Automobile Utopias and Traditional Urban Infrastructure: Visions of the Coming Conflict, 1925–1940

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Five automobile utopias presaged a conflict of infrastructures that had profound implications for traditional urban form throughout the twentieth and into the twenty-first century: Plan Voisin (Le Corbusier, 1925 and 1929), The Metropolis of Tomorrow (Ferris, 1929), Broadacre City (Wright, 1932), La Ville Radieuse (Le Corbusier, 1935), and Futurama (Bel Geddes, 1939–40). Each of these proposals sought to resolve the conflict between the ever-increasing speed and large-scale geometries of the automobile and the much finer grain and slower speeds of the traditional city street. The article explores each utopia’s typology, intentionality and presentation and its attitudes toward and uses of traditional urban infrastructures.

Throughout early 1926, its second year of publication, The New Yorker ran a series of nine cartoons by Alfred Frueh. The cartoons depicted a series of fanciful contraptions that, among other things, allowed cars to pass over and under one another or that used streetlamp standards to hoist cars off the ground for storage (Fig. 1). Each ran with one of two extremely simple captions, either “solving the traffic problem” or “solving the parking problem.” That these punchlines were so straightforward implies that for New Yorkers of the time the “traffic problem” and the “parking problem” were ubiquitous enough so as to require no further explanation. In fact, Arthur Perry, in a 1929 monograph on the neighborhood unit for the regional plan for New York, detailed and diagramed the locations where two hundred children had been killed by street vehicles in Manhattan during 1926 alone. It is shocking that such a terrible toll was being exacted a mere 27 years after, on these very same streets, Henry Bliss had become the first person to be killed in North America by an automobile. That the daily clash between pedestrians and

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automobiles in New York had so quickly built to such a deadly pitch points to a fundamental conflict between the expanding ownership and increasing speed of automobiles and the traditional functioning of the city street. Historically, urban streets had absorbed all kinds of uses, yet, clearly, this strategy was no longer working. The infrastructure of the city as conceived and constructed to that point was simply unsuited to absorb the new technology of the automobile.\(^4\)

A new infrastructure, the limited-access highway, was being developed to support the ever-more-popular automobile. Such highways had very few intersections, dedicated or nearly dedicated usage, and straight or gently curving geometries that typically allowed cars to travel at speed with few interruptions. While, by 1925, highway development had been underway for decades in the United States, they had largely been a phenomenon of the American countryside, where their safety record benefited from a relatively sparse population. However, in 1930, the West Side Highway — an elevated, dedicated, high-speed roadway — would push into Manhattan, sparking construction of similar structures across the country and bringing the infrastructure of the automobile into direct contact, and conflict, with the finer-grained infrastructures of the city. Undoubtedly, this raised highway was at least partly seen as a way to separate automobiles and pedestrians, and so reduce deadly encounters between the two. Yet, while the introduction of the automobile had already caused considerable disruption on the streets of New York, the introduction of the car-dedicated highway would presage a much broader set of difficulties, as architects, planners, urban designers, engineers, and policy-makers sought to reconcile the convenience and independence of the car with the bustle and amenities of the city.

During the interwar period the resolution of this clash of infrastructures would be a subject of much study and speculation. The promise of maintaining the best aspects of the city while leveraging the possibilities of the automobile was a recurring trope in urban planning of the period. One could certainly point to many utopian schemes that either foreshadowed this investigation or dealt with it directly: Garnier’s Une Cité Industrielle of 1918, Perret and Perret’s Tower Blocks for Paris of 1922, and Hilberseimer’s Ideal City Plan of 1927, to name a few. In order to focus the issues, this article examines only five such proposals. The schemes — Plan Voisin/Ville Contemporaine, The Metropolis of Tomorrow, Broadacre City, La Ville Radiouse, and Futurama — were chosen because they reflect some combination of significant professional and popular interest at the time or because they have had significant influence on urban design thinking since. Each of these proposals casts a long shadow, and each sought to resolve the ever-increasing speed and large-scale geometries of the automobile with the much finer grain and slower speeds of the traditional city street — some by absorbing the highway into the city, others by dissolving the city itself.

