site LINES

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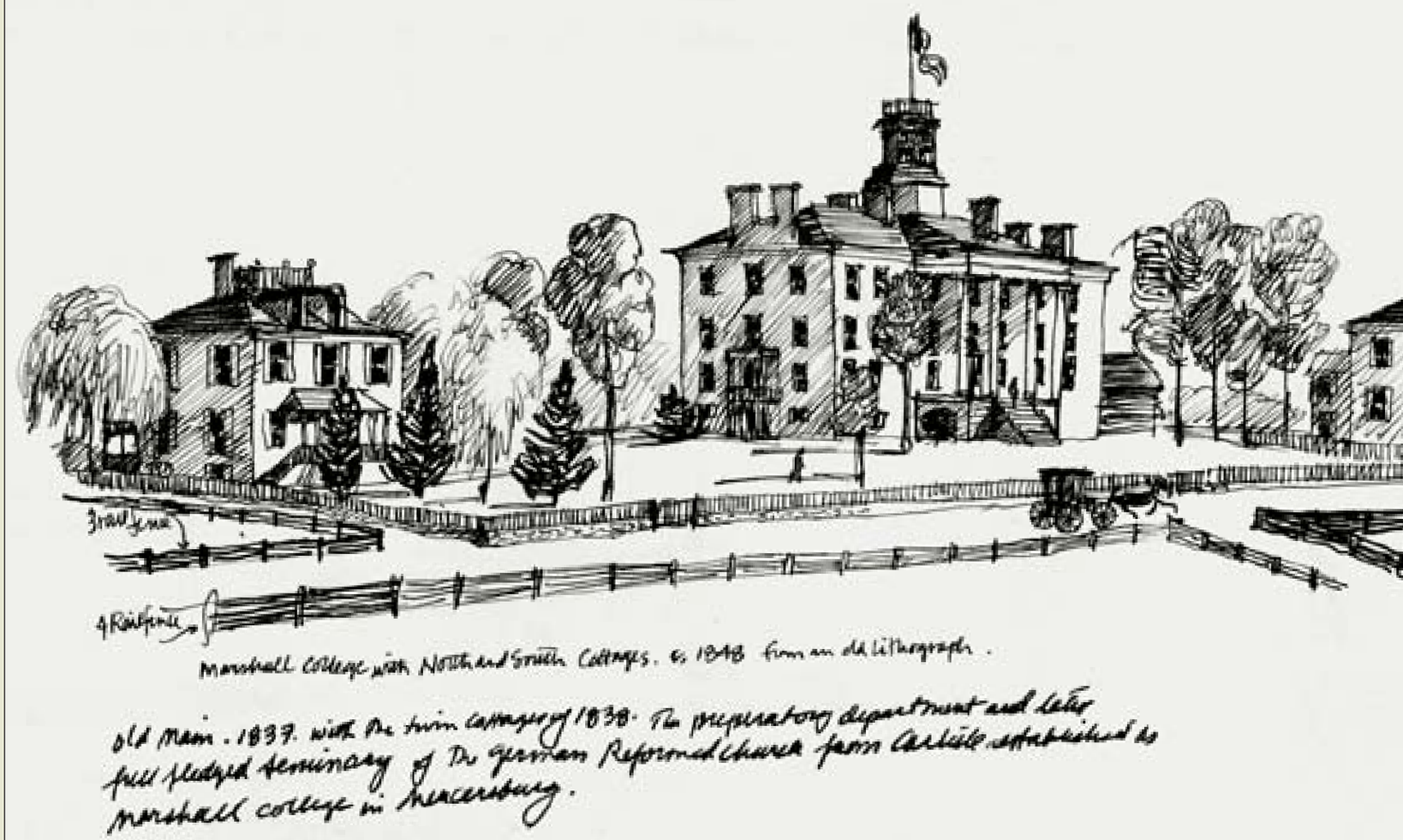


Letter from the Editor

Landscapes such as campuses, botanical gardens, museums, and zoos differ from parks and gardens in their design intentions. They are an integral part of the institutions for which they are named, with growth usually driven by mission rather than design, and so they often lose their original planning coherence as grounds expand and new wings and structures are added. Because the passing years bring new needs, tastes, building technologies, and goals, for better or worse, institutional landscapes inevitably become more crowded and less unified over time. Added to these inherent trends is the reality that landscape design is frequently architecture's stepchild; even when designers produce institutional buildings of distinction, site planning is often secondary and stylistic harmony with existing structures not considered. At best, where the original works of architecture have sufficient gravitas and grandeur, the surrounding landscape typically disappears from public consciousness and is simply perceived as setting.

Nevertheless, many institutions are the crown jewels of their cities, and although budgetary constraints exist, they are rarely dire enough to prevent at least some basic "landscaping," as the greening of building perimeters is usually called. When, however, directors and trustees engage in the kind of master planning that makes landscape aesthetics an integral part of growth and change, institutional landscapes can maintain their integrity.

In this issue, landscape architect Laurie Olin provides a comprehensive history of campus design with reflections on both form and meaning. Warren Byrd, a landscape architect and college professor, demonstrates how the Washington Zoo exemplifies the conundrums of zoo design in an ecologically sensitive age – an era in which animals are displayed in simulations of their native habitats. Katherine Harmon discusses the transformations of the Missouri Botanical Garden from the time of its founder Henry Shaw to the present. My essay is about the American Museum of Natural History's extraordinary collection of dioramas – theatrical displays that transport visitors to wild landscapes that most would never otherwise see.

In addition to these essays on the theme of institutional landscapes, you will find Frederic Rich's review of *Sanctified Landscape: Writers, Artists, and the Hudson River Valley, 1820-1909* by David Schuyler and Cynthia Zaitzevsky's review of *Graceland Cemetery: A Design History* by Christopher Vernon.

I am happy to report that there were several excellent applications in 2012 for David R. Coffin grants as well as numerous submissions of eligible books for the John Brinckerhoff Jackson Book Prize. We are pleased to announce in this issue of Site/Lines the names of the grantees and prizewinners who were selected by the awards committee.

Please remember that *Site/Lines* is entirely donor-supported, and if you wish to continue reading essays on diverse landscape themes, we urge you to send us your contribution in the enclosed envelope.

With good green wishes,

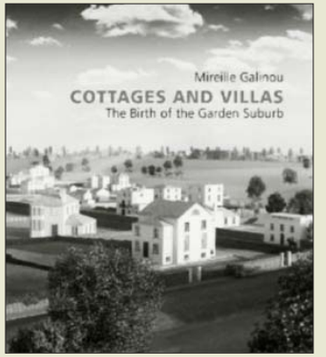
Elizabeth Barlow Rogers
President,
Foundation for Landscape Studies

On the Cover:
Marshall College,
Mercersburg, Pennsylvania.
Drawing by Laurie Olin.

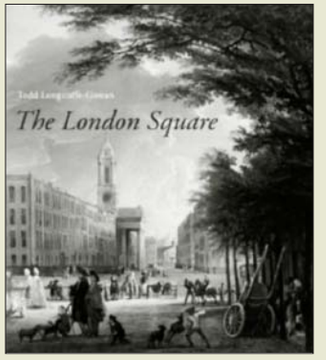
2013 Grant and Book Awards

2013 John Brinckerhoff Jackson Book Prize Winners

Mireille Galinou
Cottages and Villas: The Birth of the Garden Suburb
Yale University Press, 2011



Todd Longstaffe-Gowan
The London Square: Gardens in the Midst of Town
Library of American Landscape History



2013 David R. Coffin Publication Grant Winners

Sonia Dümpelmann
Flights of Imagination: Powered Aviation and the Art and Science of Landscape Design and Planning
University of Virginia Press

Georges Farhat
The French Formal Garden: Garden Types for Contemporary Architecture
Birkhäuser

Wybe Kuitert
Gardens and Landscapes in Japan, 1650-1950
University of Pennsylvania Press

Mark Laird
The Natural History of the Eighteenth Century Garden
Yale University Press

Micheline Nilsen
The Working Man's Green Space: Allotments and Community Gardens in Britain, France, and Germany 1870-1919
University of Virginia Press

William E. O'Brien
Landscape of Exclusion: State Parks and Jim Crow in the American South
Library of American Landscape History

Exceptional Grounds: The Landscapes of Institutions

The Campus: An American Landscape

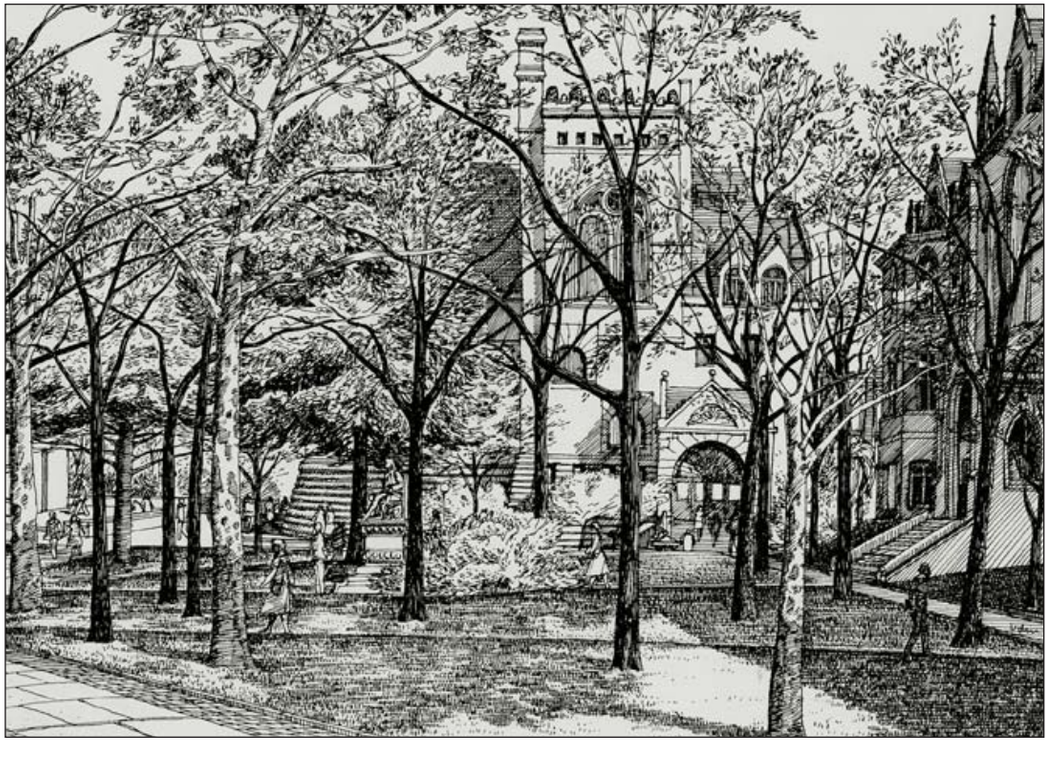
American universities have been, and probably still are, one of the glories of our culture. Eight of the ten most highly regarded universities in the world are located in the United States. Many thousands of students from all over the world come here annually to study at the undergraduate or graduate level. Colleges and universities are major contributors to our economy, both directly – through institutional purchases; the buying power of students, faculty, and staff; the creation of local jobs; the building and expansion of facilities – and indirectly, through the generation of ideas and the training of students who will be influential in their chosen fields. All this creates jobs, innovation, commodities, and commerce.

Far less attention has been paid to another aspect of the American university: its physical structure; the way its campus is set into the landscape and interacts with and changes the surrounding community. Today such interrelationships are in the purview of the landscape architect, but they existed well before landscape architecture was a profession; in fact, since the first American schools were founded. Because the American university campus is a homegrown product, its physical form has grown from its own needs and setting. It is part of the larger community as well as a community unto itself, and it has evolved along with its changing landscape and environs.

The earliest and best-known institutions of higher education in the English colonies were divinity schools. Although not exactly monasteries, they were usually founded in rural villages like Cambridge, Massachusetts, or on the edge of towns like New Haven, Connecticut, set among farms, dozy lanes, and scraps of relict forest. Almost all these schools, like many that would come later, began as a single building surrounded by some trees, a bit of grass, and unpaved lanes. As they grew, the number of their buildings increased, and campuses pushed against or encroached upon the communities that had developed at their edges. The oldest institutions began to replace the mud with lawn and shade trees – particularly American elms, but also other native hardwoods such as ash, oak, and hickory. Like the houses and outbuildings on Yankee farms, the campus buildings were generally arranged closely enough for convenient communication, although sufficiently separated for fire protection and differentiation of purpose. They were small enough to finance and build without too much difficulty.

Early schools such as Harvard (1636), William and Mary (1695), Yale (1717), and Princeton (1755) possessed what might be described as a loose-fit formality. They tended to comprise reasonably attractive buildings, well designed but not grand, arranged orthogonally to each other or the adjacent community and facing a principal street or road. While at least one campus (William and Mary) was originally intended to be built around a contained courtyard in emulation of the Oxford quadrangles of the founders' alma mater, none of the American schools were enclosed. Unlike Oxford or Cambridge – the institutions where a number of early American ecclesiastics, tutors, intellectuals, and politicians had been educated – with their late medieval, Jacobean, and Georgian courts, cloisters, arcades, towers, and quadrangles formed by conjoined structures, these New World institutions were simply a set of Georgian buildings placed in the open. Subsequently they were augmented in a gradual, neighborly fashion with additional, freestanding structures. Despite not being attached or connected, the buildings eventually formed an architectural community, set off by relatively level or gently sloping areas of turf and trees that soon grew higher than the buildings themselves. The mess and distraction of horses and carts, goods and services, washhouses and outhouses were banished from one or more quiet, roughly rectangular, loosely bounded spaces that were called "quads."

Near the end of our colonial era, an alternative convention for the American university began in Pennsylvania with the College of Philadelphia (1754). This was the urban academic institution, which would later cross-pollinate with the earlier rural type. Unlike its New England predecessors, the College of Philadelphia wasn't a divinity school. Founded by Benjamin Franklin in polyglot post-Quaker Philadelphia, it was intended to foster science, the practical arts, and humanities such as history, law, and the classics. The young school soon turned into the University of Pennsylvania, America's first true university. Like its religiously oriented, country-bred predecessors, it too consisted of well-mannered, three-story Georgian architecture. After all, these were Englishmen of the Enlightenment – Franklin and others were members of the Royal Society – albeit on the edge of the wilderness. Here medical and science buildings, like neighboring town houses and shops, sat on streets with trees, sidewalks, and traffic, in what was the second-largest English-speaking



Blanche Levy Park: proposed redesign of College Hall Green from the 1976 Landscape Architecture Master Plan for the University of Pennsylvania.

city in the world. While this model for university development – that of buildings scattered amid ordinary city blocks – was a less popular prototype, it too would find its admirers.

Although the early schools in New England were for the most part built by people who referred to architectural prints, drawings, and precedents, none of these institutions was conceived as a composition with an overall design. However, two campuses that *were* major architectural compositions appeared nearly simultaneously at the beginning of the nineteenth century: Union College (1814) in Schenectady, New York, designed by the talented French landscapist and architect Joseph-Jacques Ramée, and the University of Virginia (1817) in Charlottesville, designed by Thomas Jefferson. Both men were cognizant of the Palladian movement in England. They had studied the ensemble schemes of Palladio, Vincenzo Scamozzi, Colen Campbell, Christopher Wren, and John Vanbrugh. Some scholars have speculated that Thomas Jefferson cribbed the now-iconic plan for his "Academical village" from Ramée's model, and then with Benjamin Latrobe drove him out of the country. Whatever the truth of the matter, there is no question that these schemes would inspire dozens of subsequent campuses.

