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GROUND

an interview with historian of technology david nye photographed by *edward burtynsky* **OIL**



FIRST WORD

BY REED L. ENGLE

Driving Adventure

WHEN I WAS A CHILD, SUNDAY AFTERNOONS WERE FOR DRIVING. The lean years of World War II were over. Young families with new, or almost new, automobiles took advantage of the “day of rest” (there were Blue Laws, and most stores were closed on Sundays) to take a drive in the country. And if you lived in the country, your parents called on friends whom they might not have seen since the previous Sunday.

SUNDAY DRIVES WERE ADVENTURES, with the ever-present possibility of danger. In summer, families traveling two-lane roads with names a century old often ended up in traffic jams because radiators boiled over regularly. Car owners carried patching kits because tires had tubes and often went flat. Automobile air conditioning was unknown, and most vehicles had no radios. Travelers talked and played games. **FAMILY VACATIONS WERE NOW DEPENDENT ON** the automobile, and the trip itself became as important as the destination. Sightseeing along the way became a major part of the vacation. In the first half of the 20th century, roadside attractions sprang up like mushrooms after rain: Wall Drugstore (South Dakota, 1931); Roadside America (Pennsylvania, 1941); South of the Border (South Carolina, 1950); and countless diversions offering motorists everything from a chance to view the “World’s Largest Ball of Twine” (Kansas, 1953) to the awe-inspiring “World’s Largest Ball of Barbed Wire” (Minnesota, 1950). Increased automobile travel generated “tourist courts” of tiny individual cabins that soon grew into more organized “motor hotels” (motels), but which still retained unique, often quirky, architectural characters—witness the national chain of concrete wigwams. The generation that came of age in the Great Depression listened to Dinah Shore and took their children to “See the USA in [Their] Chevrolet.”

IT WAS A TIME OF SIMPLE PLEASURES. No little hands held electronic games. No iPods distracted conversation. No laptop computers. No Internet. Television was still over the horizon. Movies at a theater, radio at home, and newspapers were the media. **SKYLINE DRIVE WAS DESIGNED FOR** travelers in this pre-technological America. It was planned with care for leisurely drives and picnics in the cool mountain air. It was to be both the access to a national park and a major part of the park experience. It was to be both the “getting there” and a part of the “there.” **THE CREATION OF SKYLINE DRIVE WAS PLAGUED BY THE SIMPLE FACT THAT** Shenandoah National Park did not exist when most of the road was being designed and built. It was a park road constructed without a park. The limitations imposed on the initial road design by the narrow right-of-way would have to be corrected once the park was established. Due to the efforts of landscape architects and engineers

hired by Franklin Delano Roosevelt’s Civilian Conservation Corps and funding provided by the Depression relief Public Works Administration, this first major National Park Service park roadway in the East became a testing ground for new architectural and landscape design standards. **SKYLINE DRIVE IS TESTIMONY TO** the values of a less pressured society. Politics, perseverance, and the privation of the Great Depression created it. Its completion was the result of the efforts of wealthy businessmen, legislators, displaced Blue Ridge Mountain residents, and the unemployed young men enrolled by the Civilian Conservation Corps. **IT STILL STANDS UP TO THE PURPOSE SET FORTH BY** the Southern Appalachian National Park Committee in its report to the Secretary of the Interior: “It will surprise the American people to learn that a national park site with fine scenic and recreational qualities can be found within a 3-hour ride of our National Capital and within a day’s ride of 40,000,000 of our inhabitants . . . The greatest single feature, however, is a possible sky-line drive along the mountain

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top, following a continuous ridge and looking down westerly on the Shenandoah Valley . . . and also commanding a view of the Piedmont Plain stretching easterly to the Washington Monument . . . Few scenic drives in the world could surpass it.” **SKYLINE DRIVE IS, HOWEVER, NOT A PARKWAY;** it is a road in a national park, a corridor through a large natural area. To many travelers the roadway represents only brilliant October foliage. But for those who take the time, or better yet another time, to visit, Skyline Drive can offer surprising glimpses of wildness: a pair of thirsty ravens drinking from a CCC-built fountain; a bobcat perched regally on a dry-laid wall; a quail strutting and challenging your right to drive on its roadway; a black bear sow and her cubs, perched on a cut slope, watching passing cars with interest. After 75 years, Skyline Drive has blended with nature to become a part of the park’s ecosystem. This roadway was created from avarice, dreams, and the sweat and tears of countless unemployed men and boys. Along this long and winding road, history and nature meld. Drive slowly and enjoy the view.

Excerpted from *The Greatest Single Feature: A Sky-Line Drive* by Reed L. Engle, thanks to the Shenandoah National Park Association. Engle, now retired from NPS, was co-winner of its Appleman-Judd-Lewis Award for excellence in cultural resource management.



Contents

FEATURES

16 DREAM OF NATURE Russel Wright's vision of nature, nurtured on a ravaged hillside in the Hudson River Valley, took root in the troubled streets of Washington in the summer of 1968.

28 OIL The discovery of liquid gold has had a seismic effect on cultures around the globe. A talk with noted historian David Nye.

Above: Skyline Drive. PAT AND CHUCK BLACKLEY *Front: Oil wells, Beldridge, California, detail.* © EDWARD BURTYNSKY, COURTESY HASTED HUNT KRAEUTLER, NEW YORK/ NICHOLAS METIVIER GALLERY, TORONTO *Back: Cover image, Summer in the Parks booklet.* NPS/TEDD MCCANN PAPERS

SPRING **2010**

News Now 4

Artifact 38

Riding High

Skyline Drive Soars to New Heights as National Historic Landmark

Skyline Drive, recently designated a national historic landmark, courses for 105 miles along the spine of the Appalachians, looking down from a heavenly perspective on some of the most stunning landscapes in the United States. Built between 1930 and 1942, it is not only the centerpiece of Virginia's Shenandoah National Park, but a portal on the nation's past framed in a pastoral setting.

In the 1920s, a young National Park Service was working toward attracting the public to its growing collection of wild American landscapes. The agency embraced the automobile, and by the 1930s was heavily invested in a system of roadways that opened previously inaccessible places to the public. Skyline Drive played a pivotal role not only in the evolution of park roads but in the development of federal policies toward recreation and conservation. Skyline Drive also stands as a legacy of the New Deal era, with out-of-work Americans employed building lodges, trails, roadways, and cabins.



FROM THE HIGH POINTS, ONE CAN SEE THE FARMS OF THE SHENANDOAH VALLEY; REMINDERS OF WESTWARD EXPANSION AND THE CIVIL WAR ARE EVER-PRESENT.

In 1924, the Department of the Interior proposed the idea to the state of Virginia, which enthusiastically supported the road and was instrumental in its creation. It was “designed as the backbone of Shenandoah National Park,” according to National Park Service documents of the time, today a stellar example of the rustic design then popular in the parks. Similar roads through Glacier in Montana, Yellowstone in Wyoming, and Zion in Utah were experiments in harmonizing with nature, attempts to build highways that lay lightly on the land. Skyline Drive demonstrates how the approach was adapted for the Appalachians, with parking overlooks at frequent intervals providing scenic valley and ridgetop vistas linking motorists with trails to waterfalls, outcroppings, springs, and virgin stands of trees. As was the practice in the western parks, alterations to the topography were shaped to resemble the surrounding landscape. Native

ABOVE: *Clouds rest in the folds of mountains in this view from Skyline Drive in Shenandoah National Park.* **RIGHT:** *Moon rising over Moormans River from a parapet on Skyline Drive.*

contact points **web** NHL Nomination www.nps.gov/nhl/designations/samples/va/SkylineDrive.pdf Skyline Drive www.nps.gov/shen/planyourvisit/driving-skyline-drive.htm

species were planted along the winding course to blend into the largely deciduous forest. The road was completed in segments, with the construction contracted out to private companies. Landscape architect Harvey Benson oversaw the project.

Skyline Drive was a showcase of the Civilian Conservation Corps, which not only cleared and planted along the route, but also built guard walls, made signs, and shaped overlooks and road banks, their handiwork apparent in rustic cabins, lodges, gas stations, and dining facilities. Initially, local farmers and apple-pickers, then suffering through a drought, were brought in as laborers by the Federal Emergency Relief Administration. President Roosevelt, accompanied by reporters and newsreel cameramen, toured the road during the construction to promote confidence in his public works programs.

Every year thousands of visitors follow the drive's rising and falling course. From the high points, one can see the farms of the Shenandoah Valley; reminders of westward expansion and the Civil War are ever-present. As an expression of one of the nation's most enlightened ideas—paying homage to its natural places and preserving them for all—Skyline Drive is a landmark.



Temples for the People

Largess for Learning at Philadelphia's Carnegie Libraries

"An enterprise without parallel in the history of American philanthropy" is how the *Architectural Record* described Andrew Carnegie's plan to give away millions for the construction of libraries across the nation. The self-made Carnegie, who rose meteorically to the highest ranks of American industrialists, believed that everyone should have access to knowledge. The libraries would be free—a new concept in the 1880s—open to anyone with a desire to learn. Carnegie, a Scottish immigrant who worked his way from messenger boy to steel mogul, never forgot the benefactor who allowed him access to his private library, and how that privilege opened up the world.

Between 1886 and 1917, Carnegie donated \$40 million to build 1,679 libraries, his largess evident across the country. Philadelphia saw one of his most ambitious campaigns, second only to New York City, and today retains one of the nation's largest collection of Carnegie libraries.

