THE PAST FUTURES OF AEROTROPOLIS

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From the Wright Brothers' first powered flight in 1905 until the conclusion of World War II, the popular imagination of mechanical air travel offered a vision of cities and societies transformed by ubiquitous flight. In 1932, the industrial designer Norman Bel Geddes predicted air travel would become as routine as a commuter train trip, with attendant implications for urbanism: "We can expect the old 5:15 to be a group of ten passenger planes arriving at minute intervals."[1] The airport was the building type that embodied and amplified the transformative possibilities of air travel for the city. During the interwar period a colorful cast of American architects, developers, and inventors proposed vast elevated landing platforms surmounting networks of skyscrapers and enormous mechanical contrivances to launch and land planes on rooftops. During that period, the airport was a barometer of both technoscientific progress and cultural fantasy, an infrastructural typology in creative flux. As the airport evolved, so too did the possibilities of the future city, and in many speculative visions the airport and city fused into a single metropolitan organism. In 1939, the designer Nicholas DeSantis coined an apt term for such an intimate integration of airport and city: the aerotropolis.[2]

The airport is an amalgam of three very different elements: the landscape of runways for the takeoff and landing of aircraft, the architecture of terminal buildings for the logistics of passenger and freight transport, and the sundry service structures such as hangars and fuel depots that support the technical maintenance of airplanes. Today, the dominant spatial demands of the runways induce a diffuse horizontal arrangement of all the other elements, giving the airport a landscape orientation that Le Corbusier called the "naked" airport.[3] Yet an intriguing genre of the early aerotropolis embraced the opposite arrangement in which all the functions of the airport—airstrips, terminals, and service structures—were consolidated vertically into a single, tall building sited in the heart of the city that was often connected directly to rail hubs and auto networks.

1 Norman Bel Geddes, *Horizons* (Boston: Little, Brown, and Company, 1932), 80.

2 "Skyscraper Airport for City of Tomorrow," *Popular Science* 135, no. 5 (November 1939): 70.

3 Alastair Gordon, *Naked Airport: A Cultural History of the World's Most Revolutionary Structure* (New York: Metropolitan Books, H. Holt, 2004), 84.

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FIG. 1 René Francillon, *McDonnell Douglas Aircraft Since 1920: Volume I* (London: Putnam, 1979), 233.

The vertical airport proponents asserted the self-evident logic that to fully realize the potential of passenger flight, the airport should be at the busiest nexus of urban activity.

During the interwar period, bourgeoning mass media—specifically periodicals like *Popular Mechanics* and *Popular Science*—played a unique role in diffusing this particular vision of the airport across the urban core (Fig. 1). These magazines captured the technical inventions, urban aspirations, and visual representations of a wide range of speculative airport schemes. Attending to the content of these magazines uncovers not only how and why these projects were designed, but also how they were promoted to a wider public. Here we take these magazines as our primary source and a key lens through which to understand the public imagination of the aerotropolis.

Historical schemes that advocated the direct integration of city and airport prompt reflection on our present in which drone hives and autonomous aerial deliveries invoke a similar renegotiation of the line between city, sky, and society. The infrastructure of air travel, long banished to the edge of cities, is being reconsidered in an integrally urban context. Uber and Volocopter's sky taxis, Amazon's drone networks, or countless ventures from air vehicle startups all imagine a city crisscrossed with dense, local air traffic that echoes the 1920s-era aspirations of ubiquitous and cheap personal air transport. Speculative visions such as Dezeen's "Elevation"[4] documentary or Liam Young's "In the Robot Skies"[5] video embrace the possibilities and challenges of this new aerial urbanism. To be clear, the technologies driving current innovations—such as electrified engines and multi-rotor vertical takeoff and landing platforms—are qualitatively different than those of a century ago. They herald different forms of airports as well: more diffuse meshes of small-scale droneports and taxi stands instead of the sprawling megastructures of past fantasies. Yet both past and future visions of the aerotropolis embrace the city itself as a theatre for flight and must reckon with the spatial and technical challenges that entails.

By the conclusion of World War II, air travel had expanded to a scale that demanded ever more space for ever larger airliners. The two-deck Boeing 377, derived from the airframe of the C-97 military transport, was introduced in 1947 and could carry 84 passengers. This nearly tripled the workhorse DC-3's 32 passenger capacity, but the 377 also demanded larger-scale airports and airstrips to accommodate its larger airframe.[6] The volume of air travel grew dramatically, and the demand was not for local urban travel but rather for long-distance connections to far-flung destinations. These factors all but ended speculation around central

4 *Elevation*, directed by Marcus Fairs and Oliver Manzi (Dezeen, 2018), www.dezeen.com/elevation.

5 *In the Robot Skies*, directed by Liam Young (Fear and Wonder, 2018).

6 René Francillon, *McDonnell Douglas Aircraft Since 1920: Volume I* (London: Putnam, 1979), 233.

urban airports after World War II. Yet in the early speculations of the aerotropolis, we see both a generation of airport designs truly embedded in the heart of the city and a precedent for our contemporary rethinking of aerial urbanism.

AIRPORT AS SPECULATIVE TYPOLOGY

In the United States, the first catalyst for regular air infrastructure was the promise of quick communication thanks to airmail. As early as 1910, just seven years after the Wright Brothers' Kitty Hawk flight, some form of mail delivery by air was contemplated at the federal level of the Unites States government, and the first authorized airmail deliveries began a year later.[7] The first aerial infrastructure was rough and basic. An airfield was precisely that—vague terrain that might well have otherwise contained fallow pasture or farmland. It was a distinctly raw and rural condition suited to the imprecise mechanics of flight itself.