**PLAN VOISIN/VILLE CONTEMPORAINE (1925 AND 1929)**

Le Corbusier’s Plan Voisin for Paris and his related but more comprehensive Ville Contemporaine [Contemporary City for Three Million Inhabitants] were first exhibited in the Esprit Nouveau pavilion at the Exhibition of Decorative Art in Paris in 1925, and were later detailed in a book, *Urbanisme (The City of To-morrow and Its Planning)*, in 1929. The publication of *The City of To-morrow* was an event noteworthy enough in the architectural profession that the *Architectural Review* published most of the chapter entitled “The Great City” under the title “Coubusierthology” the month prior to publishing a detailed, though disparaging, review of the book.\(^5\)

The conflict between traditional city structure and the infrastructure of the automobile lay at the very center of the two schemes, and *The City of To-morrow* was a primer on the various aspects of this conflict and how, in Le Corbusier’s estimation, they ought to be resolved. In fact, the conflict was both embedded in the name of the project and served as its genesis. In a footnote to the chapter on the Plan Voisin,
Le Corbusier detailed how he had met with the heads of the great French car companies — Peugeot, Citroën and Voisin — and declared to them, “the motor has killed the great city. The motor must save the great city.” He had then asked if they would underwrite the development of

... a scheme whose sole object would be to concentrate public notice on the true architectural problem of this era, a problem not of decoration but of architecture and town planning; a sane reconstruction of the dwelling unit and the creation of urban organs which would answer to our conditions of living which have been so profoundly affected by machinery [emphasis mine].6

Of the three businessmen, only Monsieur Mongermon of Voisin saw merit in the proposal and agreed to back Le Corbusier’s efforts. Thus, the design became known as the Plan Voisin.

In his introduction to the English translation of The City of To-morrow, Frederick Etchells pointed to New York’s West Side Highway as a welcome solution to the traffic congestion in cities, one that lent believability to Le Corbusier’s proposals. He included an illustration of the proposed “motor track,” and declared with some admiration, “The speed for cars will be thirty miles an hour or over. All crossings have been eliminated.”7 This vertical separation of traffic — both between speeds of wheeled traffic and wheeled traffic and pedestrians — would be a recurring theme in each of the interwar automobile utopias examined in this article. Plan Voisin had three levels of pedestrian-only spaces — “streets of repose,” as Le Corbusier termed them — completely separated from automobile traffic.8

Le Corbusier’s handling of the traditional city fabric in the Plan Voisin was rough, to say the least. A scheme for the center of Paris, the plan essentially proposed scraping the ground clean “from Place de la Republique to Rue du Louvre, and from the Gare de l’Est to the Rue de Rivoli.”9 This would facilitate the insertion of a new city, based on the needs of the automobile, into the old, which was hostile to the car’s needs. For Le Corbusier there was no need to tinker at the margins when it was clear that the automobile and the structure of the traditional city were incompatible. As he put it,

This plan makes a frontal attack on the most diseased quarters of the city, and the narrowest streets; it is not “opportunist” or designed to gain a yard or two at odd points in over-congested roads. Its aim is rather to open up in the strategic heart of Paris a splendid system of communication. As against streets ranging from 20 to 35 feet in width with cross roads every 20, 30 or 50 yards, its aim is to establish a plan on the “gridiron” system with roads 150, 250, to 400 feet in width with cross roads every 350 or 400 yards.10

Clearly embedded in the most well-known, and most infamous, image of the Plan Voisin is Le Corbusier’s view that the traditional urban street — or “corridor street,” in his parlance — had become a “‘dead organ’ incapable of fulfilling its function” (fig. 2).11 Instead, adjacent to the tabula rasa at the center of Plan Voisin is a 400-foot-wide central artery that, while connected to the fabric of the plan, also offers dedicated lanes for through traffic without any grade connections. Just as the central district of the plan is carved from the fabric of the city, this principal artery continues straight through the city, unabated and uninfluenced by any particulars of its context. In Le Corbusier’s view, according to Hughes, the “centre of Paris was too congested, crammed, and old to support the intense motor traffic that the early twentieth century was bringing.”12 The solution was to eliminate the infrastructure of the Parisian street and replace it with spaces designed.
around the car. In the Plan Voisin the traditional city must yield to the infrastructure of the automobile wherever the two were in conflict.

Within each of the massive blocks created by the gridiron of Le Corbusier’s plan is a cruciform skyscraper. Thus, he classified it as a “vertical” scheme despite the amount of open, horizontal space it created. Surrounding each skyscraper are gardens and walkways, and on the perimeter of each block is what appears to be a continuous arcade or walkway. Yet, there seem to be no provisions for pedestrians to cross the extra-wide streets, and so the superblocks are like islands in a sea of concrete, each isolated from every other. Furthermore, in Le Corbusier’s renderings of the Plan Voisin and the Ville Contemporaine, the cities are so sparsely populated as to have the feel of having been suddenly abandoned by their citizens. In one rendering of the terraced cafes looking out toward the central station of the Ville Contemporaine, for instance, the chairs are empty though the tables are set, despite the caption’s assertion that the cafes are “much frequented” (Fig. 3). Quite at odds with reality, the visual sparseness in the presentation of the Plan Voisin and the Ville Contemporaine helps deemphasize the conflict between the car and the pedestrian by making it seem as if one could leisurely walk across their multilane streets.

