CITY SPECULATIONS

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INTRODUCTION: PORTRAYING THE CITY

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> Cities aren't villages; they aren't machines; they aren't works of art; and they aren't telecommunications stations. They are spaces for face to face contact of amazing variety and richness. They are spectacle—and what is wrong with that?[1]

THE *Panorama of the City of New York*, commissioned by Robert Moses for the 1964–65 New York World's Fair, may be the great summary image of a modern fortified city. In spite of its bold proportions and ambitious scope, it projects a finite and self-contained representation of New York. Like a specimen segregated for study, it is removed from its regional and environmental context. It is a still, silent picture—albeit a magnificent and seductive one—of the contemporary city. In its brilliant verisimilitude there is a haunting absence of the

1 Elizabeth Wilson, *The Sphinx in the City: Urban Life, the Control of Disorder, and Women* (Berkeley: University of California Press, 1991), 158.

complexities and turmoil that animate urban life and comprise the character of New York—or any other city. Astonishingly broad, we skim the surface of the *Panorama*, but there are few places to pause and reflect.

In February 1960 Moses accepted his final major position as the World's Fair Corporation president. It was the last in a long tally of titles—many held concurrently—that Moses acquired in the course of his remarkable career in public service. During his lengthy, influential, and fractious tenure as New York City's ultimate "power broker," he was credited with the development of beaches, bridges, housing, parks, recreation areas, and roadways. Moses was responsible for an astounding array of public works, including Flushing Meadows Park, Grand Central Parkway, Jones Beach, Stuyvesant Town, and the Triborough Bridge, to name just a few. But he has also been, justifiably, demonized for his ruthless and autocratic methods, his undemocratic social policies, and a misguided vision of the future of cities.[2]

As the principal organizer of this extravaganza, Moses enjoyed the enviable position and unchallenged authority to represent the twentieth-century city that he had helped shape. With the megalomaniacal zeal that characterized all of his work, he engineered an exposition of magnificent proportions and titillating diversions at Flushing Meadows Park in Queens. But Moses' long-term motivation for orchestrating the ephemeral fair—and an objective he had set at the 1939 World's Fair—was to create a new major urban park in Flushing to rival Manhattan's Central Park. Both in the geographic and popular center of a growing, reconfigured city, the new park—which he planned to name for himself—would have culminated his controversial career in public life.

Favoring the formulaic over the innovative, Moses followed the template that he had used for the 1939 fair in planning its successor. Consequently, the later exposition attempted to reproduce but never rivaled the enthralling, "brave new world" qualities promoted twenty-five years earlier at the same site. Moses' grandiose preoccupations were conspicuously evident in a trio of cartographic attractions. The Unisphere, a 140 foot high steel construction of the Earth's globe designed by Gilmore Clark and built by the U.S. Steel Corporation, became the fair's logo and remains an enduring feature at the site.

In the New York State Pavilion, Governor Nelson Rockefeller, architect Philip Johnson, and the Texas Oil Corporation (Texaco) marshaled forces to create a spectacular floor mosaic representing the New York State road maps distributed at Texaco gas stations. Today, at the pavilion's haunting ruins, there remain faint traces of the map, now fractured by large cracks and thickly overgrown with grasses and weeds.

The *Panorama*, the third monumental and laborious representational endeavor, was enthusiastically guided by Moses. For the New York City Pavilion, the only remaining structure used for both the 1939 and 1964–65 fairs, Moses commissioned the architectural modeling firm Lester Associates to construct a 1 inch : 100 feet scale model of New York City. Including all five boroughs, the nearly 10,000 square foot model would provide exquisite detail, voluminous information, and privileged views of the city.

The model's epic dimensions accommodated an obsession for detail: the city's 771 miles of shoreline, every street, and over 830,000 buildings were included in the Moses-inspired model. It took three years and almost $675,000 to build. At its unveiling, it was heralded as the "World's Largest Scale Model." Thirty years later this remains a legitimate, if vacuous, claim. As Marc H. Miller has noted, "With its colossal scale and down-to-earth factual literalness, the *Panorama* clearly reflected the distinctive tastes of Robert Moses."[3] Today, it remains a poignant, if melancholic and nostalgic, symbol of his legacy.