On both campuses, buildings were linked together by arcades, forming a coherent group framing a rectangular green that gestured toward the distant landscape in one direction and had a domed, pantheon-like structure as the central feature at the opposite end. This was the position occupied by a temple in classical times and a villa in Palladian practice. Ramée's centerpiece was to be a chapel, whereas the anticlerical Jefferson made his into a library – a temple of knowledge, so to speak.

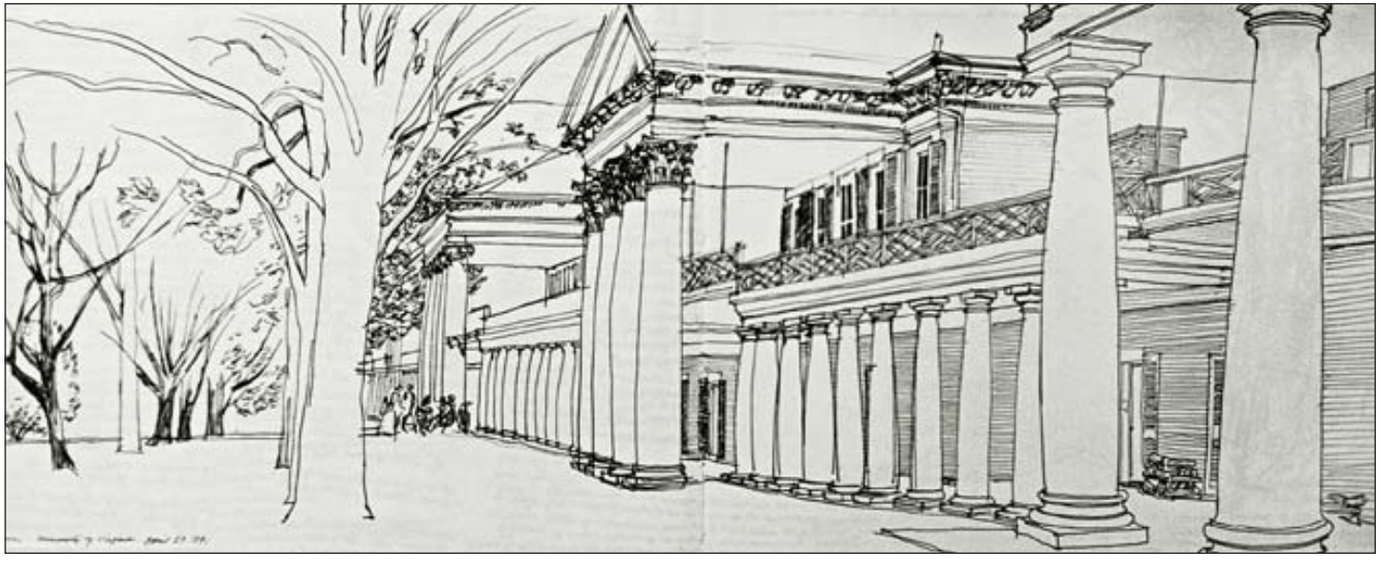
It is the rare landscape architect in America today who could not sketch out the basic plan of the University of Virginia. The brilliance of its arrangement and proportion of parts, which recalls Louis Kahn's phrase, "servant and served spaces," reveals buildings linked together by colonnades, walls, drives, paths, and gardens. This shared architectural vocabulary – which creates a community of structures and gives order, access, and visibility to the community of students and tutors – is unforgettable and, in the view of many, impossible to improve upon. Central to its power and success is that the plan is "space-positive": buildings shape the space rather than merely occupying it. Even the largest and most imposing structure sits back at the edge of the great lawn. Indeed the largest element is this terraced lawn with rows of trees that echo the colonnades.

Despite the success of these designs, neither Ramée nor Jefferson's big idea – their *parti*, as architects say – had much effect for several generations. A more ad hoc, adventitious, and incremental attitude toward the planning of campuses and their landscapes suited the politics and economics of many communities, colleges, and leaders throughout the nineteenth century.

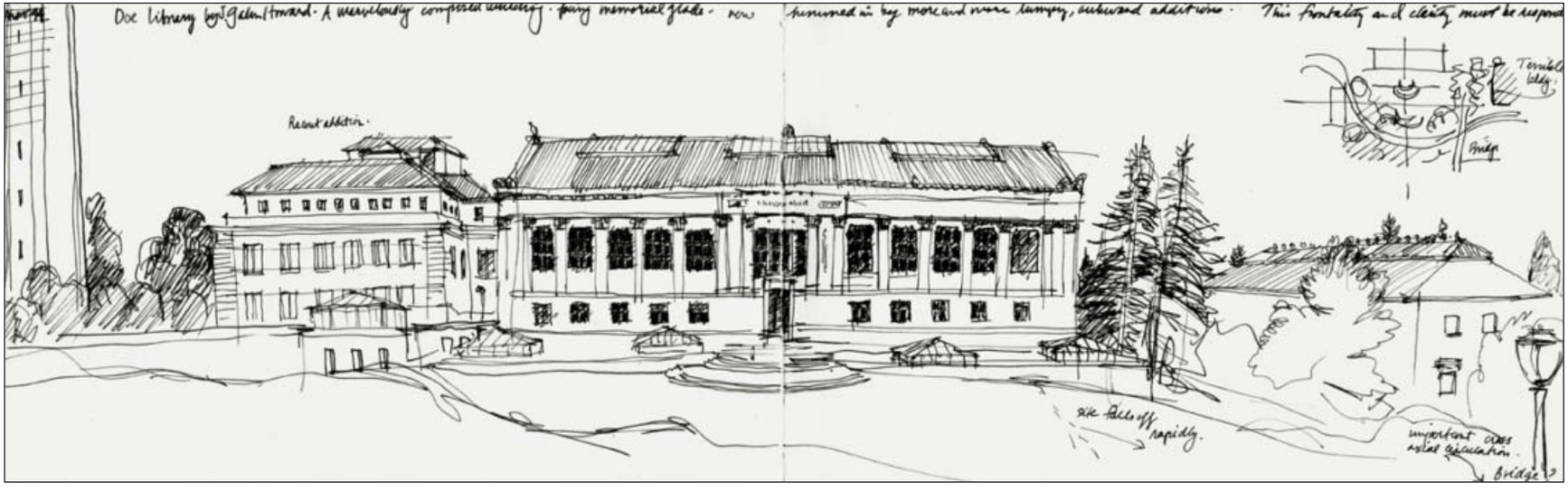
Among the remarkable accomplishments of Abraham Lincoln's two administrations – winning the Civil War, freeing the slaves, buying Alaska from Russia – was the passage in 1862 of the Morrill Act, which created land-grant colleges. This idea of giving land to each of the states "to promote the liberal and practical education of the industrial classes" eventually led to the creation of 108 such public institutions.[1] The recognition that westward expansion would require an educated populace to build the farms, towns, and necessary infrastructure and that teachers would be in demand to educate that populace so it could successfully participate in democracy was farsighted. Across the great prairies and into the most distant Western territories, a sequence of colleges was established. In early photographs, these solid Victorian buildings, often Italianate structures of brick or stone, look lonely sitting in their windswept landscapes. Sometimes acres of grass and a few young plantings can be seen around them. Within a few decades, these state colleges added buildings, most frequently lining them up in a row or placing them in two parallel ranks served by a handful of walks. By then the trees were nearly as tall as the buildings.

These were public institutions, open to citizens and the four winds. There was plenty of room. Their drives, designed for carriages and given the geometry needed to turn teams of horses, had gracious, even lazy, curves. At the heart of many of the great state universities – Kansas, Illinois, Iowa, Ohio State – one can still find these original structures next to and embracing ample lawns, quads, ovals, and commons, open areas dotted with aging trees. Often they are not only the most loved portions of their campuses but also the most generous spaces to be found. It is the rare institution where later landscape spaces are larger or more inviting than those set out in the nineteenth century.

The religious fervor that engendered our earliest colleges continued unabated through the nineteenth century, as did immigration, fostering the proliferation of institutions to educate both ministers and growing communities throughout New England, the South, and the expanding West. A significant number of America's best architects contributed delightful structures and partial plans for small private colleges – Wellesley, Oberlin, Sewanee, Bryn Mawr, Swarthmore, Trinity, Amherst, Denison, Miami, Case Institute of Technology (now Case Western Reserve University), and dozens more – as well as for larger public schools. Often, however, the planning, layout, and planting was carried out by the president and a local gardener or engineer, without an architect or landscape designer.



University of Virginia: the lawn, trees, pavilions, and colonnades.



John Galen Howard's Beaux Arts Library at the University of California, Berkeley.

The emergence after the Civil War of Frederick Law Olmsted and Calvert Vaux's landscape-architectural firm – Olmsted, Vaux and Company – which continued under the name of Olmsted Brothers for nearly a century, had an extraordinary and beneficial effect upon the landscape planning and design of the American campus. Working at public and private institutions across the country, its partners and staff provided a clear vision and superb technical support to a remarkable number of institutions of all sizes and in nearly every region. The sheer number of institutions they shaped physically – beginning in many cases soon after a campus was founded – reveals that between the beginnings of Frederick Law Olmsted's practice and the end of his sons', their firm virtually codified the American campus. Between 1865 and 1900 they produced plans and designs for over thirty-six college campuses. These included Amherst (1867), Trinity (1872), and, during the 1890s, Princeton, Smith, Harvard, Northwestern, Dartmouth, Cornell, Columbia, Bryn Mawr, Mount Holyoke, and Vassar. Between 1900 and 1960 the firm was even more prolific, creating schemes for more than 180 campuses. Just between 1900 and 1915 they were employed by institutions that included Brown, the University of Chicago, Wheaton, Wellesley, Williams, the University of Washington, Johns Hopkins, Ohio State University, the University of Colorado, the University of Pennsylvania, New York University, Swarthmore, and Oberlin. They worked at both Annapolis and West Point and at dozens of the land-grant colleges, among them Wisconsin, Michigan, Illinois, Iowa, Kansas, Colorado, Oregon, Oregon State – the list of institutions rolls on. There is an enormous range in the work, from schemes that have become iconic, even paradigmatic, such as those for Stanford and Duke, to projects that were modest and at times formulaic. At their best, they demonstrate as clearly as any plans of the firm's best-known member, Frederick Law Olmsted, a concern and genius for engendering a social vision within the exigencies and particularity of a given place.

Despite the simple underlying diagram and kit of parts that Olmsted Brothers frequently employed, a surprising and lively variety and sense of place usually resulted. Some campuses, like Wellesley and Radcliffe, are charming and intimate in form and detail. Other Olmsted work is plain, calm, and straightforward – almost simple-minded, even – at Harvard, for example, and Colorado College. A handful of the campuses are rather loose-limbed, carved out of the woods and fashioned from other, earlier ventures. The University of Washington in Seattle, which began with an oval carriage drive and a few buildings, became the Alaska Yukon Exhibition. This resulted in a fragmentary Beaux-Arts layout with a monumental axis focused on Mt. Rainier – the sort of show-stopping landscape feature that bestows grandeur on any composition that includes it.

Other schools where they worked possess spaces that are grand but verge upon being overblown and vacuous, as at Ohio State, Notre Dame, and Illinois. In part this may be an artifact of their prairie settings, but it is also a function of the dimensions of the quadrangles. The buildings, too far apart to provide comfort or intimacy, appear small. They seem to pull away from each other, rather than forming a warm ensemble as they do at Duke and Washington University, where the trees, in a manner similar to those at the University of Virginia, produce a marvelous cross-sectional ratio of apparent height to width, creating spaces that are human in scale.[2]

Nowhere does one find a better example of how responsive Olmsted could be to the *genius loci*, the spirit of the place, than in the two contrasting schemes he himself developed on opposite sides of San Francisco Bay. These were his plans for the University of California at Berkeley and Stanford University in Palo Alto, prepared in 1865 and 1888, respectively. The former was located on a partially wooded site against the hills of the East Bay; the latter, in the South Bay area, in the warm rain shadow of the foothills of the coastal range.

[1] See *Wall Street Journal*, Dec 15-16, 2012: C1, for discussion of the financial dilemmas of public universities in the current economic and political context.

[2] In each of these cases, when the author first saw them they were still magnificent. Today, however, the original plantations have reached the end of their normal life and replacements are seriously needed, and need to be done carefully and with understanding of the value of long-lived, tall-canopy trees, which does not appear to be evident, nor well understood by some involved at these institutions.

The Collegiate-Gothic towers and a Beaux Arts dome of Yale University.

At Berkeley, Olmsted incorporated a relict redwood grove along Strawberry Creek, developing a set of spaces bounded loosely by freestanding buildings with trees and verdant glades. The result amounted to a Yankee settlement in the woods, not dissimilar to the camps and lodges in the foothills of the Sierras where Olmsted had been involved in planning a mining company after the Civil War. A visit to Wawona Hotel near Yosemite or an examination of historic photos of New England villages, with their irregular commons and shade trees, give some flavor of what his plan for Berkeley would have been. Unfortunately it was abandoned for a Beaux-Arts design by John Galen Howard, with a central mall and library that never quite fit the site topographically, leaving the campus an awkward jumble to the present day. Once you put something as large and important as a main library in the wrong place, it's hard to make things work forever after. Unlike Christopher Robin, who was charming when halfway up and halfway down the stair, the disastrous building arrangement at Berkeley has produced one of the most disorderly and unfortunate campus landscapes in America.

At Stanford Olmsted persuaded both client and architect that a New England, greensward-based campus was unrealistic, given the climate, soil, limited water, and cultural history. Pointing to the Mediterranean quality of Leland Stanford's ranch and the legacy of Spain and Mexico in the region, he produced what amounted to a xeric landscape. Linked buildings, colonnades, and courtyards were arranged orthogonally in a hierarchy from one grand, open court (rather like a *maidan* or a Mexican *zocalo*) to a series of smaller, more intimate, and lushly planted ones, with a community of bungalows, an arboretum, a ranch, and hills beyond. This plan resulted in one of the greatest campus landscapes of all time – a peer to Jefferson's early nineteenth-century composition for the University of Virginia.

But at Stanford as at Berkeley, in part due to hubris and lack of comprehension, Olmsted's successors abandoned his master plan. They too were beguiled by the fashion for Beaux-Arts planning and neoclassical architecture that had been ushered into America at the end of the Victorian era, in part by the 1893 Columbian Exposition in Chicago. During the Gilded Age and the decade prior to World War I, an insular class rose that embraced the Grand Tour of Europe, imported masses of art, and indulged in a remarkable building spree. One result was a turning inward – and not just into suffocating, dark, and overladen domestic interiors that made Frank Lloyd Wright and European modernists want to dynamite architecture to let the light and space back in. Institutions were closed off or cocooned as well.

The most dramatic and blatant example of this was Stanford White's unforgivable design and construction of a building that closed off the great open lawn at the University of Virginia, turning it into a conventional, if elegant, internal courtyard. If ever one needs an example to demonstrate that architecture can convey meaning, this is it. A clear message in Jefferson's open-ended scheme was embodied by the view from the library: in a place of learning and privilege, one was always made aware of the world beyond, its potential and challenges. McKim, Meade, and White's gesture in closing it off suggested not only smug confidence and complacency but also, perhaps, disdain and anxiety. It was as if the university was turning its back on the wider world, with its lower classes, immigrants, and recently liberated blacks.