To heighten awareness of this legacy, the Preservation Alliance of Greater Philadelphia joined with the Historic American Buildings Survey of the National Park Service in an extensive documentation project. The structures resemble museums, places whose function transcends the daily business of the city. It was not only the buildings themselves HABS intended to capture, but the birth of an

THESE WERE THE FIRST LIBRARIES WHERE PATRONS COULD ROAM FREELY AMONG THE BOOKS, UNTIL THEN KEPT BEHIND THE LIBRARIAN'S DESK AND RETRIEVED ONLY ON REQUEST.

American institution: the public library. Says HABS chief Catherine Lavoie, "In part we were documenting the Free Library of Philadelphia, one of the first public library systems in the country, which is significant in its own right." The system's headquarters, the Central Library, was a clear expression of the city's commitment to public enlightenment. While not built under the Carnegie endowment, it was a symbolic center: a grand edifice inspired by the architecture of Place de la Concorde in Paris and surpassed only by the likes of the New York Public Library and the British Museum.

Of Philadelphia's original 25 Carnegie libraries, 20 are still intact, 16 used for their original purpose. The HABS documentation encompassed large format photography, measured drawings, and comprehensive written histories. The city was preparing to close nearly a dozen libraries and four were Carnegie buildings, which added urgency to the project. Says Lavoie, "They were basically an unprotected resource. Who's going to buy a library in north Philadelphia?"

ABOVE: Lion heads in the main stairway at Philadelphia's Central Library, the system's flagship. **RIGHT:** The library's second story main hall.

contact points **web** Preservation Alliance of Greater Philadelphia www.preservationalliance.com HABS Collection at the Library of Congress http://memory.loc.gov/ammem/collections/habs_haer/index.html

At the turn of the century, public libraries were a relatively new concept. Private subscription libraries, where members paid dues, had been around since the 18th century. In 1891, Philadelphia became one of the first cities to provide free libraries, but they were housed in "old mansions, storefronts, or the back rooms of commercial buildings," says the HABS history. At the time, some philanthropists were funding the construction of public libraries, but it was not common and no one had done it on the scale that Andrew Carnegie would. Libraries, "the people's university," would help immigrants assimilate, he believed; those who did not enjoy the privilege of wealth or social standing could, through motivation and ready access to knowledge, improve their lives.

For his endowment, Carnegie applied the acumen that served



him well as a CEO. Any municipality that wanted grant money had to provide a building site and an annual maintenance budget. The community also had to supply the books, a measure intended to make sure the selection accommodated the needs and preferences of the people. In this way, Carnegie got local communities to invest in the project. The result—according to Lavoie, who wrote the HABS history of the system with colleague Lisa Davidson—was that he "took libraries from the arena of private philanthropy to that of civic responsibility."

A city or town that met the conditions was eligible for a construction grant. Initially it was left to recipients to choose their design and method of construction. At that time, popular taste in public architecture leaned toward the Beaux Arts. The style, borrowing details from ancient Greece and Rome, had achieved prominence at the World's Columbian Exhibition in Chicago in 1893. The "White City," as it was called, captured the public imagination and profoundly influenced American architecture.

The Carnegie libraries embraced the regional vernacular too—such as the randomly shaped gray stone used in Philadelphia's Chestnut Hill library—but the Beaux Arts was evident nearly everywhere. As more municipalities got Carnegie funding, Beaux Arts and libraries became practically synonymous. Clients frequently would accept nothing



ALL PHOTOS JOSEPH E. ELLIOTT FOR HABS

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else, architects found. The HABS history quotes the notes of a 1903 meeting of the Illinois Library Association: "Let an architect suggest Romanesque or Gothic or Early French Renaissance or Byzantine, and he is, especially in the smaller cities, met with a stony smile, plainly saying, 'You think because I don't live in Chicago I don't know anything about architecture, but you may as well understand that I am quite up to date and know what is the proper thing in library styles.'"

The early years saw some ornate central libraries built in the well-to-do neighborhoods. That ended when Carnegie refused to fund any more of these. "He was interested in the smaller branch libraries because they were accessible to the people he was trying to target," says Lavoie. For the most part, city officials and librarians could in-

fluence design, but Carnegie's assistant James Bertram, who monitored the program, eventually stepped in to impose control. Historian Abigail Van Slyck writes, "Bertram campaigned aggressively against the full-blown temple front, castigating 'pillars and Greek temple features, costing much money and giving no return . . .'" To counter the desire for decoration, Bertram simply gave out smaller grants.

Even as Beaux Arts libraries became one of the most numerous building types in America, the Carnegie grants spurred the advancement of library science.

The American Library Association was developing new ideas on design and function, which Carnegie supported. These ideas found their way into recommendations compiled by Bertram and Carnegie on what made the ideal library. *Notes on the Erection of Library Buildings* was an attempt to discourage extravagant, poorly planned structures, putting practicality over appearance.

Philadelphia's Carnegie libraries were designed by "a who's who of local architects," says Lavoie. Hired by a committee overseeing the grants, they generally followed the recommendations on how the buildings should be laid out. Most included an ell at the rear, intended to expand the space, and a lecture hall for cultural and educational

ABOVE: The Tacony branch. **RIGHT:** The front entrance of the Chestnut Hill branch, the city's eighth Carnegie library, with motifs including classical entablature and a turned limestone balustrade.





events. These were the first libraries where patrons could roam freely among the books, until then kept behind the librarian's desk and retrieved only on request. Skylights and windows let in plenty of light, though the wall space was carefully apportioned to accommodate shelves. Bertram's *Notes* offered several different plans as suggestions. They all featured a wide-open space with the librarian occupying a central position from which patrons could be observed (planners apparently were not yet entirely comfortable with open access). Holdings were divided into adult, children's, and reference.

Philadelphia's Carnegie Fund Committee, dominated by librarians, did not include a single architect. This was in sharp contrast to its counterpart in New York, composed of nationally recognized architects who went on to design more than half of the city's libraries. Bertram felt librarians knew best how the building should function, which is why so many of Philadelphia's follow the same basic layout.

The branches were intentionally toned down to be more inviting for the working class neighborhoods where they were often located. Still, most employed "the Classical vocabulary of the Beaux Arts," in the words of the HABS report. They featured an ornamental façade, a somewhat grand entrance, decorative windows, friezes, and cornice work, but otherwise were rectangular and functional. The Lehigh branch, one of the first, was not only the largest but among the more extravagant, designed before guidelines were introduced in 1908. Its layout is in keeping with the Carnegie ideal—in fact it is called "quintessential" in the report—but its terra cotta façade and richly decorative features set it apart from the others. It was built to accommodate a burgeoning immigrant population that had settled in that part of Philadelphia at the time.

The Manayunk branch, on the northern edge of the city, was also one of the earliest and most ornate, a classic example of the T-shaped form that took hold nationwide. Today, it sits atop a small knoll in a gentrifying neighborhood, awaiting reincarnation as condominiums.

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Philadelphia's building campaign originally planned for 30 branches at an estimated \$50,000 apiece, tapping a 1903 grant of \$1.5 million to build a city-wide system. By 1916, with war raging in Europe and the United States supplying England and France, labor and materials costs skyrocketed. With a number of branches already built or underway, Philadelphia scaled back the plan to 25 and cut expenses so each would come in at about \$60,000. But, given the war, that ballooned, too. Bids for the Logan branch came in at \$75,000. The Kinsessing branch, which opened in 1919, was \$82,000. Cobbs Creek, built in 1924-25, needed contributions from the city and private donors. Cost cutting altered its form, the "concrete construction and banded windows [a] modernist interpretation of the old Beaux Arts prototype," says the HABS report. The Wyoming branch, opened in 1930 after the city had to borrow \$120,000 to build it, was not only the last of Philadelphia's Carnegie libraries, but the last built in the country.

A National Trust presentation helped John Gallery, executive director of the Preservation Alliance of Greater Philadelphia, fully comprehend the importance of the system. "I've always seen these libraries—such strong landmarks that were architecturally well designed—in working class sections of the city [but] I never could understand why they were there." The city's plan to shut down four of them brought out people in opposition. "The communities responded very angrily," he says. "They had a strong appreciation for the architectural character of these buildings as landmarks within their neighborhoods, which they didn't want to lose. That is what pushed us." The buildings did not enjoy official historic status. Had the city closed them down, they would have become surplus prop-



erty, potentially torn down or altered to the point where they would be, for all practical purposes, destroyed (which has already happened to some of them).

Using the HABS documentation, the alliance nominated the four threatened libraries to the city's register of historic places; last summer they were designated. The alliance is working on six more and may nominate the entire system—as a collection of related resources—to the National Register of Historic Places. "It's a way to get at the larger story," says Lavoie.

LEFT: Entrance pavilion of the Grecian-style Lillian Marrero branch, formerly the LeHigh Avenue branch. **ABOVE:** Cornice of the Manayunk branch's southeast entrance. The Beaux-Arts building is one of four Carnegie branches no longer used as a library.

Six Gun City

Future Uncertain at Hartford's Historic Colt Armory Complex

The Colt Armory, whose firearms were virtually synonymous with the Old West, transformed Hartford, Connecticut, with a vision of progress that embraced not only technology but its workers as well. It created a city within a city—Coltsville—a hotbed of innovation in the heart of the Connecticut River Valley of the 1850s, “what California’s Silicon Valley is today, the vanguard of an internationally significant, technology-based transformation that changed the world of work,” writes William Hosley in *Colt: The Making of an American Legend*. Today, despite the company’s departure, the legend lives on in a sprawling

with its own unique identity, all of which is related to Colt’s impact nationally.” The dome has long been a local landmark, visible from a distance. The state and the city are eyeing the complex as a key to revitalizing the Connecticut River waterfront.

