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## Rescaling urban matter : the city viewed from the air

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## RESCALING URBAN

## MATTER

# THE CITY VIEWED FROM THE AIR

When Nadar succeeded in taking the first aerostatic photograph in 1858, aerial views were already relatively common, as either perspective-based compositions in a tradition going back to the Renaissance or panorama views taken from towers and belfries. But it was the experience of going up and actually discovering "the immense, limitless carpet without beginning or end (that is the earth),"<sup>1</sup> that opened up new perspectives and possibilities. From the first Parisian images taken by Nadar on the Champs Elysées and the Place de l'Etoile, to the satellite images of megapolitan corridors circulated by NASA, these new visual perspectives allowed the aerial observer to rediscover the object constantly being lost: the city he thought he knew so well, in which he is now able to discover new forms from above.<sup>2</sup> "It is as though, at the moment when the great city, the metropolis, the *Grosstadt*, was beginning to call for an image of agglomeration other than a strictly architectural one, it seemed indispensable to preserve its visibility or, to evoke a Freudian problematic, its *representability*."<sup>3</sup> Hubert Damisch reminds us of the fundamentally narcissistic structure of the urban milieu, constantly on the lookout for means of representing its whole.

The city viewed from the air is not restricted to the vision of the "admirable spectacle" deployed beneath the gaze of aerial photographers; for those who manage to get up into the air, the horizon becomes so much bigger and clearer. As Yevgeny Zamyatin stressed in 1922, there is something very utopian about aerial perspectives:

The word airplane is so Wellsian. The airplane lunges and kingdoms, kings, laws and faith slip out of view. And way, way above, lie the glittering domes of a fantastic tomorrow. Many of us who have crossed this new horizon over the past few years are now able to share in it and see with the new 'eyes' of the aviator. Wells has long possessed these eyes. Thence his anticipation of the future and these vast horizons in space and time.<sup>4</sup>

In *Air and Dreams: An Essay on the Imagination of Movement*, first published in French in 1943,<sup>5</sup> Gaston Bachelard pointed up the "vectorial" aspect of the aerial imagination that appears in the desire for clarification and transcendence that spurs on the aerial dream. Seen from the air, the spectacle of totality rediscovered gives rise to the projection of a global fiction. The aerial metaphor of a "new horizon" is projected onto the urban space as it grapples with physical and terrestrial congestion. It is within this context of broader possibilities that the first contours of the aerial infrastructure were sketched out: a place of mediation between the urban milieu and the aerial ocean, henceforth open to the movement of humankind, that will be projected like an engine of urban renewal. The following essay will attempt to explore these aspects of the city seen from the air – discovered and projected, imagined and practiced – by focusing especially on specific devices that have influenced the representation and production of the contemporary city.

### Broadening Visual Horizons

Having been commissioned to cover the aeronautical meeting at Bétheny near Reims in late August 1909, the photographer Léon Gimpel discovered in situ the full impact of an air spectacle staged to enthrall huge crowds. The great and the good turned out in force to see Henri Farman beat the world record for both distance travelled and length of time in the air. Glenn Curtiss won the speed contest. Louis Blériot broke the world record when he won the Prix du tour de piste, while the prize for altitude was taken by Hubert Latham. Aerial mobility was finally real and had acquired a spectacular dimension reflected in speed, altitude, and endurance.<sup>6</sup>



Jacques-Henri Lartigue, only fifteen, was already crazy about aviation and provided the following account:

Yesterday an airplane flew over me, right over my head! And I saw a man inside! Sitting on his seat with his legs spread... and suddenly something mysterious happened inside of me, a bit like vertigo in reverse! It was as though I was seeing out of the eyes of another... as if I was seeing what he saw!... The first thrill of excitement is often so intense that afterwards we seek in vain to rediscover the same sensation.<sup>7</sup>

In this inversion of perspectives, the aerial exploit triggers the photographic one. And while most scenes were snapped on the ground, on the final day of the Bétheny meeting, Gimpel went up in an airship to photograph both the airplanes in flight and the crowd from above. Both the instantaneousness and the radical newness of these photos added still further to the aerial prowess. With its customary "first with the news" pitch, *L'illustration* magazine published Gimpel's photos at once. "After showing airplanes as they appear to spectators, we wanted to turn things around and get the same view as the aviators themselves."<sup>8</sup>