The contemporaneous outburst of Gothic Revival architecture on American campuses, with its departure from the village-green typology and a return to the medieval European prototype of an enclosed monastic court with connected structures, also seems to have grown in part out of a desire for the security and distinction of the past. Oxford and Cambridge were the most obvious models, but so too were Salamanca, Padua, and Heidelberg, which were often visited on tours of Europe. Despite a longstanding desire for a classless society on the part of many Americans, from the country's beginning there have been differences in wealth, education, and power among its inhabitants. Buildings in the Gothic Revival and other European revival styles popular in the late nineteenth and early twentieth century were often commissioned by educated leaders and paid for by rich patrons eager to build impressive facilities.

But if the trend was conservative, the results were often exciting. There were spectacular stone towers and picturesque compositions, such as the chapels and theological school at Duke by Julian Abel, who worked in Horace Trumbauer's office, or Harkness Tower at Yale by James Gambell Rogers. There were more modest Collegiate-Gothic, brick-and-limestone quadrangles by Cope and Stewardson at Washington University, Penn, and Princeton as well as in Bebb and Gould's plan for the University of Washington. Under the planning and design influence of Olmsted Brothers, a number of these sites were ample and lined with canopy trees (Duke, Washington University).

Also to be included among the revival styles are the host of derivative campus plans based on Thomas Jefferson's design for his "Academical Village" in Charlottesville. Some were inspired by the publication of T*he American Vitruvius* by Werner Hegemann and Elbert Peets in 1922, but others appeared even earlier, before the end of nineteenth century. All look to the University of Virginia and emulate its design of a central mall terminating at one end with a library or other major building. The design of the buildings themselves varied. While some were of brick with limestone trim in a Georgian Revival style, such as those composing the Old or Freshman Campus of Duke University, designed by Horace Trumbauer and Frederick Law Olmsted Jr., a number were built in the classically inspired Beaux-Arts style, including buildings planned by Henry Hornbostel for Carnegie Mellon and Emory, or the initial portions of MIT and Cal Tech, with their central quads and domes. The number of architects who came under the spell of the Charlottesville scheme is remarkable.

As the landscape architecture profession in America emerged at the beginning of the twentieth century, and with it the creation of prominent schools and departments offering academic training, designers besides those affiliated with the Olmsted firm began to collaborate with architects on campuses around the country. One of the most exemplary was Beatrix Farrand, whose work at Yale, Princeton, Cal Tech, and the University of Chicago markedly affected their character and our sense of their visual charm and authority. Farrand not only established palettes for the plantings and architectural elements of innumerable courts, quads, and gardens, but also proposed, and in a few cases developed, sources, staff, and nurseries to supply, maintain, and restore the required vegetation.

A relict grove at the University of Washington, since incorporated into a garden dedicated to the composer Edward Grieg.

Warren Manning, who had been a key designer and employee at the Olmsted office, went on afterwards to have a distinguished national career that included developing landscape plans for the University of Minnesota and Lake Forest College, where he visited annually to consult for several decades. Another early and important professional in the field of landscape architecture was Edward Huntsman-Trout. A pioneer in the use of native plants, this California native with unusual horticultural knowledge was responsible for the influential landscape of Scripps College in Pomona. Then there was Alden Hopkins, who, on returning from a fellowship at the American Academy in Rome, became involved in the restoration and revival of colonial-era gardens. Anyone who has visited the many courtyard gardens behind the pavilions at the University of Virginia knows his work – which, despite being of his own invention, has come to represent for several generations what colonial gardens *should* have looked like. These Hopkins gardens are now inextricably bound to the image, quality, and spirit of the campus.

Pomona College, the University of California at Los Angeles, and the University of Hawaii benefited from plans by Ralph Cornell, who by the 1950s was considered the dean of California landscape architects. His masterpiece in the genre of campus landscapes was UCLA, which he turned into a virtual arboretum, incorporating native and Mediterranean vegetation with plants then being imported from Asia, Australia, New Zealand, South Africa, and South America. A number of landscape architects of my generation used this campus as a living textbook to learn and identify much of the flora that we have come to think of as defining the character of Southern California gardens and parks.

The final closing of the Olmsted office in Brookline around 1959 unfortunately coincided with an enormous building boom in American academia. At the time, few universities had much planning or design capability in-house. The G.I. Bill for World War II and Korean War veterans, the baby boom, and the increased affluence of the middle class in the Eisenhower years prompted a dramatic expansion of school systems at all levels. In state after state, public universities expanded from one or two campuses to systems with many.

Many of these institutions, which had been largely devoted to undergraduate education in the past, also were becoming centers of graduate research. An unforeseen outcome of the rise of fascism in Europe in the 1930s was the mass immigration of scholars, scientists, and intellectuals from Europe. Almost overnight, the newcomers dramatically enhanced the scope and reach of our universities. Facilities had to be expanded accordingly, with new science and research buildings, dormitories, and teaching and library facilities. Housing shortages and problems with increased commutes and automobile use were widespread. It is difficult to find a major American university that didn't encounter problems with accommodating this growth while trying to maintain the amenities and ambience of its earlier landscape.

Most early academic and administrative buildings faced onto a bucolic central green or a sequence of courts or greens. This simple formula, ubiquitously employed in the layout of so many of the campuses, which had worked well when they were small, did not lend itself gracefully to subsequent expansion. Behind and outside that pleasant zone were drives,

roads, parking areas, service buildings, power plants, athletic fields, woods, and farm fields – or an encroaching but useful, and at times charming, community. Growth, when it came, inevitably occurred in this outer zone. For financial and political reasons it was usually incremental and opportunistic. Driven by the need for additional buildings and quantities of parking, it was rarely accompanied by significant new landscapes or spatial structures. Central quads and greens may have been held sacred, and the historic core remained intact at a large number of schools, but nearly all suffered on their expanding perimeters. Many began to move aggressively into adjacent residential and commercial communities, setting off town/gown feuds that sometimes continued for decades. Aesthetically many of these additions came to be known in the field as "train wrecks." Buildings appear to have been dropped from the sky and left wherever they landed and bounced.

Although many universities developed architectural and planning offices to manage all of this activity, almost none of those offices included landscape architects until fairly recently. At one university after another, regardless of age, prestige, or size, landscape improvements (if there were any) were nearly always tied to building construction projects. They were treated as peripheral enhancements, used to adjust existing situations just enough to allow new buildings to function physically. Even transportation and utilities received more attention than landscape in campus plans.

Despite many remarkable or merely workmanlike examples from the Olmsted firm, the notion of a landscape plan that sets out to understand and direct the spatial framework of the whole institution and its infrastructure from an environmental and shared social experience was, in the postwar era, quite rare. Many university administrators were resistant to this sort of planning because they saw it as limiting their freedom to make deals and call the shots. Campus landscapes were therefore conceived and built in disjointed bits and pieces, sometimes adding up nicely but often failing to do so – especially when, as frequently occurred, landscape funds were cut drastically or eliminated as building costs ran over budget.

Universities and colleges came more and more to be managed like the corporations that many of them actually are and less like the gentleman's clubs and extended estates of the privileged class which their founders once belonged to or owned, places that had shaped their ideas on how to run a school. As in many corporations, long-term cost benefits were often sacrificed for short-term economic goals and budgets. One result was a drastic increase nationwide in deferred maintenance of buildings and grounds. The cumulative neglect ultimately forced a response, but this did not occur for several decades.

The late 1960s brought a different sort of change when escalating conflicts between universities and their adjacent communities affected campus life, and ultimately campus landscapes, in several parts of the country. In 1968 Columbia University clumsily attempted to build a new athletic facility in Morningside Park, adjacent to Harlem, sparking immediate controversy. The following year, the University of California demolished an entire block of its residential community in Berkeley, only to end up in a bloody confrontation that hospitalized more than 120 people, ignited weeks of hostilities, and led to the arrival of the National Guard. Confrontations at dozens of institutions were sparked by social issues, whether protests over the Vietnam War or deeply flawed urban-renewal schemes. In 1970, after the National Guard fired on students at Kent State University in Ohio, killing four and wounding others, nearly every university and college in the United States erupted with student strikes, mass rallies, teach-ins, and marches. Ironically these events often took place in the shared common areas of academic campuses, which had by then become the most prominent and welcoming public spaces in many communities.

As the Vietnam War ended and America's cities and universities recovered from nearly a decade of protest, riots, and urban devastation, a pronounced and unpleasant social malaise could be detected on the perimeter of many prominent campuses. Crime rates were high; businesses were battered or gone. Harvard, Yale, Penn, Berkeley, Columbia, New York University, the University of Chicago, and many more were engaged in border wars and buffeted by real-estate crashes and union strife. The universities survived, but many became defensive and fortress-like. Walls, gates, locks, and lighting worthy of prison yards proliferated.

One exception to this pattern was the University of Pennsylvania. In 1976 the faculty of the Department of Landscape Architecture developed a Landscape Architecture Master Plan (LAMP) for the university that called for opening up the campus and healing its borders with vernacular solutions. In effect, the plan reversed a decade in which the university had turned its back on the city streets. Instead the campus was reconceived as a major urban park, serving neighbors as well as the academic community. The master plan was followed almost immediately by a development plan prepared by the architecture and urban-design faculty that proposed future development through infill rather than expansion. The university simultaneously launched a quiet campaign to purchase struggling and low-end commercial properties in order to redevelop them with higher-quality shops, offices, and residential structures.

In 1996, galvanized by a particularly shocking murder of a student, the university's president, Judith Rodin, began a multipronged engagement with the city and community that set out

A palimpsest of ancient forest trees, original building and cupola, a Collegiate-Gothic quad, and recent planting at the University of Washington.

to improve neighborhood safety, services, and capacity; provide high-quality and diverse housing choices; revive commercial activity; accelerate economic development; and enhance local public-school options. This was followed in 2000 by a new development and landscape plan for the university and community that was not only implemented but also succeeded. Critical to that success was a growing understanding that Penn was then the largest employer in the city of Philadelphia and the fourth largest in the state of Pennsylvania. With an expanded concept of "campus," a number of landscape architects carried out a series of projects that greatly transformed both the university and a portion of the adjacent city.

In a development reminiscent of Palo Alto's "Professorville" – a planned neighborhood of streets, trees, houses, shops, and public schools that proved crucial to the growth of the university – Penn decided to build a new, *public* neighborhood school with an award-winning facility to bolster community pride. The university would subsidize and participate in the school's teaching and curriculum.

The project had an immediate effect upon the surrounding real estate. It also stopped the flight to the suburbs on the part of faculty. These efforts, combined with mortgage guarantees, home-improvement loans, and the creation and support of a nonprofit business- and neighborhood-improvement district with security, sanitation, and programming services, turned West Philadelphia into a model for other institutions. The idea of what was entailed in campus planning was evolving. Today a number of other prominent urban universities have embarked upon strategies similar to those developed at Penn. The lesson here is that, like Yeat's inextricably interrelated Dancer and Dance, our university campuses are not and cannot be separated from their neighborhoods if they are to remain vibrant.

It may seem to some that the current urban, sociological, and bioengineering aspects of campus development are remote from the traditional practice of landscape architecture. Olmsted, however, was engaged continually with the city's social forces and infrastructure. In addition, a number of the founders of the American Society of Landscape Architecture were deeply involved in urban planning and design. Early volumes of their professional journals are filled with articles on the layout of communities, roads, boulevards, park systems, and civic spaces. There are reports on zoning and the economic outcomes of development. As early as the post-World War I period, a Department of City and Regional Planning grew out of the Landscape Architecture Department at Harvard.

When city planning shifted its focus to economics, sociology, and political science in the 1970s in an effort to become a quantitative science, it decamped from one leading design school after another. But the concern for larger-scale, physical urban problems continued to interest landscape architects, eventually leading to the creation of urban-design programs. Later many of these wandered off on their own or disappeared into architecture departments; nevertheless, a belief that cities (and universities) are not merely a collection of buildings has continued to haunt the generation that came through the upheaval of the 1960s and 70s. As anthropologist Claude Levi-Strauss wrote in 1938, "cities are not an architectural problem, they are cultural landscapes."

A renewed emphasis, taking up some of the old city-planning and urban-design concerns, has recently emerged in the Department of Landscape Architecture at Penn and at various centers in Europe. It has come to be referred to as "landscape urbanism." Although the trend has been barely noticed, the American university campus has become an early laboratory for practitioners of landscape urbanism.

Most recently, in the first decade of the present century, campus plans have begun to incorporate substantial environmental components. These include setting goals for energy use, water and habitat treatment and management, and sustainability. They deal as well with issues of transportation and infrastructure. In recent years, schemes have developed beyond green roofs and storm-water basins to living-systems approaches to academic precincts. Rather than, say, treating storm water as an isolated problem building by building, plans are now commonly watershed-based and conceived campus-wide, thereby engaging adjacent lands and other property owners as well. Duke and the University of Virginia are only two of a number of campuses that have recently created artificial wetlands for filtering, bioremediation, and attenuated release of storm water into vastly improved local streams.

Planning for adjacent commercial and residential districts is also continuing. Replacing and rebuilding four city blocks of tawdry and struggling businesses and surface parking lots adjacent to the Penn campus with better and more successful retail, hospitality, residential, and service enterprises in appropriately scaled structures may not have produced the charm that remains in the quasi-medieval urban pattern of Harvard Square. Still, the importance of understanding that these adjacent, supporting communities need active involvement – and, at times, outright intervention or subsidy – can be seen in the contrasting examples of Berkeley, where Telegraph Avenue and adjacent streets have become distressed and abandoned, and New Haven, where Yale has finally begun to help invest, rebuild, and reinvigorate the downtown beyond the small portion of Chapel Street that remained healthy. Whether one visits the handsome and lively commercial portions of Lawrence, Kansas; Madison, Wisconsin; or Charlottesville, Virginia; in each case the vibrancy of the cafes and shops is the result of a joint effort on the part of residents, faculty, city officials, university planners, and design professionals.

While there are many kinds of landscapes in the world, there are a limited number of typologies, most of which have been in existence for many centuries. Inevitably a new typology, as in architecture, is the result of new programmatic purpose, such as the development of the railroad station and the department store in the nineteenth century. These were totally new types with new purposes for a changing society. The American college campus was one of those rare things – a new landscape typology – and since its inception it has evolved, flourished, and metamorphosed. A remarkable number of campuses across the nation have become unique and treasured places. They have inspired envy and emulation from the corporate world, and from foreign countries – especially China and Middle Eastern nations – that are now madly trying to build them at a great rate. For many Americans, however – even academics who have grown up with them – the exceptionality of the American campus is hard to see clearly, bring-

ing to mind Ian McHarg's quip, "fish will be the last creatures to discover water."

Overall, though, American academic institutions are becoming increasingly committed to landscape design – if for no other reason than to appear desirable as they compete for prospective students and alumni support. They have hired a growing number of design and planning professionals, and a professional organization called the Society for College and University Planning has developed. In fact, whether preparing for the future or attempting to correct the mistakes of the past, virtually all the most prominent landscape architects have worked almost continuously on academic campus projects in recent decades, many of them producing some of their most important or beautiful work. Money spent on quality of life can, after all, become a self-fulfilling prophecy. As I once told a university president and his board members, "If you consider the fact that with laptops and modems, scientists and prize-winning faculty can work anywhere these days, and the palm trees are waving in the sun at a number of outstanding institutions on the West Coast, why would I want to be on a campus that looks and feels like hell, with the cold and snow on top of it?" The landscape of a university is the one thing that everyone shares every day; it shapes people's sense of not only the institution but of themselves.