When the airport appeared as an architectural type around 1918, facilities were crude and many aspects of air infrastructure were rudimentary and *ad hoc*. Up until 1925, when the United States Congress authorized a budget to support an airmail service, the provisioning of airports in the US was limited almost entirely to basic airmail infrastructure. In the earliest instances, the few concessions for passenger accommodation were makeshift hangars or glorified sheds in remote landing fields. While later passenger terminals would ultimately look to the precedent of the rail station, the most critical early planning issues for airports related not to passenger experience but to the novel operational issues like the geometry of runway arrangement, the illumination of the fields for night landings, or the servicing of planes. With no regulations or best practices, many early facilities were designed in a somewhat experimental manner. Historian Janet Bednarek observed that after World War I, the "earliest municipal airports grew out of very individual experimentation on the part of many cities."[8] In the interwar period, the American popular press, particularly the press that diffused notions of technoscience such as *Popular Mechanics* and *Popular Science*, published this airport experimentation. Between 1918 and 1938, aircraft graced the cover of *Popular Mechanics* no less than fifty times.[9] Some of these stories reveled in the gadgetry of aeronautics or daring acrobatic feats of flying. Yet many stories hinted at social changes and a new way of life sparked by cheap and ubiquitous aircraft whose potential seemed analogous to that of flying cars. One 1931 article proclaimed that the possibilities of a plane "wonderfully suited to the man of average means ... capable of carrying one to three persons, are almost unlimited."[10] As we shall see, many contemporary visions of the airport reflected these aspirations of everyday local and personal flight.

7 United States Postal Service, "Airmail: A Brief History," March, 2018, https://about.usps.com/who-we-are/postal-history/airmail.pdf (accessed Dec. 4, 2021).

8 Janet R. Bednarek, *America's Airports: Airfield Development, 1918–1947* (College Station: Texas A&M University Press, 2001), 14.

9 As counted by the authors.

10 "Wings for Everybody," *Popular Mechanics*, April 1931, 546.

The advent of the airport as a distinct infrastructural type coincided with the accelerating electrification of the United States, as well as the wider adoption of the wireless communications technology of radio. As these technologies intersected with the technical demands of flight, they provoked an array of proposals for secondary infrastructure to support air travel. With the expanded use of airplanes, radio towers and communication networks proliferated to support them. Enormous radio beacons appeared across cityscapes and countrysides. Electrical lighting, in particular, was integral to the safety of both those on the ground and aloft, particularly at night. New ground mobility regimes interwove with the airport to reconfigure the expectations of urban transport. The advent of the airport thus reverberated across the new infrastructure networks of the city.

AEROURBANISM: THE AIRPORT AND THE CITY

As the promise of air travel became more apparent, airports inevitably gravitated into the orbit of large cities. Researcher Max Hirsch notes American planner and landscape architect John Nolen's influential work of the mid-1920s placed the airport at the edge of city, integrating it directly into a peripheral infrastructure of seaplane basins and auto "superhighways."[11] Such proposals reflected pragmatic tendencies to site airports at the edges of cities and to connect them to extant ground transport lines.[12] Although a rapid connection to the city center was paramount, the airport itself was exiled to the periphery.

Yet there was a different possible future for the airport also being envisioned in the 1920s and 1930s, one which inserted the airport directly into the heart of the city. Through a series of daring unbuilt proposals, architects, engineers, and real estate developers imagined airports not as broad landscapes but as urban architecture. Perhaps the best-known version of this future was Le Corbusier's 1922 *Ville Contemporaine*, a city for three million inhabitants that radiated from a vast transport complex, complete with an enormous airfield on its roof at its very center. As evident from Le Corbusier's drawings of the scheme, the planes that would land on this central station were not at the scale of airliners but rather were more at the scale of small prop planes:

> There is only one station. The only place for the station is in the center of the city .... The station would be an essentially subterranean building. Its roof, which would be two stories above the natural ground level of the city, would form an aerodrome for aero-taxis. This aerodrome (linked up with the main aerodrome in the protected

11 Max Hirsch, "Developing successful landside real estate: An airport urbanism approach," in *Journal of Airport Management* 13, no. 2 (2019): 188.

12 John Zukowsky, ed. "Introduction," in *Building for Air Travel: Architecture and design for Commercial Aviation* (New York: Prestel Verlag, 1996), 13.

FIG. 2 A rooftop airstrip situated in the center of Manhattan, 1919. From Carl Diensbach, "Roosts for City Airplanes," *The Popular Science Monthly* (June 1919).

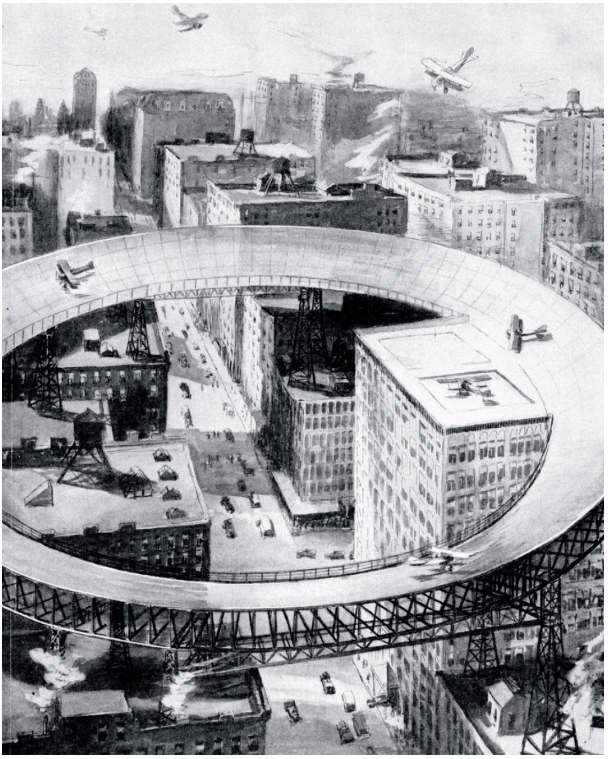


FIG. 3 A rooftop airstrip configured as a circular ring, 1919. From Carl Diensbach, "Roosts for City Airplanes," *The Popular Science Monthly* (June 1919).

> zone) must be in close contact with the tubes, the suburban lines, the main lines, the main arteries and the administrative services connected with all these."[13]

Critic Alastair Gordon, aghast at Le Corbusier's gesture, argues that "placing an airport at the city center was a naïve and dangerous suggestion," inviting disastrous accidents.[14] Yet for the next two decades an eclectic mix of architects, inventors, and speculators proposed exactly that, and with considerable gusto. For all of their pragmatic challenges, central urban airport schemes resourcefully confronted the technical and spatial difficulties of a compact airport. In their enthusiasm to integrate this new typology into the city itself, architects and other proponents proposed locating airports at every level of the city, from above the rooftops to below the streets and every elevation in between.