The structure of this article also heralded a reversal of the roles of text and image: photos were now accompanied by the text. The mass media was still in its infancy; yet the graphic design of pages devoted to air exploits was already transforming page layout, visuals, and perspectives. Photographs were splashed over double pages, or placed one over the other, collage-style, thus illustrating either the simultaneous or discontinuous nature of airplane flights.<sup>9</sup>

### Representing/Projecting

Photography was not the only domain to latch onto this new visual universe, which was also taken up in cinematographic and pictorial developments. The tracking shots used in *Metropolis*<sup>10</sup> transfigured reality and enlivened space; the collages of the Russian suprematists assembled the unthinkable; and the aerial dive views depicted in the Italian *Aeropittura* movement both pierce and accuse.<sup>11</sup> Aerial perspectives revealed a different reality and triggered new ways of conveying images that compressed space, distended perspectives, condensed images, and broadened the range of sensations.

They also changed formal and conceptual perceptions of urban space. By experiencing the city from above, city designers used this new capacity to analyze and interpret the new scales and dimensions of the urban phenomenon. They superimposed a new fiction on this newly perceptible whole, as if being able to see again had triggered an almost immediate desire to remodel the object revealed. These vantage points ushered in a new reforming spirit, and the representation of urban totality acted like a reflexive mechanism that needed to be projected. Hugh Ferriss, analyzed New York and then rendered it from an aerial panoramic perspective as a city of skyscrapers – giant stalagmites – marked by passing air and land traffic.<sup>12</sup> Frank Lloyd Wright presented aerial views and projected an extension of the city-territory in his future Broadacre City project.<sup>13</sup> And Marcel Lods, an experienced pilot, denounced the Parisian smog as he overflew the new extensions to the capital on his way to his building projects.<sup>14</sup>

Le Corbusier used the power of the airplane as a weapon to challenge the existing urban environment and harnessed the same visual inspiration to recast or even create entire new cities. He visited South America in 1929 during a memorable trip, which included flights over Brazil with the help of the aviators Jean Mermoz and Antoine de Saint-Exupéry. He was so taken with these aerial views that he designed the plans for Montevideo, Sao Paulo, and Rio de Janeiro from the



Hugh Ferriss, "Hangars in the sky," *American Architect*, January 1931. Source Archives of Hugh Ferriss, Box 2, Drawings and Archives, Avery Architectural and Fine Arts Library, Columbia University of New York.



air, based on the "theorem of the meander," which first came to him in a plane:

Following the outlines of a meander from above, I understood the problems encountered by human things, the dead ends in which they get stuck and the apparently miraculous solutions that suddenly resolve apparently inextricable situations. For my own use, I have christened this phenomenon the 'law of the meander.'<sup>15</sup>

And in *Aircraft* (1935), Le Corbusier went on to observe that:

The airplane gives us a bird's-eye view. When the eye sees clearly, the mind can decide in more lucid fashion.<sup>16</sup>

The airplane turned land-bound powerlessness into air-borne lucidity. Architectural visionaries clarified their thinking and simultaneously rediscovered their powers of transformation.

Aerial views were used by regional planning as a tool for measuring and projecting. First, they began to be used systematically for cadastral surveys of the city and its environs. As New York's city limits swelled to include most of the metropolitan area, a huge project to photograph the city's urban fabric known as the Aerial Survey was initiated in the early 1920s; by 1921, the Fairchild Aerial Camera Corporation had produced a giant photo mosaic depicting the urbanized street-grid pattern of greater Manhattan. But it was in 1924 that the sheer visual power of the medium was revealed in an aerial map of Greater New York showing its five boroughs in a single image.<sup>17</sup>