Lester Associates' contract with the World's Fair Corporation allowed for only a one percent margin of error in the construction of the model, a puzzlingly impossible requirement given the dynamic nature of urbanism.[4] How can error and accuracy be measured when the city

pocalyptic title and voluminous con-
rt Caro's Pulitzer Prize-winning
; *The Power Broker: Robert Moses*
ll of New York (New York: Alfred A.
74), is most responsible for revealing
e as New York's 'master builder.'

3 Marc H. Miller, *The Panorama of New York City* (New York: Queens Museum of Art, 1990), 14.

4 Ibid., 19.

is, as Jean-Paul Sartre describes, a "moving landscape for its inhabitants?" Despite the impossibility of their task, the model-makers analyzed and assimilated data from a number of representational resources in order to make an "error free" depiction of the 320 square-mile city. This material included: tax and insurance maps, vertical and oblique aerial photographs, Sanborn Maps, contour maps produced by the U.S. Geological Survey, and thousands of photographs of individual structures. Mixing representational veracity with other graphic conventions to ensure legibility, selected buildings and spaces were color-coded to classify typologies and city services that Moses deemed significant.

Since its renovation and reopening in the fall of 1994, viewers have circled the model in relative quiet. But as visitors entered the New York City Pavilion when the fair first opened, the audio-taped voice of Robert Wagner, then mayor of New York City, directed them to a scale model of the city of New Amsterdam circa 1660. Lilliputian in comparison to its sequestered companion, visitors could then only encounter the *Panorama* via a tracked-car ride that circled the perimeter of the model, simulating views from 3,000 to 20,000 feet. Traveling through a day-to-night lighting cycle, fair-goers orbited the gigantic model as the amplified voice of Lowell Thomas recounted the story of "the greatest city on earth." The theatrical nature of the *Panorama,* if diminished in its second reincarnation, remains disarmingly seductive.

The single-minded spectacle of the *Panorama* was, in many ways, Moses' tribute to himself at a time when his career and credibility were subject to challenge and ridicule. Although his career spanned over four decades, his work after World War II generally reflects an insatiable desire for power and a decline of vision. Although he predicted that the model would serve as an exceptional planning tool for the future—an incomparable resource for a new generation of city planners—it was, in fact, used as such only sporadically after the conclusion of the fair, and was virtually ignored following Moses' retirement from public life in the 1970s. A dinosaur in terms of any practical application, this embodiment of Moses' urban vision inevitably confirmed its own irrelevance, if not obsolescence. It is, in fact, no small irony that he advocated this titanic "planning" resource as the conclusive statement of a career that often avoided, demeaned, and suppressed long-term urban planning.

This remarkable exercise in heroic cartography and self-hagiography has been reinvented, rejuvenated, and revised, and now occupies the central space of the Queens Museum of Art, the current occupant of the New York City Building. Returned to Lester Associates in the early 1990s, the model was updated to represent the contemporary city. Buildings and other structures were extracted and added, recording the debilitating erasures and frantic additions in different areas of the city. Almost all structural amendments and deletions that have occurred in the past three decades have made their mark on the "new" *Panorama.* Without being beneficiaries to "before and after" portraits, viewers can only imagine the breadth and depth of change. Instead, they encounter a freeze frame of the present just as fair-goers experienced a city frozen in time at the midpoint of one of history's most fractious decades. The sense of volatile, sometimes violent, urban transformation is not codified in this model.

In spite of its amended, "contemporary" presentation, the *Panorama* is a paradoxical image; an obsessive and anachronistic form of urban representation. Now placed in the center of an art museum, visitors enter a small, discrete doorway to ascend a pedestrian ramp that encircles the model. At several points around the circumference, the programmed route leads onto glass balconies that extend out over the model, offering views other than the strictly peripheral. Less inhibited than most adult visitors, children from the many school groups that visit the *Panorama* often lie face down on the glass outcroppings to affect their own aerial views of the city.

Still, the *Panorama* depicts, as Moses ordained that it would, seamless, distant, and supposedly timeless views of the city's density and accretive sprawl. It is concurrently a plan, map, model, and portrait. In

its reconstituted status as a collectible artifact or "art object," it is of significant historical if questionable aesthetic interest. It remains an uncritical representation of the—dubious—efficacy of the master plan, the unifying view, and the totalizing narrative. Compelling but never comprehensive, the *Panorama* manifests the ideological coding inherent in all forms of urban representation. With all that is visualized, viewers confront what they overlook about the city; for all that is evident, they are affected by what is absent.

