
Introduction

TIM CULVAHOUSE

Childhood Memories

Saturday mornings, when I was a child, after *Sergeant Preston of the Yukon* and *Mighty Mouse* on the big, black-and-white television in the wood-toned metal case, we would climb into the car and head for “The Country.” The Country was where my cousins and my aunts and uncles lived. It was where my grandfather “Mr. Chet” Culvahouse lived, in a big, white, clapboard house on a point, surrounded on three sides by Watts Bar Lake. My father had grown up in this house, one of ten children—five boys, five girls.

We drove south out of Rockwood, Tennessee, on US 27, a two-lane highway snaking gently down the broad valley toward Chattanooga. The windows of the green-and-white Galaxie were down, and the warm air, softer than cotton, tumbled in. At Spring City, fifteen miles down the way, we turned left and wound through scrubby woods. A railroad track flanked us on the right. Wherever the road cut into the side of a hill, the dirt was deep orange. Roots of the southern yellow pines balancing on the edge of the cuts stuck out of crumbling banks.

Around one bend—the one I looked for, my signal—the ragged cuts gave way to gentle, carefully tended grass slopes, slipping smoothly into the dark pine woods. The road rose to the left, curved back to the right, over and down the hill, then up and down again in long sweeps through the tidy forest.

Rounding the final hill, we dropped down between concrete retaining walls, through the face of a bluff, and out into the open. That was my favorite moment, as the road passed from the wooded hills onto the top of Watts Bar Dam. To the left below us was the lake, to the right, much farther down, the river. On the far side of the dam, we passed over the lock, in which barges might be lowering on their way downriver from Knoxville, Tennessee. Beyond the lock a small road forked off to the left. We took it and, after a short distance, turned left again at a crossroad with a little store with a gas pump, onto the River Road. We were in The Country.





OVERLEAF Visitor center overlook at Watts Bar Dam, 1986

LEFT The approach to Watts Bar Dam, 1986

RIGHT The Culvahouse homestead before the closing of Watts Bar Dam, with the house upper left and the store to the right, ca. 1940. The current level of Watts Bar Lake would be in the midst of the group of hogs.

Every so often we caught a glimpse of the lake off to the left, and as we drove along, my father pointed out the landmarks: the road to the Holloman Place, where there was a spring full of watercress; Erma and Hatsie Ewing's white house on the hill; and just beyond it Glamour Manor, a log house with a screen porch across the long front, where my parents had lived when they were first married. Somewhere just along there, the Culvahouse homestead began, along the right-hand side of the road where the ground rises quickly up the side of Looney Ridge. Once, the left-hand side of the road had been a part of the farm as well, but now it is dotted with lakeside cabins and mobile homes.

We turned left off River Road onto the long gravel drive up to the homestead, and just before the house we passed Mr. Chet's store. The store faced the front of the house across a stretch of dirt road that came up out of the lake on one side of the point, ran straight across its quarter-mile width, and dropped back below the surface of the lake.

(My grandfather died when I was three. I barely remember him. My clearest memory—a mixture, perhaps, of recollection and the story that was frequently repeated to me—is of Mr. Chet taking me across to the store for the Coke forbidden by my parents. Coca-Cola came in heavy, green glass, returnable ten-ounce bottles, the perfect size for a toddler.)

The distance between the line marked by the mostly submerged dirt road in front of Mr. Chet's store to the natural bank of the Tennessee River had been exactly a mile. This had been the Culvahouse farm, productive land, where Mr. Chet raised cattle and hogs and corn. Then the TVA closed Watts Bar Dam.