In a companion book to the PBS series *They Made America* Harold Evans writes of Samuel Colt, “Whether his revolver defended or retarded civilization is endlessly arguable . . .” What is indisputable is his contribution to manufacturing. Colt’s enterprise saw the dawn of precision, mass-produced, interchangeable components. The New

England firearms industry was a rich source of innovation, with the federal armory in Springfield, Massachusetts—today also an NHL—just 25 miles to the north. According to the landmark nomination, the Colt armory had the “essential ingredients of the American manufacturing system: an innovative product, advanced manufacturing techniques, thorough mechanization, large-quantity production, successful marketing, . . . and adept use of patents.”

Samuel Colt was born in Hartford in 1814, the son of a textile manufacturer. He had an inquisitive bent, an engineer’s mind, and early exposure to tools and the process of making



WESTWARD EXPANSION FOSTERED EXPLOSIVE GROWTH AT THE COMPANY. “A WEAPON THAT ENABLED A HORSEMAN TO FIRE SIX SHOTS WITHOUT RELOADING HAD REVOLUTIONARY IMPLICATIONS,” WRITES HISTORIAN ROBERT UTLEY.

260-acre downtown site marked by an iconic dome, the subject of a congressionally mandated study that ponders its preservation as part of the National Park System. Largely abandoned since 1993, the armory was designated a national historic landmark in 2008.

The Coltsville Historic District was the center of Samuel Colt’s industrial empire with a forge shop, foundry, machine shop, offices, warehouse, garage, and worker housing. Says Karen Senich, the Connecticut state historic preservation officer, “It’s an entire area

ABOVE: The Colt Armory today. **RIGHT:** Colt revolver from the collections of the Smithsonian National Museum of American History.

contact points **web** NPS Study www.coltsvillestudy.org National Historic Landmark Nomination www.nps.gov/history/nhl/Fall07Nominations/Coltsville%20Historic%20District.pdf

things. He took a job as a seaman in 1832 and it is said that he got the idea for the revolver while watching the workings of a ship’s wheel.

He returned from sea to work for his father, who financed his first attempts at making the weapon, which were unsuccessful. At that time, firearms were still being made—at least partly—by hand. Colt believed that all parts could be machined, producing a flawless product. With hundreds of machines doing a large part of the work, Colt advanced the concept of interchangeable parts and standardized mass production. His fortunes changed when the Army ordered thousands of his revolvers with the outbreak of the Mexican-American war in 1846. Soon there was an order for another thousand, and Colt eventually broke ground for the armory. Westward expansion fostered explosive growth at the company. “A weapon that enabled a horseman to fire six





shots without reloading had revolutionary implications,” writes historian Robert Utley. “Colt” became a catch-all term for revolver.

Soon after the armory was completed in 1855, Colt built a series of worker homes to attract machinists, toolmakers, and other specialists. In the 1880s, they graduated to more upscale housing as unskilled laborers moved into the homes they left behind. Coltsville sponsored lectures, classes, dances, and intramural sports. Unlike other industrial colonies of the era, there was no attempt to exert control over the workers’ private lives, since most lived off the grounds.

Colt was a marketing genius ahead of his time, cultivating a close relationship with the military. He sent engraved models to heads of state

THE LEGEND LIVES ON IN A SPRAWLING 260-ACRE DOWNTOWN SITE MARKED BY AN ICONIC DOME, THE SUBJECT OF A CONGRESSIONALLY MANDATED STUDY THAT PONDERES ITS PRESERVATION . . .

and convinced the famous to provide testimonials. His methods had a ripple effect on industry. Up-and-coming weapons inventors all came to Colt for the machining, testing, and production of their designs.

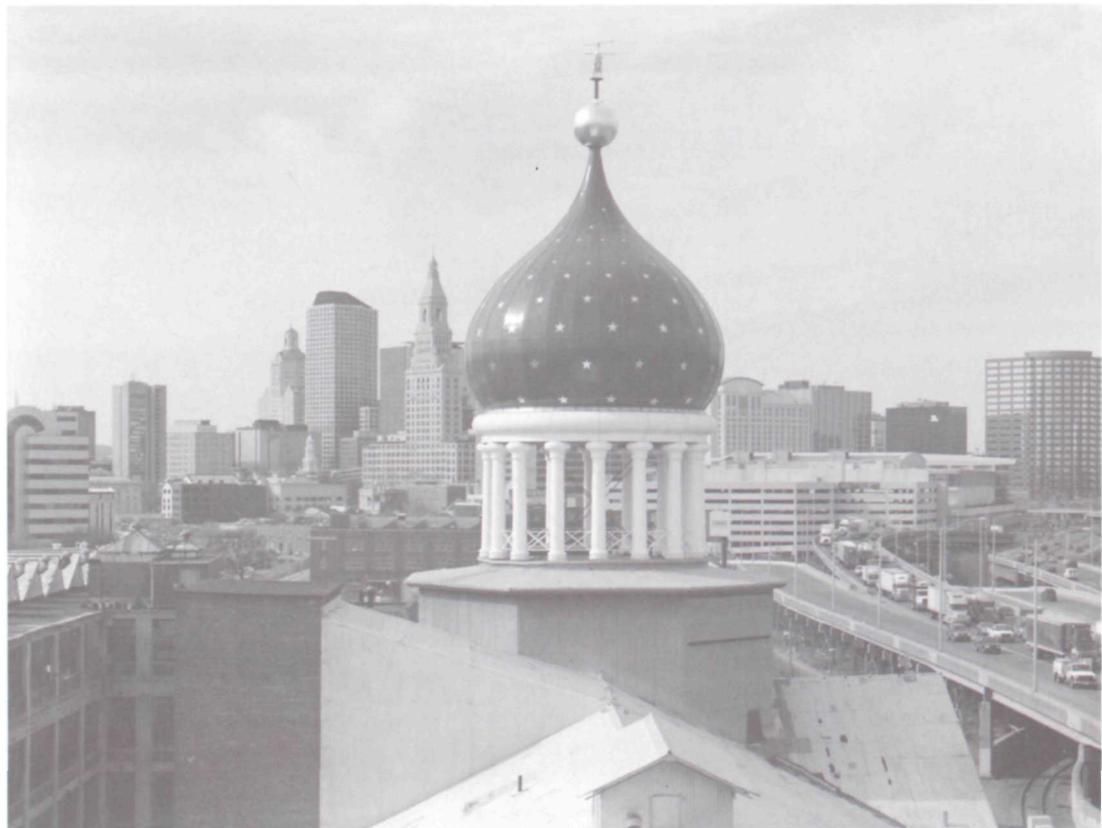
Samuel Colt died in 1862, at the height of Civil War production. His wife Elizabeth ran the company for another 39 years, an anomaly in the male ranks of American industrialists, becoming a local patron of the arts.

World War I spurred extraordinary growth, the workforce skyrocketing to 10,000. The Army was short on the weapon that would define the conflict—the machine gun—and the armory was one of only two in the nation to produce it. In World War II, Colt was a linchpin of the “arsenal of democracy” with patents on the .30 and .50 caliber Browning machine guns—which the Army adopted as standard weaponry—and sole source of the .37-millimeter anti-aircraft gun. By 1944, with 16,000 workers, the company had to establish satellite facilities around the city. The Army purchased the patent for Colt’s famous .45 semi-automatic, along with those for a number of other weapons.

But the company’s insistence on precision was increasingly at odds with a new ethos that stressed speed and efficiency. In the heady year of 1943, with the machinery turning out more weapons than ever, Colt lost money. The company’s role as worker benefactor became anachronistic in a time when labor was asserting its rights as never before. After the war, the workforce shrunk to 1,000.

In 1947, some of the buildings were demolished. Colt was bought out by a conglomerate in 1955 and the main plant moved to West Hartford. The machine shop remained open, producing the M-16 rifle for the Vietnam War, but the armory closed its doors for good in 1993.

The National Park Service study concludes that Coltsville could be an appropriate addition to the National Park System if “ownership issues are resolved, development plans crystallized, and partnerships better established.” For now, at least, circumstances are too uncertain to make it feasible. In 2003, a developer began rehabilitating the industrial buildings, aided by preservation tax credits, but went bankrupt with the economic downturn. With a new



developer in place, the project has begun to move forward. In an ideal world, says the study, the armory would be an “inviting and walkable” site, with thousands of square feet of exhibit space and direct access to nearby attractions, costs shared among federal, state, local, and private partners. While the economy has hampered revitalization, the city remains optimistic about this vision.

LEFT: Revolver from the collections of the Smithsonian National Museum of American History. Colt’s metalworking advances altered other industries. **ABOVE:** The company dome, an iconic beacon on the skyline.

Written and
Photographed
by David Andrews

Dream of Nature

BELOW: *Wright's studio, chiseled into a former quarry—the heart of a healed landscape with echoes of Walden and scene shifters the Olmsteds and Capability Brown.*
RIGHT: *Light and contrast, prime tools in Russel's design kit, were used to dramatize elements so that their key features stood out boldly.*

ALL PHOTOS DAVID ANDREWS/NPS EXCEPT AS NOTED. BELOW RUSSEL WRIGHT DESIGN CENTER





In the postwar years, Russel Wright was the star of the station wagon way of life, informal and woodsy, the Ralph Lauren of his day with a loopy signature that instantly branded his nature-inspired designs for the home.

