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LANDSCAPE ARCHITECTURE MAGAZINE

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THE PUBLIC GARDEN

How the mission is evolving

STUDENT DEBT

Rising sums for landscape grads

HIGH TIDE IN BOSTON

Wide open to the rising sea

SAVE THE NATIVE BEES!

A pitch for efficient pollinators

RIGHT
A meadow marches
down to angled
concrete—and
Iris versicolor,
native blue flag iris.

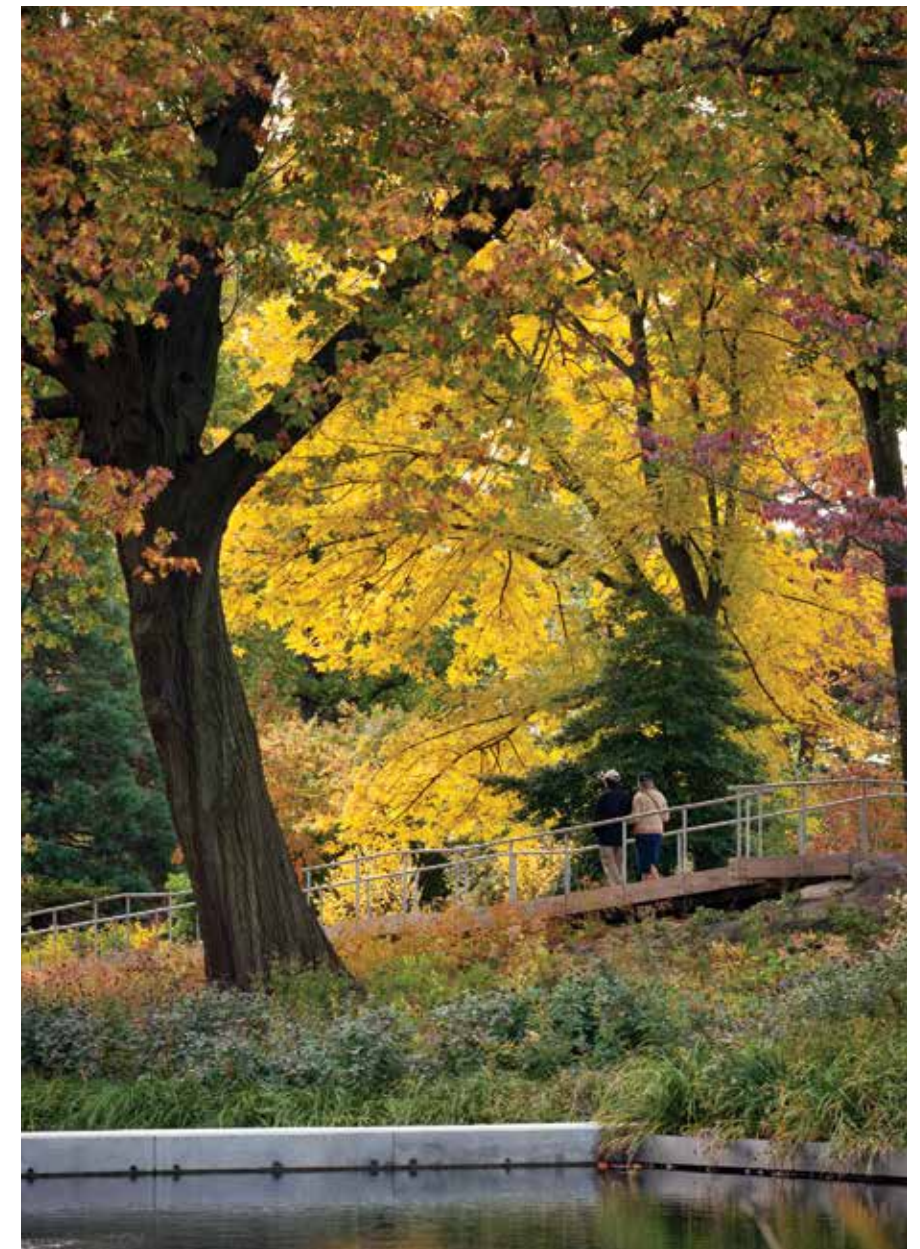


THE LARGER VISION

**IN SWEEPS AND SMALL MOMENTS,
OEHME VAN SWEDEN TIES NYBG'S
NATIVE PLANT GARDEN TO THE
NATURAL LIFE OF ITS REGION.**

BY MAC GRISWOLD

ROBERT BENSON



“THIS WAS A MOMENT when intuition and spontaneity floated over years of thought,” remembers Sheila Brady, FASLA, a principal at Oehme van Sweden, the landscape architecture firm. In the 1980s, OvS pioneered what became known as the New American Garden, with swaths of mostly native species and their cultivars as optimum and bravura solutions for America’s planted spaces both public and private, large or small. But a giant next step has been taken in the firm’s progression toward American plants for American landscapes: the 3.5 acres of the new Native Plant Garden at the New York Botanical Garden (NYBG), which opened in May 2013. A woodland rise melts into an ancient forest; a bog glides into a pond; a meadow falls from a hot dry ridge down to the moment of intuition Brady is describing: the very contemporary water feature she designed, cradled between the parallel slopes of woodland and meadow.

In 2008, after intensive study with her colleagues of the site’s existing soil chemistry, topography, geology, and hydrology that she hoped would help her firm win the commission, Brady left her office in Washington, D.C., for a breather at the National Gallery. She trained in the fine arts (life drawing, photography) before she became a landscape architect, and she found herself mesmerized by *Bask*, a 12-foot-long piece of black-stained pine, the work of the sculptor Martin Puryear, one of America’s greatest living artists. *Bask* is a floor piece. A maximum 12 inches at its center high point, the work seems to move, assuming different fluid shapes as you circle it. The curves and angles of Brady’s 320-foot-long water feature are clearly related to *Bask*. They share a concentrated sense of relaxation, of peace in slow motion.