The Authority

First conceived by Senator George Norris of Nebraska in 1926,¹ the Tennessee Valley Authority (TVA) was chartered by Congress in 1933 at the urging of President Franklin Roosevelt to create "a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise."² Its purpose was

to improve the navigability and to provide for the flood control of the Tennessee River; to provide for reforestation and the proper use of marginal lands in the Tennessee Valley; to provide for the agricultural and industrial development of said valley; to provide for the national defense by the creation of a corporation for the operation of Government properties at and near Muscle Shoals in the State of Alabama, and for other purposes.³

The TVA region, defined as the watershed of the Tennessee River and its tributaries, encompasses all of Tennessee and parts of six other states: Virginia, North Carolina, Georgia, Alabama, Mississippi, and Kentucky. In 1933, this area was unusually impoverished, even by Depression-era standards. Deforestation and poor farming practices, leading to soil erosion and exhaustion, had undermined both timbering and farming, mainstays of an agrarian economy. Other river-related problems restricted economic growth: flooding beset urbanized centers along the river and its tributaries with increasing frequency and severity, and swift currents and rocky shoals inhibited commercial navigation.

The TVA addressed these and other issues with unprecedented comprehensiveness—what the Authority refers to today as "integrated resource management." In the service of agriculture, it developed fertilizers and promoted improved farming methods. It reforested and worked to improve wildlife habitat. The hydroelectric dams—its most iconic structures—served triple duty: the regulation of water levels in the Tennessee river, to control both seasonal flooding and the malaria-carrying mosquito population; improved navigability; and provision of electricity, which not only increased the productivity of existing farms and businesses but also drew new industry to the region.⁴

With the United States' entry into World War II, the TVA was immediately enlisted into the war effort. Its electrical-generation facilities were put to work first for the production of ammonium nitrate for explosives and aluminum for aircraft, then for the refinement of plutonium for the atomic bomb. The town of Oak Ridge, Tennessee, was built twenty miles southwest of the TVA's first dam, Norris (1933–36) (named after the senator), to become, along with the University of Chicago's Stagg Field, Hanford Engineer Works in Washington State, and the Los Alamos National Laboratories, one of the four legs of the Manhattan Project. The urgency of the atomic weapons program accelerated the TVA's construction—to save time, for example, Cherokee and Douglas dams were built from the same plans—and

reinforced its already powerful mandate. Fortunately, this urgency did not distract from, but rather helped focus, the Authority's design agenda.

Today the TVA is the nation's largest producer of electric power. It continues to serve its seven-state region as an independent agency of the federal government, self-financed through the sale of electricity. In addition to its thirty-four flood-control dams, twenty-nine of which provide hydroelectric generation, it operates eleven coal-fired, six combustion-turbine, and three nuclear power plants, seventeen solar-power sites, one wind-power site, and one methane-gas site, as well as the Raccoon Mountain Pumped Storage Plant, near Chattanooga, where electricity is consumed during off-peak hours to lift water to a mountaintop reservoir from which it is then released to generate power during peak hours.

Annually, 38,000 barges carry over fifty million tons of goods on the Tennessee River. A series of thirteen locks, integral to the main river dams but operated by the Army Corps of Engineers, permit navigation upriver as far as Knoxville, 650 river miles from the confluence of Tennessee and Ohio rivers at Paducah, Kentucky.⁵

The TVA reservoirs and the 290,000 acres of land associated with them provide recreation, including swimming, boating, fishing, camping, and picnicking. The Ocoee River Gorge, with its three hydroelectric dams managed by the TVA, was the site of the whitewater competitions of the 1996 Olympic Games.

The Necessity for Persuasion

In the published accounts of the TVA projects during the war years (including those in the architectural press), the landscape of eastern Tennessee was portrayed as an erosion-scarred wasteland. The portrayal was partly true. Like much of the United States, Tennessee had been largely deforested by the 1920s and '30s, and cultivation of steep hillside fields had devastated portions of the landscape. Runoff from the denuded hills produced increasingly frequent and damaging floods. In particular, Chattanooga, at the time a city of over 200,000 people, located where the river passes through a narrow mountain pass, was prone to devastating floods.