Among the boldest early proposals for central urban airports were those that placed the airport directly atop the roofs of skyscrapers or astride a series of connected buildings. In these schemes, the airport landed as the crowning stratum superimposed on the city's existing architecture. In 1919, in one of the most striking schemes, H.T. Hanson offered the runway as an annular bridge, a halo hovering atop towers, looming over New York City below (Figs. 2, 3).[15] This ring-shaped airstrip exploited the advantages of the velodrome, with its canted runway revolving about an invisible central axis. Using this design, planes accelerated until they could slingshot into the blue expanse, or conversely, they could spiral down to a complete stop when landing. Hanson even proposed that the center could be an enormous elevator to lift and lower planes to the circular runway.[16] By raising the airport from the ground to perch in the sky, he connected the city to aerial skyways opposite the emerging terrestrial highways below.

Other proposals were less geometrically ambitious but retained the central impulse to build the airport as a roof to the city. For instance, a 1930 proposal adopted technology from aircraft carriers to place a thousand-foot runway above a ten-story airport terminal (Fig. 4).[17] New York City, in particular, enjoyed a number of proposals for prodigious elevated runways. One 1929 design called for a landing platform above the Pennsylvania Railroad Station that would have transformed it into a multimodal mobility hub (Fig. 5). An enormous airfield surmounted not only the station itself but extended over buried tracks, creating a vast landing zone in central Manhattan. Many details echo Antonio Sant'Elia's similar 1914 scheme for a combined aerodrome and rail station. Such schemes cast the airport as simply the latest and highest layer of urban transport.

13 Le Corbusier, *The City of To-Morrow and its Planning*, trans. Frederick Etchells (London: John Rodker, 1929), 170.

14 Alastair Gordon, *Naked Airport: A Cultural History of the World's Most Revolutionary Structure* (New York: Metropolitan Books, H. Holt, 2004), 69.

15 Carl Diensbach, "Roosts for City Airplanes," *Popular Science*, June 1919, 74.

16 Ibid.

17 "Scale Model Shows Plan of Roof-Top Airport," *Popular Science*, February 1930, 55.

Fantastic machinery addressed the challenges of landing in compact city cores. One daring variant of the rooftop airport ventured a dramatically inclined mechanical ramp that had the appearance of a railgun for airplanes (Fig. 6). This enormous, bridge-scale 210-foot runway could rotate, pivot, and tilt upward to loft and land planes. According to its inventor, R. James Gibbons, "It will enable a plane to land or take off in as small a space as the roof of a skyscraper in a crowded business section—the incline serving to halt a plane when landing, or to speed its take-off when departing."[18] Gibbons, a construction contractor from Brooklyn, New York, was primarily interested in efficiently moving manufactured goods in and out of dense urban zones. Yet he saw his contraption as naturally useful for a future of ubiquitous personal air travel, perfect for "the man who lives in the country and can afford a plane or, for that matter, the man who lives in the city apartment house and wants a plane to take him to and from the country for weekend jaunts."[19]

Although the rooftop airport had its charms, other designers took a diametrically opposed approach to the siting of the airport. Instead of raising the airport into the clouds, they buried it deep beneath the city streets. One inventive example was the underground airport proposed by self-styled aircraft designer Dr. William W. Christmas in 1935 (Fig. 7).[20] Christmas, a medical doctor and aeronautical dabbler, enjoyed a rather colorful career in aircraft design, developing two versions of the appropriately, if unfortunately, named "Christmas Bullet" airplane that managed to crash and kill two pilots on their respective maiden flights.[21] Christmas returned to aeronautics about a decade later, this time with his airport proposal. In this scheme, planes would land on a ground-level roof and then descend through a series of ramps to this compact but systematic multi-layered terminal. The terminal design included connections between the airport and various ground transportations as well as cargo and postal terminals. It seemed ideal for small or even personal planes that were envisioned as a daily mode of transportation as mundane as the car or the subway.

Between the extremes of the rooftop airport and the underground terminal, some designers proposed towers in which some or all of the floors were airstrips. Many of these proposals hybridized the demands of the airport with existing typologies, converting cathedrals or office buildings into layered air garages. In these schemes we also see the common themes of mechanical contrivances to accommodate the logistics of the vertical airport and the interest in small-scale personal air travel. One 1927 version of the stacked air terminal was conceived as a multi-story building where planes can "launch from all floors and

18 "New Flying Field for Roof Tops," *Popular Science*, March 1929, 53.

19 "Problem Solution Came in a Dream," *The Brooklyn Daily Eagle*, June 10, 1928, 10.

20 "Model Shows Subterranean Airport," *Popular Science*, April 1935, 25.

21 Robert J. Neal, *A Technical & Operational History of the Liberty Engine* (North Branch, MN: Specialty Press, 2009), 147–149.

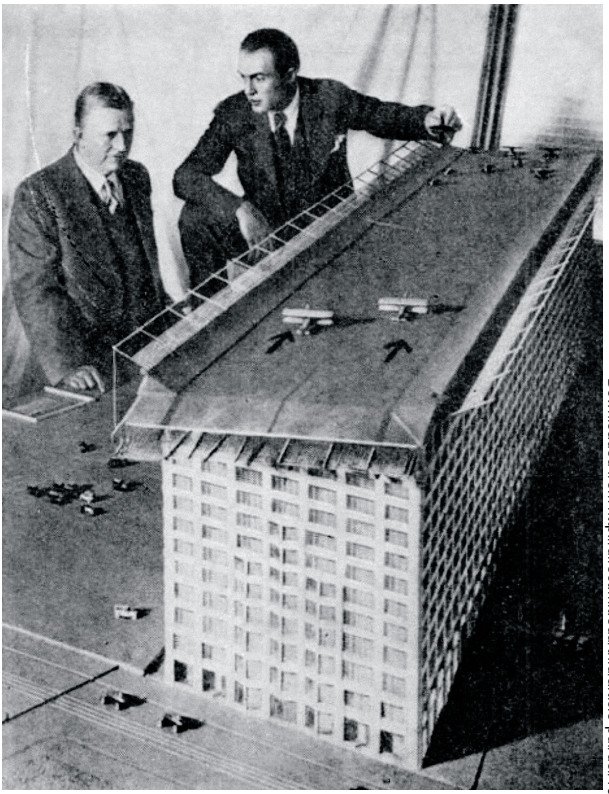


FIG. 4 From a rooftop airstrip that applied ideas from naval aircraft carriers. From "Scale Model Shows Plan of Roof-Top Airport," *Popular Science,* February 1930.