Of course the American campus will continue to change, as it has since its beginnings. Once-bucolic and semirural campuses are continuing to become more urban in character, and this will remain the case for the nation and the world. At the same time, the image of the early pastoral idyll is still powerful, and as we fight to make our cities and campuses healthier and more sustainable, the perennial urge for *rus in urbs* reasserts itself. A new generation of shared green spaces is being introduced on urban campuses, often atop or within complex and hybrid architecture and infrastructure. The landscape is satisfying our need for it by coming inside. The American campus has been, is, and probably will always be many things, but it is also a state of mind. – Laurie Olin

Two superb books for those who wish to learn more about the history of many of these institutions are:
Paul Venable Turner. *Campus: An American Planning Tradition.* MIT Press, 1984.
Judith Rodin. *The University & Urban Revival: Out of the Ivory Tower and Into the Streets.* University of Pennsylvania Press, 2007.

Representing Nature: The Dioramas of the American Museum of Natural History

When we think of landscape as an art form we tend to think of painting. In this case the names Claude Lorrain, Constable, and Corot come to mind, along with American artists of the Hudson River School such as Thomas Cole, Alfred Bierstadt, Asher Durand, and Frederick Church. But who recalls the names of Frank Chapman and Carl Akeley? And yet, for the past century, hundreds of thousands of adults and children have observed their three-dimensional landscapes with curiosity and wonder – those exhibitions of birds and mammals from Asia, Africa, and North America that are displayed in replicas of their native settings in several lofty halls of the American Museum of Natural History. Seen through frames of glass, these illuminated animals are not only set against painted landscapes but also surrounded by actual plants or highly realistic simulacra, as well as rocks and stones gleaned from specific sites or fabricated when originals were too large to collect.

Stephen Quinn.

Chapman and Akeley were the esteemed pioneers of this exhibition technique, and their collaborators and followers – William R. Leigh, Robert Rockwell, James Perry Wilson, Belmore Brown, Francis Lee Jaques, and Robert Kane – furthered the museum's reputation as the premier institution committed to this type of display.

The descendants of cycloramas – 360-degree panoramic paintings of important sites and historical events mounted on the inside of cylindrical drums – and Louis Daguerre's theatrically back-lit scrims giving painted scenery an illusion of spatial depth, habitat dioramas portray natural specimens in three-dimensional settings of great verisimilitude. This lineage begs a further question: are habitat dioramas science or art? Stephen Quinn, who has helped to conserve and create them for the past thirty-nine years in the Exhibition Department of the museum, believes they are both.

Quinn considers Chapman and Akeley masters of this form of landscape depiction, which fuses sculpture, painting, and collage in compositions of extraordinary fidelity. For him these men are revered progenitors, great naturalists who were explorers, specimen collectors, and taxidermists all in one. The fact that they bagged their quarry with a gun, just as Audubon killed his subjects in order to accurately draw and paint them for *The Birds of America*, is not a problem for him. "Whether bird or mammal, all the specimens in dioramas have necessarily been collected in the wild by men who were good shots," he told me, as we stood in front of the magnificent diorama of a herd of bison in the recently restored Jill and Lewis Barnard Hall of North American Mammals. "These were not hunters for sport. Rather they were scientists with an important conservation message, early defenders of the world's vanishing, pristine landscapes – particularly the wildlife habitats in America and Africa that in early twentieth-century were seriously endangered by wealthy sportsmen, food harvesters, and plume hunters – much as they are today by clear-cutting, natural-resource extraction, and overdevelopment. This is what this museum was all about from the beginning – collecting wildlife and creating displays to show people the wonders of nature and wake them up to the fact that a lot of it was in danger of being lost."

After mid-twentieth-century modernism cast a cold eye on representational art and wildlife films and television shows became popular, some discredited the museum's dioramas as outdated – a position Quinn has always strongly opposed. On the contrary, he staunchly maintains that the three-dimensionality of these lifelike and life-size animal forms renders them more emotionally compelling than animals are when seen on television or a diminutive computer screen. He firmly believes that the sophisticated techniques that provide illusory spatial breadth and depth make the dioramas much more real than their photographic counterparts.

He also believes that the dioramas' re-creations of specific settings, inhabited by creatures most people will never see in the wild, are compelling testaments to nature's sublimity – and a visceral means of educating the museum's five million annual visitors about the importance of landscape conservation.

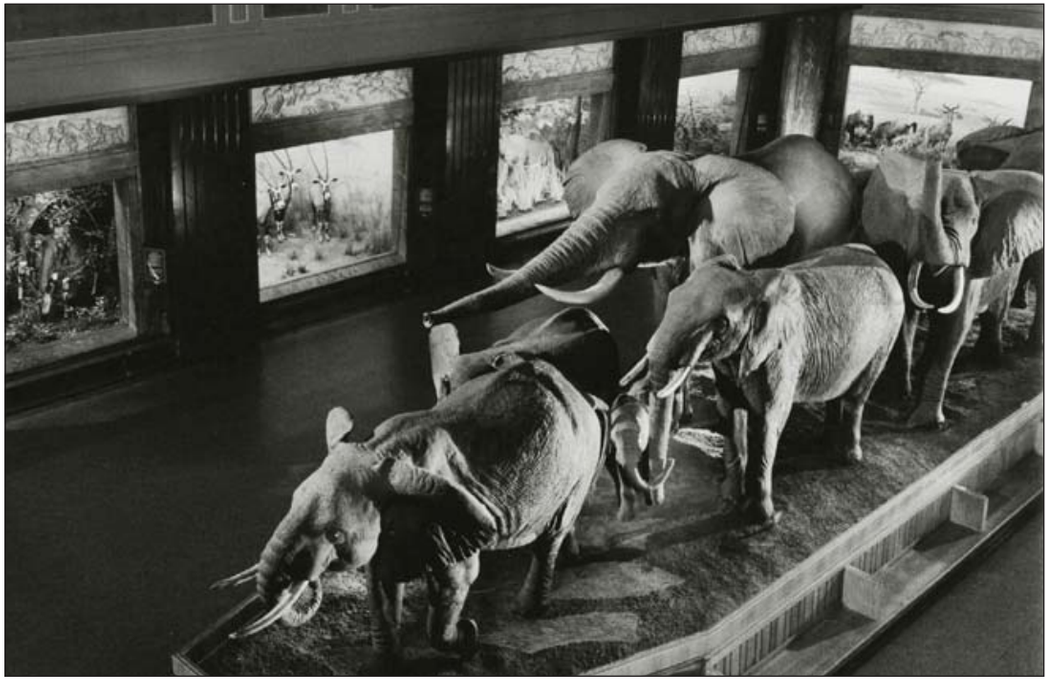
According to Quinn, the conservation ethos of the museum is built into the institution's DNA; by the end of the nineteenth century, not only the great diorama artists but also the museum's science curators and philanthropic supporters were viewing vanishing wildlife species with justifiable concern. "The passenger pigeon was rapidly becoming extinct," Quinn explained. "Game birds for the table were being shot in vast numbers, the railroads had turned buffalo hunting into a sport, and the market for plumes for the millinery trade caused the slaughter of hundreds of thousands of egrets, flamingos, and other shore birds." Then in 1885, Morris K. Jessup, third president of the museum, traveled to London and saw the mounted bird specimens in the British Museum. "Upon his return, he found a dedicated young ornithologist – Frank Chapman – and hired him to collect birds within a fifty-mile radius of New York City. This was the beginning of our earliest dioramas. Come, I'll take you upstairs to see the Hall of North American Birds."

There Quinn showed me several of Chapman's early efforts in a series of four-sided glass cases containing mounted bird specimens and botanical models, which at first appeared to be three-dimensional versions of Audubon paintings of birds posed on branches. Quinn described how Chapman had later improved his displays by adding curved backdrop panels with paintings depicting the original habitats from which the specimens had been collected. Moreover, he brought artists with him into the field in order to portray the landscapes they encountered as accurately as possible.

Chapman went on to create window-protected, theatrical, stage-style dioramas, the earliest being the Pelican Island diorama of 1902. "He chose this subject because the pelican was one of the many water birds that were about to become extinct," Quinn said. "Plume hunters would lie in wait in the mangroves near their nests so that they could kill them as they came in to feed their young. As president at the time, Theodore Roosevelt, a naturalist himself, whose father was one of the founders of the museum, was able to get Congress to enact legislation in 1903 designating Pelican Island the first federal bird reserve." Much to Quinn's regret, the Pelican Island diorama was destroyed when Chapman's original Hall of North American Birds was modernized in the 1960s.

Quinn himself is widely considered to be one of the most expert birders in the region, and the museum-sponsored bird walks he leads in the Central Park Ramble during the May migration season have a large following. His ornithological skills were honed when he was a boy growing up in Ridgefield Park, New Jersey. He credits his parents with sharing their reverence for nature with their children, taking them on vacations to national parks and other wilderness areas. Even more formative for his career as a naturalist and avian expert was his older brother, who took him on many adventurous explorations of the Hackensack Meadows next to their home. "In those days it was a paradise," he recalled. "For me it was just like being Tom Sawyer. On Saturdays we would go out early in the morning on rafts, and I would help my brother collect birds for the aviary and ponds he kept in the back yard. Sometimes we would filch one or two eggs from a nest, incubate them in a warm place at home, and then raise the chicks. Of course, it is completely illegal nowadays to keep wild birds, and even back then the game warden would occasionally pay us a visit. Then when my brother got his driver's license, whenever we read about an oil spill in the newspapers, we would go patrol the beaches and run into the surf and catch ducks. After we brought them home, our mom would let us wash them in the bathtub."

Carl Akeley's elephant grouping, Hall of African Mammals.



And then there was the American Museum of Natural History. "It was just thrilling to climb those grand steps and walk into the Theodore Roosevelt Rotunda," he said. "It was like being in St. Paul's Cathedral or some other great religious space. You could say that this place was the temple where I worshipped nature. After I graduated from Ridgefield Park High School, my guidance counselor directed me into a career in wildlife management. Since I had been painting and sketching my entire life until then, I decided to transfer to the Ridgewood School of Design. When I graduated in 1974, as luck would have it, the New York State Council on the Arts was sponsoring an internship program that had been started here at the museum. Even though dioramas were somewhat out of fashion at that time, it was a farsighted way for the museum to train a new generation of diorama artists, since the old ones were all gone or about to retire."

Chapman's creation of the Hall of North American Birds provided only a sample of what lay ahead in the museum's development of the diorama as its principal mode of natural-history education. It was Carl Akeley, by combining the skills of a sculptor, a naturalist, an explorer, and a taxidermist, who brought this art form into its golden age after the museum's fourth president, Henry Fairfield Osborne, hired him away from the Field Museum in Chicago in 1909. There he had perfected what came to be known as the Akeley technique, a lifelike presentation method he had earlier demonstrated with the creation of a relatively small muskrat diorama. Now, with Osborne's support, he was ready to apply his skills to the mounting of two fighting bull elephants.

As Quinn ushered me downstairs to the Hall of African Mammals, he extolled Akeley's unsurpassed prowess as the creator of dioramas. When I asked him to describe the process of creating the taxidermic specimens on display, he explained how Akeley took extensive field measurements; modeled clay

around a skeletal armature to create a detailed sculpture of the animal; and then covered the clay with the beast's stripped hide, which had been processed at a tannery to make it supple and insect-proof.

But this was not the end of the process. Quinn went on to describe how the wet clay within the now-skin-clothed animal would have been further manipulated by Akeley to ensure a subtler detailing of the musculature, wrinkles, and folds, and to perfect the lifelike pose he had conceived for the manikin. When Akeley was satisfied, a plaster cast was made that encased the entire hide-covered clay sculpture. Once hard, the plaster and underlying pelt were incised and separated into two halves. The hardened clay was then removed from these molds and the skeleton sent back to the Department of Mammalogy, after which Akeley's team filled the plaster shells with papier-mâché. Once it was dry, they reunited the two halves of the animal, removed the plaster from the exterior, sewed the skin together again at the seams, and concealed the stitching where the specimen had been cut apart.

This revelation took me a moment to absorb. "Do you mean," I asked, "that these huge elephants are lightweights – just papier-mâché figures with hides covering them?"

"Yes," Quinn replied, "they weigh a lot less than an actual elephant, but they are very sturdy. There is a picture of Akeley riding on top of one."

The centerpiece of the Hall of African Mammals is a free-standing herd of eight elephants that include a cow elephant collected by Theodore Roosevelt and a calf collected by his son Kermit on a 1909 expedition to Africa for the Smithsonian. Akeley was leading an expedition for the museum at the same time, and the two parties met up. With Roosevelt's donation of his and Kermit's elephants to the museum, Akeley was able to unite them with the two bull elephants he had previously collected and mounted and present the four in a grouping called *The Alarm*, which was placed on exhibit in a hall called the Akeley Elephant Room. The splendid Hall of African Mammals where they now stand would not open until 1936, ten years after Akeley's death. At that time, four other elephants collected by then-museum president F. Trubee Davidson and his wife were added to the group.

The story behind this multi-animal grouping testifies to the courage of naturalist collectors who were willing to risk their lives in pursuit of dangerous creatures. In Akeley's case, vision and tenacity were involved as well. Near the end of his 1909 African expedition, while shooting photographs in the bamboo forest on the lower slopes of Mount Kenya, he was charged and mauled by a rogue elephant. It was while he was still in the field during months spent convalescing from this almost fatal accident that he conceived of the Hall of African Mammals. Back at the museum and on subsequent expeditions to Africa, Akeley dedicated the rest of his career to its realization.

Although Akeley did not live to see it completed, the grand Hall of African Mammals – with its forty-foot-high ceilings, handsome Art Deco architectural detailing, and twenty-eight illuminated diorama encasements encircling the ground floor and mezzanine – is in accord with the scheme he had envisioned. The freestanding elephant grouping at its center, which is visible from the Theodore Roosevelt Rotunda at the museum's main entrance on Seventy-ninth Street and Central Park West, could be seen as the institution's iconic heart.

Although some curators have disagreed, Quinn believes that the room should remain dimly lit like a theater, its walls of serpentine – a dark green stone composed of ferromagnesian minerals – free of labels, so that the dioramas are always the principal focus of the visitor's attention. When I asked him which of Akeley's dioramas in this hall was his favorite, he took me over to the window in front of the mountain gorilla specimens. Akeley had collected them in 1921 in the rain forests of Mount Mikeno among the Kivu volcanoes, in what was then the Belgian Congo. "Remember," Quinn said, "Akeley and the other scientists of this museum were Darwinians. They understood the kinship between gorillas and human beings. Akeley even wrote of the remorse he experienced when he killed the great silverback gorilla you see here. He called it 'a magnificent beast with the face of an amiable giant who would do no harm' and said he felt like a murderer. And because of the beautiful surroundings, he said that he 'envied this chap his funeral pyre.' "

Akeley returned to the site in 1926 with an accomplished plein-air landscape painter of the American West, William R. Leigh, in order to ensure that the diorama's background would appear as site-specific as possible. To achieve an equally realistic foreground he brought along staff to collect the botanical specimens that would serve as models for their fabricated counterparts. It was at this time that Akeley fell gravely ill and died. Fittingly the intrepid explorer cum wildlife artist was buried on site, which was the place he had declared the most beautiful on earth.