Protection of Chattanooga and other flood-prone cities in Tennessee, northern Alabama, and western Kentucky was one of the chief goals of the TVA, a goal it has largely achieved. The regulation of water levels in the tributary reservoirs provides catchment for spring runoff, and the introduction of more responsible agricultural practices, such as contour plowing, has controlled erosion on small upland farms.

In the bottomland of the Tennessee River itself, however, the control of urban flooding was accomplished by the regulated—and permanent—flooding of the countryside. A series of eight main river dams (of the twenty-nine dams ultimately built on the Tennessee River and its tributaries) inundated thousands of acres of rich, alluvial land along the floor of the valley.

Close to 1,000 of those acres had been part of the Culvahouse farm. Photographs, taken for court proceedings to contest the amount of compensation



LEFT Chet Culvahouse in field of corn, ca. 1940



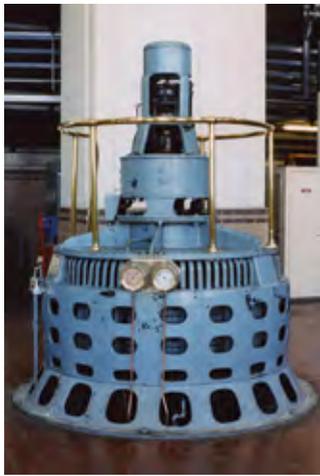
RIGHT Eroded landscape near Copper Hill, Tennessee, 1942. Here, fumes from copper smelting destroyed vegetation within a fifty-square-mile area. Such extreme conditions were at times treated by the press as if they were representative.

the government offered for the property, show fields of corn twice the height of my grandfather. Such images of fecundity are largely absent from the published record, which reflects a well-coordinated effort to persuade the public of the benefits of the TVA agenda. Persuasion was required, and not only because of the costs to bottomland farmers like Mr. Chet. Even with the benefits it would bring to the region, the sheer novelty of the project demanded explanation. It was novel in at least three ways: it was modern, it was international, and it was—literally—electrifying.

The Shape of Power

Electric power had been generated from the waters of the Tennessee and its tributaries for more than twenty years before the founding of the TVA. The Aluminum Company of America had built hydroelectric dams, beginning with Cheoah Dam in 1915, to power its plant at Alcoa, outside Knoxville.⁶ Two privately built dams (built between 1910 and 1913) on the Ocoee River and the original Hales Bar Dam (ca. 1905, also privately developed) on the Tennessee provided electricity for, among other things, Chattanooga's street railway.⁷ Between 1918 and 1924, the Army Corps of Engineers built Wilson Dam to fuel the production of wartime munitions and, later, fertilizer.⁸ Wilson also provided power for distribution to individual households in the nearby town of Florence, Alabama. (To power Florence—a town of 36,000 people—today requires only the smallest of the turbines at Wilson. This "house generator," in its beautiful cast-iron case, is the only generator in the TVA system that is self-starting. Because it does not require current to already be flowing in the TVA grid, if the entire grid ever shut down, this would be the first generator to bring the grid back up.⁹)

For rural households electricity was not, however, the obvious benefit we now take for granted. People were accustomed to other ways of doing things and



LEFT The “house generator” at Wilson Dam, 2004



RIGHT Entrance to turbine shaft chamber at Wheeler Dam, 2004. Note the abstraction of rusticated masonry joints in the reinforced concrete wall.

skeptical of dependence on large-scale infrastructure. The concept required selling. As Barry Katz describes in “Ideology and Engineering in the Tennessee Valley” (Chapter 4), the Authority not only provided electricity, it also sponsored the development of compact, efficient home appliances and promoted their sales. Beyond the home, it promoted the application of electric power to the evolution of regional craft industries such as ceramics.

Functionally, electricity was the most obviously modern element of the TVA. Formally, it was an enigma. Except in the jagged arcs of lightning or the miniature lightning of the Van de Graaff generator, electricity has no visible shape. The paraphernalia of its generation and distribution had shapes—many shapes, some suggestive, perhaps, of a new aesthetic, but an aesthetic not yet fully coalesced. The physical boundaries of water containment made more powerful formal suggestions: the great bulk and breadth of the dams raised novel questions of scale and articulation.