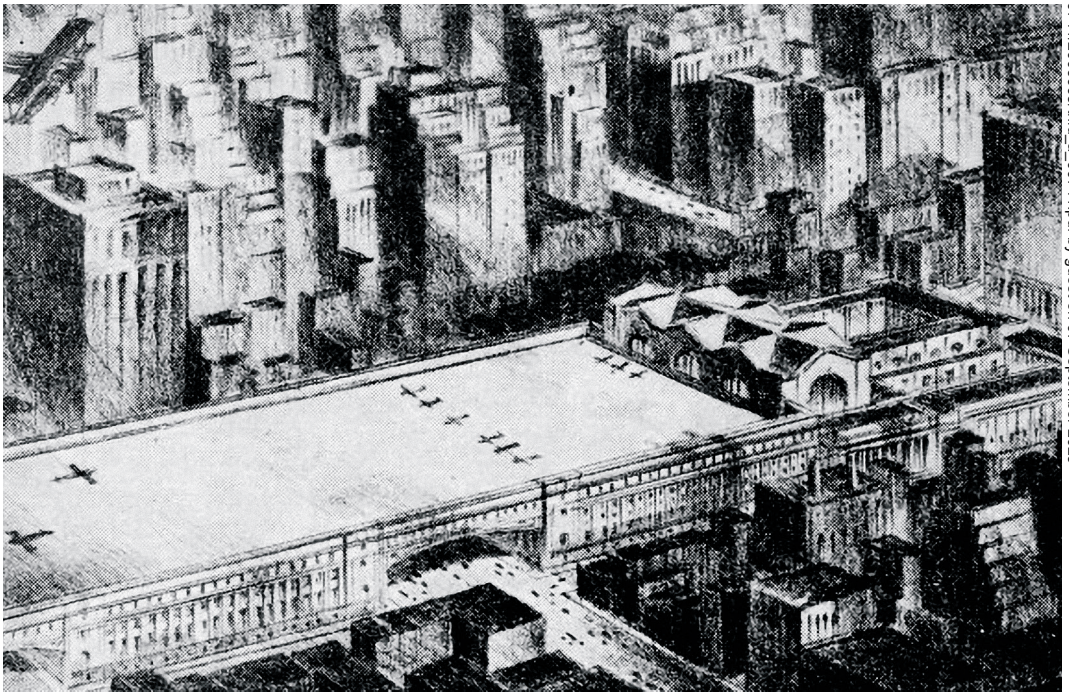


FIG. 5 1929 New York City Airport Concept atop the Pennsylvania Railroad Station. From Smithsonian National Air and Space Museum Archives, Image number: 9A03965.

MARCH, 1929 POPULAR SCIENCE MONTHLY 53

New Flying Field *for* Roof Tops

Aviation expert invents a tilting platform to halt planes in small space on skyscrapers, steamers, or docks. May revolutionize construction of airports.

HIGH officials of the U. S. Navy and representatives of the French and English governments recently witnessed a demonstration in Brooklyn, N. Y., of a remarkable new airplane landing and launching device—a tilting platform which, according to its inventor, R. James Gibbons, a member of the advisory board of the Guggenheim School of Aeronautics, New York University, will revolutionize landing fields. It will enable a plane, he says, to land or take off in as small a space as the roof of a skyscraper in a crowded business section—the incline serving to halt a plane when landing, or to speed its take-off when departing.

On this page our artist has pictured in detail the construction and operation of the novel device, of which Gibbons exhibited a working model to the experts.

Essentially it is a 210-foot runway wheeled about on a revolving turret to face the wind. Its floor is equipped with retarding cables to halt an alighting plane and bring it to a quick stop. A plane alighting at a speed of fifty miles an hour, for example, is brought to a halt in eighty-seven feet.

By a simple adjustment of the automatic platform equipment, the platform will handle anything from the smallest scouting plane to a giant air liner of ten tons' weight. Planes can be received and launched every five minutes.

Tests of scale models in wind tunnels assisted in the design of the platform. The inventor says it can be used not only on roof tops of buildings but also on battleships or liners, in wooded and mountainous country where landings have been impossible, and on post offices, railroad stations, and docks.

Our artist pictures here the ingenious operation of the proposed tilted flying field and, in the inserts, how it will aid in landing in wooded regions, or in launching planes from ships.

Drawn especially for POPULAR SCIENCE MONTHLY *by B. G. Seielstad*

FIG. 6 An elaborate mechanical airstrip by Dr. William. W. Christmas that could be rotated and inclined as necessary. From "New Flying Field for Roof Tops" *Popular Science*, March 1929.

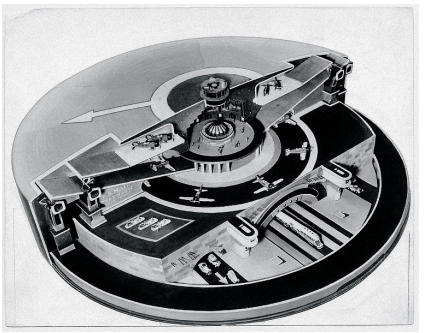


FIG. 7 An underground air terminal, with a landing area on the roof. From "Model Shows Subterranean Airport," *Popular Science*, April 1935. Used with permission of *Popular Science*, © 2021. All rights reserved.

taxi up by land or by water" and would be "elevated to the floors easily on special lifts" (Fig. 8).[22] The project had the urban presence of a large office block rather than anything specifically aeronautical. A variant of this idea was architect Norman Weekes's 1928 vision of Future Airport that imagined the buildings around Sydney, Australia's Hyde Park extended into skyscrapers with hangars and elevated landing strips. Weekes was perhaps best known for his 1927 scheme to renovate Hyde Park itself, and so his future airport is perhaps a natural extension of that work. Weekes also embraced a radical future of ubiquitous personal flight in his airport. According to Weekes, "There will be equal facility in all large buildings for alighting and 'checking' in one's moth plane or semi-human wings exactly as one at present does with one's hat or umbrella."[23]

Architectural competitions created room for architects to embrace the more visionary implications of the central urban airport. In 1928, the Lehigh Portland Cement Company sponsored a national competition for new airport designs that generated considerable interest. Garnering 257 entries, the competition served as a gauge

22 "Air Garage to Launch Planes from All Floors," *Popular Mechanics*, July 1927, 33.