These limitations were apparent to some contemporaneous critics. Trystan Edwards, in his review of *The City of To-morrow*, not only pointed out the problems the schemes created for pedestrian and vehicular circulation, but also hinted at another issue that would become important to several of the interwar highway utopias (and eventually in urban planning practice) — namely, that with the rise of the automobile, the center city would no longer be a locus of both living and working. Rather, urban car transportation networks would be increasingly seen as systems accommodating a daily ingress of workers to the center and a corresponding egress at the end of the work day. Le Corbusier’s functionally distinct planning raised but didn’t address this issue. As Edwards wrote:

> [T]he trouble arises at the bottle-neck at the base of the skyscraper, and the provision of ample open space around it does not altogether meet the difficulty. In the new city at about 6 p.m. every day 40,000 clerks will be clamouring for exit from each skyscraper, either by railway or by road. How long will it take to get them out? Many of the lifts will not be express, but must have nearly a hundred stopping-places on the way down. And what of intercommunication between the blocks during the day? Would it be possible, for instance, to get from the thirty-fourth floor in skyscraper A to the twenty-seventh floor in skyscraper B as quickly as a man may walk half-a-mile in the City of London? 

In the Plan Voisin and the Ville Contemporaine, as in other interwar utopias to follow, the car and its infrastructure were not seen as playing the role of the traditional urban street, which accommodated transportation as well as social, commercial and civic functions. This stripping of non-transportation-related uses from the street was further facilitated by a growing sense that the center city would no longer be a place of inhabitation. Rather, the street would become a means for maximizing the efficiency and speed of the car, and inhabitants would be separated either horizontally or, increasingly, vertically.

The full development of the vertical separation of transportation functions would be realized in the Ville Contemporaine, in which Le Corbusier applied the ideas of the Plan Voisin.
Voisin to a greenfield site, proposing a comprehensive city for three million inhabitants. Here Le Corbusier detailed the vertical distribution of the “great central station,” inscribed between four of the cruciform towers. Across six levels of pinwheel trays, he detailed a place for nearly every form of transport imaginable, from airplanes to subways. However, he did not outline a place specifically for pedestrians.

In the well-known image of the Ville Contemporaine taken from a vantage point even with the tops of the skyscrapers, Le Corbusier showed a dedicated motorway stretching to the horizon and parking spots for taxi planes (fig. 4). The image deemphasizes the negotiation between car and pedestrian. One’s eye is far above the ground; car traffic is thin; and the inhabitants are scattered like ants on the plazas and parks below. Pedestrians still have access to the ground plane, though their realm is ill defined, and they still share it with cars — but now with cars whose routes seem less predictable than in the Plan Voisin. As noted by Robert Fishman, this center “lacks the symbolic value that one might expect. Le Corbusier has placed no cathedral or civic monument there. The center serves people going somewhere else — people in motion.”

THE METROPOLIS OF TOMORROW (1929)

Architecture critic Paul Goldberger has positioned Hugh Ferriss in the middle ground of twentieth-century urban visionaries, arguing that “The images he created were not as crisply rationalist as those of Le Corbusier nor as romantically suburban as those of Frank Lloyd Wright or Patrick Geddes; neither were they as casual and random as those of Jane Jacobs.” Yet it is interesting to consider how in his 1929 book The Metropolis of Tomorrow Ferriss negotiated the distance between existing city fabric and the projection of new infrastructure into that fabric.

Most well-known for its volumetric diagrams of New York City zoning regulations, The Metropolis of Tomorrow, despite its forward-looking title, begins rather prosaically with a section comprised of Ferriss’s commercial renderings for various clients as a way of grounding its utopian proposals. The second section is then titled “Projected Trends,” implying that the culminating third section, “An Imaginary Metropolis,” will provide the rational alternative to the changes afoot in the city. Though published in the same year, The Metropolis of Tomorrow, in both its title and content, reads as a response to Le Corbusier’s The City of To-morrow. This is not altogether impossible, since many of the ideas in Le Corbusier’s book had been public for several years. However, at the time of its publication, The Metropolis of Tomorrow seems to have garnered little of the professional and popular attention enjoyed by The City of To-morrow. Neither were Ferriss’s ideas about city planning to become as influential as those of Le Corbusier. It is probably only due to the skill of his architectural renderings that Ferriss’s ideas about city planning have passed down to us at all. Yet the vision they provide is a provocative one with respect to the resolution of the infrastructure of the automobile and the traditional city street.
While the structure of *The Metropolis of Tomorrow* helps lend credence to Ferriss’s proposals, the sheer weight and energy of his renderings also help make the case. Unlike Le Corbusier’s sparsely traveled roadways and sparsely populated parks and terraces, Ferriss’s highways and sidewalks teem with activity. It is, in fact, in the second section, “Projected Trends,” which also contains the famous zoning diagrams, that Ferriss began to use his consummate skill as a delineator to create a visual argument for the city to come. For Ferriss, the utopian city would not be one of park-like openness; rather, it would be dense (thus the necessity for stepped buildings to allow light and air at ground level), and the accompanying traffic would be intense. He recognized the challenge early on, stating,

