (*Eupatorium spp.*)
- New England Aster (*Aster novae-angliae*)
- New York Aster (*Aster novi-belgii*)
- Sensitive Fern (*Onoclea Sensibilis*)

**BUFFER**
- Black-eyed Susan (*Rudbeckia laciniata*)
- Butterfly Weed (*Milkweed*) (*Asclepias tuberosa*)
- Purple Coneflower (*Echinacea purpurea*)
- Wild Indigo (*Baptista tinctoria*)
- Wild Bergamont (*Monarda didyma*)

**TREES AND SHRUBS**

**BASE**
- Buttonbush (*Cephalanthus occidentalis*)
- Cranberrybush Viburnum (*Viburnum trilobum*)
- Green Ash (*Fraxinus pennsylvanica*)
- River Birch (*Betula nigra*)
- Silky Dogwood (*Cornus amomum*)
- Swamp White Oak (*Quercus bicolor*)

**SLOPE**
- Green Ash (*Fraxinus pennsylvanica*)
- Red Maple (*Acer rubrum*)
- Red-twig Dogwood (*Cornus sericea*)
- River Birch (*Betula nigra*)
- Serviceberry (*Amelanchier canadensis*)
- Sweetpepperbush (*Clethra alnifolia*)
- Sweetbay Magnolia (*Magnolia virginiana*)
- Winterberry Holly (*Ilex verticillata*)

**BUFFER**
- American Holly (*Ilex opaca*)
- Arrowwood Viburnum (*Viburnum dentatum*)
- Bayberry (*Myrica pensylvanica*)
- Hackberry (*Celtis occidentalis*)
- Lowbush Blueberry (*Vaccinium angustifolium*)
- Red Bud (*Cercis canadensis*)
- Red Oak (*Quercus falcata*)
- White Oak (*Quercus alba*)
- Witchhazel (*Hamamelis virginiana*)

GRASSES AND GROUNDCOVERS

**BASE**
- Bluejoint Grass (*Calamagrostis canadensis*)
- Sedges (*Carex spp.*)
- Fowl Mannagrass (*Glyceria striata*)
- Soft Rush (*Juncus effusus*)

**SLOPE**
- Big Bluestem (*Andropogon gerardii*)
- Switchgrass (*Panicum virgatum*)
- Virginia Wild-rye (*Elymus virginicus*)
- Wood Grass (*Sorghastrum nutans*)

**BUFFER**
- Bearberry (*Arctostaphylos uva-ursi*)
- Broomsedge (*Andropogon spp.*)
- Indiangrass (*Sorghastrum nutans*)
- Little Bluets (*Schizachyrium scoparium*)
- Panic Grass (*Panicum virgatum*)
- Switchgrass (*Panicum virgatum*)
- Deer Tongue (*Dichanthelium clandestinum*)
# PLANT SPACING

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Aesthetic Considerations

- Plant Layering
- Plant Massing
- Unity + Repetition
- Maintaining Balance
- Accents + Focal Points
- Keep it Simple
PLANTING DESIGN

Layering Plantings

- Create depth by planting larger plants behind smaller plants
- Develop structure for the intended design
- Be sure to plant the right size plants in the right place – consider proportions
PLANTING DESIGN

Massing Plantings

- Plant in groups to provide visual impact
- Direct viewers eye toward desirable view
- Direct viewers eye away from undesirable view
- Massing several of the same species together minimizes impact of individual plant die-off
PLANTING DESIGN

Unity + Repetition

- Complement existing landscape plantings and features
- Respect architecture, spaces, and community aesthetics
- Consistency in plant character provides unity
- Build on a selected theme to provide repetition

USEPA. 2009. Green Infrastructure Case Studies

James Corner Field Operations
A Balanced Landscape Design

- Keep the plantings in context with the property or site
- Respect the complexity of plant texture and color
- Direct viewers eye away from undesirable view
- Plan for ‘up-close’ and ‘distant’ experiences
PLANT SELECTION

Similar Colors, Different Forms
PLANT SELECTION

Similar Forms, Different Colors

James Corner Field Operations/Piet Oudolf
Establishing a Focal Point or Accent

- Incorporate landscape elements such as boulders, a stone path, or a bench
- The rain garden itself can be a focal point
- Use purposeful massings of flowering plant species
- Include a specimen tree or shrub
RAIN GARDEN DESIGN

Keep it Simple!

- Focus on only one or two themes
- Consider seasonal changes
- Consider long-term maintenance needs
- Plan for succession and maturity
- Thoroughly investigate existing site conditions
CLASSICAL MAGNET RAIN GARDEN

**Planting Plan**

- **Echinacea purpurea 'Primadonna White'**
  Coneflower
- **Echinacea purpurea 'Sundown'**
  Coneflower
- **Mondara 'Grand Marshall'**
  Beebalm
- **Echinacea purpurea 'Ruby Star'**
  Coneflower
- **Heliopsis 'Summer Nights'**
  False Sunflower
- **Aster novae-angliae ‘Snow Flurry’**
  New England Aster
- **Viburnum cassinoides**
  Withe-Rod Viburnum
- **Aster novae-angliae ‘Alma Potschke’**
  New England Aster
- **Schizachyrium Scoparium**
  Little Bluestem
CLASSICAL MAGNET RAIN GARDEN

False Sunflower

Heliopsis 'Summer Nights'
False Sunflower
CLASSICAL MAGNET RAIN GARDEN

Coneflower

- *Echinacea purpurea* 'Primadonna White'
  Coneflower

- *Echinacea purpurea* 'Sundown'
  Coneflower

- *Echinacea purpurea* 'Ruby Star'
  Coneflower
CLASSICAL MAGNET RAIN GARDEN

Little Bluestem

Schizachyrium Scoparium
Little Bluestem
CLASSICAL MAGNET RAIN GARDEN

Withe-Rod Viburnum

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