23 Norman Weekes, "Sydney in fifty years time: a picturesque property," *The Home* 10, no. 1 (January 1929): 22–24, 55, 84.

of the architectural imagination at that propitious moment of early air travel. The competition also attracted attention in the popular press like *Popular Science,* which published many of the designs, trumpeting them as "airports for the future."[24] By the time of its publication, more than 1,000 airports were already in operation,[25] though organizers noted that "a mere handful were anything more than flying fields," consisting merely of graded land and a few rickety structures.[26] The objective of the competition was to look beyond these makeshift facilities and envision edifices and landscapes suitable for a revolutionary form of transport.

The jury consisted of a cross-disciplinary range of experts drawn not only from architecture and engineering but also from aeronautics, planning, and management. This eclectic composition ensured that pragmatism often prevailed in the judging of entries. In addition to suspicion of overlarge or inefficiently sited buildings, the jury revealed that "it was upon economic grounds primarily that plans were rejected from the award group."[27] Nevertheless, some marvelously novel proposals were submitted.

Among the most memorable entries was one offered by H. Altvater of New York, who took the elevated airport to new

24 "Airports for the Future," *Popular Science*, February 1930, 52.

25 *American Airport Designs* (New York: Taylor, Rogers, and Bliss, 1930), 6.

26 Ibid., 7.

27 Ibid., 49.

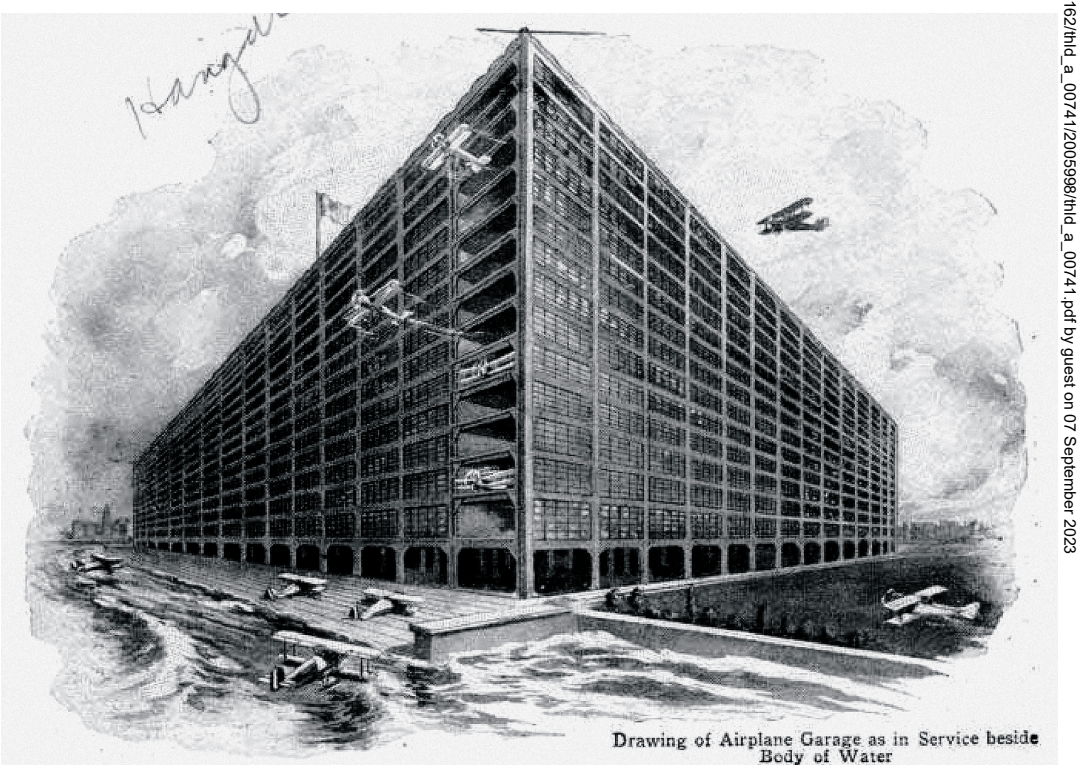


FIG. 8 A layered airstrip that allowed planes to land or take off from any level. From "Air Garage to Launch Planes from All Floors," *Popular Mechanics,* July 1927.