The model's titanic dimensions and static presentation both clarify and complicate ideas about the temporal and mutable dimensions of cities and communities. How are these dynamic dimensions depicted? Are there representational strategies or technologies that feature and privilege change over stasis? With the intention of investigating exploratory and analytical work that "re-presents" the contemporary and future city, *City Speculations* seeks a response to the *Panorama*. Particular consideration has been given to creative propositions that engage particular sites and specific issues; projects whose strategies and forms have the capacity to proliferate in other areas of the city. Microscopic in comparison to the sweeping scope of the *Panorama*, in the work assembled here readers might discover an intimacy and immediacy in urbanism that the *Panorama* suppresses. Whereas the great model is a deductive exercise inviting conclusions about parts based on the whole, the forms of analysis, interpretation, and representation that comprise this volume are inductive. They are visions that offer productive, instrumental glimpses of aspects of the city, and they seek a collective comprehension.

Speculation engenders ideas about thinking and seeing, knowledge and vision. All forms of representation are inherently biased and support particular views of the city. Who is doing the representing? What is being presented? These are questions that remain in the foreground of contemporary cultural discourse. *City Speculations* presents and explores the different visions, means, methodologies, and intentions of urban representation. Using both the New York City metropolitan region and the *Panorama* as site and subject, these projects include a range of representational strategies and lenses through which the late-twentieth-century city can be visualized. Four projects directly respond to the *Panorama*—those of Mojdeh Baratloo and Clifton Balch, Newark Metametrics, Kyong Park with William Cathcart, and Wellington Reiter. An unanticipated fifth, by Richard Plunz with Victoria Benatar, Maria Gomez, Hubert Klumpner, and Erich Proedl, emerged from the *Panorama*'s renovation. The ten remaining projects present computer animations, drawings, environmental simulations, maps, videos, works in progress, and other forms of documentation. Together, they provoke the *Panorama* into a spirited conversation about urban representation.

Regardless of whether the contributors question or contest the Moses model, all of the work either intentionally or implicitly responds to the Queens Museum's centerpiece. The diversity of views presented makes clear that no single representation of the city is objective, comprehensive, benign, or true, and that all depictions of the city are informed by and inscribe a particular point of view. The museum invited contributors to begin new explorations, to develop ongoing projects, to take inquiries in new directions, or to usher ideas in germination to new levels of realization. *City Speculations* was, from the outset, framed as a research opportunity rather than a conclusive display of finished work. As such, these projects invite questions. What do different models, maps, and images of the city enable people to examine or force them to overlook? How do the diverse forms of urban representation affect the way we understand New York? How have the profound changes in imaging technologies influenced perception, planning, and design? The projects that comprise *City Speculations* are situated both metaphorically and, in the context of their position on the museum's floor, physically at points of mediation between the actual city and its ultimate representation.

There are connections and metaphors that animate these collective investigations. Postmodern theory has challenged notions of a unified self and a universal subject. This has allowed us to understand

that contemporary issues of urban representation align with questions of identity. And if identity is understood as a negotiable, mutable, and nomadic subject, cities must also be explored and represented as transitional, layered, and often contradictory environments. Yet, with the *Panorama*, there remains a unifying, dogmatic coherence; a singular, infallible aspect to the views that it offers. The objective of *City Speculations* is, however, not to deride the Moses concept of urbanism, but to show its intentional objectives and latent limitations.

For all of his commitment to parkways and the vast arterial systems of New York, Moses paradoxically required a fixed image of the city. And it is just this fixity that the architects, artists, and designers included in *City Speculations* destabilize. Nomadism is an apt metaphor for the urban condition, for as individuals apprehend and understand the city through their own repetitious and fortuitous patterns of movement, they encounter an urban context that is circulatory and shifting. People experience and visualize the city as a transitive and temporal site. These projects contest any fixed, dominant scopic regime, and celebrate the faceted textures of spectacle.

In contrast to the epic narrative of the *Panorama*, *City Speculations* can be understood as an anthology of short stories written by many authors, representing a diversity of viewpoints. It is an anthology that establishes the connective tissue between the *Panorama*, the quintessential simulacrum of a city, and the city itself, the reality of the many iconographies that constitute urbanity.