In November of 2010, Quinn visited the region on another museum expedition to paint plein-air paintings – this time for the purpose of pairing recent images with the diorama in New York in order to document the environmental changes that have occurred in the area around Mount Mikeno. Not only has its tropical sublimity been compromised by clear-cutting on the slopes but the green valley visible in the diorama has been parceled into agricultural fields as well. Many of these are now used as encampments for refugees who have been displaced by the ongoing war and civil unrest in the Democratic Republic of the Congo and Rwanda. "You see," he concluded, "a large number of the dioramas here at the museum serve as records of various landscapes as they were before human intervention and disturbance. Today, when there are no more than an estimated seven hundred mountain gorillas left in the world, this is how we can remember what these places once were like and why we should preserve the remaining ones like them."

Mountain gorilla diorama, Hall of African Mammals.

As we moved downstairs to the Hall of North American Mammals, I asked Quinn about the other taxidermists, background painters, and foreground specialists who had helped to create the museum's fascinating windows on nature. To introduce me to another of the diorama artists who are his heroes, Quinn took me to the mule deer diorama painted by James Perry Wilson, whom

Mule deer diorama, Hall of North American Mammals.

he considers to be the most important background painter of all time.

Wilson, who started his career in the museum under the tutelage of William R. Leigh in the Hall of African Mammals, developed a method that took into account perspectival optics. Heretofore it had been a matter of guesswork for an artist to compensate graphically for the inevitable distortions that occur when a flat image is transferred to a curved surface by means of an ordinary grid. Wilson, however, who had trained as an architect, developed a grid that he was able to geometrically alter in such a way that its squares change in size and shape toward the edges of the diorama's curved background wall, although they appear orthogonal when viewed from a central position.

Before plotting the diorama's background scenery according to his manipulated grid, Wilson used panoramic stereoscopic photographs as references in placing the horizon line at exactly five feet two inches from the ground, which he considered to be the average viewing height of a museum visitor. If all this sounds overly mechanical, one must recall that Renaissance painters also used grids to accurately enlarge the drawings they wished to transfer onto large surfaces. More important, as Quinn explained, once Wilson had sketched his scenery according to his mathematically formulated grid, he referred back to his plein-air paintings to ensure that the color and values of the diorama's background approached those seen by the naked eye when looking into the distance outdoors.

In the manner of an art historian, Quinn analyzed Wilson's technique. Viewing the mule deer diorama with the butte called Devil's Tower in the background, I could appreciate the subtle gradations in the sky from the acme to the horizon line, and the way in which the artist used a weaker chroma to convey the haziness of the distant mountain ridge and the pinkish amber light of late afternoon. Quinn pointed out that the matte surface made the scene more naturalistic; paint mixed with medium is glossier. Wilson, moreover, never used blacks. Instead he employed more nuanced tones achieved by mixing complementary colors, and this also increases his paintings' verisimilitude.

The trickiest part of diorama creation may be seamlessly melding the painted background into the arranged foreground with its real or artificial plants, rocks, grass, gravel, sand, or snow in a tableau in which the sculpted taxidermies are the star attraction. Beyond this, the hues, values, and directional illumination of the background painting must be consonant with those of the three-dimensional foreground objects, and the sections must appear to merge with no apparent dividing line between them.

"Lighting is a critical factor," Quinn told me. "Getting the electrical light source – which is concealed the same way that stage lights are in a theater – evenly directed and dispersed so that background and foreground appear to share the same time of day is important. There can't be any hot spots, and the whole scene has to be illuminated in a way that makes the light appear to be coming from one side. Here in the mule deer diorama you can see by the background sky and how the light falls across the landscape that the time of day is late afternoon. Look at the way it lights up Devil's Tower in the background and how the foreground shadows are all in the same direction."

Just on the other side of the plate glass window a doe was grazing, and an antlered male was looking about alertly, as if aware of our presence. On the realistic gravel- and grass-covered ground near their feet, I saw that the shadows corresponded perfectly with the slant of the light source. Quinn explained, "Some shadowy tones had to also to be painted into the vegetation in the foreground in order to get just the right effect of reflected light in the outdoors." Returning to the American bison and pronghorn antelope diorama – the largest in the museum – I could see how Wilson and his apprentice Fred Scherer, with the help of mammalogist T. Donald Carter and foreground artist George Peterson, had managed to achieve similar effects by the same means on an even grander scale.

As we circled around the perimeter gallery in the Hall of North American Mammals, we stopped by another Wilson masterpiece, the wolf diorama. As we stood in front of this nocturnal snow scene, Quinn pointed out Wilson's understanding of meteorology and astronomy as well as nighttime light. "You can see the luminous streaks of the aurora borealis, and there is Polaris and the constellations in exactly the positions they occupied at 3:00 a.m. on December 7, 1941, at the place where Wilson stood in a forest, somewhere between Minnesota and Ontario, painting his background sketch."

He called my attention to other accurately studied details. "Notice how the shadows of the two running wolves were fabricated by the foreground

Wolf diorama, Hall of North American Mammals.

artist Raymond deLucia, who sprinkled dry color onto the artificial snow, which is made from marble dust and sparkling mica chips. That is because the low-level florescent lamps with blue filters used to simulate nocturnal light are incapable of casting shadows in this scene. You can see that the dry-color shadows fall according to the position of the full moon, which can't be seen but can be imagined to be somewhere outside the diorama.

"Now look at the wolves' tracks in the snow, and you will see how accurately they depict the way a wolf runs at high speed. This is called a 'gathered suspension' – the point in each sequence of strides when all four feet are off the ground and gathered below the animal." Quinn then pointed out a different set of tracks, also apparently made at top speed but with all four feet outstretched for the next stride, the resulting pattern indicating an animal that runs with an "extended" suspension. "Now these are the kind of footprints that show exactly the way the tracks of a white-tail deer fleeing from its predator would appear," he explained. "A lot of people who see these dioramas won't notice such things, but this is what makes them valid in the eyes of the naturalists who come here to study them."

For Quinn, however, there is also a moral – and even a religious – dimension to his work. He firmly believes that in our homocentric era of global transformation and climate change the museum's dioramas are testaments to nature's divinity, echoing Thoreau's dictum that "in wildness is preservation of the world." Their scientific accuracy, combined with exquisite craftsmanship, is what makes them so morally instructive. "Now that there are tremendous threats to biodiversity and habitat destruction going on all around us," he said, "visitors to this museum can see how beautiful these places are, or once were. You can't destroy nature heedlessly; these creatures and we are part of a single web of life on this planet."

When Quinn first came to the museum, he worked under the tutelage of deLucia; over the years since then, he has advanced to the position of senior project manager. "I never liked that title, really," he told me. "I think of myself primarily as an artist." Quinn is retiring from his job in a few months, and then he is planning to paint full-time. "But that doesn't mean that I won't be coming back to help on projects," he quickly added. "After all, this place has been my whole life."
– Elizabeth Barlow Rogers

In Ambivalent De-fence of Zoos

In a just world there would be no zoos. We would share our sundry habitats with thousands of species of animals in a mutual accord, allowing each of us the territory and resources to thrive. There would be no boundaries, no constraints, no restraints – that is the improbable, Edenic dream.

At present, however, we must have zoos in some form – not merely for public entertainment but for the more noble causes of conservation and preservation. At least, that is the prevailing argument for their existence. When Nelson Byrd Woltz Landscape Architects (NBW) was approached by the National Zoo a few years ago to collaborate on a renovation with them, our designers and landscape architects soon found themselves caught in the camouflaged snare embedded in the evolving field of zoo design: the paradoxical challenge of designing enclosures that still, somehow, hint at boundlessness.

The zoo has its origins in the menageries and hunting parks of earlier centuries. In various sizes and forms, such animal collections persisted into the mid-1800s, when the first official zoological gardens were conceived. As the initial public zoos emerged in Europe out of royal holdings, it is likely that they were conceived with thoughts of some academic correlation to the earliest, university-sponsored botanic gardens (Padua, Leiden, Oxford). These compressed and edited assemblages of the world's known flora – ostensibly gathered for education, propagation, research, and dissemination – supported commerce, agriculture, and medicine. Such collections also incorporated a little beauty and amusement as the entertainment of visitors became part of their mission. It was perhaps inevitable that the idea of interior and outdoor museums would ultimately expand to include living specimens from the animal kingdom, under the broad umbrella of curiosity, education, and – much later – conservation and preservation.

In the 1890s Frederick Law Olmsted contributed an early prototype to zoo design. This was his layout of the Smithsonian Institution's National Zoo in Washington D.C.'s Rock Creek Park. The National Zoo had been established by an act of Congress in 1889 for "the advancement of science and the instruction and education of the people." Olmsted's contribution – in collaboration with William Temple Hornaday, then head of the Smithsonian's vertebrate division, and Samuel Pierpont Langley, Secretary of the Smithsonian – was to organize the zoo and its primary path system along the spine of the rather linear and challenging Piedmont/Fall Line topography. While only traces remain of the original character and distribution of the animal enclosures, there are still a scattering of Beaux-Arts-era buildings surviving from that turn-of-the-century project. Olmsted's sensitivity to landform prevailed in much of the subsequent development, although demanding and expanding programs and collections, coupled with the zoo's ever-increasing visitation – now at over two million visitors per year – has meant a considerable sublimation of the gently forceful Olmstedian hand.

We are all too familiar with the century-long reign of concrete-and-steel caging that dominated zoo enclosures everywhere (and unfortunately still persists in vestigial roadside zoos, circuses, and official zoos of some developing nations). Animal welfare seems to have been a minor consideration for the first hundred years of zoo development, if it was considered at all. That began to change in the 1960s, when research led by animal behaviorists like Konrad Lorenz and Nikolaas "Niko" Tinbergen influenced the redesign of zoo enclosures, popularizing the notion of more environment-based, "natural" habitats.

Soon designers such as Jones and Jones (in Seattle), Jon Coe (Seattle, Philadelphia, and currently Australia), David Hancocks (Seattle, Arizona, currently also in Australia) and others were creating more expansive and extensive habitats. These new zoo designs evolved not only from increased empathy for the caged animal but also from greater knowledge, research, and understanding of its habits and behavior. This meant more topography, more vegetation, more diversity, and more environmental richness and stimulation. It also meant dissolving the perceptible barriers between people and animals, and presenting animals (or possibly even hiding them from view) in a wilder, less-kempt context.

The mission was about providing more choice – both for the animals and the humans observing them. This usually meant provisions for more shade and sun gradations, more layers to the forest (assuming that was relevant to the animal's native habitat), more and different forms of water. It has also translated into ever-more-sophisticated interpretations of the expressed geologies that might represent the native terrain of these animals. This has inevitably led to more fake rock work, because the budgets of zoos are not infinite, and the exigencies

of time, space, and safety have collectively mandated a practical set of strategies for making these new exhibits. We try to make them as "real" as possible, but the reality is, these are stage sets – part of an elaborate and expensive form of outdoor theater.

In 2002 the National Zoo asked NBW, in collaboration with Chatelain Architects and a tremendous team of consulting specialists, to design a significant upgrade to a corridor of habitats identified as the Asia Trail. At the core of our effort was the creation of unobstrusively enclosed environments for seven Asian animal species: the giant panda, red panda, sloth bear, Asian small-clawed otter, fishing cat, clouded leopard, and giant salamander. These environments were generously woven around a meandering, not-quite-two thousand-foot-long path that negotiated sixty feet of vertical grade within a 5.5-acre site.

The project derived much of its impetus from the zoo's desire to expand and improve the yards for the giant pandas, who are a huge draw. The larger goal, however, was to redress the woefully inadequate living quarters of some of the lesser-known Asian animals, such as the red panda and the sloth bear, while simultaneously congregating all seven species in closer, more logical, geographic and ecological proximity.

An early design study section through several adjacent Asia Trail habitats, depicting a variety of strategies for engaging both animals and visitors within a very steep site.

Like the great majority of twentieth-century zoos established before the 1960s, the National Zoo had animal collections that tended to be grouped according to species, rather than by biogeographical relationships. In other words, all the world's bears would be grouped together in adjoining, rather dismally designed, concrete/rock ensembles with moats and dens and a noticeable absence of vegetation. There would also be very little differentiation between, say, a grizzly bear's environment and a sloth or spectacle bear's environment.

With the Asia Trail, we (NBW) worked closely with Coyle and Caron, exhibit-design specialists, as well as with the zoo's exhibit team and the contractor, to create habitats that closely evoked the animals' native territory. Living bamboo dominated the red and giant panda exhibits – though more on the outside than within their actual ground, as the giant panda would destroy any growing bamboo within days. But the exhibit designers conceived of an original, painted-steel-rod detail for the sloth bear exhibit that replicated bamboo groves while providing an imperceptible barrier to the enclosure. We continued the bamboo theme by proposing that bundles of harvested (dried) bamboo canes serve as trail and exhibit markers at key locations along the Asia trail. Their size hinted at the story of just how much bamboo each panda consumes on a daily basis – a remarkable amount because of their seemingly inefficient digestive system (they only "use" 17 percent of what they consume).

The fishing cats' constructed microcosm reproduces small forest ponds and mud-bank stream environments; the Asian small-clawed otters have a fast-flowing, rock-strewn creek replete with drifts of Equisetum. The giant pandas ramble amid climbable trees, rock outcrops and dens, and decaying

A young boy peers through a glass wall into the Giant Panda's constructed "naturalized" world along the Asia Trail at the National Zoo.

tree trunks scattered around gentle waterfalls and pools. Hidden misters provide a cooling fog to counter Washington's relentless summer heat.

The red panda peers down at us from a perch high in the carefully positioned tree in its new environment, adjacent to the giant-panda yards along the Asia Trail. There is some small solace or satisfaction here, to have made a place – a series of places – where animals can gaze down on us. We understood this to be good, empathetic, contemporary-design practice – to devise a world (albeit an artificial one) that in some modest measure allows animals a position of prominence. That suggests, if only symbolically, that humans are not the dominant being. These judiciously designed spaces often serve as both a prospect and a refuge. We can view the animals in multiple habitats or locations: high, low, eye level; on rock outcrops, in trees, pools, falls, and streams; clambering up and down tilted and decaying logs. And they can observe or experience us from numerous vantage points as well.

Chinese officials with Aba Prefecture's Wolong National Nature Reserve so liked our re-creation of the giant-panda habitat within the Asia Trail that they invited us to China to help them remake the antiquated designed environments in which their own pandas were contained. Such was the state of things that we found ourselves in a *charrette*, exploring this World Heritage site in Sichuan Province, trying to bring a westernized take on "natural" animal environments to the stunning and vanishing *real* world of the last one thousand pandas.

How was our Asia Trail in Washington, D.C., any different from numerous zoo remakes (or new zoos) that had recently

opened? Perhaps in its incorporation of the best contemporary practices in design, layout, and choice of materials, in combination with stimulating strategies and programs. The latter were not only meant to enrich the daily lives of the animals but also to engage the observer in ways more tangible than passive viewing. We do note, and fully appreciate, that the zoo-management team at the National Zoo/Smithsonian considers the Asia Trail the most significant upgrade at the National Zoo in the past forty years. The zoo averaged 1.8 million visitors per year in the three years leading up to the opening of the Asia Trail. For the two years following its opening, the number jumped to 2.6 million people. It has since settled back to about 2.1 million people a year. They don't all come because of the pandas, but it is generally accepted that the Asia Trail has contributed to the increase in attendance.

Certainly visitors comment favorably on the virtues of the expanded, animal-friendly habitats along the Asia Trail as well as on the dynamic path corridor created for them to experience these habitats. The animal inhabitants, less forthcoming in their commentary, at least appear to enjoy their new and improved digs – rolling, scampering, splashing, and climbing – although one of the clouded leopards, Mook, did chew her way through the steel InvisiNet. They found the overnight escapee the next morning, snoozing right next to her newly designed habitat. Perhaps she spent the night wandering in search of better worlds but ultimately decided – at least within the larger confines of the National Zoo grounds – that her newly designed home was the best local option.