ROBERT BENSON

MARK PFEFFER, RIGHT

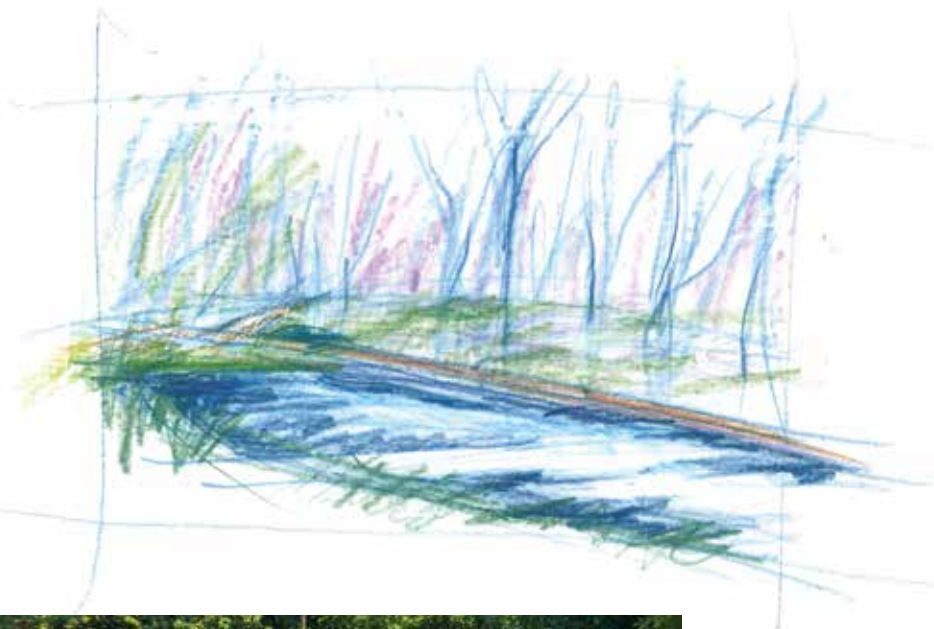
Brady says: “The design couldn’t be too busy—studies of perception consistently demonstrate we have only a 30-second frame when the eye allows its lens to absorb the big picture.” At first glance, the design as a whole is simple and large. A wide, boldly angled promenade—5,000 square feet of sustainably harvested black locust boards—runs the length of the inner curve of the water feature on the woodland side. It seems to rise imperceptibly from the entrance grade to join steps that curve out of sight toward the forest. Then, turning left sharply to cross a cleansing wetland, the promenade ends at the meadow rise. The stream, which originates in the existing Rock Garden above the new area and is augmented by surface runoff, eventually joins the Bronx River, tying itself and the Native Plant Garden into the region’s natural water system.

That the water is aerated as it tumbles softly over two massive, locally quarried stone weirs is easy enough for any visitor to understand. Even the idea of a biological filter—the wetland—has become part of a common sustainable and environmental landscape vocabulary. But well below the tranquil surface lies a highly engineered, experimental system. The impermeable bottom holds a quarter-acre water body, a huge sand and gravel pump pushes 350,000 gallons of water back up to recirculate before running downstream, and a cistern holds stormwater overflow. “Records of the pump room maintenance and procedures will be a good source of information for future facilities, for the benefits and limits of running a system of this scale,” Brady says. “The wetland had to be large enough to contain five times the cleansing space for the water in the pond, with a reserve area of clear water.” Recalling one struggle, she says, “Where the

OPPOSITE
A cleansing stream forms the center of the Native Plant Garden.

CENTER
Flowering grasses meet mallows at the wetland edge.

ABOVE
An old pin oak, *Quercus palustris*, casts light and shade on the accessible walkway.



PLAN

- 1 ENTRY PAVILION
- 2 ENTRY GROVE
- 3 WET WOODLAND
- 4 PROMENADE
- 5 WATER FEATURE
- 6 WET MEADOW
- 7 MESIC MEADOW
- 8 EDUCATION PAVILION
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- 17 WOODLAND
- 18 FOREST TRANSITION



original streambed was, the area got tight, so we had to regrade,” something they avoided if possible in the effort to retain all the natural features of the site. Working with NYBG’s staff headed by Todd Forrest, the garden’s vice president for horticulture and living collections, they decided on a vertical concrete edge so visitors could be close to the water and the plantings. Anyone strolling the promenade can look a plushly red-veined—and carnivorous—pitcher plant (*Sarracenia x excellens*) right in the eye.

Working at the largest possible scale is the maxim of this project. The Leon Levy Foundation gave \$15 million to research, create, and sustain the effort. The region-wide water ecosystem and the other broad natural networks that were waiting to be discovered and used, plus NYBG’s supremely well-versed horticulture, underpin the design story. By a recent count, in

2013, nearly 100,000 native trees, shrubs, wildflowers, ferns, and grasses are thriving on site.

NYBG, a designated National Historic Landmark, has been committed to the study and preservation of native plants since its founding. In 1895, Nathaniel Lord Britton selected the site for its natural features, including that 50-acre old-growth forest, and within three years the garden had published the first of three volumes of *An Illustrated Flora of the Northern United States and Canada*. In updated form, as Henry Gleason and Arthur Cronquist’s *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, along with its indispensable *Illustrated Companion*, the work remains the native plant bible today. Britton’s wife, the botanist Elizabeth Knight, the only woman among the 25 nominees to the Botanical Club of

America in 1893, published hundreds of scientific papers (mostly on mosses) and as early as 1902 raised public awareness of wildflowers by launching the Wildflower Preservation Society of America. The Brittons’ bedrock dedication to America’s flora is suitably commemorated at “Britton Rock,” one of the glacial outcroppings that are such a prized feature of this site.