IT'S A STEAMBATH DAY IN THE CITY BUILT ON A SWAMP AS I GRIND GEARS GOING UP

Meridian Hill, one of the steepest grades in the nation's capital. The heat came early this year with the firestorm following the assassination of Martin Luther King, Jr. My boss has just dropped in on the offices of the *Afro American*, on 16th Street at the base of the hill, in part to tout Summer in the Parks, a program promising relief for a city that needs it, the brainchild of designer Russel Wright.

I'm learning stick shift to keep her '53 Ford idling, Bonnie-and-Clyde style, as she ducks in to pitch the media lords of the city. Junior Bridge—her very name speaks of youth and possibility in the years before hope went out of fashion. A wide-eyed high schooler, I was glad to be along for the ride, in that summer of 1968.

Stage right, the program will unfurl in a grand old dame of a park erected thanks to the doyenne of 16th Street, Mary Henderson, early in the century. Henderson lined the avenue with embassy buildings, the host of many an international soirée, to enrich her real estate investments. Now the area is in decline, hastened by the riots. Our destination—a Chateau-style delicacy, one of Henderson's last—is home base, headquarters of DC Parks and Recreation, which has joined hands in the venture with the National Park Service and the Smithsonian.

Meridian Hill Park remains a signature spot in the city, an Italian Renaissance wedding cake with tiers of water stepping down the slope in stately fashion. Since the water has been off for some time, it's an ideal place to signal Wright's intent—to awaken parks to a new purpose.

In the postwar years, Russel Wright was the star of the station wagon way of life, informal and woodsy, the Ralph Lauren of his day with a loopy signature that instantly branded his nature-inspired designs for the home. But with his wife's death in the early '50s, he gradually withdrew into the hills of the Hudson River Valley, transforming a ravaged landscape into his magnum opus, a work of art wedded with ecology, the word now on everyone's lips. That brought him to the attention of the National Park Service.

WRIGHT BEGAN AT PRINCETON, A 17-YEAR-OLD WEEKEND APPRENTICE TO SET DESIGNER

Norman Bel Geddes, a future rival in the emerging industrial design profession. Wright soon succumbed to the allure of the avant garde theater—afire with the new in the 1920s—first as a summer-stock set designer for future filmmaker George Cukor, then plying his trade in New York. His wife Mary Einstein, a niece of Albert and student of sculptor Archipenko, soon shifted Wright to the decorative arts. But the theater lived on as a metaphor.

Their first apartment, a tiny space at 165 East 35th Street, tipped the hat to Hollywood, mixing Bauhaus minimalism with classical columns that opened into closets. Mary starred in a short film shot at the apartment—sprawling seductively on the bed in a slinky gown, touching up her makeup at the built-in vanity—the epitome of the liberated woman surrounded by the unbridled fantasy of lamps made from aluminum tubes and chairs crafted from bent sheet metal.



LEFT: *The sinuous volumes of American Modern reached perfection as an interknit set, the spaces between pieces as powerful as the pieces themselves.*
ABOVE: *Along the Autumn Path at Manitoga, like a Japanese tour garden meant to walk in, not just look at, its trails a journey into the forest's secrets.*

Russel quickly moved past what he called his “t-square and compass period.” His American Modern dinnerware—with a quarter of a billion pieces sold over a 20-year run that began in 1939—echoed the sensuous forms of the surrealists, toned down for a middle-class audience. Maternal references were ever-present, perhaps most emblematic the pregnant profile of his American Modern pitcher. Customers came in droves, a near-riot following a Gimbel's ad for a shipment of Wright ware. The ergonomics of his objects, delivered with a dose of whimsy, presaged the user-friendly designs of today.

He had an uncanny ability to dramatize. His works were inherently marketable—flexible, easy to use, durable. He tapped the table’s drama with “stage sets” of lamps, linens, glassware, and flowers. He and Mary, as co-strategist, were relentless with the new tools of multimedia promotion, portraying her as an everyday housewife in the world of ease created by his products. Their best-selling *Guide to Easier Living* showed how to live a life of spontaneity, free of rigid Victorian codes, surrounded by beauty. Americans caught the fever, and so did museums, with exhibitions on design for the contemporary lifestyle. Wright had gone beyond



Wright’s theatrical bravado is alive and well as I ascend a gravel drive, twisting and turning through a forest tunnel, the sound of a waterfall creating anticipation like an orchestra tuning up. Two low-slung buildings peek through the trees seductively. I pull into a courtyard enclosed with a wall of vegetation, relieved by window-like openings into the forest and through a trellis where the sound of water beckons. The centerpiece is an island of boulders, with an iron ring jutting out, the evidence of quarrying days. Between 1957 and 1961, Russel’s home and studio—a pair of blue-gray glass boxes—were edged into the side of a quarry, their low profile demure behind a screen of sycamore, dogwood, and mountain laurel, roofs alive with growth. “Dragon Rock,” Wright’s daughter called it, after a figure discerned in the contours of the quarry. I watch as water cascades over the edge, feeding a pond where there was once a vast void.

“With neither the overwhelming sculptural force of Fallingwater nor the cool machined aura of Mies van der Rohe’s Farnsworth House, Dragon Rock was quiet in the presence of nature,” says Donald Albrecht in *Russel Wright: Creating American Lifestyle*. Architect David Leavitt designed the house, guided by Wright. Each room frames its own view. Spaces dissolve into one other—or segue to stone set pieces, terraces for barbecues or relaxing. The intimate one-level studio, notched in the quarry wall, gives an eye-height view of nature in wrap-around widescreen.

But the real story is the site, “Manitoga,” Algonquin for “Place of Great Spirit.” Wright’s intent was not just a preserve but a multi-sensory experience akin to being inside a work of art. He hoped visitors would “feel in a new and intensely personal way the meaning of our eternal natural legacy.”

Wright worked with the grain of nature. “There are no geometrically arranged trees or shrubs, no exotic species from distant places, no plants clipped or trained into balls or bumps,” says Carol Levy Franklin in the *Manitoga Design and Management Guide*. Wright kept a light touch, pruning and placing so native plants, especially wildflowers, would flourish.

“Most of us respond without reservation to the dramatic landscapes of the West,” Levy says. “Wright took on a more difficult task: to help the average person [see] the far subtler and seemingly chaotic world of the northeastern deciduous forest.” The land itself tells the story, not explanatory signs. Wright edited to let nature speak in plain terms—so features stood out; so there was only canopy and understory, no shrubs in between; so ganged species created layers each distinct in its own autumn shade. He created journeys from open to enclosed, from light to dark, from meadow to wilderness. Stone was his signature material, jutting out of

With neither the overwhelming sculptural force of Fallingwater nor the cool machined aura of Mies van der Rohe’s Farnsworth House, Dragon Rock was quiet in the presence of nature. —Donald Albrecht, Russel Wright: Creating American Lifestyle

an ambition to design everything for the home—he had re-defined the home itself. After Mary’s death, he had nothing left to prove.

THE HUDSON RIVER VALLEY IS A STUDY IN CONTRASTS, ITS FORMER FACTORY TOWNS A foil for the Gilded-Age getaways of the rich, where outcrops over a billion years old stare down on one of the nation’s fabled waterways. The Wrights came here in 1942, to an 80-acre slice of hill denuded by loggers and stonecutters, then in the early stages of recovery. Great blocks of granite had been chiseled out to help build New York City. A logging trail, just wide enough for a team of horses, had been incised into the site, abandoned quarries covered with vines and brambles. It was, writes Wright, a “nondescript piece of woods . . . considered useless land . . .” Today it is a national historic landmark.

LEFT: *American Modern* sold over a quarter of a billion pieces, the popularity of Wright’s products owed in part to relentless radio interviews, speeches, books, store appearances, displays, and newspaper and magazine articles. RIGHT: Boulders burst inward in the amphitheater space of the living-slash-dining room at Dragon Rock, where hemlock needles are pressed in the walls, tree branches double as towel racks, and bathtub water pours out of rocks, a “green” roof repaired thanks to a Save America’s Treasures grant.



DON FREEMAN



the mountainside like a boney spine. He artfully arranged boulders with an old winch truck he got from the phone company for \$50. The experience around Dragon Rock was his most orchestrated, an overture of all the site's elements. "The quarry, when Wright found it, was a great dry hole, its bottom filled with cut stones, debris, brambles, and young trees," says Levy. He blasted channels out of the ledges—diverting a stream—then broke up the pool with a large rock that lures swimmers in summer.

I ascend to the quarry's highest spot, then down to a birch grove on a mossy plateau next to the rim. A swath of mountain laurel glows in late afternoon light. It is a place of pause with a view of the entire tableau—house, quarry, waterfall—perched on a precarious drop over the edge of a cliff. Wright tapped into the danger of the site, evoking fear and awe like the paintings of Thomas Cole.