The Asia Trail's designed habitats exceed the accepted standards for these particular creatures (by whose standards seems a fair question to ask – obviously not their own). Nevertheless it never seems adequate enough. Especially for animals that like to, or expect to, roam. But part of the impossible design challenge is to make whatever square footage we are accorded seem as expansive and diverse and complex as possible. So we incorporated twists and turns, ups and downs, and ins and outs, designing multiple nooks and crannies for both protection and exposure. One aim is to create hiding places that maybe don't completely hide, because people visit expecting to see what they came for. This is certainly one of zoo design's most challenging conundrums.

As for accessibility and sustainability, the Asia Trail is heavily invested in these twin, twenty-first-century expectations. Beyond the essential provisions for animal welfare and enrichment, these two human values are served up in both grand and quiet ways throughout the project. Their counterpoint is

The bamboo-enshrouded threshold of the Asia Trail.

expressed in a series of lovely contradictions and bamboozlements. Here we are attempting to represent an Asian world amid a Rock Creek corridor of tulip poplars, beech, and oak; negotiating our way down a slope at 5 percent through bounded borders we are trying to disguise; and directing waters into reservoirs hidden beneath the trail. We even managed the sleight-of-hand efficiencies of tucking animal-holding areas and maintenance (back-of-the-house) zones underneath portions of the quarter-mile-long trail. The trail itself avoids the more typical materials of concrete or asphalt in favor of a natural, resin-based paving surface. With the help of many specialists, including a very engaged zoo staff and administration, it succeeds as an artful display of animal and human environments, a set of experiences designed to acknowledge that we share the limited resources of this finite world and that animal cultures and human cultures are ever overlapping. Whether misting ourselves in proximity to the pandas brings us any closer together is for others to argue. We try to literally and figuratively dissolve the barriers between animals and humans, understanding that most of these creatures exist, even in the wild, in a no-longer-wild world. Every habitat that we are trying to replicate here, from the sweep of the Sichuanese highlands to the Indian tropical lowlands, is influenced by humans.

So zoos today are increasingly not just about the revivification of forest pools but the preservation of gene pools as well. One of the more heartening aspects of the Smithsonian's commitment and investment in sustaining the zoological world is the magnitude of its research and breeding efforts. The National Zoo's 160 acres within Rock Creek Park are complemented and reinforced by the 3200-acre Smithsonian Conservation Biology Institute just outside Front Royal, Virginia, an hour's drive from the District of Columbia. Here animals do have the territory to roam and live a somewhat more "natural" life. Some animals are quarantined here for health and safety reasons, but it is also in this less-stressful context that endangered species are bred to combat the possibility of their extinction. This environment also serves as one of several stepping-stones in the reintroduction of selected animals to the wild.

Back at the top of the Asia Trail, a sloth bear draws a mighty breath through the openings in a constructed termite mound that is just at the edge of the glass barrier wall. We can feel the suction at the end of the long, narrow feeding tube that has been inserted from our side of the world. It is a momentary sense of other beingness, of sharing a very small moment in the life of another sentient creature. It is a reminder of one of countless reasons we go to the zoo. As Diane Ackerman presents it in her concluding paragraph of a *New York Times* essay on why we love zoos: "What a lonely species we are, searching for signals of life from other galaxies, adopting companion animals, visiting parks and zoos to commune with other beasts. In the process, we discover our shared identity. We flock to zoos for many reasons, not least to shed some of the burden of being human."

It is hard to fully reconcile or justify zoos. Except to say, what choice do we have if we feel compelled to preserve our biological brethren? It would be marvelous if we could move these animals back to their lands of origin – or at least to places where they might roam more freely. In most cases, however, that dream future is highly unlikely to arrive. In the meantime, recent efforts like the creation of the Asia Trail at the nation's zoo are safeguards against losses we do not wish to imagine. – Warren T. Byrd Jr.

Plants for the People: Henry Shaw's Enduring Missouri Botanical Garden

The Missouri Botanical Garden, a seventy-nine-acre sanctuary for weekend floraphiles and serious scholars alike, lies in the thick of urban Saint Louis. About three-quarters of a million visitors pass through the garden's main entrance each year – some to see a flower show or glean new home-gardening tips, others to study preserved specimens in extensive herbariums. A patchwork of themed gardens, carefully designed beds, and modern and historic structures, the garden has been a resource for visitors from near and far for 154 years.

Now a National Historic Landmark, the garden owes its enduring success and popularity to its founder, Henry Shaw, as much as to any current or recent director. Shaw's deep interest in plants as individual subjects for study, his strong belief in the abilities of gardens to improve life for all, and his keen eye for institution-building and maintenance have kept this gem of Midwestern horticulture flourishing for more than a century after his death.

Shaw's vision for his garden was both Victorian and democratic. He wanted a garden designed more for active study than passive repose. He saw it as a much-needed force for refinement and education in what was then a rough-and-tumble frontier city. These goals, slightly modified, endure today, as visitors continue to seek diversion and education in a hectic and changing world.

Born in 1800 in Sheffield, England, a town already transformed into a manufacturing center by the Industrial Revolution, Shaw traveled to Saint Louis in 1819. There he established a hardware business that he ran and expanded over the next two decades. Venturing forth one day on horseback from his newly adopted city, he arrived at an enchanting swath of open prairie. The land extended westward, he later recalled, "uncultivated, without trees or fences, but covered with tall luxuriant grass, undulated by the gentle breezes of spring." Decades later, it was this tract of land he would acquire from a local farmer and turn into his public botanical garden.

A naturalized citizen after 1843, Shaw amassed a great fortune in the frontier economy. As a middle-aged bachelor, he then traveled back across the Atlantic, taking in the art, culture, and gardens of Europe and the British Isles. Inspired by what he saw – especially by the Royal Botanic Garden at Kew – he decided to establish a public botanical garden of his own devising, located in his new country and connected to his country estate.

In assembling his garden, Shaw enlisted the help of some of the most highly respected names in the field of botany, including Asa Grey, William Hooker, and George Englemann. Englemann, a German doctor who had opened a practice in Saint Louis, was an avid student of botany and organized many collection expeditions throughout the still-wild Americas. He encouraged Shaw to give equal weight in his garden to science and research, two main components of the newly established discipline. Although Shaw stood firm in ensuring that his garden was from the beginning open to the general public, he also established a museum and library. There was a herbarium, too, to which Englemann donated a 95,000-specimen collection. Shaw himself was a diligent student. He made copious notes about his botanic acquisitions and indicated which exotic imports failed to survive the harsh Missouri climate.

From the beginning the institution would cater not only to scientists but also to amateurs. In the mid-nineteenth century, botany, as both a hobby and a science, was expanding from an upper-class gentleman's pursuit to an activity that middle-class men, women, and children could enjoy as well, a change that practically ensured the botanical garden's popularity. To support the "botanizing" movement, Shaw decided, as he explained in his *Guide to the Missouri Botanical Garden*, that his garden would display a "systematic arrangement of classified plants." But his was a refined and exactingly Victorian ideal for what a botanical garden should be: a plant display in the Gardenesque style, meaning one in which plants are elevated to the level of artworks, to be studied and admired from every angle. With individual specimens taking precedence over landscape composition, massive century plants (*Agave americana*) were placed on high pedestal planters in the manner of sculptures; changeable beds of cacti were laid out in flower patterns; and shrubs were arranged to highlight the color and foliage of each bush.

In addition to these individual plants, Shaw decided that both an arboretum and fruticetum were necessary elements of a comprehensive garden. The design of these features mirrored the ethos of botany. Trees in the original arboretum, for example, were positioned in rows that allowed for systematic study. The highly regimented landscape that reigned at the botanical garden was as remote from the purely aesthetic gardens Shaw had seen on his tours of Europe as from the naturalistic landscapes championed by Fredrick Law Olmsted and his followers. (In fact, Olmsted visited the Missouri Botanical Garden and was notably unimpressed.) Shaw did, however, later give the city a 289-acre piece of adjoining land that was sculpted into Tower Grove Park, a more picturesque landscape that remains a popular destination for recreation and repose today.

By 1859, the untamed patch of prairie Shaw had seen in the 1820s had been utterly transformed into his ambitious and meticulously assembled garden. It opened that June as the Missouri Botanical Garden. The forty-five-acre landscape was free to the public and accessible every day except Sunday. According to Shaw's records, it was not uncommon for more than a thousand people to visit on a single day. Shaw himself lived in a villa called Tower Grove House, which was located on the garden's grounds. From the tower, he could proudly watch the throngs of visitors.

Shaw's grand project reflected his pride in his adopted country. The diverse species on view at the garden would "stimulate all amatures [sic] in the city and state," he wrote. "A botanical collection open to the public acts as a stimulus to ornament and beautify our country." Shaw viewed the project as ongoing: the same year the garden opened, he drew up a trust – "a permanent fund for all time" – to maintain his creation. He also wrote a will that charged a board of trustees with safeguarding for the public's use "a Botanical garden easily accessible, which should be forever kept up and maintained for the cultivation and propagation of plants, flowers, fruit and forest trees, and other productions of the vegetable kingdom; and a museum and library connected therewith, and devoted the

Pool and Climatron, Missouri Botanical Garden.

same and to the science of Botany, Horticulture, and allied objects."

Since Shaw's death in 1889, the will has remained the governing document guarding and guiding the garden as it has grown and changed. "It was a very astute beginning for this institution," says Bob Magill, vice president of science and conservation at the garden. He speaks proudly of how the organization continues to fulfill its mission, using – as do many others at the garden – the institutional "we" when explaining its history. But time has hardly stood still; although Shaw's will has been amended in only about a dozen instances – and then only by formal appeal to the Circuit Court of the City of Saint Louis – the fact that it does not provide firm landscape instructions per se has given its custodians considerable freedom. As McGill remarked, "We've taken it and run with it."

The garden is now open every day of the year except Christmas. Admission is no longer free, as it was in Shaw's time, but Saint Louis-area residents can enter for just four dollars (half of the standard admission price), and children twelve and under can visit at no cost. Additionally, in 1983, the garden became part of the city's Metropolitan Zoological Park and Museum District, joining other institutions in the area in receiving tax money from the city. (It also gains income from memberships, gifts, grants, and education programs.) The garden now also operates two other centers. The 2,400-acre Shaw Nature Reserve, thirty-five miles southwest of Saint Louis, was purchased by the garden in 1925 when the air pollution from Saint Louis threatened the survival of orchids, pines, and other plants on the main campus. The Sachs Butterfly House, an 8,000-square foot conservatory with butterflies and plants in Chesterfield, opened in 1998 and was taken over by the botanical garden in 2001.

When I visited Saint Louis on a bitingly cold Monday last December, I had nearly the entire garden grounds to myself, exchanging friendly greetings only with groundskeepers and gardeners as they zipped around in golf carts installing holiday decorations at Tower Grove House or tending to winter beds outside the Chinese Garden. The temperate and tropical greenhouses, however, were bustling with casual visitors and visiting students alike.

Despite the fact that the garden still operates as a charitable trust, I found that much of it would be unrecognizable to Shaw today. I encountered a mélange of preserved or reconstructed Victorian-era features – a hedge maze, water lily displays, a nineteenth-century, brick-and-glass greenhouse – but also numerous contemporary additions. These self-contained enclaves include a Japanese garden, the Chinese Garden, an Ottoman garden, and a mock-Western town for children's play. The garden's most significant addition is the seventy-foot-tall geodesic dome called the Climatron, which was built in 1960 according to the principles of R. Buckminster Fuller.

In spite of these changes, the landscape retains deep institutional roots. The brick-and-glass Linnean House was built in 1882, seven years before Shaw's death, to display citrus trees, palms, and other fragile plants during the long Missouri winters. It is the oldest continuously operated greenhouse west of the Mississippi. James Gurney, the garden's first head gardener, and George Pring after him embraced the Victorian fascination with water lilies, breeding and displaying them in reflecting pools that help create the main axis in front of the Linnean House. The first director, William Trelease, worked with Olmsted's firm in an effort to expand the garden and incorporate more picturesque elements. By 1912, when George Moore assumed the directorship (serving until 1953), the garden underwent even greater changes, gaining naturalistic vistas. Shaw's formal arboretum and fruticetum were gradually filled in with other botanic offerings. Now, instead of the founder's original, linearly planted arboretum, trees throughout the garden are labeled. The Cherbonnier English Woodland Garden – a wild, forestlike enclave that is in dramatic contrast to the modernistic Climatron – opened in 1976.

There are some things, however, that cannot change, says Andrew Wyatt, the garden's vice president for horticulture. The center of the garden, he notes, should retain its traditional Victorian vistas. Wyatt and his team are plotting small alterations they plan to make across the garden over the next few years, such as rotating the plants featured in the Linnean House and reimagining beds and displays for different seasons and years. They also have their eyes on the biggest historical marks in the landscape – namely, the trees, which need to be replanted when a void opens up. "We're thinking for the next one hundred and fifty years," Wyatt says, noting that "history develops over time" and each layer adds richness and opportunities for interpretation.

Currently, for example, Wyatt and his team are looking to enrich the Boxwood Garden, which has its origins not with Shaw but with former garden director Edgar Anderson. Anderson collected the first specimens of these long-lived plants in 1934 when he was a staff researcher during a trip to the Balkans. Some of his finds are still on display. Wyatt believes that highlighting historic individual plants provides an opportunity to tell a story for visitors and help them connect with the garden and its past.

Newer gardens, including the Iris Garden and the Daylily Garden – established in 1984 and 1988, respectively – revive some of Shaw's studious intentions for the garden. Visitors strolling between the Tower Grove House area and the main axis are treated to a meandering path of carefully labeled specimens – more than fifteen hundred irises and more than two thousand daylily species – inviting both appreciation and examination. Shaw hoped that the specimens on display would inspire visitors to take on their own "botanical improvement" of the world; now the garden even has an outreach program based at the Kemper Center for Home Gardening. Opened in 1991, it operates in partnership with the University of Missouri Extension and Master Gardeners. Twenty-three neat and manageably sized demonstration gardens have been laid out in curved tiers around a central building where even the indoor plants are arranged around windows to demonstrate optimal placement. And experts are on hand to answer any garden-related question – or just for a friendly chat with visitors.

Although the garden might have changed physically, as an institution it has maintained much of its idealistic vision. Recognizing early the lack of qualified gardeners in the United States, Shaw established a garden-research program in 1880. In 1885 he endowed the Washington University School of Botany, which continues to offer courses in partnership with the garden. And the garden's research program has flourished, far exceeding anything that Shaw and his contemporaries could have foreseen.

For Magill and others, the founder's mandate in his will that the garden further botanical study is as relevant now as it was in the mid-nineteenth century. Although the physical herbariums – which currently contain more than six million specimens – remain key to this mission, the institution now has massive online databases. *Botanicus*, for instance, is an annotated, online repository for scientific plant resources, resembling a hyperlinked library; and *Tropicos* is a digital resource cataloging more than 1 million genera and 4.2 million specimens. Studying the Web traffic to these free sites, Magill notices that people are visiting the garden's offerings from all over the world – a development squarely in line with Shaw's original aim to share botanical knowledge and appreciation of plants with a broad public.