The phrase “of Northeastern United States and Adjacent Canada” is key to understanding the horticultural ambitions of this garden. The selection of plants draws on the same native plant range, from New Brunswick south to Virginia and west to the Mississippi. Covering 29 percent of the United States, and including the flora of 22 states and five provinces, the vast area is a quiet statement about the boundlessness of a nature we hardly recognize today as one nature. What OvS and NYBG have done

is to assess the soils, water, slopes, and microclimates already on site within the 3.5 acres of the Native Plant Garden, then intensify and maximize them, then distill (their favored word) the range of possible regional experience within those possibilities. “Distill” meant compiling thousands of potentially garden-worthy native plants whose home habitats, native soil food webs, and cultural requirements fit the site, meaning they would thrive. “We pared down the list to the essential 100 plants for each of the growing conditions,” Joanna Payne, a former curator of the Native Plant Garden, explains. Payne, who worked closely with Brady’s team on plant selection, tracked down the vast majority of the plants. Targeted plants already on the NYBG site were carefully lifted and stored for several years, including a large collection of rare trilliums, which reproduce slowly and are on the endangered list. It took three years to prepare the woodland for planting.

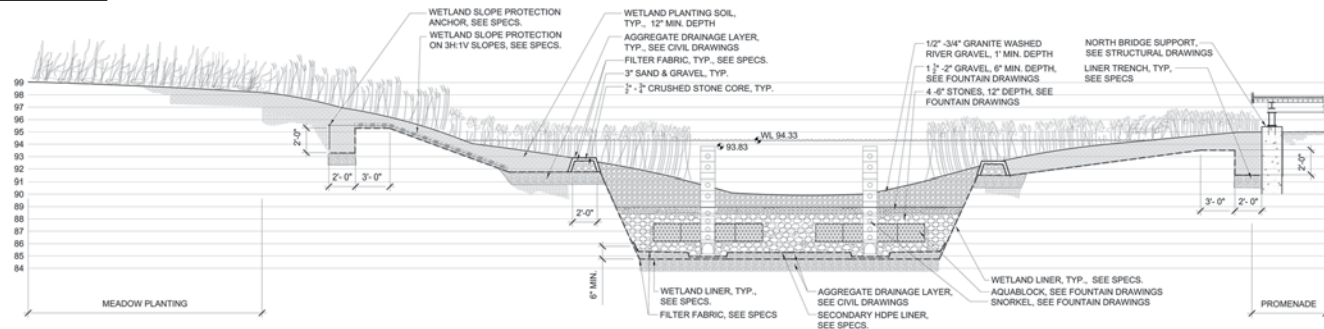
OPPOSITE TOP
Water came first: an early sketch.

OPPOSITE BOTTOM
Cardinal flower, *Lobelia cardinalis*, heads toward the wetland.

SHEILA BRADY, PASTA, TOP; ROBERT BENSON, BOTTOM

COURTESY DEHME VAN SWEDEN

WETLAND SECTION



RIGHT
Water flows down over two stone weirs, then back up through a massive underground cleansing system.

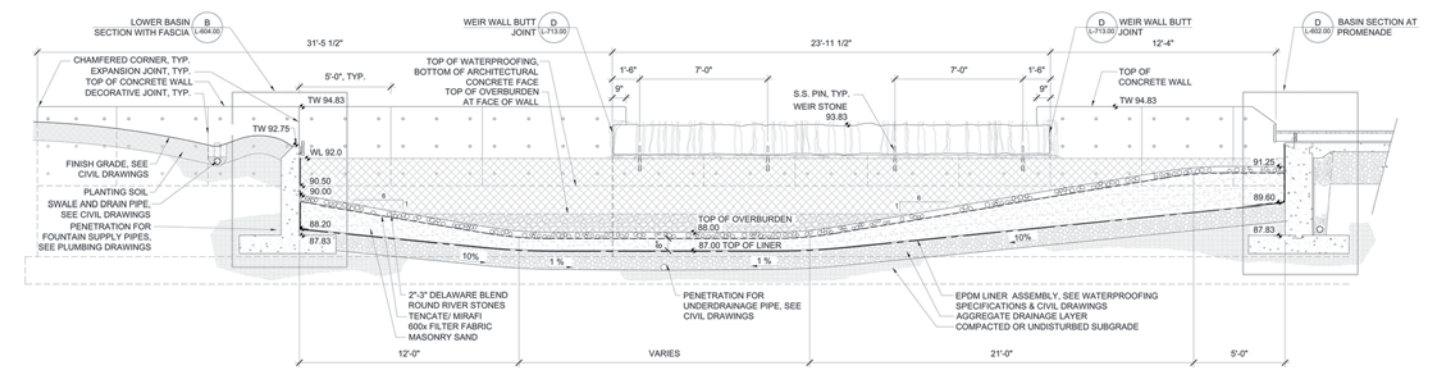
“The site had microclimates—root zones in the woodland and the glade, the sensitive areas around schist outcroppings—and we had to go out and discover them,” Brady says. At OvS, Hilary Oat-Judge, ASLA, designed planting plans for woodlands and wetland, while Marisa N. Scaleria, ASLA, was in charge of planning the ridge and the two meadows, a classic mesic prairie and a wet meadow. Joseph Chambers, ASLA, controlled the vital flow of documents for engineering and construction.

The rigorously selected plantings, now in their second year, already demonstrate how the right choice of natives will grow and thrive, given the correct conditions. But “it’s a garden, not an argument,” Forrest explains. “We collaborated with Sheila and her team to take advantage of the varied nature of the site to make a beautiful cohesive garden that celebrates native plants