The next day I head up the Morning Walk, along a path once used by cordwood sleds. When Wright started, small hemlocks dominated both sides. He encouraged the strong by getting rid of the scrawny, and most of the deciduous plants too. Now the trail is an allée of green. I pass through a forest he left untouched. "It is rather like looking at the bottom of the sea through a glass window," he writes. "Here you witness the dramatic cruelty of the forest. The corpses of fallen trees are being devoured by decay or are caught in the arms of the younger ones. Roots attack the boulders." Lost Pond, another filled-in quarry at the site's pinnacle, evokes the primeval. Manitoga is a journey from quarry to quarry, from the designed one at the bottom, to here, where Wright intervened hardly at all. A few steps away is the grandest vista, which, he wrote, "looks like a perfect misty monumental painting by one of the Hudson River painters," and was likewise delicately crafted. I descend via a quick zigzag, pausing at Sleeping Buddha Terrace, a long horizontal rock shouldered into the hill.

"Russel came here and was rejuvenated by nature—and thought others should be too," says Kitty McCullough, head of the Russel Wright Design Center, headquartered at Dragon Rock. His awareness grew. "The Hudson was catching fire, it was full of debris," Kitty says. "Nobody would have thought of swimming in it. The fisheries had died. The more Russel designed, the more he became aware of the environment."

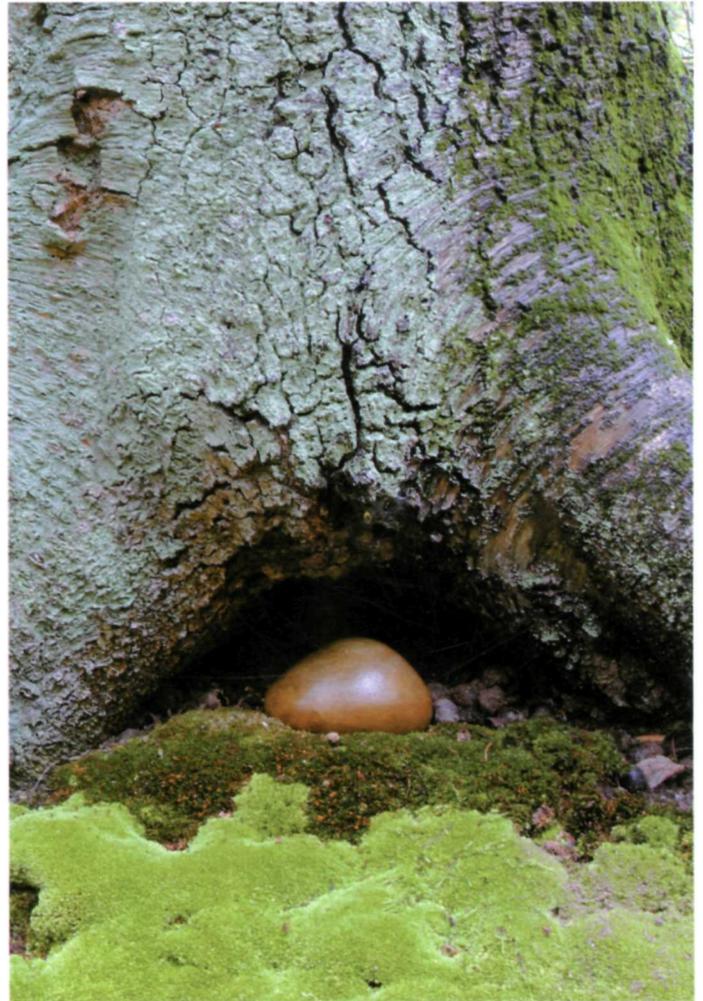
HE WAS NOT ALONE. DON NICE, AN ESTEEMED MODERNIST PAINTER, MOVED HERE IN THE '60s. "The first week of spring I was on the porch and a huge brown U.S. Army airplane came down to about a hundred feet, dumping DDT in the marsh right in front of me. You soon had fish without fins." In a key court case, citizens protesting a planned pumping station at the foot of Storm King Mountain—majestic across the river from where we sit—gained legal standing in a decision that favored preserving scenic beauty. The environmental movement had a powerful new weapon—the law.

Wright edited to let nature speak in plain terms—so features stood out; so there was only canopy and understory, no shrubs in between; so ganged species created layers each distinct in its own autumn shade.

Pete Seeger, who built a cabin here in the '50s, tells me about a picnic at Russel's house. "And I met René Dubos, then a scientist with the Rockefeller Research Institute. I'll never forget what he said: "Think globally, act locally, that's the key to the future.'" In the words of former senator and governor Gaylord Nelson, creator of Earth Day: "Everybody around the country saw something going to pot in their local areas, some lovely spot, some lovely stream, some lovely lake you couldn't swim in anymore."

As the environmental movement gathered steam, Seeger's sloop *Clearwater* became a vehicle for awakening awareness—movable classroom,

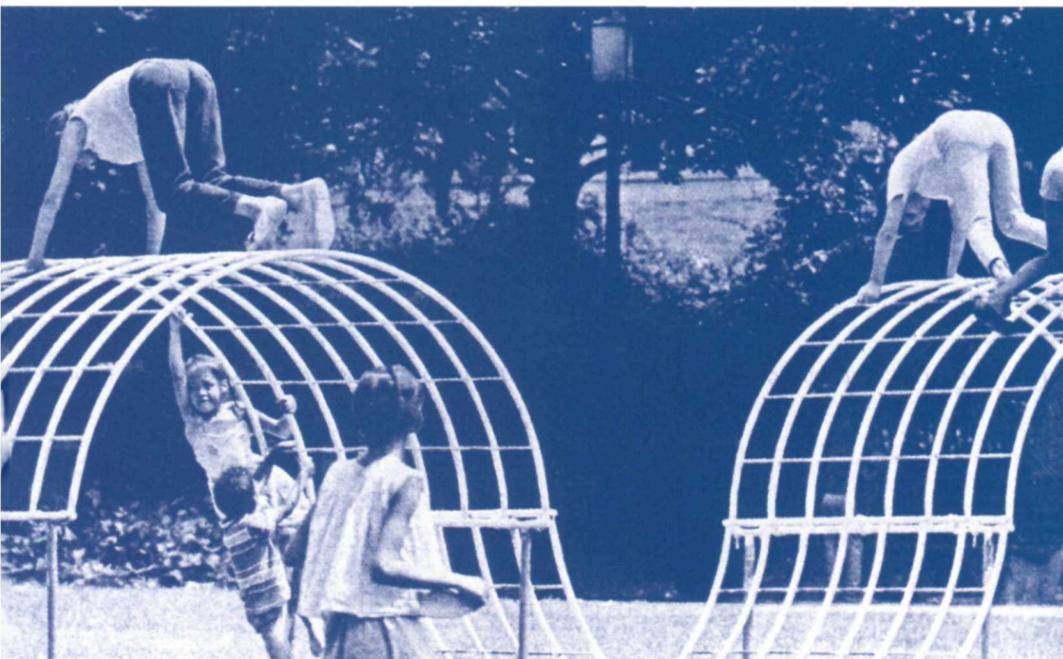
laboratory, forum, place of song—first on the Hudson then on the national stage. He sailed down to Washington, parked on the Potomac, and went up to serenade Congress with fellow folksinger Don McLean. Then he made his pitch. "I had a big pie chart with the federal budget on it," he says. "A circular piece of cardboard, with different slices in different colors. And I said, 'This slice of pie is education. This slice of pie is health. This huge slice of pie—that's the defense department. And this tiny sliver you can hardly see is what they call the environment. So much for the federal budget,' I said, and sailed it like a frisbee over the audience." Washington's politics of theater would prove fertile soil for Russel Wright.



LEFT: Russel enhanced the chances that favored natives like fern would flourish as the landscape recovered; today, his touch is almost indistinguishable. "Instead of imposing rigid forms and preconceived patterns on the place, Wright sought to make contact with the fluid structure and connecting patterns," writes Carol Levy Franklin in the *Manitoga Design and Management Guide*. **ABOVE:** Moss, another favorite, appears frequently along the four miles of paths, the entire site a choreographed composition with build-ups, thematic variations, and climaxes.

IN 1967, STANLEY CAIN, DOI ASSISTANT SECRETARY FOR FISH AND WILDLIFE, CAME BACK from Manitoga so awed he set up a Washington meeting with Wright, NPS Director George Hartzog, and other officials. During a luncheon at Cain's club, while rhapsodizing about enticing people to the wilderness parks, Russel was told they were already brimming with visitors. Instead, he was given a car and driver for a day and a half to gather ideas on furthering the city's beautification initiative being championed by the First Lady. "Washington seemed to me the most pampered, pompadoured city that I had ever seen," he writes in his reminiscence about Summer in the Parks. "So I asked the driver to go further out, and the park areas became more and more neglected and shabby"—notably in Anacostia, a largely black neighborhood that stood in high contrast to the white suburbs and monumental core. "Thus I began to have a cause," he writes. He soon had a retainer, and a proposal, which Hartzog, highly enthusiastic, mustered through his congressional committee, with a half-million-dollar budget.

Washington seemed to me the most pampered, pompadoured city that I had ever seen. So I asked the driver to go further out, and the park areas became more and more neglected and shabby . . . —Russel Wright



THE SUMMER IN THE PARKS "SHOW WINDOW" WAS TO LOOK OUT ON DOWNTOWN FROM the banks of the Anacostia River, the plan crafted with Wright's new co-producer, NPS publications art director Tedd McCann, who left a copy in papers he bequeathed at the University of Maryland. It is a vision of its time. A new freeway—which had recently severed the neighborhood from the water and the rest of the city—would be used to advantage, enticing motorists from its elevated perspective. A tree-top-level boardwalk would provide "an agreeable viewing place for boat regattas and water skiing as well as a grandstand for viewing the finishing of bicycle races," the journey from event to event "an event in itself," band shells and a dance pavilion throbbing in the tropical night—"the louder the better"—since the freeway would buffer the sound. Locals would stream in by foot, bike, car, and special shuttle, visitors from the opposite shore by boat. "Good crowd density is essential to the success of any space for entertainment," opined the plan. "Excitement is created by containing people and pushing them

up against each other," the nighttime alight with colored bulbs and "moving light paintings." In the day, the park would be a beehive with a beauty care center, sewing center, typing center, tot center, car repair center, teen center, and senior center, one of the goals teaching trades to the poor.