*The first tendency, then, with which the following sketches will deal will be the tendency toward concentration. This will lead us at once to the tendency to build higher and higher structures; and we must notice, at the same time, the various proposals to care for the accompanying traffic congestion.*

Two of Ferriss’s “Projected Trends” dealt directly with the conflict of automobile and pedestrian on the city streets, and both utilized the vertical dimension as a way to resolve this conflict. He called the first of these “Overhead Traffic-Ways” ([FIG. 5](#)). Here Ferriss took the new urban form of the raised motorway to ludicrous new heights. While simultaneously noting the insanity of the accompanying image, he observed that with stepped-back buildings,

*One could drive at will across the facades of buildings, at the fifth, tenth, fifteenth or twentieth story. Automobiles below one, automobiles above one! A paradise, perhaps, for the automobile manufacturer! But for the office worker — less and less escape from the noise, the rush and the atmosphere of traffic.*

The second of Ferriss’s trends dealing with the conflict between the emerging automobile and the pedestrian-focused street was “Pedestrians Over Wheel-Traffic” ([FIG. 6](#)). Here he used his rendering skills to make an elevated walkway over a bustling multilane highway seem placid and serene, as if the pedestrians were overlooking a stream (an analogy he used in the text as well). In addition to the visible automobile and pedestrian levels, the text described another level of train traffic below. Ferriss presented this abdication of the ground plane as if it were merely a logical step in the evolution of the city. For example, he stated that a future
where stores have a lower entrance for patrons arriving by automobile and an upper entrance for patrons arriving on foot, “however radical, seems in the long run inevitable.”20 Like Le Corbusier, Ferriss recognized that the speed of the automobile made it incompatible with pedestrian uses. His raised pedestrian ways thus became a proxy street, allowing the city’s traditional functions to continue while the cars enjoyed a new dedicated space within the urban fabric. In the vertical separation of functions the scheme was not unlike Plan Voisin’s terraced cafes. However, the specifics of its outcome were very different due to the insistence on concentration rather than segregated urban functionality.

As Ferriss turned to the final section of Metropolis, he laid out his utopian vision of the city of the future. This vision, while not Le Corbusier’s airy parkland, was also not the dark canyons of the “Projected Trends” section. Rather, it described a dense city consisting of a field of six-story buildings punctuated by megalithic stepped towers that straddled several blocks. These buildings are ordered by two street systems. The more prominent of these is a radiating system of large streets, the intersections of which either form civic roundabouts or are covered over by the large towers. The secondary system is a grid of narrower streets that passes through the lower districts (FIG. 7).

Ferriss described the larger streets as “a system of broad avenues which must be two hundred feet wide and which are placed about half a mile apart. . . . [H]ere is a system of superhighways which carry the express traffic of the city and . . . the tower buildings are express stations for the traffic.”21 By contrast, the secondary arteries are “scarcely more than sixty feet wide; obviously . . . to carry only the traffic which is local to the district.”22 Later, in the description of the first of the large towers (or “centers,” as Ferriss called them), he described an even more complex picture. “Local wheel traffic is on the ground level; express traffic is depressed; pedestrians pass on a separate plane above.”23 Ferriss’s utopia sought to eliminate the city’s infrastructural conflict by giving each mode of travel its own plane, separated in both plan and section. The resulting structure, devised to free the car from the traditional city street, ordered the very city.

BROADACRE CITY (1932)

Frank Lloyd Wright first proposed Broadacre City in a series of lectures in 1930, and expanded on the concept in three books: The Disappearing City (1932), When Democracy Builds (1945), and The Living City (1958). While all of the automobile utopias examined in this article bear some debt to Tony Garnier’s Une Cité Industrielle of 1917, perhaps Broadacre City is the most indebted. Images of Garnier’s low-slung, horizontally dispersed, functionally segregated city hugging the surrounding landscape bear a striking resemblance to photographs of the Broadacre City model (FIG. 8).24 Wright likely saw in Garnier’s proposal the means by which he could achieve his vision of an urbanism suited to contemporary demands. This urbanism would take advantage of the car’s ability to incorporate more of the ground plane into the city. Indeed, in many ways Broadacre City is homage to horizontal distribution.