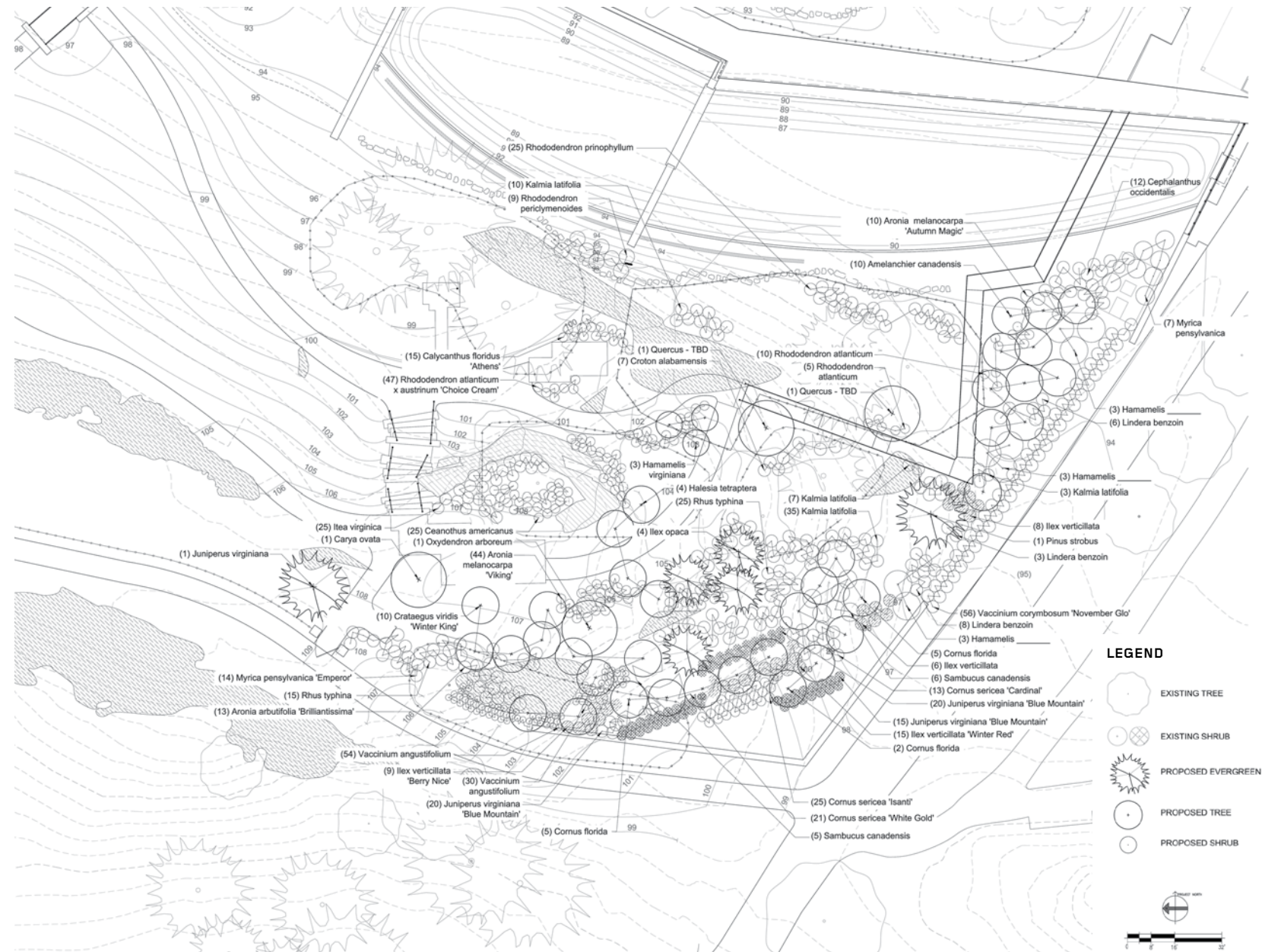
and feels as if it belongs. Instead of attempting to re-create specific ecosystems, we worked with a palette of great plants and existing topography, aspect, [and] soils to create compositions that will thrive over the long term. While many of the plants might grow together somewhere out there in nature, the compositions in our garden are artifice: the progeny of a partnership between our horticultural knowledge and Sheila’s artistry.”

NYBG had interestingly learned what to avoid from a “habitat-based” earlier native plant garden created in the 1930s by the revered T. H. Everett, the director of horticulture at the garden for decades. The goal of the original garden was to show the greatest diversity of plants native to northeastern North America “by constructing a concatenation of small vignettes that referenced much larger ecosystems in the region: a pine barren, a