The eastern stone wall that once separated the garden from farmland now stands between it and rows of early twentieth-century brick houses. Bringing the surrounding community and the rest of the region's population into the garden's welcoming embrace is both a challenge and an imperative. Although the garden still attracts crowds for its plant shows

despite the myriad distractions of modern life, the collection is not just something to be studied and admired. Says Sheila Voss, director of education, "It's about something bigger." Voss and her staff are striving to interact with visitors in new ways and engage them on new levels. Efforts such as free public concerts on summer evenings can draw as many as ten thousand people in a single evening, of whom many have never before set foot in the garden. Voss notes that Shaw's original, carefully constructed landscape has become more "like a forum – not just a one-way exhibit," adding that the garden's staff feels compelled to do the best it can before passing on its responsibilities to the next generation of caretakers. She referred to Shaw's legacy as "humbling."

Emphasizing his continuing presence, Shaw is buried on the grounds of his adjacent estate. His remains rest in front of Tower Grove Home in a granite mausoleum containing his life-size marble effigy. The garden's current mission, adopted in 1999, like that dictated for it in Shaw's will, is simple yet demanding: "To discover and share knowledge about plants and their environment, in order to preserve and enrich life." If the founder's era was one of botanical discovery and exploration, the late twentieth and early twenty-first centuries have demanded research in the cause of conservation and battles against habitat destruction. The celebration of plants may still be intended to civilize, but now it is supposed to encourage sustainability as well. Toward this end, a small, state-of-the-art weather station is tucked into the corner of the Kemper Center. This Remote Automated Weather Station gathers real-time information on humidity, precipitation, soil moisture, solar radiation, temperature, and wind. The data it collects are being stored and analyzed to help garden staff and researchers track climatic changes. Surrounding the station is a display of specimens that used to be hearty locally; it demonstrates the shifting of plant-hardiness zones. This little outpost of technology is quietly signaling the future of the landscape it monitors.

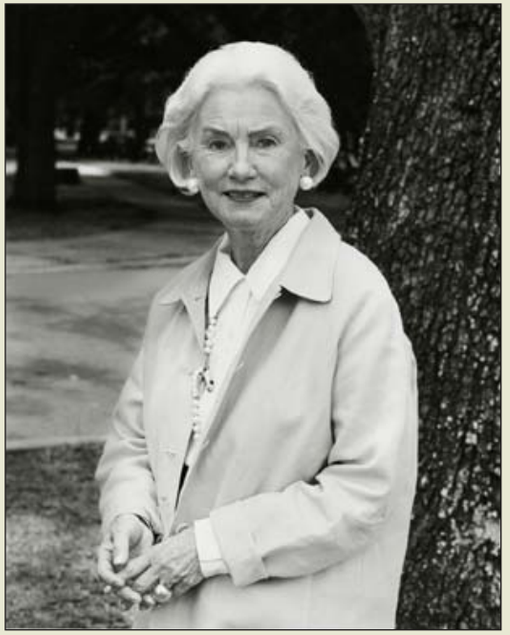
This quiet way of showing – not telling – visitors about sustainability and climate change is just the latest effort to lead the garden into the next one hundred and fifty years. "We have the beauty to attract the public," Wyatt says. The challenge is to involve visitors in the larger discussion so that they leave the garden with an expanded sense of plants' importance and the issues at stake. If the garden's caretakers succeed, Shaw's creation might make us more aware of the landscape around us, but also more conscious of a wider landscape – namely, our changing environment. – Katherine Harmon

With gratitude for Carol Grove's thoughtful historical research in her book *Henry Shaw's Victorian Landscapes*.

Place Maker/Place Keeper

Place Maker: Genevieve Trimble

Genevieve "Gen" Trimble is the owner of Afton Villa, a two hundred fifty-acre plantation in St. Francisville, Louisiana. After the destruction of the forty-room, Gothic Revival mansion by fire in 1963, the plantation's nineteenth-century garden languished until Trimble and her husband Morell – "Bud" – bought the property in 1972 to save it from imminent subdivision and development. With advice from Dr. Neil Odenwald, FASLA, professor of landscape architecture at nearby Louisiana State University, the Trimbles elected to add their own influence to the garden. It reflects their lives and her strong sense of garden design, yet its origins, existing plant materials, and historic evolution are respected. Explaining her philosophy of sensitively integrating historic character and current intention, Trimble once remarked, "All old gardens are haunted, one quickly discovers, in that their former owners, who have loved and worked them, seem forever in the shadows, possessively prescribing and dictating what not to tamper with or change."

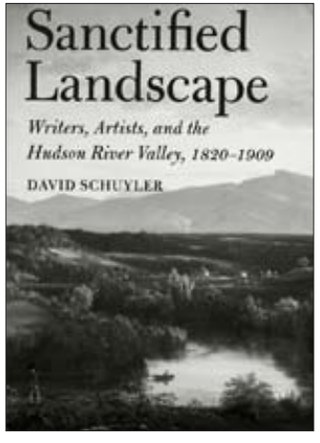


Place Keeper: Antonia Adezio

The mission of the Garden Conservancy is to preserve exceptional American gardens and find ways to save them for the education and enjoyment of the public. Antonia Adezio served as the head of this four thousand-member organization for twenty-three years, from the organization's founding under the leadership of legendary gardener Frank Cabot until the end of 2012. During this time she has helped perpetuate the artistic vision of the creators of dozens of major gardens across America, including five that have been declared National Historic Landmarks and seventeen that are listed on the National Register of Historic Places. Notable among the gardens that have benefited from her strategic planning, whether in fine-tuning their organizational structures or planning for ongoing maintenance and funding, are the Ruth Bancroft Garden in Walnut Creek, California; the John P. Humes Stroll Garden in Mill Neck, New York; Henriette Suhr's Rocky Hills in Mount Kisco, New York; Peckerwood Garden in Hempstead, Texas; Greenwood Gardens in Short Hills, New Jersey; and the topiary garden of Pearl Fryar in Bishopville, South Carolina. In 1995 Adezio inaugurated the Garden Conservancy's national Open Days program, making possible public visits to private gardens. Subsequently she was instrumental in forming a partnership between the Garden Conservancy, the National Park Service, and the Golden Gate Conservancy to spearhead the restoration of the historic gardens on Alcatraz Island in San Francisco Bay.

Books

Sanctified Landscape: Writers, Artists, and the Hudson River Valley, 1820-1909
By David Schuyler
Ithaca: Cornell University Press, 2012



The case for the Hudson Valley as the prototypical cultural landscape is well known. It was the setting for many of the critical events of the American Revolution, thus acquiring historical associations so vital to national pride of place. Accessible from the country's main port of entry, it provided many early nineteenth-century Americans and Europeans with their first glimpse of the New World beyond the coasts. It offered in one trip both the sublime terrors of the wilderness and the promise of a new American pastoral. The representatives of our earliest native movements in art and literature chose it as their subject, presenting the landscape to those who could not visit in person and investing it with what Simon Schama calls the "frame," which is crucial in turning mere geography into landscape. The revolutions in transportation and industry that made modern America possible – the Erie Canal, Fulton's steamship, and the Hudson River Railroad – also had their roots in this one place. As a result, the river and its valley provided many significant elements of the young country's emerging national identity, and in return America endowed this place with countless layers of association and meaning, and thus value.

The Hudson River literature has long been extensive, and anticipation of the 2009 quadricentennial celebrations of Henry Hudson's 1609 voyage spurred additional scholarship. Fran Dunwell's excellent 1992 work, *Hudson River Highlands*, was completely revised and republished in 2008 as *The Hudson: America's River*. Tom Lewis gave us a comprehensive scholarly work, *The Hudson: A History*. Art of the Hudson River School continues to fascinate, and the New York Historical Society's contribution to the quadricentennial was Linda Ferber's *The Hudson River School: Nature and the American Vision*, the most significant book of its kind since John Howat's seminal *Hudson River and its Painters* in 1988. We now even have a semiannual journal, the *Hudson River Valley Review*, which publishes both serious scholarship and amateur essays in the burgeoning field of regional, or place-based, studies. The question, then, is what David Schuyler's *Sanctified Landscape: Writers, Artists, and the Hudson River Valley*, 1820-1909, adds to this body of work.

Schuyler – a distinguished scholar best known for his editorial work on *The Frederick Law Olmsted Papers*; his excellent biography *Apostle of Taste: Andrew Jackson Downing*; and other books on the urban landscape – limits his ambitions in *Sanctified Landscape*. He confines his exploration of the valley to a period of about eight decades, seeking to answer three questions: how Americans first experienced this landscape; why they thought it was special; and how they reacted to the region's rapid industrialization and alteration at midcentury. His approach is not analytical but episodic. He builds his answers through five short essays on six nineteenth-century citizens of the Hudson Valley: Thomas Cole, Washington Irving, N.P. Willis, Andrew Jackson Downing, Jervis McEntee, and John Burroughs. These are not comprehensive biographies, but collections of vignettes from the lives and works of his subjects. Interwoven with these sketches are three thematic essays: on the origins of the "tourist experience" in the early century; on the process of "sanctification" that later arose in response to industrial change and threat; and on subsequent attempts to revive the landscape's historical associations, climaxing in the Hudson-Fulton Celebration in 1909.

In his chapter on Burroughs, the author quotes his subject, who explains that "the facts in the life of Nature that are transpiring about us are like written words that the observer is to arrange into sentences." Perhaps inspired by this, Schuyler gives us closely observed cameos, points us in the right direction, but largely leaves it to us to connect the dots. He presents the propositions that the Hudson helped to build America's national identity and produce "new ways of thinking about the human relationship with the natural world," but he does not support these hypotheses with a closely argued analysis. Instead his approach is granular; as in a large mosaic, the accumulation of detail builds gradually to the bigger picture.

Some of his choices are conventional, such as using Thomas Cole to set his theme of "the artists' river"; some are less obvious but familiar to students of the Hudson – for example, selecting the writer N. P. Willis to complement the better-known Washington Irving; and some choices appear at first blush downright eccentric, such as his lingering look at the life of the late-century Hudson River School artist Jervis McEntee. By the end, however, the more-obscure figures like McEntee prove to be the most interesting, and Schuyler tells his and the others' stories with considerable charm.

Sanctified Landscape has a distinctly melancholic tone. McEntee lived a life of constant disappointments, and his preference for painting autumnal and winter scenes is a haunting metaphor for his era's rapidly waning interest in American landscape painting. The considerable reputations of Burroughs and Willis faded fast. Downing died young in an accident, and even the magnificent 1909 Hudson-Fulton Celebration is presented by Schuyler as a flop. Perhaps this melancholy also reflects our continuing ambivalence at the very idea of a landscape that burdens nature with the imprint of human history and culture – so imperfect and so often deeply troubled. No wonder Wordsworth bemoaned that the civilized man had no choice but "To look on nature, not as in the hour / Of thoughtless youth; but hearing oftentimes / The still, sad music of humanity."

Increasingly that "still, sad music of humanity" became manifest in the valley, and Schuyler's subjects are acutely sensitive to it. Cole bemoans the ax felling the Catskill forests and ominously paints into his *River in the Catskills* (1843) the new Canajoharie and Catskill Railroad, Leo Marx's "machine in the garden." Irving curses the railroad that cut between his idyllic Sunnyside and the water, "profan[ing]" the river itself. Even Burroughs must retreat from Riverby, his house on the Hudson, to the more completely bucolic and wholly rustic Slabsides. Of course these resentments eventually sowed the seeds for the sensibility and values that would come to full flower later in the twentieth century, in the movement to protect the historic places and iconic landscapes of the Hudson Valley. But in 1909, the year Schuyler closes his narrative, there was little cause for optimism.

Sanctified Landscape does not contribute substantively to cultural landscape theory – that is, to our understanding of the processes by which history, allegory, myth, and metaphor turn geography into landscape. It does not aim for the chronological or geographical scope and depth of Simon Schama's superb *Landscape and Memory*, which provided remarkable insights into what cultural landscape is. Instead the book is a well-crafted and concise illustration of that process at work in one time and place. The author takes his title from Cole's famous remark that the struggle for freedom has "sanctified many a spot." It is, of course, a secular sort of sanctity. For Schuyler, it is also an active type of sanctity, an idealization of place that compels what he calls a "preservationist impulse." Schuyler explains that "the sanctification of landscape united attitudes toward scenery, history, political culture, and change into a conservative worldview that helped contemporaries adapt to the social and economic forces that were transforming their lives."

Schuyler is selective in his choice of themes, and as a result some important strands of the then-emerging Hudson River culture receive less attention than they might. One is the philosophical foundation provided by American transcendentalism. Transcendentalist thinking is deeply woven into the sanctified landscape of the Hudson and influenced much of the literary and artistic output in the era Schuyler describes. I have always enjoyed the metaphor for philosophy grounded in nature provided in 1858 – four years after Thoreau published Walden – by the expedition of a distinguished group of thinkers into the real wilderness, a spot on the banks of Follensby Pond known thereafter as the Philosopher's Camp. The party consisted of two poets, Ralph Waldo Emerson and James Russell Lowell; two scientists, Louis Agassiz and Jeffries Wyman; two lawyers, Ebenezer Hoar and Horatio Woodman; two doctors, Estes Howe and Amos Binney; John Holmes, the younger brother of writer Oliver Wendell Holmes; and William James Stillman, an artist, writer, and skilled woodsman. The "philosophers" spent a month at Follensby Pond engaged in hunting, fishing, exploration, nature study, and deep conversation about man's relationship with the natural world. During the rigorous expedition, Emerson wrote his poem "The Adirondacks" and Stillman chronicled camp life in his painting *The Adirondack Club*.

As Wallace Stegner, who carried forward into our own century so many of the values and sensibilities that are the subject of *Sanctified Landscape*, famously put it in his superb novel *Crossing to Safety*, "Hudson River School painting [unites] the philosophical-contemplative with the pastoral-picturesque." That philosophical-contemplative strain – where, like the camping philosophers, we experience natura naturata (created nature) but look for natura naturans (the transcendent or creating aspect of nature) – is critical to an understanding of nineteenth-century America's engagement with the land. That sensibility still reverberates strongly in the nation and the valley, which struggles more than ever with question of man's relationship with, and moral responsibility for, the natural world. And – like the mix of poets, lawyers, doctors, artists, and scientists gathered at the Philosopher's Camp – every branch of human knowledge and endeavor continues to contribute to this question. The scholastic distinction between natura naturata and natura naturans has been recently resurrected by a quantum physicist, Wolfgang Smith, who sees the collapse of the wave function, whereby potential becomes manifestation, as the action of *natura naturans* creating *natura naturata*.[1]

Another interesting aspect of Hudson River culture during the period covered by Schuyler is the rise of the eccentric and its contribution to the valley's distinctive character. John Stuart Mill observed that "eccentricity has always abounded when and where strength of character has abounded; and the amount of eccentricity in a society has generally been proportional to the amount of genius, mental vigor, and moral courage which it contained." Given the abundance of genius, mental vigor, and moral courage in nineteenth-century New York, it should be no surprise that the great city's backyard hosted a marvelous concentration of eccentrics. Orson Squire Fowler, for example, who was responsible for the briefly popular science of phrenology (reading character from the shape of the skull), lived in an octagonal house on the banks of the Hudson and advocated for the octagon as the perfect shape for rooms and houses in his 1848 best seller, *A Home For All*. During the Gilded Age, when most wealthy New York families flocked to the North Shore of Long Island or to Newport, many of those attracted to the Hudson – while perhaps not full-blown eccentrics – were of a slightly different ilk. In 1886 tobacco heir Griswold Lorillard, who had settled with friends in the Hudson Valley enclave of Tuxedo Park, revolutionized dinner wear with the shocking innovation of a short dinner jacket, ever thereafter referred to as the "tuxedo." Illinois Central Railroad President William H. Osborn built a whimsical castle on a high hill instead of a more conventional estate house. This whimsy is now a deeply rooted part of the Hudson Valley architectural vernacular. To this day, buildings up and down the valley still sprout octagonal towers without conscious knowledge of their debt to Fowler, and celebrate their remarkable setting with an exuberance not found elsewhere in the Northeast. The power of place is strong – in few places as strong and pervasive as in the Hudson Valley.