Like his contemporaries, Wright recognized the difficulties of meshing the infrastructure of the automobile with the fabric of the city—at least with the fabric of the city as it had been understood to that point. Much like Le Corbusier, he concluded that this meant the “vertical,” “centralized” city must yield to the progress that the automobile (and electronic communications and flight) represented. However, Wright’s response to this idea was more radical in some ways than even the Plan Voisin. Wright saw in these technologies the possibility of social changes so powerful that the city, as it had been constituted to that point, could no longer stand. Wright solved the conflict between the emerging infrastructure of the automobile and the infrastructure of the traditional city by eliminating the traditional city in favor of a landscape organized by the speed and mobility of the car. As he put it:

*Let us say that before the advent of universal and standardized mechanization, the city was more human. Its life as well as its proportion was more humane.*

*In planning the city, spacing was based, fairly enough, on the human being on his feet or sitting in some trap behind a horse, or two. Machinery had yet brought no swifter alternative.* . . .

*The fundamental unit of space-measurement has so radically changed that the man now bulks ten to one and in speed a thousand to one as he is seated in his motor car. This circumstance would render the city obsolete.*

Broadacre City is an inhabitation of the landscape where the scale of the automobile is the dividing metric, allowing its citizens to spread out and claim their acre of land and establish a moral life free from the usury and indentured servitude of the centralized city (fig. 9). This optimism has led to the justified criticism by Fishman that “Wright was fascinated by the automobile, convinced of its potential to revolutionize modern life and blind to its limitations.” Despite its frequent naiveté, though, Wright’s vision was prescient as to the impacts of technological change in ways that his predecessors were not. According to Peter Rowe, “Broadacre City was seemingly prophetic about modern metropolitan development, especially decentralized outward urban expansion.”

Seeking to reach a broader lay audience with his scheme, Wright also eschewed extensive drawings and turned to models as a primary mode of presentation. He and his apprentices produced an overall model of the scheme along with several
larger-scale models of individual buildings from Broadacre, which were exhibited at Rockefeller Center and other venues. While attempting to transmit his ideas directly to the public, Wright also authored two sizeable articles on Broadacre in professional journals in April and May of 1935.

The uniqueness of his plan was not lost on Wright. In The Disappearing City, he took several jabs at the Le Corbusier, not over aesthetics, but transportation technology, noting the inadequacy of the “gridiron” to deal with modern traffic. Wright saw the other automobile utopias of the time as lacking the intellectual rigor and fortitude to follow technological changes to their ultimate conclusion. This sparring reached its apex when Wright took direct aim at the Plan Voisin, declaring,

Let us approach the traffic problem as a human problem — that is the essential problem the congested city now presents — not as mere tinker or as some garage-mechanic, nor childish [sic] try to tear the out-moded city down to get the green pastures in and set the city up in them again on its old site — feudal towers only a little further apart.

Rather, Wright saw the challenge of the utopian city as the challenge of leveraging the technology of the automobile (and to a lesser extent the airplane, and even the motorboat) to provide individual citizens with access to light, air, and the earth itself. To emphasize the centrality of the highway and automobile transportation to his scheme, he sought to recast the architect “as the master road-builder,” and he saw “the super-highway and the tributary hard road . . . [as] architectural factors of fundamental if not greater importance.”

Much as in the visions of Ferriss and Le Corbusier, the highway would now order the landscape, giving primacy to the infrastructure of the automobile, and the new city would be created upon this armature — only, in Wright’s case, the city would be spread thinly on this framework.

While this strategy did solve many of the conflicts between traditional and emerging infrastructures, it did not alleviate them entirely. In both of his 1935 articles Wright highlighted the design of a grade-separated crossing for levels of traffic: intercity passenger and freight, an arterial street, storage areas, and a monorail. However, he made no mention of pedestrian uses. It was not until the publication of When Democracy Builds — its optimistic title implying that Broadacre City would be the blueprint for a postwar building boom — that Wright grappled in more detail with the remaining conflicts. Here he proposed the model of a grade-separated intersection facilitating four directions of automobile traffic and four directions of foot traffic. This concept was further elaborated upon in The Living City, using photographs of the same model augmented with additional text, plans and sections of the intersection. Yet, despite decades of development, and while convincingly solving the complex sectional problems of the separated grade, the intersection’s right angles did not provide a credible solution to the problem of a high-speed interchange. Nor in this most humanist of the automobile utopias were the pedestrian passageways through the intersection persuasively humane. Even in its later iteration the intersection remained an abstraction not grounded in the larger Broadacre City model. It was merely an idea for an interchange — recognition that conflicts remained between the automobile and the pedestrian even when the “centralized,” “vertical” city had been successfully dissolved.