LOWER BASIN SECTION

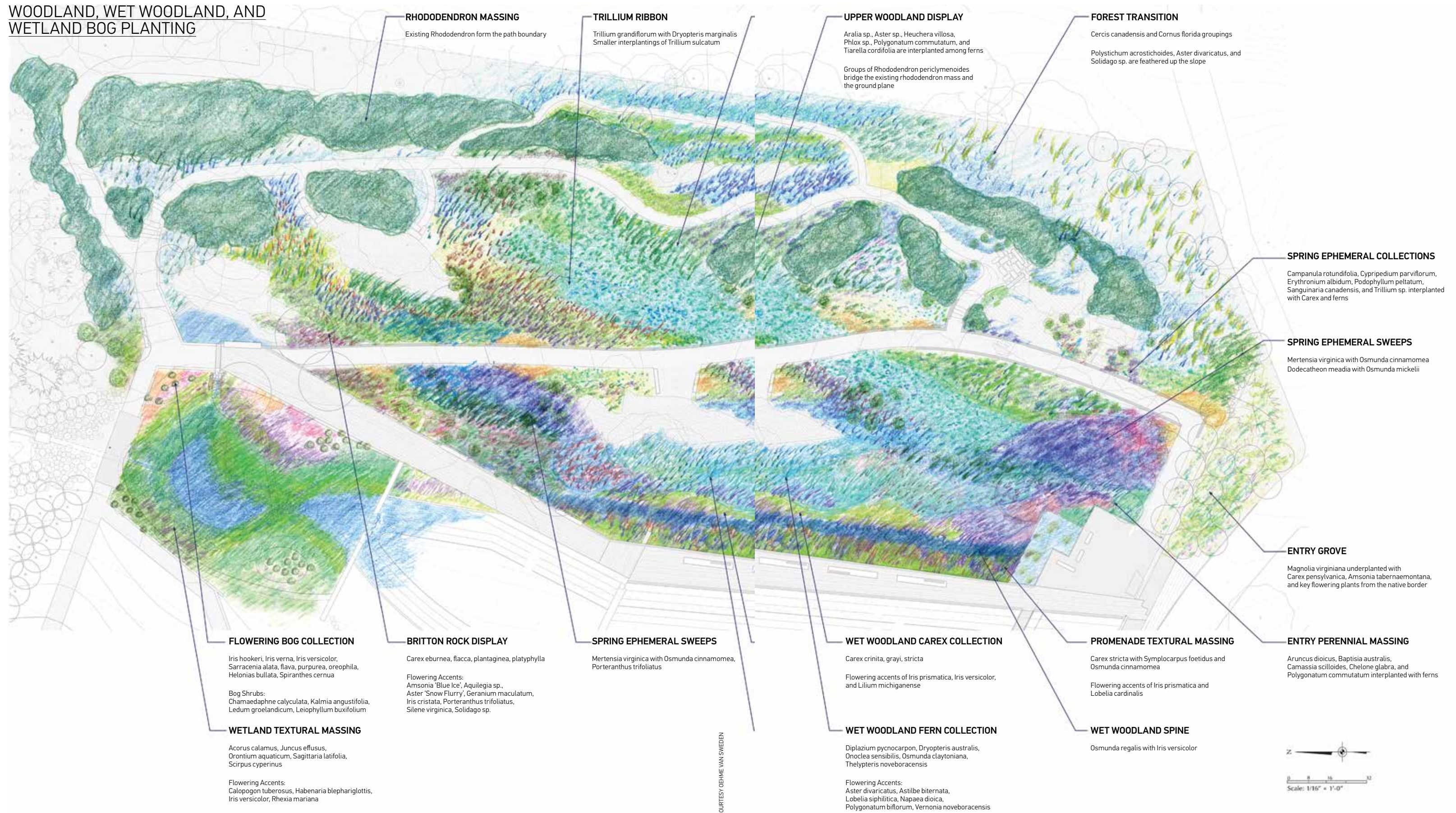


GLADE AND NATIVE BORDER – TREE AND SHRUB PLANTING PLAN



IVO M. VERMEULEN, BOTTOM; COURTESY OEHME VAN SWEDEN, TOP AND OPPOSITE

WOODLAND, WET WOODLAND, AND WETLAND BOG PLANTING



RHODODENDRON MASSING
Existing Rhododendron form the path boundary

TRILLIUM RIBBON
Trillium grandiflorum with Dryopteris marginalis
Smaller interplantings of Trillium sulcatum

UPPER WOODLAND DISPLAY
Aralia sp., Aster sp., Heuchera villosa, Phlox sp., Polygonatum commutatum, and Tiarella cordifolia are interplanted among ferns
Groups of Rhododendron periclymenoides bridge the existing rhododendron mass and the ground plane

FOREST TRANSITION
Cercis canadensis and Cornus florida groupings
Polystichum acrostichoides, Aster divaricatus, and Solidago sp. are feathered up the slope

SPRING EPHEMERAL COLLECTIONS
Campanula rotundifolia, Cypripedium parviflorum, Erythronium albidum, Podophyllum peltatum, Sanguinaria canadensis, and Trillium sp. interplanted with Carex and ferns

SPRING EPHEMERAL SWEEPS
Mertensia virginica with Osmunda cinnamomea
Dodecatheon meadia with Osmunda mickelii

ENTRY GROVE
Magnolia virginiana underplanted with Carex pennsylvanica, Amsonia tabernaemontana, and key flowering plants from the native border

ENTRY PERENNIAL MASSING
Aruncus dioicus, Baptisia australis, Camassia scilloides, Chelone glabra, and Polygonatum commutatum interplanted with ferns

FLOWERING BOG COLLECTION
Iris hookeri, Iris verna, Iris versicolor, Sarracenia alata, flava, purpurea, oreophila, Helonias bullata, Spiranthes cernua
Bog Shrubs: Chamaedaphne calyculata, Kalmia angustifolia, Ledum groelandicum, Leiophyllum buxifolium

BRITTON ROCK DISPLAY
Carex eburnea, flacca, plantaginea, platyphylla
Flowering Accents: Amsonia 'Blue Ice', Aquilegia sp., Aster 'Snow Flurry', Geranium maculatum, Iris cristata, Porteranthus trifoliatus, Silene virginica, Solidago sp.

SPRING EPHEMERAL SWEEPS
Mertensia virginica with Osmunda cinnamomea, Porteranthus trifoliatus

WET WOODLAND CAREX COLLECTION
Carex crinita, grayi, stricta
Flowering accents of Iris prismatica, Iris versicolor, and Liliium michiganense

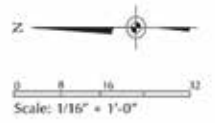
PROMENADE TEXTURAL MASSING
Carex stricta with Symlocarpus foetidus and Osmunda cinnamomea
Flowering accents of Iris prismatica and Lobelia cardinalis

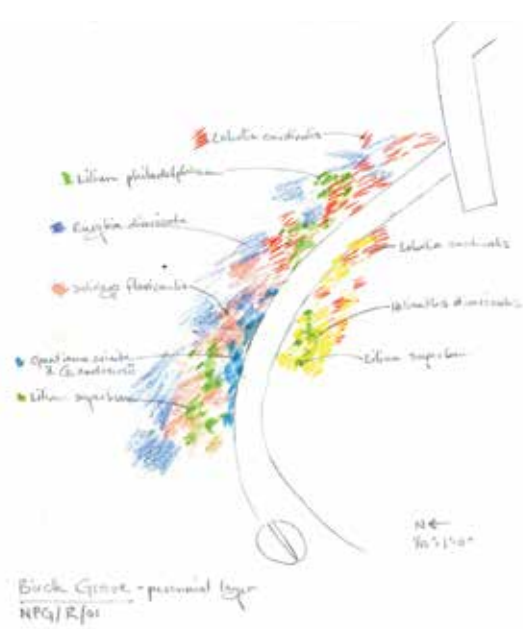
WET WOODLAND FERN COLLECTION
Diplazium pycnocarpon, Dryopteris australis, Onoclea sensibilis, Osmunda claytoniana, Thelypteris noveboracensis
Flowering Accents: Aster divaricatus, Astilbe biternata, Lobelia siphilitica, Napaea dioica, Polygonatum biflorum, Vernonia noveboracensis