These questions were particularly novel for the rural South, but they arose amidst an international discussion that had been developing for some time. At least two of the emerging principles of modern design had their roots in the North American landscape. The first of these, the idea that the lines of a building should echo the forms of the landscape in which it resides, came out of the Prairie Style architecture of Frank Lloyd Wright. The second, a faith in the aesthetic virtue of strict engineering calculation, derived from an appreciation of the spare beauty of Canadian and American grain elevators. Both of these influences had traveled to Europe, the former through the publication of Wright’s work in Germany, the latter through *Vers une Architecture (Towards a New Architecture)* (1923), the manifesto of the Swiss architect Le Corbusier. In it Le Corbusier published photographs of

American grain elevators alongside other new forms derived from engineering decisions: airplanes and steamships.

TVA’s work itself continued this exchange of ideas between the United States and Europe. The use of rough, board-formed concrete at Norris Dam made an impression on Le Corbusier when he visited the TVA in 1946, as he copied the motif in his *Unité d’Habitation* in Marseilles (1947–52), managing at the same time to be credited as the “inventor” of *beton brut* (“raw concrete,” showing the impression of its formwork).¹⁰

A third principle was developing in Europe in which the formal ideas of modernism were conjoined with a political idea (suggested as well by Wright) that dissolving the physical hierarchies of space into more continuous organizations of buildings and landscapes would lead to a more egalitarian, democratic society.

Each of these three principles—continuity with the landscape, forms derived from engineering function, and architectural form as a tool for social equality—complemented perfectly the ambitions of the TVA. This match may, in itself, have been enough to determine the thrust of TVA design, but the importation (and reimportation) of formal ideas from Europe arrived with an influx of European émigrés fleeing economic hardship and the fascist regimes of Germany and Italy and strongly affected the design agenda of the TVA. Two of these émigrés—Hungarian architect and engineer Roland Wank and Italian architect Mario Bianculli—joined the TVA Architect’s Office as principal designers, bringing with them firsthand experience with, and commitment to, the emerging ideals of modern architecture. Wank played a seminal role in internal debates at the Authority over the proper expression of modernity in a traditional, agrarian context. Christine Macy, in “The Architect’s Office of the Tennessee Valley Authority” (Chapter 1), explores Wank’s role more deeply. As she relates, persuasion was as necessary within the TVA as it was outside of it.

The application of European or international ideas to the rural landscape of the Southern highlands was not, by any means, a foregone conclusion. Earle Draper, director of the Authority’s Land Planning and Housing Division, advocated respect for and replication of the familiar forms of regional building, an attitude shared by TVA director Arthur Morgan. Wank, as chief architect, countered with an argument for modern methods to meet the need for housing production. He argued further for an economy of expression based on the necessities of construction, unembellished by ornament. The housing produced by the TVA illustrates the debate between regionalism and modernism, with some dwellings, such as those in the town of Norris, retaining the gabled forms of traditional dwellings, while others, including the modular cabins premanufactured for Fontana, North Carolina, are explicitly modern.

The tension between modernity and tradition is less apparent in the large-scale work of the TVA: the dams, powerhouses, and steam plants and the land-



LEFT Typical house at Norris, Tennessee, 1934

RIGHT Prefabricated house at Pickwick Dam, 1941

scapes they inhabit. The Authority inherited one completed neoclassical dam, Wilson (1918–24), and a neoclassical design for its upriver neighbor, Wheeler (1933–36), as well as for Norris. But Wank successfully argued for a reconsideration of their appearance, and the only obvious trace of neoclassical thinking in either is a pared-down interpretation of rustication in the concrete walls around Wheeler’s turbine shafts. Otherwise, the large projects are thoroughly modern, their persuasive appeal deriving not from familiar forms but from a consistency of treatment—both in style and quality. Because every detail fits seamlessly into the whole, there is a sense of rightness, even inevitability, to the projects.