But the idea was dashed, largely by budget. "We do not have a particularly good image in this town," McCann writes in a memo threatening to quit. "As someone once said to me, 'Show me your black superintendent, show me a Negro in your high command. You have planted a lot of flowers and bulbs but what have you done in *my* community' . . . I thought of the debris-strewn and smelly barren stretches along the Anacostia in contrast with Haines Point, with Pershing Square and Columbus Island . . . While I have not dealt with the problems from the Olympian heights of 1600 Pennsylvania, neither do I view beautification programs as the first priority in solving this city's ills." The program soldiered on, taking advantage of the fact that most of the city's parks were federally owned and

operated—"hundreds of scattered sites" from the Monument and the Mall to "small triangles of a few hundred square feet," McCann writes—community parks, downtown parks, grand old magnets, and an emerald necklace of places out on the far edge.

Wright's core intent, in the words of a National Park Service press release, was to introduce "kids of the asphalt and concrete" to the wonders of nature: "What does an inner-city boy do after discovering his reflection in a park lagoon? Well, he might want to watch the ripples after tossing a stone into the water instead of at a windowpane. So, the National Park Service dumped a load of stones—reasoning that city boys could make all the waves they wanted—at Washington, D.C.'s Aquatic Gardens. Then the Park Service built small rafts because somebody remembered that a boy automatically becomes a pirate captain or Robinson Crusoe when sailing his own ship."

A series of "spectaculars" lit up the city, the first drawing a throng of 20,000 with fireworks and Cab Calloway hi-de-ho-ing across a stage at Meridian Hill Park. "African Night," later in the season, "even brought Summer in the Parks into the good graces of many of the Black Militants,"

ABOVE: Russel thrived under limits of time and money, designing portable, easy set-up gear. He took on the Summer in the Parks project in part because the nation's capital was "so damn vital and exciting right now," he told the *Washington Post*. "It is the center of the best Negro brains in many different fields, and it is the battlefield for their rights at present." RIGHT: Poster for a "spectacular" in the program's signature hues.

IT WAS

POP MUSIC

FESTIVAL

SUN.

NOVA

AT BEACH

1 PM TO

10 P.M.

McNeill & Shull

Sponsored by Summer in the P...



says a program booklet with McCann's papers. "One of the added social benefits of the spectaculars was to mix up different elements of the city. The rich and the poor and their children dug the proceedings all alike." There was something for everyone: a powwow, a horse show, the First National Jousting Championship. In the vein of the then-in-vogue vest pocket park, small spaces throughout Washington became outdoor rec rooms, easy set-up "furniture" designed by Wright. Jazzmobiles brought music, much of it flavored like the strains of dashiki-clad South African trumpeter Hugh Masekela, programming tailored to local wants. Surprise trips—to a "secret island," a Civil War fort, sailing on a Chinese junk—captured the era's spontaneity, kids told nothing more than to show up and expect a day of fun and lunch, no reservations. "The idea was to keep them coming, keep them surprised," says the booklet. By the end of the summer, the *Washington Post* was calling the program "a happening."

Washington was a happening place in those days, the air alive with danger and amusement. Just a few months before, to the chanting of shamans and the tinging of finger bells, protesters assembled to levitate the Pentagon, and met a rain of billy clubs. It was protest as performance, Mall marches a pageant of swashbuckler shirts, Daniel Boone buckskins, musketeer hats, sarapes, sarongs, and saris, a nod to history and legend, the bible and the comic book.

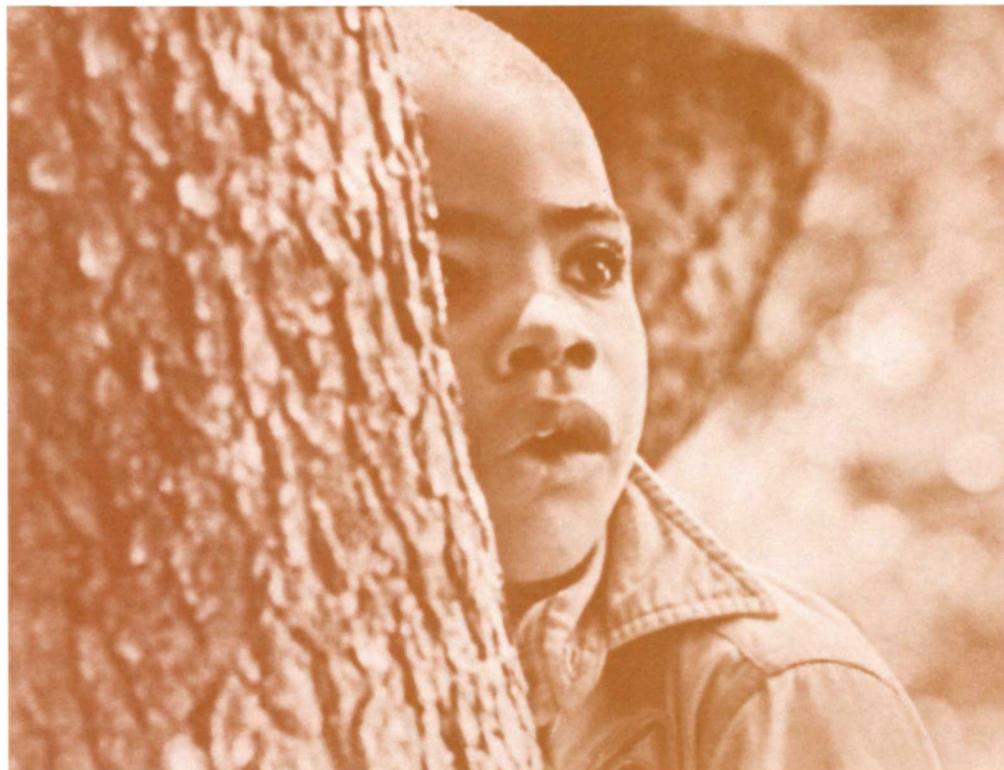
TODAY IS BICYCLEDELIC DAY IN THE NATION'S CAPITAL, August 19, 1968, as I help ready an Orville Wright five-seater for display in the shadow of the Monument. The Smithsonian has unlocked the vaults, and out rolls an array of spoked wonders—high-wheelers, wood-wheelers, even an 1860 "bone shaker"—soon joined by French Gitanes, Italian Cinellis, British Carltons, and American Schwinns as riders of the National Capital Open storm past. Parks for people, people for parks—that was the program's motto—and kids from all over the city compete in a bike race and rodeo, entertainment by the King George Unicycle Riders. The next morning I help set up the display on the soundstage of Panorama, one of the first magazine-style TV shows, hosted by a young Maury Povich.

neighborhood impact," writes McCann. "The kids from four to twenty-four knew who you were and what you did. On the city streets from early morning to late at night, the cars tied the whole program together."

He sums up the program's legacy: "Washington after [the] uncertainties of spring badly needed some one thing to get it back together once more. In its own way Summer in the Parks accomplished that."

WRIGHT DIED IN 1976, AND TODAY THE CENTER NAMED FOR HIM MANAGES HIS COMPOUND, in some ways like Monet's Garden before restoration. The bones are in good shape, but the rest needs care. Dead hemlocks disfigure the upper slopes, victims of insects. Deer browse the seedlings, further disrupting the forest succession. Still, I sense Russel's dream as I stroll the site.

Pete Seeger puts Wright's life in perspective, quoting Martha Graham: "All artists are filled with a blessed unrest trying to reach the infinite. They never make it, but they never give up trying." Russel blazed a vision of hope across the 20th century. Perhaps a new century will see that hope fulfilled.



NPS/PAPERS OF TEDD MCCANN

What does an inner-city boy do after discovering his reflection in a park lagoon? Well, he might want to watch the ripples after tossing a stone into the water instead of at a windowpane. —National Park Service Press Release on Summer in the Parks

Summer in the Parks was a media darling, thanks in good part to Wright's savvy. "The biggest chore of all was to keep the program surfaced in the alphabet soup that characterizes the federal bureaucracy," writes McCann. Russel asked McCann's kids to draw what a summer in the park meant to them; two drew a tree, the third added a smile. From that, national cartoonist Robert Osborn came up with the "laughing tree," a catchy symbol that seemed to "grin enthusiasm" in the words of the *Post*. The symbol, with the program's signature blue, white, and green, was splashed on stationery, handbills, balloons, sun shades, buttons, tee-shirts, refreshment stands—and a dozen or so vehicles that made "a constant

contact points The Russel Wright Design Center **email** info@russelwrightcenter.org **web** www.russelwrightcenter.org

ABOVE: Cover image of the *Summer in the Parks* booklet, which puts the effort in perspective: "In the summer of 1968, with store windows still boarded up and April's rubble still in the lots where buildings had been, Washington was crawling with show mobiles and soul mobiles and myriad attempts to make life more fun . . . *Summer in the Parks* carried on with a vengeance the idea that it can be a joy to live in the city." **LEFT:** A Manitoga moment.