Anthologies are never authoritative. Optimistically, they are collections of evidence that signal an atmospheric reality, an ether that surrounds and permeates perception. But it is in the concurrence and confederation of collected visions that readers of the city discover the freedom and possibility to honor many different stories, to let cities be both the symbols and repositories of cultural values. The objective of *City Speculations* is to introduce a spirited dialog in contrast to the strident monolog of the *Panorama*.

It is interesting to note that many of the contributors to *City Speculations* teach at colleges and universities. As educators, they are constructing the pedagogical structures for the next generation of architects, designers, and planners. Together, they ask questions about cause and effect, observation and meaning. While avoiding didacticism, there is an unmistakable instructional potential in this collection of projects. There are lessons formulated, inquiries pursued, and assumptions aired. The contributors to *City Speculations*, if not actively shaping the city, are undoubtedly influencing what it will become. They inscribe the theories that infiltrate practice. If the *Panorama* never fulfilled Moses' purported objectives as a powerful planning tool, *City Speculations* nonetheless confirms that it is a provocative teaching resource. Ironically, by challenging its effectiveness and relevance as urban representation, the contributors confirm its resonance as an educational instrument.

One month after Moses accepted the position of World's Fair Corporation president, the artist Jean Tinguely installed his own *Homage to New York* in the sculpture garden of the Museum of Modern Art. He found the components for the project in the dumps of New Jersey and the shops of Canal Street. Using his own panoply of devices, including bicycle wheels, old motors, piano parts, a go-cart, batteries, tubes, and a firearm, Tinguely's experimental, idiosyncratic sculpture was set into motion in order to self-destruct. At its opening—and closing—on 17 March 1960, it gyrated in spectacular fashion, yet failed to successfully complete its kamikaze mission. A tepid fire erupted and the New York City Fire Department reluctantly extinguished it. In the end, the remaining charred pieces of the installation were discarded—returned to the landfills that the artist frequented. As Billy Kulver observed, "All the rest was memory and pictures."[5]

At virtually the same moment that Tinguely sought fire and chaos to represent the city, Moses set out

5 Pontus Hulten, *Jean Tinguely: A Magic Stronger than Death* (New York: Abbeville Press, 1987), 77.

to freeze and preserve it. For all of his notable work, Moses never understood that the movement and velocity of parkways could be metaphors for the contemporary city, a concept promoted by many contemporary architects, planners, and theorists. He sought ways to circumvent and transgress the city, never envisioning that circulation might have some connection its systemic structures. Moses kept scrutinizing the silent, still picture long after it was out of focus. In contrast, Tinguely sought an image, a gesture, and a spectacular and ephemeral moment as the most appropriate analog of the city. In vividly different ways, both the *Panorama* and *Homage* have left their memorable imprints on their host museums as well as the city beyond. *City Speculations* seeks meaning in the points between fixity and temporality, between the inevitable and the imagined city.

THE NEW YORK PANORAMA: A PARADOXICAL VIEW

M. CHRISTINE BOYER

IT seems paradoxical that Robert Moses would choose, at the end of his career, to display a comprehensive view of his master works. Moses, who controlled the landscape of New York for nearly fifty years, neither believed in the process of planning nor ever produced a master plan for the many projects he built. Why did he employ the totalized view encompassed by a panorama—a scale model of miniaturized buildings, streets, parks, and bridges—to reveal his command over the physical reality of the city and to display the marvelous record of his reign? Why not rely on the most advanced techniques of simulation that the 1960s could offer in order to entertain and visually stimulate the spectator? He could have used photographic projections to achieve the effect of greater illusion, or he might have explored the sight and sound simulations of Cinerama, a popular medium of projected three-dimensional images. There is always a pressure in popular entertainment to move from mere representation to the higher technical arts of simulation, where the experience of reality and illusion

are confounded in the production of more fantastical worlds. Why, then, did Robert Moses revert to displaying the works of his masterful hand in the nostalgic replication of a nineteenth-century medium, the panorama, at the 1964–65 New York World's Fair?