From Ten Mile to Guadalcanal

Just as unfamiliar, international forms were being imported into rural Tennessee, via the TVA dams, rural Tennesseans were shipping off to unfamiliar places—Normandy, Anzio, the South Pacific. The experience of my father, Bob Culvahouse, was typical. On July 14, 1943, he boarded a train at Chattanooga’s Terminal Station, bound for Camp Barkeley, Texas. At every station stop that long day—in Vicksburg, Mississippi; Delhi and Monroe, Louisiana—he sent my mother a postcard. After several weeks of basic training, he left Camp Barkeley, again by train. He boarded a troop ship in San Diego and spent the next two-and-a-half years in New Caledonia, Fiji, Guadalcanal, and Okinawa.

On January 19, 1946, he arrived back in the United States, at Vancouver Barracks, Washington, and eight days later he was discharged at Camp Chafee, Arkansas. From there he took a train back to Chattanooga, and he was home. During those years he had spent more time than he would have liked on transport ships, but he died, more than fifty years later, without ever having flown in an airplane. How typical that was of his peers in rural East Tennessee, I cannot say. But



LEFT Photograph of inhabitants of Fiji, ca. 1944

RIGHT Bob Hope’s USO review, with, left to right, Patty Thomas, Jerry Colonna, Tony Romano, Frances Langford, and Hope, unidentified Pacific island, ca. 1944



he was not, generally speaking, a Luddite: a high-school math teacher, he studied COBOL computer programming in the summer of 1962. What was typical was the experience of picking up, going to a foreign, faraway place, and then returning to the small, rural settlement where he had been born and raised, as if nothing had changed. But it had.

On the first day of January 1942—three weeks after the bombing of Pearl Harbor—Watts Bar Dam closed. The reservoir was filled before the events of the war sent my father to the Pacific, but there had hardly been time to get used to it. The Culvahouse homeplace was no longer on a hill—it was on a peninsula.

Continuities

Riding in the back of that 1959 Ford, unharnessed on the wide bench seat, I enjoyed the gentle roll and curve of the road into Watts Bar Dam. It did not occur to me then, and not for thirty years after, that the curves and the ups and downs of that road were *designed*. I thought roads were placed as they are as a matter of convenience; that, following old cow paths or Indian trails, they wound around the hills because it was the easiest way to go. If I had stopped to think about it, however, I would have noticed that the roads outside the TVA reservation cut the curves short, seeking a straighter line. That is where the orange clay banks emerged. The TVA roads betray a different attitude, gentler and less abrupt. Their designers did not merely defer to the hills, they choreographed a partnership of automobile and landscape. Long before artist Michael Heizer employed a bulldozer to draw his *Double Negative* (1969)—the pioneering minimalist earthwork near Overton, Nevada—TVA engineers applied grading equipment to the land as a sculptor would apply a chisel to marble.



LEFT Cover of *Yank: South Japan*, a weekly newspaper published by the enlisted men of the U.S. Army, November 2, 1945. “This Week’s Cover: This scene shows a high-power TVA transmission line running through a Tennessee Valley rural area—symbolic of the benefits that have come from the world’s first attempt to develop an entire region.”

CENTER Roof of Norris Dam powerhouse, from the top of the dam, 2002

RIGHT Combined gauge house and navigation light pole, Gunter’sville Lock at Gunter’sville Dam, 1938



Today that equipment has grown to such gargantuan proportions that the highway engineer has little incentive even to acknowledge a small hill, much less engage it artistically. Here, as in other areas, the TVA offers compelling lessons in the value of design for human experience.