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OIL

**AN INTERVIEW WITH HISTORIAN OF TECHNOLOGY DAVID NYE
BY NATIONAL PARK SERVICE HISTORIAN TIM DAVIS
PHOTOGRAPHS BY EDWARD BURTYNSKY**

"Part of the technological sublime is that it's frightening and fascinating at the same time, like watching a lightning storm," says noted scholar David Nye, describing how people saw the spread of rigs and refineries across the Texas landscape of the early 20th century. "You'd see an almost infinite array of derricks in all directions as developers kept getting rights to adjacent lands." Here Nye—author of *Consuming Power: A Social History of American Energies, Narratives and Spaces: Technology and the Construction of American Culture*, and *American Technological Sublime*—elaborates on his theories in conversation with National Park Service Historian Tim Davis, a specialist in cultural landscapes research. Along the way, readers get a sampling of photographs from the new traveling exhibition and book by eminent photographer Edward Burtynsky, launched at Washington, DC's Corcoran Gallery of Art last fall, called, simply, "Oil."

LEFT: *Drilling leaves its mark on Beldridge, California, the first stage in a process that is often unexpectedly profound. Writes photographer Edward Burtynsky in the preface to his new book, "In no way can one encompass the influence and extended landscape of this thing we call oil."*



A:

IT WAS JOHN D. ROCKEFELLER WHO GRASPED THAT SUCCESS WAS NOT IN CONTROL OF THE DRILLING, BUT IN CONTROL OF THE REFINING AND DISTRIBUTION. THAT'S WHERE YOU GET THE CHOKEHOLD.

TIM: How has oil affected our lives and landscapes?

DAVID: The story begins in the 19th century with drilling for oil in western Pennsylvania—not far from where I grew up, actually. I used to see these old oil wells, what was left of them, when I was a kid in the early '50s. They seemed quaint, these little pumps in fields with cattle and farm implements. Oil was an everyday part of life, with low prices at the pump and Americans driving 300-horsepower cars. If we look at those first wells, they were pretty profitable for the region. Even so, people in the 1880s were critical of what they did to the environment—the rivers were flowing with oil and the landscapes were wasted by it. Today that's all disappeared. So as history it's a little elusive.

It was John D. Rockefeller who grasped that success was not in control of the drilling, but in control of the refining and distribution. That's where you get the chokehold. He built up a huge monopoly even before the automobile was important. So by the time I'm growing up, I'm immersed in a world of cars and gas stations where half the land in places like Los Angeles is devoted to the automobile. The naturalization of the technology was complete. It took me years of thinking to get a sense of what happened, how we went from a nation of horses and railways to a nation that got around by car and truck, with passenger trains on a long decline over the 20th century. After about 1920, the spread of suburbs was already quite marked. By 1925, only the destitute and people in the very big cities didn't have cars.

TIM: One thing that's gone is the excitement embodied by the automobile. Could you talk about that sense of promise?

DAVID: Take assembly-line manufacturing—of what else, the car. It wasn't just the Henry Fords who were excited. It was the consuming public. The demand was so great the manufacturers almost couldn't keep up. The assembly line suggested rapid progress. You could walk through a plant and see a car growing as you walked. It was almost miraculous. The most popular exhibit at the 1915 Panama-Pacific International Exposition was a full-scale assembly line, and again at the Chicago Century of Progress Exposition of 1933. It shows the enthusiasm for this idea that abundance will come with mass production, with all the new sources of energy. Oil was portable, dense—you could move it around to do all kinds of things. It empowered the individual, who could cut down all the trees behind his new house now that he had a chain saw. That house soon filled up with mass-produced appliances, their energy often supplied by burning oil. The growth of consumer society was an expression of an oil economy.



LEFT: An Oakville, Ontario, refinery, metaphor for oil's elaborate network of cause and consequence. **ABOVE:** Pipes in the landscape, Cold Lake, Alberta.

A:

BURTYNSKY OFTEN SHOOTS FROM A CRANE OR HELICOPTER, CAPTURING THE SUBLIME MOMENT OF SOMEBODY STANDING ON TOP OF A MOUNTAIN LOOKING OUT ON A POWERFUL SCENE THAT MAKES YOU FEEL INSIGNIFICANT.

TIM: There was drudgery with the technologies of horse and streetcar.

DAVID: A famous article calculated how many tons of horse manure was dropped in the streets, posing not just a danger of pollution, but a danger of disease, too. In hot weather, the manure would dry up, turn to dust, and blow around. There's nothing romantic about horses in a city. As strange as it seems today, cars were seen as clean.

TIM: The green technology of the time.

DAVID: Faster and cleaner but maybe not as safe. There was a sense that they were dangerous. But that was exciting, too. The sense of moving at a high speed was something people sought.

TIM: The car was a social boon, not just a better way to get around.

DAVID: The gas engine changed the world, breathing new life into traditional lifestyles. A farmer with a team of horses would take a long time to go to town, something he might do only once a week. But with a car, he could go in for an evening. His kids could ride the bus to a modern school. The automobile was liberation. Women didn't need a man to go places. You could pull the car up to the house, open the hood, and connect the battery to a radio or other appliance. There were kits so people could turn the energy of the motor to some other purpose.

TIM: You used the word "naturalization" in talking about how oil became ingrained in our culture. Do all technologies follow a similar arc?

DAVID: Yes. First the technology is something novel and exciting. After a generation or so, it's a natural thing, like a computer today. And then at some point it becomes banal and maybe people get fed up with it. You're sitting in a traffic jam and cars are no longer exciting. The thrill is gone. At some point, the thing becomes outmoded and people become nostalgic about it. We go ride on a steam train not to go anywhere but to experience what it's like. That would have seemed strange to people 150 years ago.

TIM: You noted that oil's degradation of Pennsylvania is often hard to detect these days, at least to the naked eye. Detroit might look very different a hundred years from now with the auto industry's departure.

DAVID: In central Detroit empty houses are being pulled down and gardens grown instead. I've read stories about people moving back because property can be had very cheaply. A renaissance seems unlikely, but you never know. Certainly the story of Detroit is a fascinating one. There was tremendous growth from 1900 to World War II, but then with the racial tensions of the '60s and the Japanese competition of the '70s it became a slow-motion train wreck. Today, it's not that Detroit is producing bad



RIGHT: *The Alberta Oil Sands, one of Canada's primary energy sources.*



cars, it's that its manufacturing base is hollowed out. In a way you might see in that the evolution of American emotions towards the automobile. How Detroit looks is a correlative for how we feel about the car.

TIM: Let's focus on the landscape of oil exploration, extraction, and processing. Those Pennsylvania rigs of your youth pale next to the Texas and California oilfields that embody what you call the technological sublime.

DAVID: The difference is in the scale and the rawness of the land where intrusion has been recent. You can see it in these photographs. Burtynsky often shoots from a crane or helicopter, capturing the sublime moment of somebody standing on top of a mountain looking out on a powerful scene that makes you feel insignificant. These are photographs taken with a large negative, not digital, so when you blow them up it's almost like being there. Looking at the images of the Azerbaijani fields is like stepping into the past, like seeing the oil rigs of Los Angeles in the 1920s where the intent was rapid extraction at the expense of everything else. Today that is not acceptable in the United States. Yet those L.A. derricks once invoked a sense of the sublime, too.

You can find the language of it as early as descriptions of the Erie Canal in the 1820s, in the notion that these things shocked people into seeing the power of technology. In the effort of the mind to make sense of some-

A:

**AMERICANS STILL GO TO WATCH SPACE
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GROUND SHAKES AND THE AIR
TINGLES AND THEY SMELL THE
FUEL IN THE AIR.**



thing so immense, an exaltation built up. People felt they were in the presence of something magnificent. When they saw the mastery of the canal—the mastery of the land, the mastery to move goods with almost no effort and expense compared to before—they really got excited. Today it doesn't seem spectacular, but at that time to build a canal all the way from the Hudson to the Great Lakes was considered probably impossible, and likely a folly. So when it was done, there were great celebrations. Americans still go to watch space rockets lift off. That's the technological sublime they're feeling when they hear the roar of the engines and the ground shakes and the air tingles and they smell the fuel in the air. I ask Europeans if they have a space center, and none of them know. It's not part of their identity.

TIM: The Brooklyn Bridge, the great dams—at least up through World War II there was a strong American identification with technological prowess. Yet oil always had an undercurrent of negativity and suspicion.

DAVID: That was true for extraction industries in general, like mining. There's less visual excitement compared to a railway.

TIM: I wonder if the ambivalence is rooted in classical myth and folklore, that we're messing with the underworld, unleashing dark forces we can never completely control.

LEFT: Discarded jet engines in the desert outside Tucson. **ABOVE:** A pile of tires so large it has its own name, the Oxford Tire Pile in Westley, California.

DAVID: There was once a tendency to think of ore as growing underground, that to extract it was to violate Mother Earth. With oil there was this fear of releasing bottled-up pressures that maybe should be left alone.

TIM: Popular culture suggests that oil has a corrosive effect on morality, that people elevated too quickly from their more primitive state are not these virtuous Jeffersonian yeomen, they're John D. Rockefeller and J.R. Ewing, mortals corrupted by excessive wealth. The movie *Giant* has Rock Hudson and Elizabeth Taylor living the Jeffersonian dream on a ranch until lowlife hired hand James Dean destroys the social order by hitting a gusher and striking it rich. The recent *There Will Be Blood* expresses similar sentiments.