WET WOODLAND SPINE
Osmunda regalis with Iris versicolor

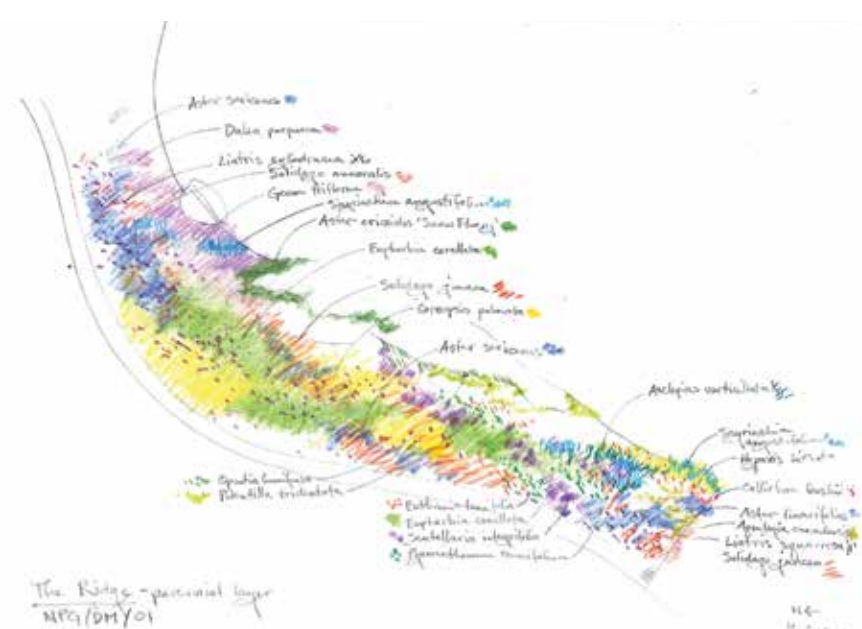
WETLAND TEXTURAL MASSING
Acorus calamus, Juncus effusus, Orontium aquaticum, Sagittaria latifolia, Scirpus cyperinus
Flowering Accents: Calopogon tuberosus, Habenaria blephariglottis, Iris versicolor, Rhexia mariana