But these lessons require careful observation. Unlike Heizer’s cut in the edge of Mormon Mesa, which depends on contrast for its effect, the roadways of the TVA reservations form a seamless continuity with the ground they traverse. You can usually tell when you have entered a TVA reservation—the shoulders of the road are more neatly mowed than elsewhere—but there is nothing abrupt about the transition. As Jane Wolff describes in “Redefining Landscape” (Chapter 2), the continuities of the designed landscape obscure innumerable dislocations in the preexisting landscape—of dwellings, commercial and agricultural buildings, fields, even cemeteries—but these dislocations were themselves assiduously coordinated. The visible choreography of designed elements holds throughout the reservation, from the scale of the landscape, through the scale of the dam itself, down to the detail of a light fixture or a door handle.

The novelist Henry James writes, “Really, universally, relations stop nowhere, and it is the exquisite problem of the artist to draw, through a geometry of his own, the circle within which they shall happily appear to do so.”¹¹ Though James was referring to novels and the obligation the novelist has to invent a fictional world without loose ends, his words are applicable to the designers of the TVA. For them the goal was to bring the abrupt forms of modern engineering design into continuity with the natural landscape and then to develop a connection among the built forms themselves, making of the whole a new nature.

As I experienced the Watts Bar reservation as a child, the cohesiveness of the TVA landscapes began with the roads. “The road goes ever on and on,” sings

Bilbo Baggins, and of things manmade, the road is the one that most literally connects distant parts of the landscape. The TVA designers took care to bring their roads into continuity with the immediate landscape as well, choreographing a tableau of built structures unfolding before the moving automobile. The structures themselves are marked by a similar relationship. This continuity can be literal and physical, as in the increasingly streamlined skins of turbine gantries that Barry Katz describes in “Ideology and Engineering in the Tennessee Valley” (Chapter 4), in which he explores the Authority’s industrial and product design. It can also be idiomatic, as seen in the design of building elements conceived so that each belongs to the whole.¹²

Two examples may suggest the thoroughness of the TVA Architect’s Office in creating a seamless architectural idiom. One is the application of concrete panels to the roofs of the powerhouses in the awareness that these roofs would be prominent visual elements as seen from above. While serving to protect the roofing material from ultraviolet radiation, the formal purpose of the concrete panels is to complete the visible form—to leave no element undesigned. The second is a typical navigation light at a lock entrance, in which the location of the lighting mast and the ladder used to replace the bulb also become the delicate and graceful termination of the massive concrete wall of the lock. The ladder on the lighting mast, oriented to reinforce the prow-shaped form of the wall as it meets the river’s current, ends in a radial return matching the semicircular ends of the guardrail. The same descending curve is seen in the down-turned profile of the lower ladder rungs set into the concrete wall below. Together, these elements form a common language.

Words and Pictures

In addition to the three-dimensional elements of landscape, building, and details, the Authority also mustered two-dimensional design in the service of its persuasive program. In “TVA Graphics: A Language of Power” (Chapter 5), Steven Heller illuminates the commercial modernism present in American graphic design that informed the graphic work of the TVA; in “Almost Fully Modern: The TVA’s Visual Art Campaign” (Chapter 6), Todd Smith focuses on a single representative mural at Daniel Boone Dam, tracing the interplay of progressive and traditional elements in the Authority’s visual rendition of its story of technological and social progress. Here, as in the TVA’s housing program, progressive ideology meets popular effectiveness in a well-tempered compromise.

The landscapes, buildings, details, graphic elements, and murals of the TVA form a unified ensemble, a completeness in the classical sense, in which nothing may be added or taken away without diminishing the whole. The comprehensiveness of this vision is perhaps as important as any of its explicit messages in asserting the value of the TVA’s unprecedented transformation of a region. In the work of the TVA’s first decade, design is persuasion.



LEFT TVA visitor center of Cherokee Dam, showing the Built for the People of the United States motto, with the dates of construction, 1986



RIGHT Chickamauga Dam, spillway at night, 1940

But Nobody's Perfect

Of course, not everyone was convinced. Certainly Mr. Chet and his five sons and five daughters were not. The intricate weave of people's lives in the landscape does not readily admit comprehensive visions or earthly utopias. Resentment of the TVA's reengineering of the region lingers there. But just as certain are the benefits to the region, rich in new ways of intertwining our lives with the land.