There are many reasons why Moses may have selected the more archaic techniques of representation embodied in a scale model over the more theatrical effects produced by more sophisticated forms of simulation. One can assume that he wanted to emphasize the physical experience of looking in order to accentuate the sense of amazement and surprise produced by the marvelous view of his efforts. The assumption can likewise be made that he hoped that spectators would be astonished when confronted with a building program that they knew of from newspaper accounts but had never envisioned in entirety, and that this astonishment would implicate spectators in the aura of wonderment created by the *Panorama*. Perhaps he also knew that the historical acceptance of his work depended on visitors substituting the *Panorama*'s landscape view of his completed project for the experience of confusion and disruption that industrial change and modernization had entailed. It can be argued as well that Moses wished to demonstrate his control over the city, to underscore that he was the master draftsman, the rational technician who held the power to transform this view. More spectacular means of representation—like Cinerama—might only have diverted attention from his accomplishments by accentuating the technical apparatus used to create the illusion.[1] Finally, Moses may also have desired a public demonstration of his accomplishment, a social event and record for the collective memory of the city. Such an event would necessarily require a shared visual experience. Consequently, he would have wanted to avoid isolating the spectator in the darkness necessary for projected images or filmed events.

Yet even panoramas display a bias for showing everything without divulging anything. Like a successful magic show, they depend on their techniques being invisible. While panoramas may transform the material world into a new reality, they reveal only their power to transform, never demonstrating how this process takes place. In 1787, the inventor of panoramas, Robert Barker, claimed that they presented "*nature á coup d'oeil*"—a silent still life with the power to capture appearances and command the wonders of nature. The spectators of one of Barker's panoramas, after traveling through a darkened tunnel, climbed a staircase and were suddenly deposited on a platform fixed at the center of a centrifugal view. Although they could never approach the horizon of this perspectival model, viewers were nevertheless immersed in a virtual space that might be mistaken for the real, or at least taken for a good facsimile of it.

The early success of the panorama relied on the artistic power of both scene-painters, whose seamless dissolves could simulate the passing of time, and the wizardry of technicians, who could produce the illusion of movement by projecting light across a model. These feats of artifice and mechanical invention were sufficient to create the illusion that reality had been inexplicably transformed by secret or invisible technique. Not only did panoramas faithfully represent the detail, texture, and look of actual objects and events, but they served as "mirror[s] with a memory," reproducing events and objects from the past and projecting them into the present.[2] Disbelief could be playfully suspended, for the spectator knew, as part of the theatrical experience, that it was actually the technique of the scene-painter, the mechanisms of projection, and the realistic props and objects that had produced the effect of the real.[3] Such effects may well have been important for Moses, as he clearly intended to have his panorama call attention to his power over the topography of the city.

Between 1860 and 1910, panoramas reached their height of popularity, not only achieving the realistic representation of space, but providing a sensation of motion as well. They served as a kind of pre-cinematic, animated newspaper that called on spectators to make connections between the view

1. The following account draws a distinction between representation and simulation and follows closely the argument that Don Slater developed in "Photography and Modern Vision: the Spectacle of 'Natural Magic'," in Chris Jenks, ed. *Visual Culture* (New York: Routledge, 1995), 218–237.

2. This is how Oliver Wendell Holmes described the daguerreotype in 1859. Quoted in Slater, ibid., 218.

3. Ibid.

represented and contemporary events reported by the press.[4] Thus, Charles Castellani's panorama entitled "Le Tout Paris" triumphed by grouping the figures of various celebrities around the well known Place de l'Opéra. One reviewer exclaimed, "no better place could have been chosen in this shining and noisy Paris to represent Parisian life in all its ardor, vigor, and feverishness."[5] It appears that this simple, circular panorama—a painting that did not compete with other panoramas of the day in terms of verisimilitude—was nevertheless a grand success because its subject matter alone was sufficient to animate its view. It provided a lifelike rendition of a moment taken from popular discourse that had already been narrated in the press.[6]

During the late nineteenth century, Paris displayed a kind of "panoramania." When the famous Musée Grévin wax museum opened in 1882, it became an immediate success, attracting half a million visitors annually. Modeled in part on Madame Tussaud's London wax museum, it was founded by journalist Arthur Meyer and newspaper caricaturist Alfred Grévin. They intended this museum to mimic the newspaper, offering a random juxtaposition of tableaux similar to the manner in which newspaper columns presented readers with series of unconnected stories. They changed these tableaux often, promising that their displays would "represent the principal current events with scrupulous fidelity and striking precision. . . . [It is to be] a living museum."[7] In order to heighten the effect of realism, installations were furnished with authentic accessories: a model of Victor Hugo held the author's real pen; the effigy of Marat was displayed in the revolutionary's actual tub.[8] Thus, the museum offered the spectator the novelty of visualizing familiar events, people, and stories in exacting detail at a time when photographs were not easily reproduced and had yet to accompany newspaper reports. Furthermore, these views required that spectators willingly acknowledge the link between known facts or public events and their representations.