DAVID: In *Giant*, you suddenly have riches without effort, without striving, without in a sense earning it. The disruption of the pastoral way of life comes with instant riches that just pour out of the ground.

TIM: It reminds me of another trope in American culture, the machine in the garden. Have green technologies finally reconciled nature and technology—is that part of the allure? Or is it a new sublime masking less salubrious things like ion battery disposal? These gigantic solar arrays in the



A:

LOOKING AT THE IMAGES OF THE AZERBAIJANI FIELDS IS LIKE STEPPING INTO THE PAST, LIKE SEEING THE OIL RIGS OF LOS ANGELES IN THE 1920S WHERE THE INTENT WAS RAPID EXTRACTION AT THE EXPENSE OF EVERYTHING ELSE.

desert, from a magisterial gaze they look fantastic. But they have tremendous water needs and impacts on the local ecology.

DAVID: Oil was part of the industrial disruption—"the machine in the garden"—in the pastoral society Jefferson idealized. Today it seems that the reconciliation might be within our grasp. Demonstration houses are built with ever-smaller ecological footprints. But they often rely on expensive materials like solar panels. So we could be kidding ourselves.

TIM: Let's segue from the 21st century to talk about preserving the 19th and 20th.

DAVID: Preserving an oil site is a challenge, like preserving a battlefield, where you can have markers and memorials but no evidence of where the cannons and bullets ripped the shrubbery and the trees. Nevertheless there's a certain peaceful atmosphere, re-conquered by nature. I was online looking at an early oilfield in California called Topeka Canyon. They've got a marker and one small piece, Well No. 4. This was one of the longest producing wells in history. Often you have to reconstruct something or use film and photography to really help people get a sense of it.

TIM: There's a museum in Louisiana with a full-blown rig. It may be hard to understand for people elsewhere, but for many regions oil is part of their heritage. Daddy and Grandpa worked on a rig.

DAVID: North Sea oil has made Norway one of the richest nations in the world. There's a museum that looks like an oil platform out a long dock in Stavanger. You put on an orange life vest and go in a little room, and have the illusion that you're flying to the rig. I was rather taken with it.

TIM: You've written that inventions spread slowly, innovations rapidly.

DAVID: A basic invention like the automobile may take a long time to develop. But then it quickly leads to a host of innovative spin-offs, from car radios to miniature golf courses.

TIM: The national parks were a spin-off, a classier version of the miniature golf course. Grand Canyon didn't become what it is until you could get there by car; for most of the 19th century almost nobody saw it. The greatest popularity of the parks was from the 1920s through the 1960s, a quintessential shared experience for the middle class American family that coincided with the rise of the car. What will happen post-auto?

DAVID: I think there will always be something resembling the car. Since the 1900s, there's been a fourfold increase in the American population. So in a sense you need more places so everybody doesn't go to just a few.



LEFT: Dismantling tankers in Chittagong, Bangladesh. Oil has given birth to entire offshoot industries—each with their own impact—spanning the globe.
ABOVE: Oilfield in Baku, Azerbaijan.

TIM: Can you close with your idea of path dependency vis-à-vis oil?

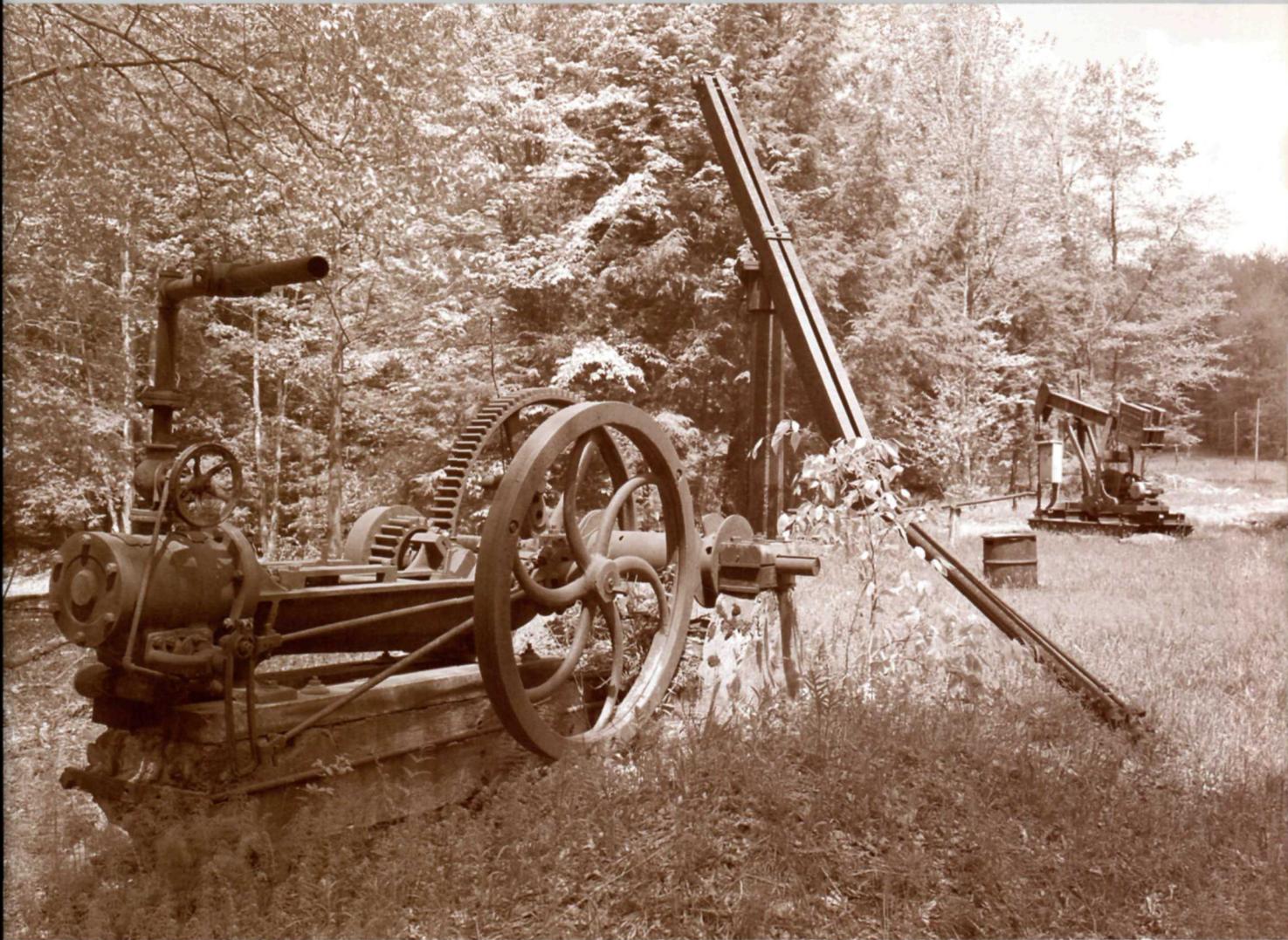
DAVID: It took decades for Detroit to move away from the assembly line after Japan developed its lean production system. Detroit was path-dependent. The same can be said of consumers and their cars. We know that peak oil is arriving soon; we're likely at the start of a shift to a new energy regime. If we wait until the problem is acute, we'll keep doing the same path-dependent things, which will translate to a lot of pain and suffering.

The United States is like General Motors. It's difficult to get off the path you've been on so long. Britain was a success story, then stumbled because it held on to its coal-based economy. My father, who was an engineer, was astonished to see steam-driven textile mills in Britain during the '60s. And of course we know what happened to British textiles. They moved to Asia.

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ARTI FACT

Boomtown Rush



WESTERN PENNSYLVANIA IS HOME TO “the valley that changed the world,” where in 1859 Colonel Edwin L. Drake, manager of the Seneca Oil Company, drilled the first commercially profitable well just south of Titusville. It took Drake almost a year and a half—the company gave up on him halfway through—but when his bit reached 69 feet, the bubbling crude became the Gold Rush all over again. Titusville’s population skyrocketed from 250 to 10,000 as boomtowns sprung up throughout the region. **TODAY, THE DRAKE WELL MUSEUM RESIDES ON THE SITE,** one of a host of oil-related national historic landmarks along with over 75 properties in the National Register of Historic Places. The Historic American Engineering Record has documented over a dozen sites, among them McKenna-Jojo Air Lease, above, in Allegheny National Forest. This device provided not only an economical way to get more oil out of depleted wells, but to pump several at a time. The crude around Titusville was of such high quality—an excellent lubricant for machines—that it was worth the extra effort, even in the days of plentiful oil when companies could just go punch a hole in the ground somewhere else. **THE HEART OF PENNSYLVANIA’S OIL-RICH HISTORY IS** the Oil Region National Heritage Area, a 708-mile swath of land near the foothills of the Appalachians, including McClintock Well #1, the world’s oldest well still producing at its original depth, and the ghost town of Pithole City, once the state’s biggest boomtown. **TODAY, ALTHOUGH THE MORE THAN 17,000 ACTIVE WELLS IN THE UNITED STATES ARE** “much more economical and less maintenance-intensive” than the old technology, says HAER architect Christopher Marston, the ones that remain “are a reminder of the significance of an era and the importance of documenting a vanishing element of our nation’s heritage.”

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COVER IMAGE, SUMMER IN THE PARKS BOOKLET, FROM "DREAM OF NATURE," PAGE 16. NPS/ PAPERS OF TEDD MCCANN