Richard Barnes's photographs deepen this account of the TVA in many ways. Those that appear as chapter illustrations provide the first widely published color images of the original TVA work, otherwise known only in black-and-white photographs that, beautiful as they are, cannot convey the insightful color palettes that shape the experience of the TVA facilities. But perhaps more important are the images that form Barnes's photo essay (Chapter 3). These pictures bring to light the poignant disruptions that the TVA has made in a regional landscape—disruptions that can never be wholly mended. At the same time, they portray the everyday pleasures of the new landscape.

Jennifer Bloomer's closing essay, "Watauga" (Chapter 7), draws together the pleasures and sorrows of our nation's most ambitious planning effort in the terms that matter: those of the lives of people living through and in the designed landscape. As architects and other designers contemplate our role in the world, in its political, economic, and social life, the work of the TVA offers lessons, both encouraging and cautionary, for the persuasive power of design.

Notes

1. Jack Neely, "Clash of the Titans," Tennessee Valley Authority, <http://www.tva.gov/heritage/titans/index.htm>.
2. "From the New Deal to a New Century: A Short History of TVA," Tennessee Valley Authority, <http://www.tva.gov/abouttva/history.htm>.
3. Tennessee Valley Authority Act, U.S. Code, vol. 16, sec. 831 (1933).
4. "From the New Deal to a New Century."
5. "TVA at a Glance" (TVA fact sheet), Tennessee Valley Authority, <http://www.tva.gov/abouttva/index.htm>.
6. Alberta and Carson Brewer, *Valley So Wild: A Folk History* (Knoxville: East Tennessee Historical Society, 1975), 239–44.
7. David H. Steinberg, *And to Think It Only Cost a Nickel!: the Development of Public Transportation in the Chattanooga Area*, (Chattanooga: privately published, 1975), 41.
8. *Wilson* (Tennessee Valley Authority, 1996).
9. Terry Johnson, TVA News Bureau, in conversation with author, October 2002.
10. Christine Macy provides the following account: During Le Corbusier's 1946 tour of the United States, his first stop was New York City, where he met with Albert Einstein and Henry Kaiser. My second visit was to Knoxville to see Mr. Lilienthal, the Director-General of the Tennessee Valley Authority [and] the guiding spirit of that harmonious plan, sponsored by President Roosevelt, which built the dams on the Tennessee River and the new towns, rescued American agriculture, and gave it new life.

He was particularly interested in seeing the TVA's use of concrete and its experiments with town planning in Norris and Fontana Village. He discussed both with Lilienthal. Le Corbusier reported, Our conversation was a friendly one indeed, for my golden rule speaks of harmony, and harmony is the aim of all Mr. Lilienthal's work. His face lit up at the delightful thought of establishing a reign of harmony... by undertaking the most gigantic works and coordinating the most immense projects: water, motive power, fertilizers, agriculture, transport, industry... The end result: a territory as large as France snatched from the grip of erosion, which, with a terrifying speed, was laying waste wide stretches of arable land. Now, victorious life was regaining possession of the salvaged land, performing upon it one of the greatest syntheses of modern organization. Le Corbusier, *Le Modulor* (Paris, 1947).

11. Henry James, *Literary Criticism: French Writers, Other European Writers, the Prefaces to the New York Edition* (New York: Literary Classics of the United States, Inc., 1984), 1041.

12. Edward Said defines "authority" in a way particularly apt to the TVA's design work: Every sort of writing establishes explicit and implicit rules of pertinence for itself: certain things are admissible, certain others not. I call these rules of pertinence *authority*—both in the sense of explicit law and guiding force (what we usually mean by the term) and in the sense of that implicit power to generate another word that will *belong* to the writing as a whole. Edward Said, *Beginnings: Intention and Method* (Baltimore: Johns Hopkins University Press, 1975), 16.