COURTESY OEHME VAN SWEDEN

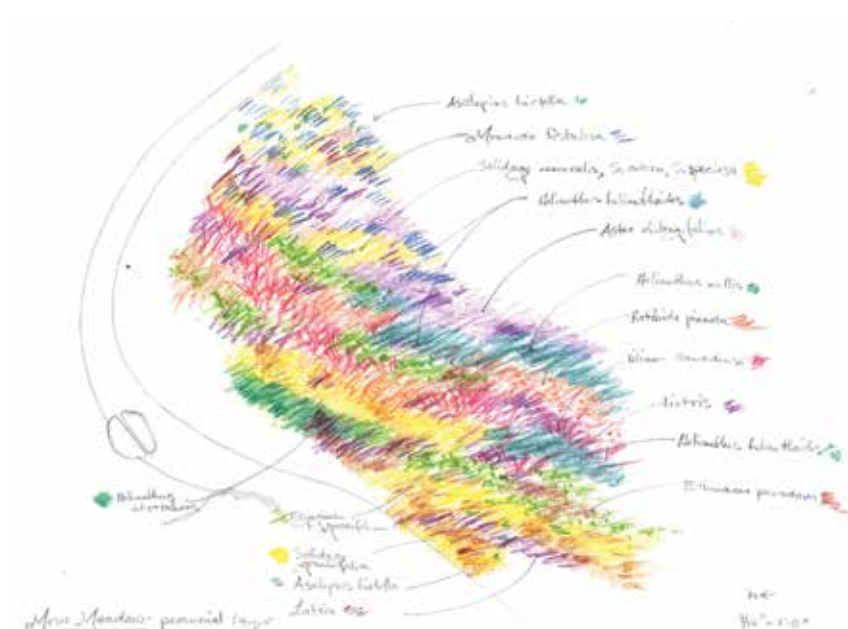




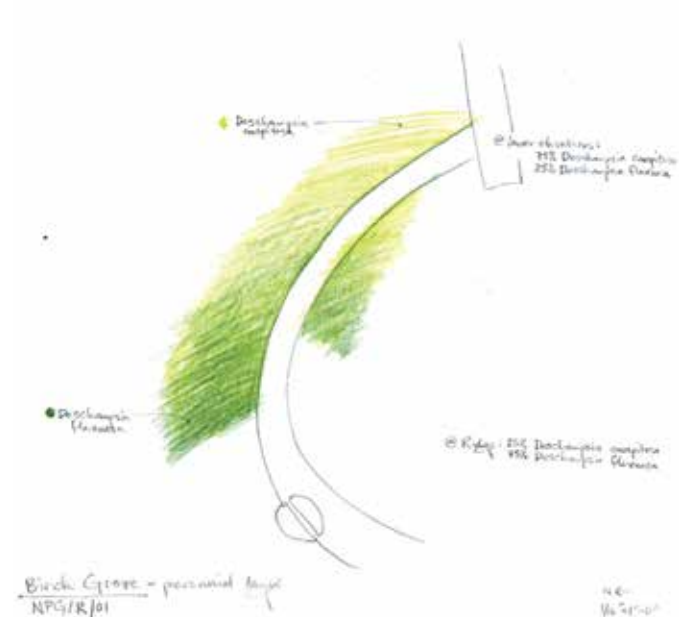
Birch Grove - perennial layer
NPG/R/01



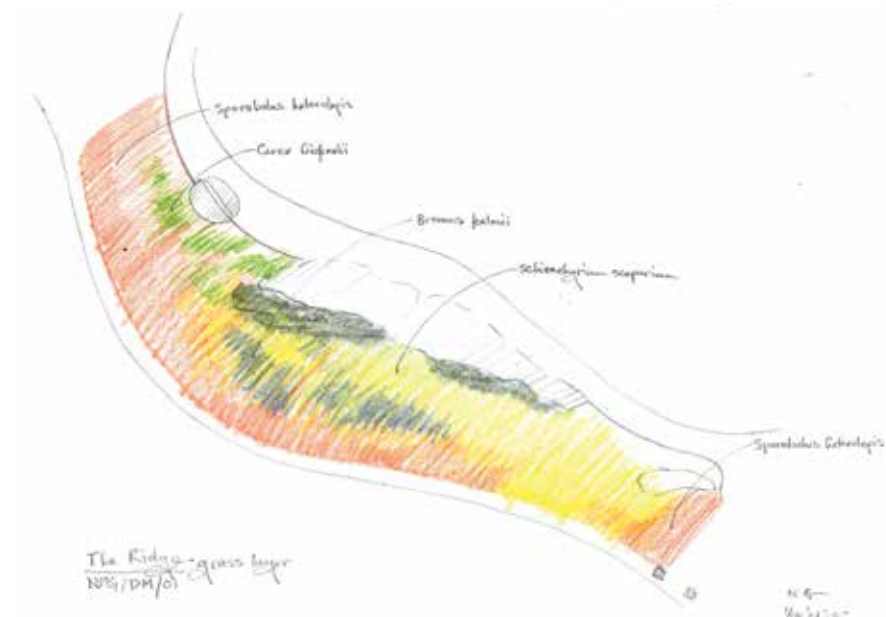
The Ridge - perennial layer
NPG/DH/01



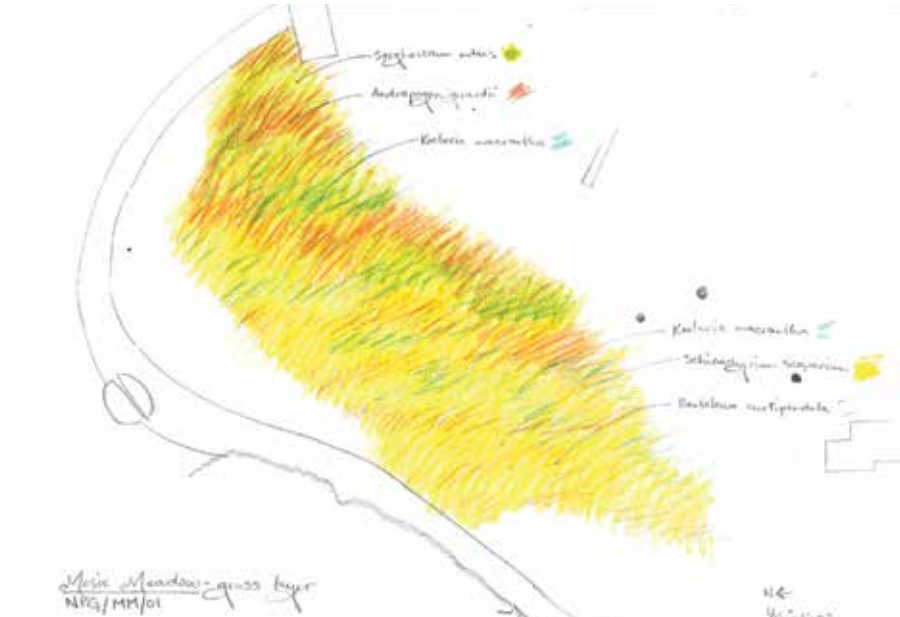
Moss Meadow - perennial layer
NPG/MS/01



Birch Grove - grass layer
NPG/R/01



The Ridge - grass layer
NPG/DH/01



Moss Meadow - grass layer
NPG/MS/01



↳ serpentine barren, a calcareous knoll, an acid bog, a meadow, a woodland,” Forrest recalls. While at first this mosaic approach allowed NYBG to grow some very unusual plants, they often languished because the vignettes could never re-create all the various biotic and abiotic factors that define the complex ecosystems they were meant to represent. The sturdier survivors became invaders; the more delicate plants gave up the struggle.

The episodic nature of the old garden also significantly undermined its beauty. Transitions are now seamless from woodland to wetland, from sunny meadow to shadier glade. High up in the dry woodland, a narrow path threads through an old rhododendron thicket. Each step counts. Brady drew on her knowledge of labanotation, a system devised for recording human movement on paper, to make it like a dance. A connected

lower path gives a view down into the planting transition to the wet woodland, colony by colony, patch by patch. In spring before the trees leaf out, the tides of ephemerals that overlay one another as the season progresses can be described with a rare accurate use of the word “tapestry.”

Brady explains that the garden’s long gestation period led to “a period of simplification over the years.” She continues: “Paths moved, became angular, then flexed, curved, then some returned to angular shapes.” Shelby White, a trustee both of NYBG and of the Leon Levy Foundation, which made the new garden possible, “wanted to ease out into a curve at the approach to Split Rock,” a gigantic glacial erratic that crowns the ridge and speaks to the power of millennial ice and thaw. Now the curve over the meadow and past Split Rock recalls the

old outer curve of the garden’s western shoulder. The curve enhances the presence of the rock itself. Originally the design did not include the top of the ridge. The design team took it.

About the path structure Brady also notes, “Throughout the entire garden the importance of not cutting the soil bed took precedence, but ADA accessibility made it necessary on the south side of the meadow where that path winds down to the entrance.” She was quite conscious of pivot points that would map the area and set the cadence for a visitor. There are two hiding places: the rhododendron thicket and the dark privacy of the Japanese torrey glade (*Torreya nucifera*, the only exotic allowed to remain in the garden), which shelters the education pavilion and creates two specific viewsheds instead of another panoramic view. There are pauses: the lower weir where the

sound of water is arresting; the top of the wetland for a long look down the entire water feature to the entrance pavilion; and the turn at Split Rock, a vantage point to look across at the woodlands from the meadows, and the promenade.