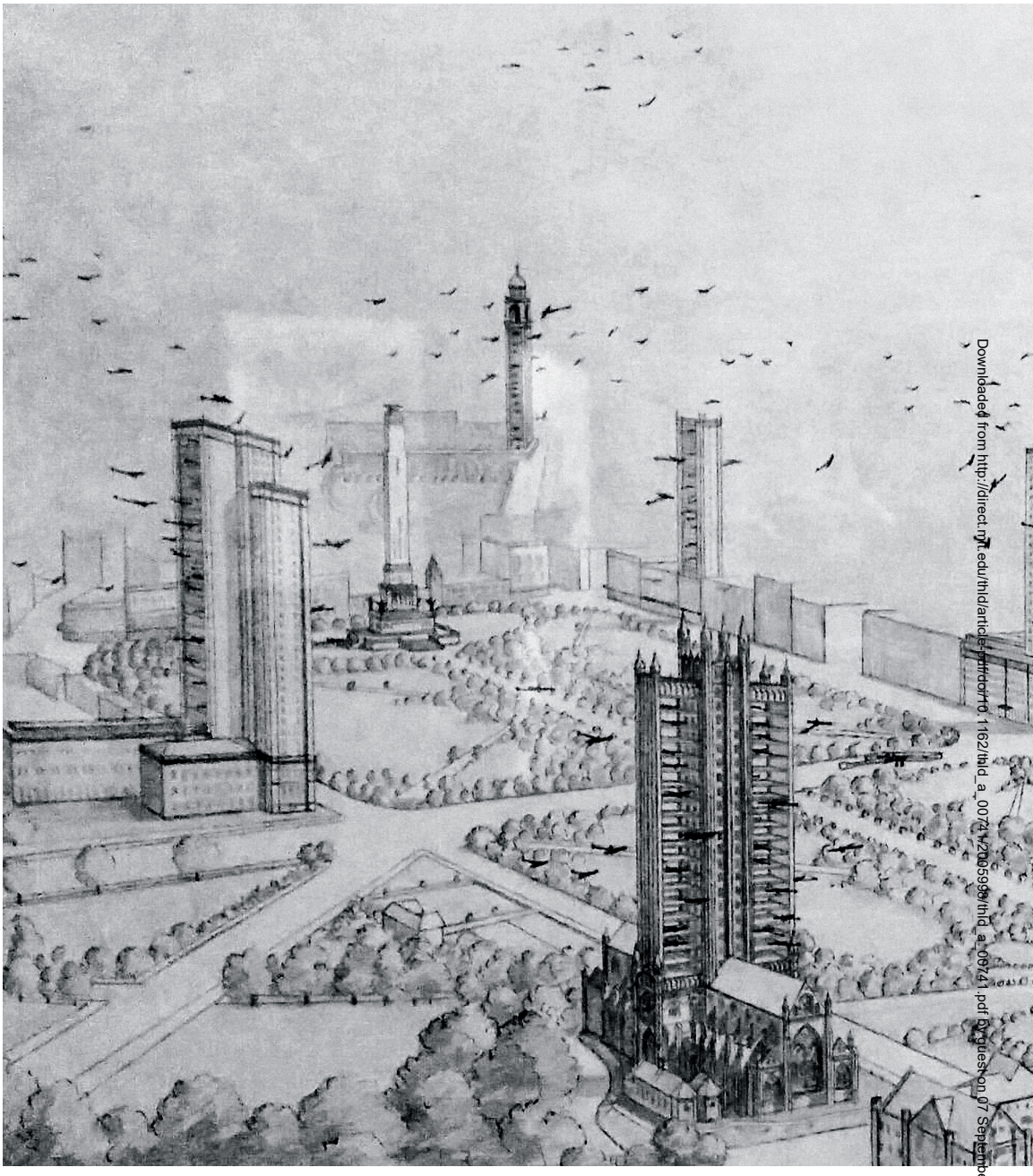
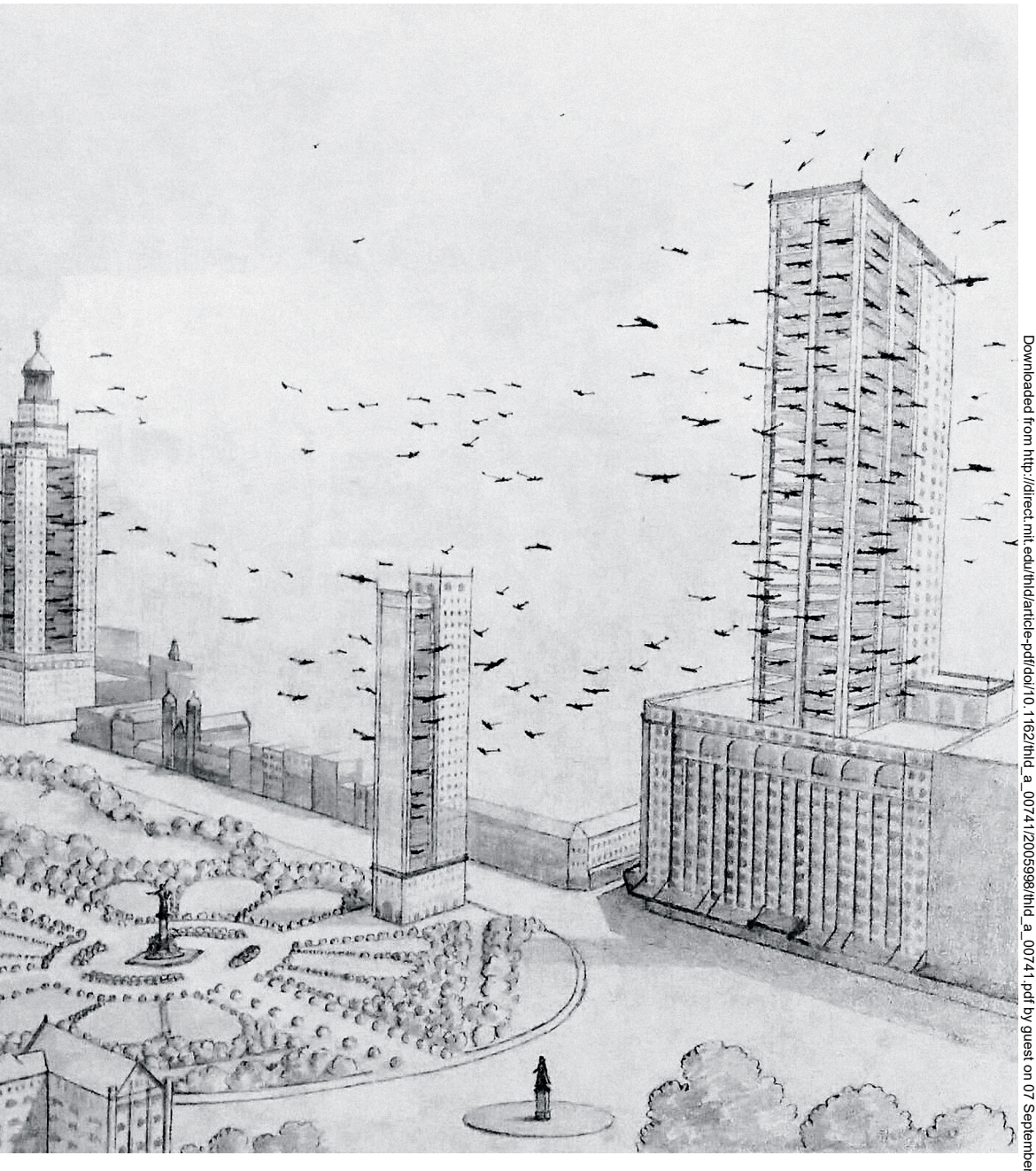


FIG. 9 Swarms of aircraft alight from stacked airstrips housed in enormous towers. From Norman Weekes, "Sydney's future airport," 1928 / E. Norsa, 1928, photograph, Mitchell Library, State Library of NSW, Image number: V1/Aer/1.