4. Vanessa R. Schwartz, "Cinematic Spectatorship before the Apparatus," in Linda Williams ed. *Viewing Positions: Ways of Seeing Film* (New Brunswick: Rutgers University Press, 1994), 107.
5. Ibid., 97–98.
6. Ibid., 105–111.
7. Quoted by Schwartz, ibid., 94.
8. Ibid., 95.

These simulations also enabled visitors to inhabit multiple perspectives and to experience the surprise of seeing things that one might not ordinarily see. For example, in 1889 the museum presented a tableau of the Eiffel Tower before it had been officially opened—a chance for the public to glimpse the magnificent views the tower would soon offer. Three sights were cleverly combined into one privileged view. Spectators saw Gustav Eiffel and several exposition officials inspecting the tower in mid-construction; workers who had stopped to watch those very dignitaries; and a panoramic view of Paris from the second level of the tower. Surely this would have pleased Robert Moses, for he too wanted to ensure that spectators made connections between projects well known from daily experience or newspaper reports and the surprising totalized vision that his panorama displayed.

Using the most advanced technical means, three-dimensional tableaux vivants, along with panoramas, dioramas, magic-lantern shows, photographs, and stereoscopic views offered the nineteenth-century spectator new kinds of visual realism. These new kinds of realism, however, may have had characteristics that Robert Moses would have wanted to avoid. Not only did these simulations assume the viewpoint of a journalist or an artist, but they required a technical apparatus in order to organize, manage, and produce their three-dimensional effects. Consequently, it was not just representational realism but mechanical or instrumental wizardry that enthralled audiences in the late nineteenth century. They flocked to theatrical spectacles and thrilled at scenographic displays magically transformed by mechanical devices. By attending these types of shows, Victorian society gradually learned to live with modern machines and mechanical processes. Technical accomplishments became spectacles in themselves, for at that time "to represent, to know, to transform [became] not only mutually reinforcing but united activities, three forms of appropriation of the material world which both produce[d] and assimilate[d] the modern experience of command and control."[9]

Modern realism enabled the world to be

9. Slater, Op. cit., 222.

described in "factual form," supposedly uncompromised by theory, values, or magical events. It enabled sight itself to be produced by the same industrial techniques that created the objects of sight, thereby calling attention to the technical apparatus of vision. Paradoxically, once the world had been deprived of wonder through its instruments of realistic vision, once occult and supernatural effects had been destroyed through so much understanding, the nineteenth century attempted to re-enchant its visual field in theatrical events, visual spectacles, and quasi-magical shows. By hiding the apparatus of display and highlighting the artifice of re-creation, it relied on the magic of inexplicable processes and special effects. Hence, no matter how great the factual details of realism were, there was always a pressure to move from mere representation and factual understanding to simulation and the demonstration—not explication—of how effective illusions and wonders were produced. In contrast to this rational and instrumental control over material reality lay a willingness to suspend disbelief and become pleasurably immersed in fantastical worlds.[10]

Although dioramas, panoramas, and even wax museums had been popular forms of entertainment in the late eighteenth century, they nevertheless experienced a revival of interest at the end of the nineteenth century. As witnessed in the popular displays that the Musée Grévin presented, that era experienced an unquenchable desire for spectacle. As audiences grew more and more accustomed to seeing their world produced in realistic exactitude—demonstrating that one could appropriate, master, map, project, and reconstruct it—additional pleasure arose from the ability to simulate that world, from the special effects themselves. Wonder, once the result of excellence in draughtsmanship or a particular scenographer's theatrical skill was now dependent on the ability of mechanical techniques to produce an illusory space in which the spectator lost the sense of being in a constructed world. Thus, to take an example, the stereoscope—first displayed to the world at the Great Exhibition of 1851—created the illusion of three-dimensional depth, "enabling" the viewer to move into the surface of an image, look around its objects, and feel their solidity. As did many of the other nineteenth-century forms of spectacular illusion, the stereoscope cheated the senses by removing the marks of its own production.[11] Surely Moses would have wanted to avoid the mystical aura of such forms of artifice, for they might re-enchant the spectator's view and distract them from their awareness of his role as "master builder" and obscure the marks of his construction. Indeed, many of Moses' projects, in particular his bridges, were made out of brass in order to stand out in the mass of structures in the *Panorama*. Indeed, this older representational medium permitted viewers to make the linkages between events that they already knew of from years of newspaper reporting with the actual locations of those events within the *Panorama*'s landscape of the city. Now, they could verify and acknowledge just how comprehensive Moses' transformations had been.