Nature has its geometries—think snowflakes or neural connections—and Brady’s design enhances and recalls those moments of geometry. Native plant gardening has come of age. The contemporary design is both a template and a metaphor for a larger and more optimistic approach to native plants, their regions, their systems. “Extirpation is regional extinction for plants and the creatures that depend on them,” says Doug Tallamy, an ecologist at the University of Delaware, talking about the essential role native plants play in sustaining native birds and insects. He stresses the hundreds of insects every single

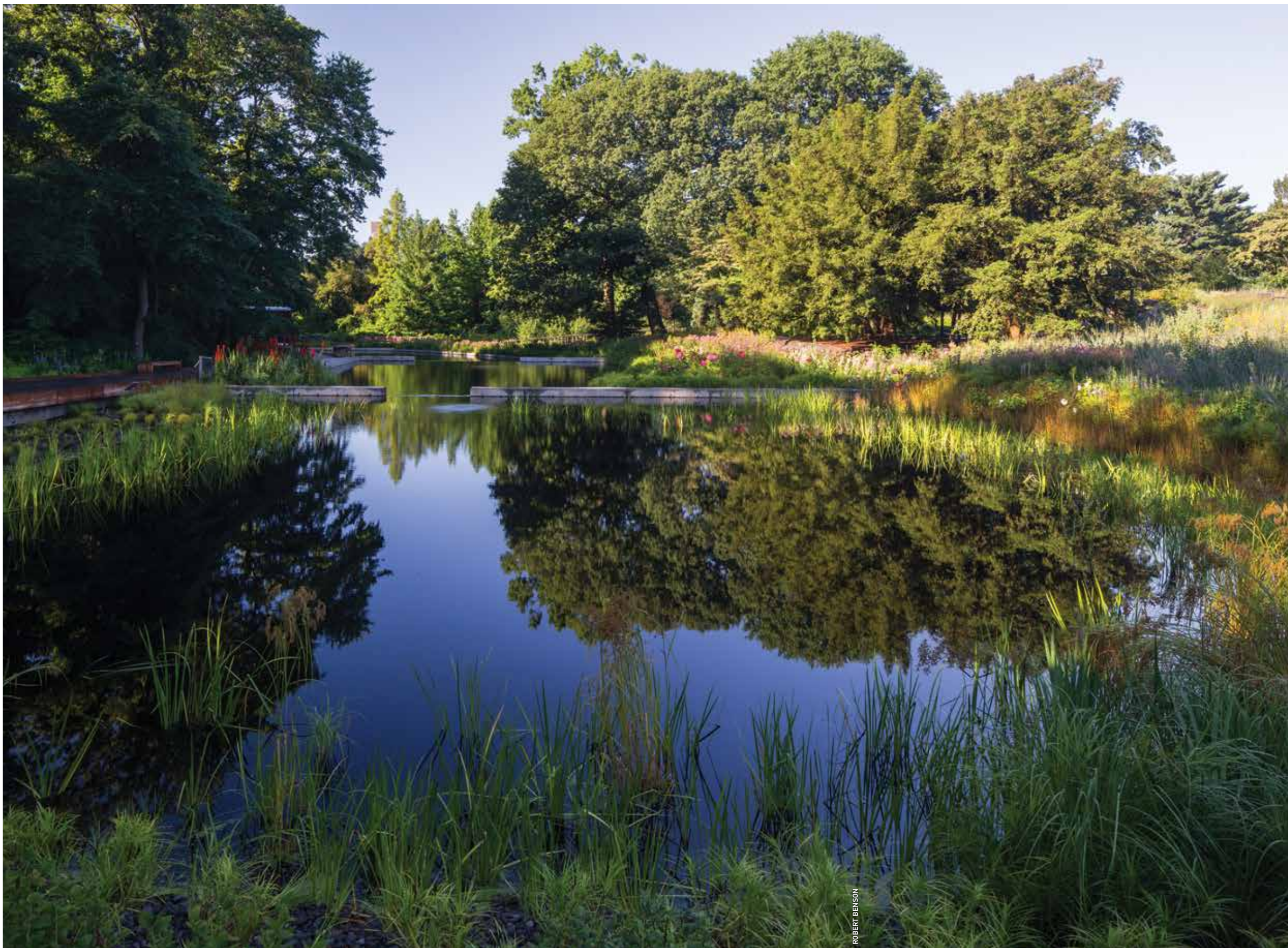
TOP
A shorter joe-pye weed backgrounds *Hibiscus* ‘Jazzberry Jam.’

CENTER
Foamflower, dwarf larkspur, and mayapple carpet the woodland in May.

BOTTOM
Purple prairie blazing star and yellow coneflower mingle with pale wild bergamot.

COURTESY DEHME VAN SWEDEN

COURTESY DEHME VAN SWEDEN, LEFT; ROBERT BENSON, TOP RIGHT; LARRY LEDERMAN, CENTER RIGHT; IVO M. VERMEULEN, BOTTOM RIGHT



ROBERT BENSON

LEFT

The tranquil water and the banks of foliage and blossoms sustain an interlocking network of life.

bird needs to survive: It takes 6,240 to 9,120 caterpillars to hatch a clutch of chickadees. Here in living color and abundance is the holding line against extirpation. “Specialized relationships are nature—specialization is the rule and it always starts with plants,” Tallamy adds. The ruby-throated hummingbird migrates north at exactly the time that the red and yellow native columbine, *Aquilegia canadensis*, begins to flower in the Northeast. “This garden celebrates bringing back the community of birds and plants to our neighborhoods in corridors that thread together the fabric of plant and animal life that is part of our cultural heritage,” says Payne. On the first day the garden was open in May 2013, the earliest visitors were a blue heron and a woman in a wheelchair. As the great English novelist E. M. Forster so memorably wrote in *Howards End*, “Only connect... Live in fragments no longer.” ●

CULTURAL LANDSCAPE HISTORIAN MAC GRISWOLD'S MOST RECENT BOOK, *THE MANOR: THREE CENTURIES AT A SLAVE PLANTATION ON LONG ISLAND*, NOW OUT IN PAPERBACK (PICADOR 2014), IS A BIOGRAPHY OF A PIECE OF LAND AND ITS INHABITANTS.

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