LA VILLE RADIEUSE (1935)

When Le Corbusier returned to the expansion of his urban planning ideas with the publication of La Ville Radieuse [The Radiant City], he did so with a renewed interest in vertical separation of traffic types and much more detailed information about how pedestrians would fit into this scheme than in The City of To-morrow six years previously. He was unequivocal about what his ideas would mean for the traditional infrastructure of the city. The chapter outlining the detailed relationship of pedestrian and car was entitled “Death of the Street.”

In this chapter Le Corbusier, as he did with all of the other aspects of the Radiant City, put forth a set of standards to guide the work. After declaring that “streets are an obsolete notion,” he proceeded to outline the urban planning principles that would lead to such a conclusion:

1° Classification of Speeds. Normal biological speeds must never be forced into contact with the high speeds of modern vehicles.
2° Creation of one-way traffic. No high-speed vehicle should ever be subjected to the possibility of meeting or crossing the path of other moving objects. “One-way traffic” should become an automatic element of high-speed locomotion put into universal effect (and should not merely imply innumerable quantities of round signs stuck up on posts with white letters against a red background); crossroads (traffic meeting on the same level) should be eliminated.

3° High-speed vehicles must all be employed for specifically designated purposes.

4° The functions of heavy vehicles.

5° The liberation of pedestrians.

In the Radiant City vertical separation must be used such that not only would pedestrians not come into contact with high-speed vehicles, but the vehicles likewise should not come into contact with each other — a scheme that recalls the grade separation of the early Broadacre model. With regard to Le Corbusier’s division of these vertically separated planes of movement, he came to a very different conclusion than did Ferriss as to how they should be allocated. On this point he was forcefully insistent. When discussing the possibility of the ground plane being devoted to the automobile with the pedestrian raised above, he stated with not a little hyperbole:

*I appeal to our human STANDARDS to rescue us from such a suggestion! Is man to spend his life from now on gesticulating up in the air on a series of (inevitably) narrow platforms, climbing up and down stairways — a monkey up in the tree tops! If he possessed he agile feet and the miraculous tail of a monkey it might make sense. But in fact it is madness. Madness, madness, madness. It is the bottom of the pit, a gaping error: the end of everything.*

He went on to insist that in the Radiant City the entire ground plane would be dedicated to the pedestrian. On this point he firmly placed himself in opposition to Ferriss’s Metropolis, and he strangely aligned himself with Wright’s insistence on the citizen’s access to land. However, in Wright’s horizontal city the ground plane played a distinctively different role than it did in Le Corbusier’s vertical one. In Broadacre City access to land was an individual right; one received a privately held acre that was the key to independence. In the Radiant City the ground plane was communal — a giant parkland in which rose object skyscrapers, or over which raised highways hummed.

In the Radiant City, the city was again ordered by the infrastructure of the automobile, rather than requiring the automobile to conform to the traditional city fabric. This is never more evident than when the car interfaces with the skyscrapers. Though the skyscrapers occupy only 5 percent of the field of the Radiant City, if one adds up all the vehicle space needed to service them, it is hard to imagine how they could possibly take up any more space (Fig. 11). Attached to each skyscraper is an intricate network of overpasses, loops, and parking lots that links it back to the motorways. Seen from this vantage point, the parkland beneath seems a very uninviting prize for the pedestrian to have gained in the Radiant City. In this arrangement the city has again yielded to the automobile: the proposal contains extensive gardens and gleaming, efficient new towers, yet both the gardens and the towers are compromised by their arrangement.

**FUTURAMA (1939–40)**

Designed by Norman Bel Geddes, Futurama was part of General Motors’ “Highways and Horizons” exhibit at the 1939–40 New York World’s Fair. Visited by more than five million people during the fair’s run, its impact on the popular imagination was far reaching. Like Wright, Bel Geddes saw a model as the representational tool best suited for reaching a lay audience. The exhibit also featured a “conveyor-goround,” a belt of continuous seating that carried visitors on a fifteen-minute ride overlooking its incredibly detailed one-acre model, consisting of “more than five hundred thousand individually designed buildings, a million trees of thirteen different species, and approximately fifty thousand motorcars, ten thousand of which careened along a fourteen-lane multi-
speed interstate highway.”36 The exhibit promised visitors a view of an American landscape of 1960 as seen from the seat of a low-flying airplane.