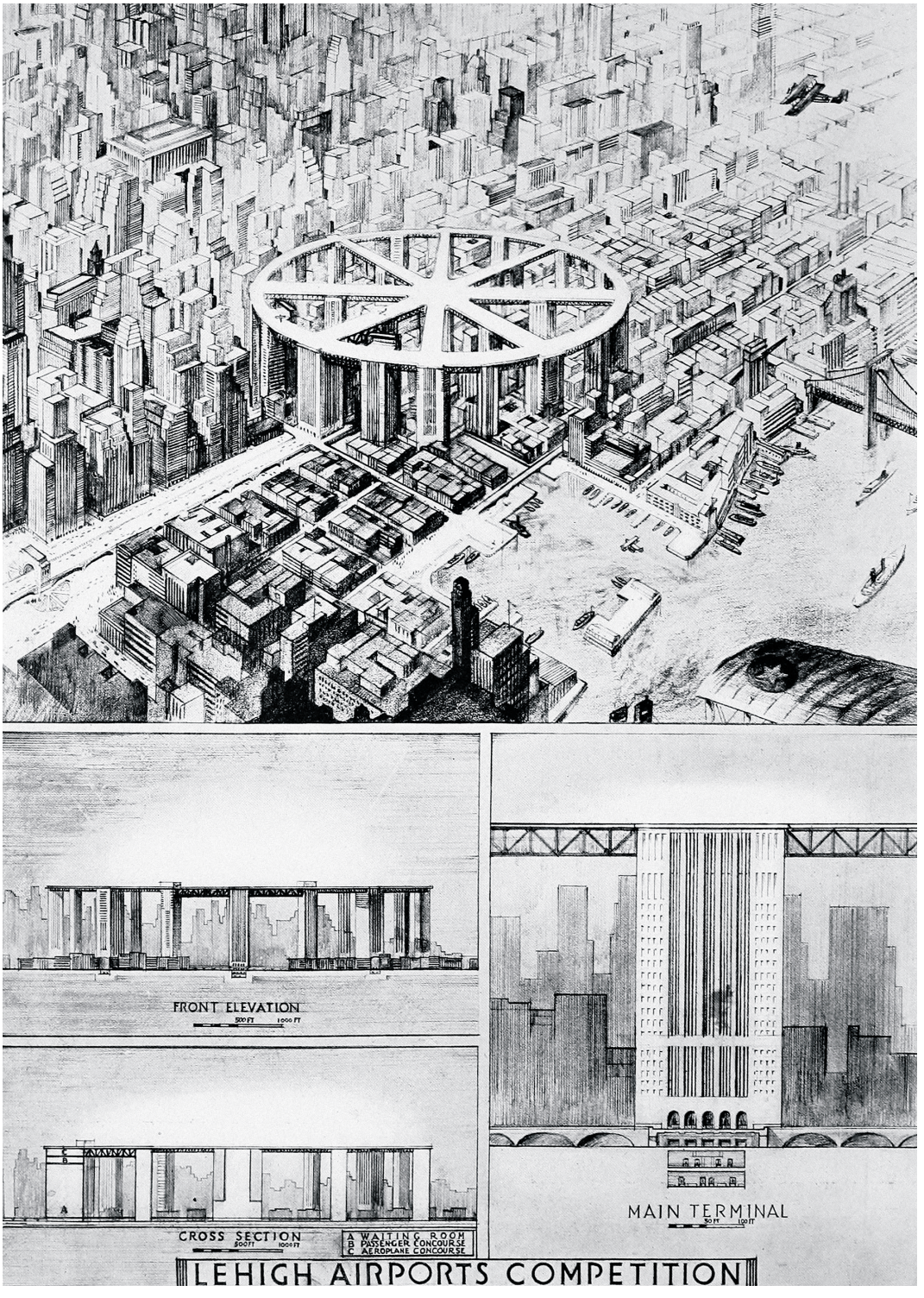


FIG. 10 H. Altvater's proposal for a rooftop airport submitted to the Lehigh Airports Competition. From *American Airport Designs* (New York: Taylor, Rogers, and Bliss, 1930).

heights. Resting atop 33 towering skyscrapers, Altvater's sketch defines a spoked system of radial runways supported by a bridge-like substructure (Fig. 10). In this project we see an apotheosis of many of the trends that defined the earliest futures of the airport: staggering scale, careful runway geometries, and an assumption of plentiful but relatively small aircraft. With its bold radial geometry and massive scale, Altvater's airport hovered like a cloud above the modern city.

Of all of these ambitious attempts to place the airport at the core of the city, among the most bombastic was a vast aerotropolis billed as New York's "Dream Airport," envisioned as an elevated airfield that covered a sizable chunk of lower Manhattan at a cost of $3 billion (about $45 billion in 2021 dollars). The flamboyant New York developer William Zeckendorf proposed the scheme in 1946, just two years before he would begin a long and famous collaboration with I.M. Pei. According to Pei's biographer Carter Wiseman, Zeckendorf liked "big limousines, big cigars, and big deals."[28] At the time of the airport proposal, Zeckendorf was negotiating a massive deal to redevelop what would ultimately be the site of the UN Headquarters into what he hoped would be a city within a city. Never one to think small, Zeckendorf took the same city-in-a-city approach with his airport: it would have covered 144 blocks twelve stories above ground and would have been financed by rentals in the solid volume of the aerotropolis beneath (Figs. 11, 12). As *LIFE Magazine* reported enthusiastically, "This airport city would embrace factories, stores, streets, apartments, warehouses, docks, railroads and steamship terminals."[29] In this last and most megalomaniacal scheme, urban integration of the airport was complete: the airport and the city were one.

By this time, after the end of World War II, the attention of architects was already shifting from the fantastic visions of urban airports to the equally enticing promise of vast new air complexes on the urban periphery. Air travel became more reliable during World War II. Global conflict accelerated the routinization of air travel and standardization of airport infrastructure as the military spent heavily on combat and surveillance aircraft operations. Moreover, the volume of passenger aircraft flights was exploding, with 1946 seeing double the passenger-miles of the prior year, and nearly a sixty-fold increase over fifteen years.[30] Designers had to conceive airports at a scale that was beyond what the central precincts of any modern city could accommodate. In the American context, new airports radiated from the edge of the city, or landed in the hinterlands that offered a buffer for urban expansion. Although the possibility of an urban airport never entirely disappeared, in the postwar years it was largely relegated to the realm of fantasy and speculation.