The desire for greater realism always seems to push toward the simulation of three-dimensional images. Nothing illustrates this better than the development of Cinerama, an apparatus that projected multiple wide-angle images onto a spherically adapted screen. The evolution of this system began in 1937, when architect Ralph Walker approached film producer and special effects expert Fred Waller with the idea of creating a projected three-dimensional presentation for the 1939 World's Fair.[12] By the end of 1938, Laurance Rockefeller had joined Walker and Waller in the formation of the Vitarama Corporation, with the express goal of perfecting the machinery for projecting three-dimensional images. Waller, formerly the head of Paramount's special effects department and the technical mastermind of the new company, was already well aware that the exploitation of peripheral vision produced a sense of realism by stimulating the perception of three-dimensional depth. To compliment projected images, Waller experimented with sound systems that would augment a spectator's sensation of realism.

10. Ibid., 218–237.

11. Ibid., 218–237.

12. The development of Cinerama is recounte in a 1950 letter by Fred Waller published as, "The Archeology of Cinerama," *Film History* 5 (1993): 289–297.

Waller, through Vitarama, produced three installations for the 1939 fair. The first, on the interior of the exhibition's Perisphere, was a projection of ten columns of figures marching in synchronicity to the fair's theme song. Another, developed for Kodak and known as the "Hall of Color," offered a panoramic projection of the company's Kodachrome slides on eleven different screens arranged in spherical sections. This slick presentation became the best attended commercial installation at the fair. Vitarama's third exhibit was a simulation of space travel developed for the American Museum of Natural History. Entitled "Time and Space," it consisted of a combination of moving and still images projected onto a curved surface. Together, these three exhibits captured the imaginations of American audiences, who had a seemingly insatiable appetite for ever more advanced modes of representation.

Never afraid to follow a promising trend, corporate America sought to capitalize on the powerful impact of Vitarama's new methods of projection. Following World War II, Time, Inc. called on Waller to develop a promotional presentation for *Life* magazine glorifying the postwar American way of life. The result, "The New America," was so successful that the State Department, recognizing its value as a propaganda tool, appropriated the show and presented it to German and Japanese audiences who gave it rave reviews.

Banking on a record of popular success, the 1946 formation of the Cinerama Corporation allowed Waller time and money to develop a sight and sound apparatus for commercial entertainment. His subsequent experiments revealed that a cylindrical screen minimized the distortions of side views created by projection onto a spherical screen. With Cinerama, Waller sought to take advantage of the way the mind comprehends space, such as the gradual graying or bluing of objects as they move away from the eye, or the unconscious awareness that objects directly in front of the eye are plainly enlarged and objects on the periphery of vision move rapidly by. Waller experimented with Cinerama's sound system as well: six different audio channels seemed to be optimal, allowing a uniform volume of sound to travel across the screen and beyond its limits, all the while enhancing the depth of that sound as it moved away from and toward the audience. Cinerama's elaborate machinery served to trick the senses and immerse the viewer in a completely simulated space. It focused the spectator's wonder on the technical apparatus that produced the show and not on its actual content or creator.

No doubt, all of these modern arts of simulation were known by and available to Robert Moses, but he willfully chose to avoid them. Was it because they were ideal techniques for re-enchanting a realistic view with the magic of unknown processes? World's fairs were often the proving grounds for those combining technological innovation with ideological discourse in order to enable spectators to envision worlds yet to be actualized. Robert Moses, however, wanted to present a record of his actual achievements, to represent the last fifty years of his construction as a completed tableau. He thus appropriately selected the more archaic theatrical event of a panorama in model form.