Accordingly, the exhibit dealt not only with the city, but with the design of an entire region. The model depicted canyons, farmlands, hydroelectric dams, lakes, and a circular airport, and sought to present a wide variety of technological innovations related to automobile transport. As claimed by Alfred P. Sloan, chairman of GM at the time, Futurama was “designed, not as a projection of any particular highway plan or program, but rather to demonstrate in dramatic fashion that the world, far from being finished, is hardly yet begun.”37 As elucidated in Bel Geddes’s 1940 book *Magic Motorways*, the number of suggested innovations was indeed extensive. They included parallel alternate routes of varying length and configuration for traffic of different speeds, new methods of traffic signaling, redesigned interchanges, advances in illumination, and even suggestions for reducing graft in road contracting.38

However, it was the visit to the city of 1960 that was the climax of Futurama, and it was here, of course, that one could see how Bel Geddes dealt with the conflict between automobile infrastructure and the urban street. He began by declaring that the motorway (which he envisioned as sustaining speeds of up to 100 mph) should avoid entering the city altogether — a concept, it has been suggested, that he took from Benton MacKaye’s 1930 essay “Townless Highway.”39 As Bel Geddes explained:

> [I]f the purpose of the motorway as now conceived is that of being a high-speed non-stop thoroughfare, the motorway would only bungle that job if it got tangled up with a city. It would lose its integrity. The motorway should serve heavily populated areas, but it does not have to connect population hubs directly. A great motorway has no business cutting a wide swath right through a town or city and destroying the values there; its place is in the country.40

In recognizing the inherent conflict between the speed and individual control of automobility and the traditional uses of the city, it seems Bel Geddes not only understood the fundamental clash of infrastructures, but had banished the highway from his utopian city and eliminated the problem. However, this decree only applied to the largest and fastest network of interstate roads in the Futurama model. The city would be served by feeder boulevards, which would be one-way streets, either 80 or 100 feet in width. Therefore, while the “motorway” was kept at arm’s length from the city, Bel Geddes’s “boulevards” bore a strong resemblance to today’s urban Interstate highways (Fig. 12). As with Le Corbusier’s schemes,

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**Figure 12**: The “express boulevards” of the Futurama model. Source: N. Bel Geddes, *Magic Motorways* (New York: Random House, 1940).
Futurama envisioned this system as a conduit for filling up and emptying out the city on a diurnal working-day cycle. In a 1937 article, Bel Geddes painted a picture that would become common in American cities in the coming decades:

*It is at sunset that [the] brave new city appears at its most romantic, with the last rays of the afternoon sun creating a vast patchwork of black and white. On the highways and subways the crowds stream out to the vast suburbs. By midnight, save for the hotels, watchmen, and late revelers, the city is deserted.*

Thus, in Bel Geddes’ near-future world of 1960 the city was not to avoid the invasion of the car and its infrastructure, the highway. For Bel Geddes, as for the utopians before him, this meant that the city would be transformed and reordered to conform to the speeds and geometries of the automobile. The car would now create the grain at which the city would be built. This meant that the tallest buildings in the urban core could be spaced further apart to allow for light and air at the lower levels. Yet, in Futurama there is none of the homogeneity of Le Corbusier and Ferriss, nor is there the anti-centralization of Wright. The city has a distinct core that is consistently built up, though with no apparent center. It has surrounding suburban development with what we might today read as edge cities. Recreational centers, transportation and shipping hubs, and smaller residential areas are spread further afield, all connected by a high-speed road system. Its similarity to contemporary American cities is striking (Fig. 13).

In the urbanized core, organized as it is by multilane one-way traffic, the traditional urban street is eliminated. Again the challenge of safe urban pedestrianism remained; again the answer would be to utilize multiple planes organized vertically. In *Magic Motorways*, the West Side Highway again makes an appearance, now not as the rendering of things to come heralded in *The City of To-Morrow*, but as a photograph of an orderly and logical solution to the problem of urban automobility. As Bel Geddes stated, “It isn’t enough that the pedestrian be separated by the mere height of a curbstone from the cars which he impedes and which menace him. He must be put out of harm’s reach. The pedestrian must be made into an efficient transportation unit too.”