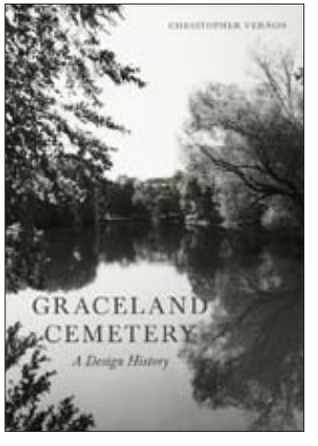
Although *Sanctified Landscape* could have been many times longer and explored a plethora of additional Hudson Valley characters and themes, the author's selective approach is a successful one. We get a rough sketch of the topography of the Hudson's cultural identity, and leave Schuyler's book convinced that the historic and environmental preservation ethos that flowered but a few decades ago was, in fact, deeply rooted in "the search for continuity" that began in the middle of the nineteenth century. – Frederic C. Rich

[1] Wolfgang Smith, *The Quantum Enigma*, 3rd ed. (Angelico Press/Sophia Perennis, 2005), 105-110.

Graceland Cemetery: A Design History

By Christopher Vernon

Amherst, MA: University of Massachusetts Press in association with the Library of American Landscape History, 2012



For some time – especially since the 1989 publication of Blanche Linden-Ward's *Silent City on a Hill: Landscapes of Memory and Boston's Mount Auburn Cemetery* – historians, architects, landscape architects, and lovers of peaceful oases in the city have become increasingly interested in the American rural cemetery movement. Its first exemplar, Mount Auburn Cemetery, was founded in 1831; two other important examples were established before

the decade ended – Laurel Hill in Philadelphia (1836) and Green-Wood Cemetery in Brooklyn (1838) – and Spring Grove in Cincinnati was chartered in 1845. Chicago's Graceland, founded in 1860, was one of the last. During the Civil War years, the rural cemetery would be gradually supplanted by other types of burial grounds.

Although cities in New England and the Mid-Atlantic states were quick to follow Boston's lead in establishing rural cemeteries, a phenomenon that Arthur J. Krim examined in his article "Diffusion of Garden Cemeteries in New England" (1983), modern monographs on these cemeteries have been slow to appear. Fortunately, early guidebooks were published to most of the first rural cemeteries – Mount Auburn, Laurel Hill, and Green-Wood – and they have become important sources of information and images. The two for Green-Wood and Mount Auburn, published in 1847, are often bound together, the text for the first written by Nehemiah Cleaveland and for the second by Cornelia W. Walter. Both are illustrated with line engravings by James Smillie. Some of the mourners portrayed in these engravings are solitary and sunk in melancholy; others are accompanied by children, subdued in manner but attentive, whom the adults appear to be lecturing on the virtues of the deceased. In 1852, *Smith's Illustrated Guide to and Through Laurel Hill Cemetery* appeared, written by R. A. Smith and illustrated with wood engravings. (It is now available online.)

Another major rural cemetery was Spring Grove in Cincinnati, chartered in 1845. Its trustees chose a site and then approached John Notman, a Scots-born architect who had designed Laurel Hill Cemetery. Notman's plan for Spring Grove was overly formal, however, and did not address the difficulties of the land. Next, the trustees approached a local architect, Howard Daniels, asking him to design a picturesque scheme that better dealt with the realities of the terrain. Daniels' plan was adopted, but the landscape became cluttered when individual owners began to embellish and plant their lots. In 1854, Robert Buchanan, a member of Spring Grove's board, met Adolph Strauch, a young Prussian landscape gardener and adherent of the famous garden designer Prince Pückler-Muskau. Strauch convinced Buchanan that he could achieve greater landscape unity in the cemetery by making the plan more scientific, and he was appointed Spring Grove's landscape gardener and then its superintendent. (He remained in Cincinnati for the rest of his life and is buried on an island in the lake at Spring Grove.) Strauch's revisions of the Spring Grove landscape were so successful that in 1875 Frederick Law Olmsted described it as "the best [cemetery in the United States] from a landscape gardening point of view."

These, then, are four of the most significant pre-1860 rural cemeteries in the United States – Mount Auburn, Laurel Hill, Green-Wood, and Spring Grove – and some important publications about them, both early guide books and modern monographs. Among modern studies, an essential reference is *The Last Great Necessity: Cemeteries in American History* by David C. Sloane (1991), which covers the entire chronological sweep of the American cemetery in its every form and stylistic manifestation. Also of value is *Silent Cities* by Kenneth T. Jackson, with photographs by MacArthur Fellow Camilo Jose Vergara (1989), which is not limited to "elite" rural cemeteries but also discusses and illustrates the burial grounds of ethnic and religious minorities.

Before this year, however, Chicago's famous cemetery Graceland had never been the subject of a book-length study. Robin Karson, executive director of the Library of American Landscape History, and the trustees of the Graceland Cemetery Improvement Fund agreed that one was urgently needed. Karson invited Christopher Vernon, an American living in Australia, to write the book. Previously Vernon had written an introduction to a reprint of Wilhelm Miller's *Prairie Spirit in Landscape Gardening* and had contributed to a 1992 report on Graceland. He had also been a student of Walter L. Creese, who included a chapter on Graceland Cemetery in his book *The Crowning of the American Landscape: Eight Great Spaces and Their Buildings*. Now an associate professor in the School of Architecture, Landscape, and Visual Arts at the University of Western Australia, Vernon accepted the offer, even though it required him to make frequent long flights to his home hemisphere.

Like nearly all rural cemeteries, Graceland, founded just before the Civil War by Thomas Barbour Bryan, is a private entity. In 1856, Bryan, a lawyer and land developer, formed a committee and purchased land to the north of Chicago, which had undulating terrain and a grove of old trees. He had studied A. J. Downing's writings as well as G. M. Kern's *Practical Landscape Gardening* (1855), which includes a section on layouts for cemeteries.

Most of these well-known rural cemeteries were designed sequentially by one person or at most two, as in the case of Daniels and Strauch at Spring Grove. By contrast, Graceland was the subject of plans by at least five landscape professionals, generally little known. The first was a Swedish landscape gardener, Swain Nelson, who had settled in Chicago. Next on the scene was William Saunders, a Scots landscape gardener with an established reputation in Philadelphia. Nelson and Saunders appear to have worked in tandem for a time, with Saunders the principal designer and Nelson executing his plans. An undated lithograph of Graceland attributes the design to both men. Although water-stained and marred by a large tear, it is a key document, showing a regular layout but with an area reserved for parkland – one feature of which was a grotto.

Horace W. S. Cleveland would also provide an early design for the cemetery. Cleveland had gained a reputation primarily for New England work, including four cemeteries, and also for implementing Olmsted and Vaux's plans for Prospect Park in Brooklyn. He then moved to Chicago from Boston and did the same for their designs of the south parks of Chicago and the nearby community of Riverside. When *The American Builder and Journal of Art*, which published articles on landscape matters, was founded in Chicago in 1869, Cleveland became a contributor with "A Few Hints on the Arrangement of Cemeteries." A few years later, he wrote a booklet entitled *The Public Grounds of Chicago: How to Give Them Character and Expression*. It was almost inevitable that Cleveland would be asked to do further work at Graceland. (Although the cemetery itself was well outside the range of the Great Fire of 1871, Cleveland's 1870 plan was destroyed, but it was also described in an official pamphlet, which Vernon has made use of here.)

In 1877, Graceland's founder left Chicago to take a post in the Rutherford Hayes administration. Before leaving, however, Bryan hired William Le Baron Jenney to carry out the last major improvements at Graceland. Today best known as the architect of the structurally innovative Home Insurance Building (1885) in Chicago, Jenney had studied engineering in Paris. How-

ever, his tenure was short. By 1881, Thomas Bryan's nephew Bryan Lathrop, Vice-President of Graceland's Board of Managers, had named Ossian Cole Simonds landscape gardener at Graceland, bestowing upon him the titles of "Superintendent, Landscape Gardener, Engineer, and Surveyor." Traditionally the design of Graceland is attributed to this last contributor to its planning.

Simonds had just completed his architectural studies at the University of Michigan. Aside from a rural upbringing, he had no special knowledge of plants when he arrived at Graceland, but during the course of his tenure there he became an expert plantsman. He and Lathrop immediately began planting the site, then barren and practically treeless. While few planting plans for Graceland have survived, Simonds left an account of his first planting activities there, writing that he went out into the country to select "native growth" from farms, including elms and other trees "fourteen, sixteen and eighteen inches in diameter." He also purchased wagonloads of shrubs. Like Olmsted in his design of the Boston parks, under way at the same time, Simonds was not a purist about native plants. He emphasized but did not use them exclusively to create what Wilhelm Miller called "long views" – a fine example of which is the grass path depicted in Vernon's book. Carefully graded and sensitively planted, this path has an intriguing but almost certainly accidental resemblance to the walk past Ray Wood at Castle Howard in North Yorkshire, England, which terminates first at Vanbrugh's Temple of the Four Winds and then in a distant view of the Howard family mausoleum designed by Nicholas Hawksmoor (1731).

Simonds resigned as Graceland's superintendent in 1898 but remained as landscape gardener for a few more years, a total of two-and-a-half decades of intense involvement at the site. Vernon gently suggests that posterity has been perhaps too kind to Simonds, giving him credit for concepts developed by his predecessors, who had done considerable groundwork before his arrival. Nevertheless, when Simonds retired, Graceland's evolution as a landscape was essentially complete, and two of its most famous monuments were in place: the Martin Ryerson tomb (1889) and the Carrie Eliza Getty mausoleum (1890), both by Louis H. Sullivan. Later memorials in Graceland include the Marshall Field monument (1906), a collaboration between sculptor Daniel Chester French and architect Henry Bacon in a garden setting, and the mini-Parthenon designed by McKim, Mead & White in 1921 for Mr. and Mrs. Potter Palmer, which overlooks Lake Willowmere.

Vernon's research on this book was exemplary. Where documents were lacking, or lost in the 1871 fire, he diligently sought sources elsewhere. He located the *American Builder*, in print for a scant four years, which contains valuable information about Cleveland's Chicago years. He also obtained a transcript of Simonds's account of Graceland's plantings from the University of Michigan. His bibliography is exhaustive. The book is illustrated with fine black and white historic photographs chiefly from two sources: eloquent turn-of-the-century views by Arthur G. Eldredge, some from the collection of the Chicago History Museum and others from a 1904 book on Graceland published by the Photographic Print Company. It also contains contemporary photographs in both color and black-and-white by Carol Betsch. Both trained landscape historians and other readers of *Site/Lines* will be happy to have this book in their libraries.

– Cynthia Zaitzevsky

Contributors

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Elizabeth Barlow Rogers is the president of the Foundation for Landscape Studies, a life trustee of the Central Park Conservancy, a fellow of the American Academy of Arts and Sciences, and a member of the boards of The Battery Conservancy, the Library of American Landscape History, and the Regional Plan Association. She is the author of several books on landscape history and the nature of place, including *Landscape Design: A Cultural and Architectural History* (2001), *Romantic Gardens: Nature, Art, and Landscape Design* (2010), and *Writing the Garden: A Literary Conversation Across Two Centuries* (2011). Her most recent book, *Learning Las Vegas: Portrait of a Northern New Mexican Place* will be published in Spring 2013.

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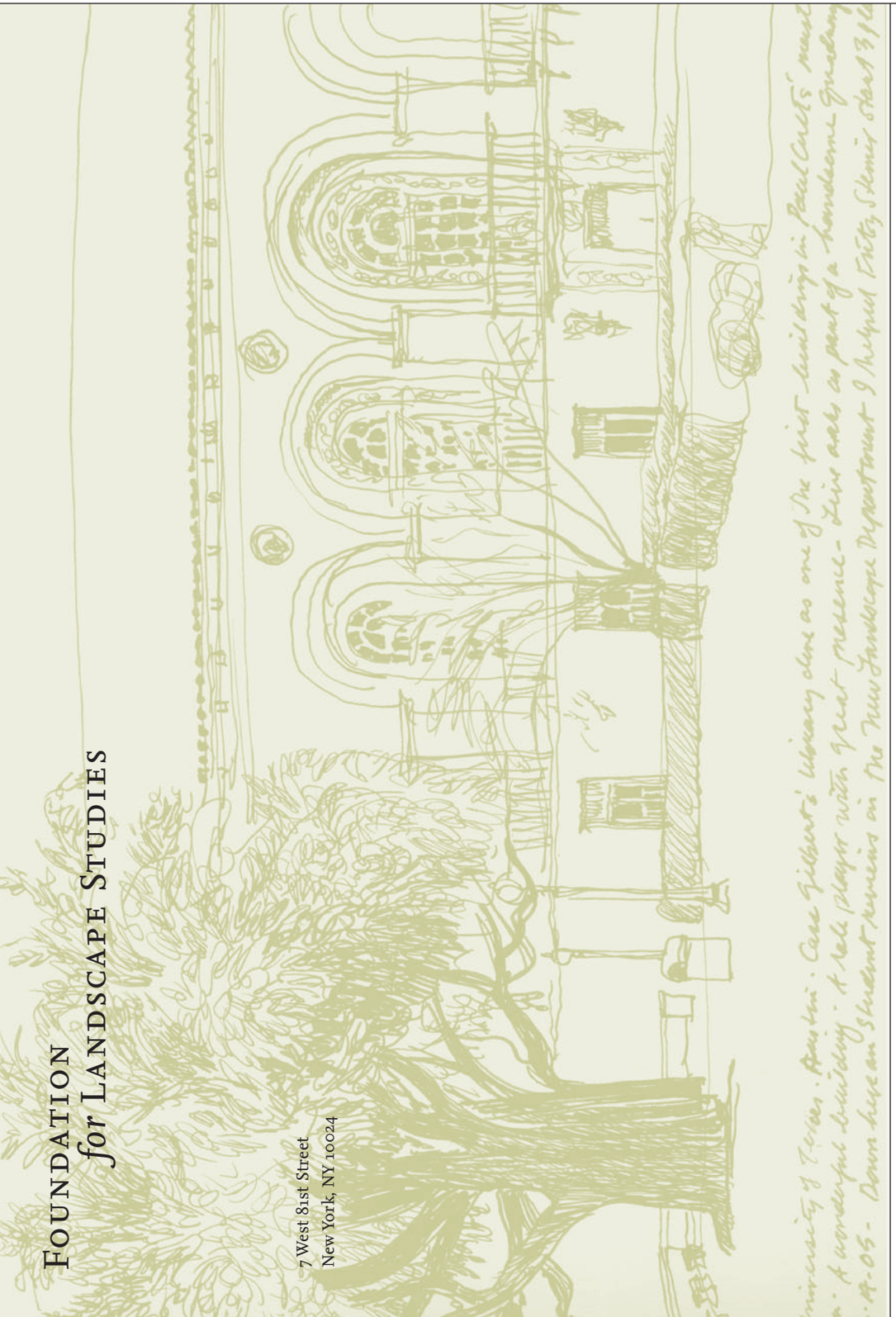

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