28 Carter Wiseman, I.M. Pei: *A Profile in American Architecture* (New York: Harry N. Abrams, 1990), 47.

29 Robert Sellmer, "The Man Who Wants to Build New York Over," *LIFE Magazine*, Oct 28, 1946, 67.

30 "Air Transport: Facts and Figures," Air Transportation Association of America, 1949.

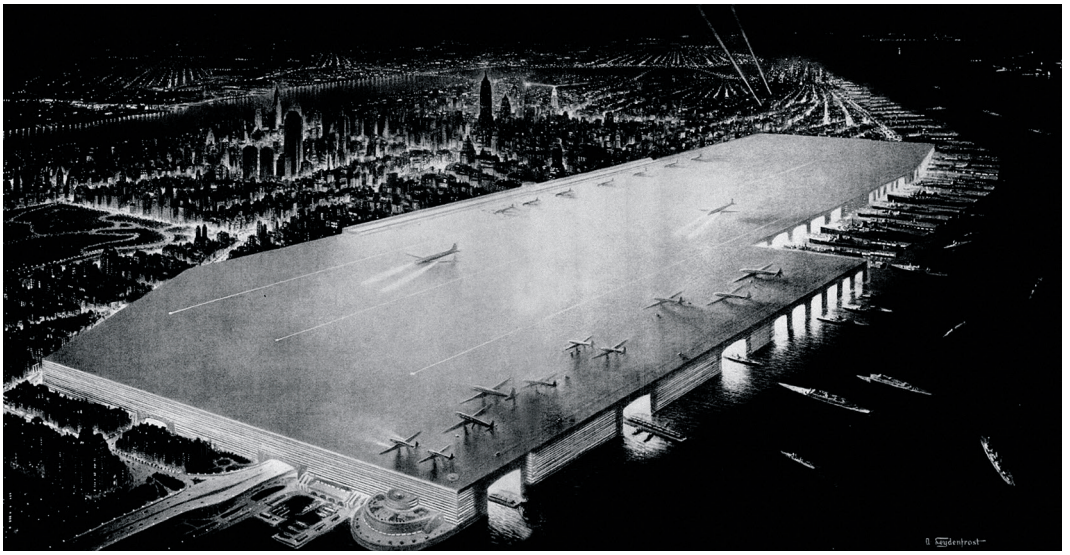


FIG. 11 William Zeckendorf's plan for a three billion-dollar airport stretching over 40 blocks of the Hudson River, 1946. From "New York City's Dream Airport," *LIFE Magazine*, March 18, 1946.

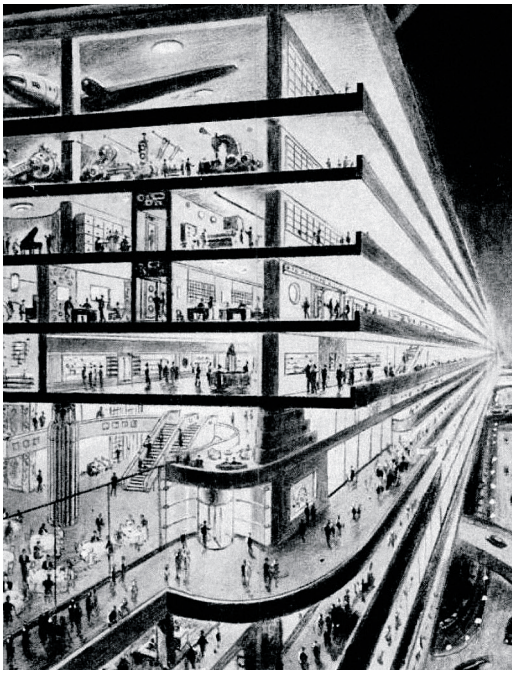


FIG. 12 A sectional perspective of the vibrant space imagined under the enormous canopy of a 144-block airstrip. From "New York City's Dream Airport," *LIFE Magazine*, March 18, 1946.

THE POSTHUMAN AEROTROPOLIS

Today, in a strange echo of Zeckendorf's Dream Airport, vast air terminals have fused with hotels, malls, and entertainment venues to create quasi-urban spaces. Yet instead of developing as cities in cities, these new terminal complexes have almost grown into satellite cities in their own right. If the former aerotropolis was a building-as-city, surmounted by an airport, the aerotropolis now occupies a more nebulous zone that sprawls across wider territory, an urban region with air travel at its heart.

Although the speculative airports of the 1920s and 1930s remained mostly unbuilt, the aspirations and desires that they represented have fresh relevance in our own time and may hint at further transformations of the aerotropolis. Today, there are affinities between these schemes and the current musings around drone and autonomous aerial vehicle technology. The prevalence of speculation in popular media, the promises of transformed cities, the interest in smaller-scale vehicles, and the visions of quotidian air travel all echo the first golden age of aerial futurism. The boosterism of the past is feel-

ing eerily close to nominally new visions offered for our future: before and after are converging.

Beyond these echoes, aerial mobility is today being reimagined not only as a conduit to connect to far-flung locales but also as a local infrastructure of the city itself, energized with drone delivery routes and rapid air taxi transit. These more agile and granular air technologies open up a new geometry of the urban airspace, what geographer Andrew Harris calls volumetric urbanism.[31] In this new conception of urban airspace, the aerial network entails not only large airports and protected transit corridors for large jets but also a diffuse system of small-scale skyways and landing pads that proliferate across rooftops and façades. Moreover, the new vision of air travel is no longer exclusively by and for humans. Unmanned aerial vehicles can ferry cargo and consumer goods across urban skyways autonomously. Today, these ideas of air travel are convolved with notions of the smart city and the spectrum of autonomous objects that proliferate across land and air. The new aerotropolis is a posthuman menagerie suspended overhead.

Across a century of sundry mutations, the aerotropolis is again poised for further transformations in the face of new technologies. Yet, as architects dream of the halcyon future of the new aerotropolis, they would do well to recall the dream airports of the past. These schemes confronted the daunting challenges of integrating the technical apparatus of air travel into the metropolitan fabric and imagined a society with air travel as a daily reality. To be sure, they were naïve in many respects. Yet beyond their limitations, the visionary impulses of these early schemes inspire with their possibilities of air travel and their bold ideas of what aerial architecture could be in the heart of the city.

31 Andrew Harris, "Vertical urbanisms: Opening up Geographies of the Three-dimensional City," *Progress in Human Geography* 39, no. 5 (2015): 601–620.