**Figure 13** The city of 1960 from the air. Source: N. Bel Geddes, *Magic Motorways* (New York: Random House, 1940).
The entire urbanized core is therefore overlaid with a network of raised pedestrian walkways that continues block after block. As in Ferriss’s city, the entire ground plane is dedicated to roads, parking, and vehicular deliveries. At Futurama, this arrangement was seen not simply as pragmatic, but as the symbol of progress itself. At the culmination of their “flight” around the future landscape, visitors stepped out of their “plane” and into the model — a full-sized intersection of Bel Geddes’s city of 1960. Walking on the raised walkways, they peered down onto the uncluttered “boulevards” used to display very still and very quiet General Motors products. Perhaps this arrangement could be as peaceful as overlooking a stream after all, if only the city were turned into a car lot (Fig. 14). This commercial tableau as proxy for urban fabric is an interesting metaphor for the influence various car companies had on the examined urban utopias.

Utopias and the Nature of Optimism

The urban problems created by the automobile were the prime impetus for rethinking the city during the interwar period, a problem so pervasive that it sparked an outpouring of schemes, including many not examined here. Le Corbusier gave voice to the imperative, stating “our city authorities think that everything will work itself out in the end. It won’t. Nothing will work itself out. We have to build new cities.” It was clear that the car and the highway were going to change the city. Yet, each designer felt assured that, were his ideas followed, this transformation could be positive for both. Perhaps Wright alone had the courage to ask if the city and the highway were simply incompatible — though his assumption that the city must as a result disappear seems rash, at the very least.

The utopias examined here may be seen as a prologue to the history of the difficult relationship between the highway and the city. The highway/urban interface was to become the site of a decades-long struggle for primacy between the infrastructure of the highway, prioritizing speed and individual experience, and the civic infrastructures that support the intricate interactions of people in complex urban environments. As we continue the effort to balance these two powerful but (if not fully incompatible then at least) unfriendly forces of the built landscape, it is important to consider the possibility that our hopes for a détente might be overly optimistic — as, no doubt, were the utopian schemes examined here. We see their shortsightedness in our cities today. When we walk next to an urban Interstate highway it is decidedly not the placid stream of Ferriss’s Metropolis of Tomorrow but rather a significant source of noise and air pollution. The land use and resource use difficulties inherent in Wright’s Broadacre City are manifested throughout contemporary suburbia. The functional separation of Le Corbusier’s urban proposals presaged a time when highway systems were designed expressly to empty cities efficiently at the end of the work day — a strategy that is now being slowly reversed in many places. Bel Geddes’s Futurama, for all its optimism, gave a glimpse of a landscape opened through the automobile to haphazard development.

As Duranti has noted, particularly in the interwar period, “[u]topias captured popular imagination in part because they allayed widespread concerns over the dangers of social dislocation, economic crisis and mechanized murder.” Seen in retrospect, with the full knowledge of what follows, the five utopian visions provide valuable insights into both societal hopes for the possibilities of new infrastructures and societal blind spots toward the importance of more traditional ones. The investigation of them has contemporary relevance because they represented a first attempt to deal with questions that have still not been adequately answered — questions about the proper relationship between the highway and the city.

Additionally, these utopias provide useful touchstones for the growing contemporary interest in infrastructural urbanism as a mode of (at least speculative) intervention in the American city. Such practices require a rigorous vetting if they are to carry the weight of reasonableness and performance. As with the traditional functioning of the urban street in the examined utopian schemes, an ever-present concern of such proposals must be the justification both for what is lost and what is gained. In other words, do the positive aspects of the proposal outweigh its negatives in both intended and unintended consequences? This questioning requires some mechanism for stepping, at least temporarily, outside of the self-justifying logic of the proposal in order to assess a type of overarching effectiveness that takes into account previously unconsidered variables.
REFERENCE NOTES

1. The first of these cartoons appeared on January 23, 1926, and the last on May 15, 1926.
4. For a comprehensive account of the difficult transformation of urban streets from public space to transportation network, see C. McShane, Down the Asphalt Path: The Automobile and the American City (New York: Columbia University Press, 1994).
10. Ibid., p.49.
11. Ibid., p.49.
18. Such images of multilayered traffic in cities, even several stories high, were not unheard of at the time. In fact, some of Ferriss’s renderings bear a striking resemblance to images from Fritz Lang’s film Metropolis, which was released in 1927.
19. Ferriss, The Metropolis of Tomorrow, p.64.
20. Ibid., p.66.
21. Ibid., p.110.
22. Ibid., p.110.
23. Ibid., p.112.
27. Fishman, Urban Utopias in the Twentieth Century, pp.277–278.
30. F.L. Wright, The Disappearing City, p.29.
31. Ibid., p.49.
35. Ibid., pp.122–23.
37. General Motors Corporation, Futurama, undated promotional material.
40. Bel Geddes, Magic Motorways, p.211.
42. Bel Geddes, Magic Motorways, p.237.
43. Le Corbusier, The Radiant City, p.121.