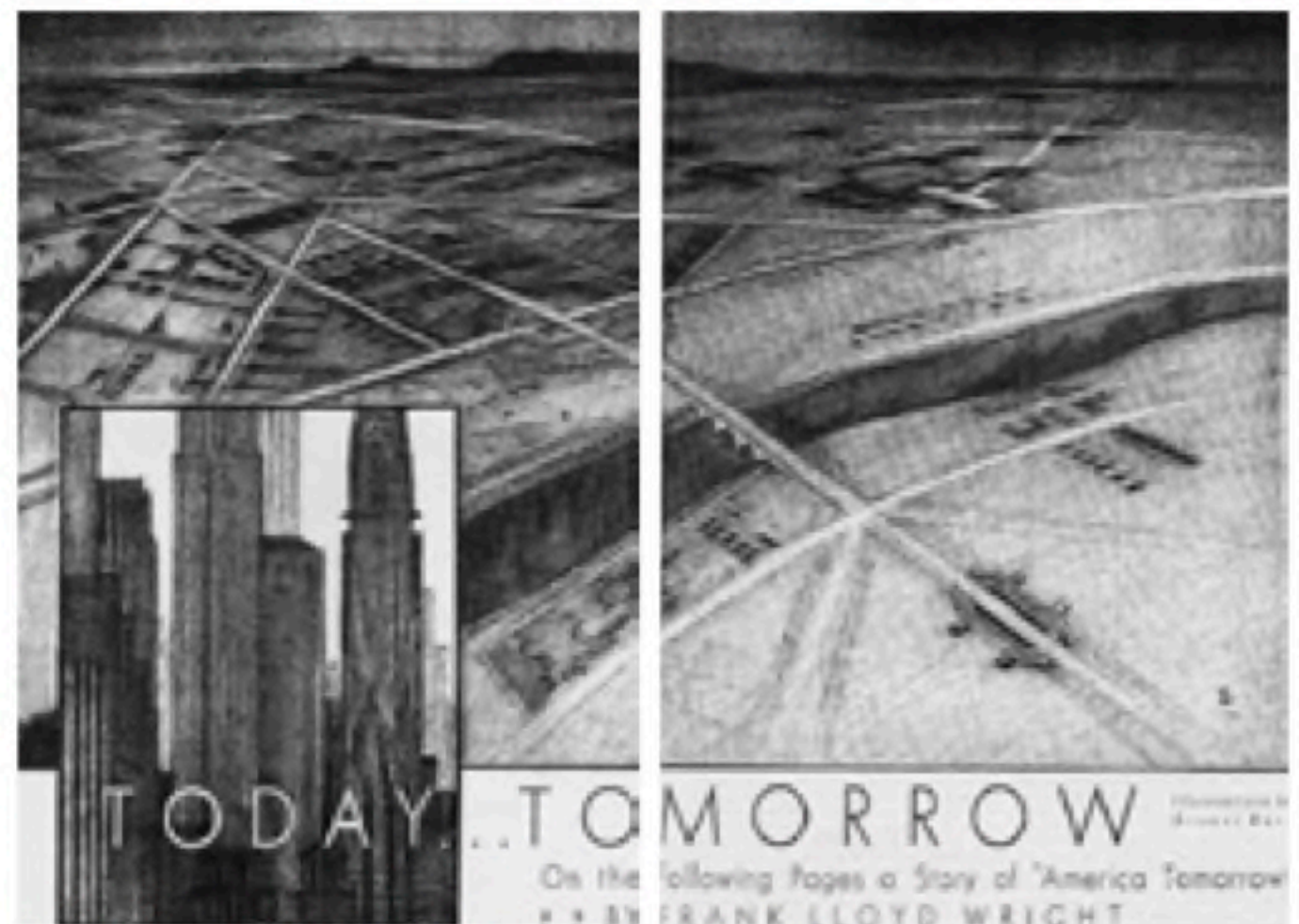
This newfound perspective on metropolitan reality also pointed up regional imperatives. The Regional Plan of New York and its Environs, undertaken at the same time, projected a systemic scale. Infrastructure and parks were deployed within a new network that marshaled and organized the urban fabric and reestablished links of interdependence between the center and the periphery.<sup>18</sup> In France, aerial perspectives were also used extensively in planning, developing and sprucing up cities under the Cornudet Law from 1919, and from 1934 on within the scope of the Prost Plan for the future of the Paris region.<sup>19</sup> The aerial view facilitated a grand plan that aspired to reassert control over the capital: it was first used to trace out the new frontiers of the metropolis. It presented the metropolis on a regional scale in all its beauty and disorder; then, in mapping out the future of the region, using wide in-flight views, it laid out the future of the vast landscape of the Greater Paris region that would subsequently be criss-crossed by highways.

### Dynamics of Elevation

After seeing the world from an airplane, Paul-Henry Chombart de Lauwe developed a new approach to the city. After the war, he conducted surveys of urbanized space based on aerial views: *La découverte aérienne du monde* [discovery of the world from the air] contained a new way of mapping the world.<sup>20</sup> Details and globality could now be assessed simultaneously to take in what could not be seen below, to forge links between dimensions such as lifestyles and territorial location, for example. He stressed that the traces left upon the earth by any human group can be discerned more clearly from the air. "More recent forms of social organization stand out more clearly in forms of habitation and how these are grouped together." He echoed the views of Patrick Geddes, who was also taken by the clarifying dimension of seeing things from above. The sociologist-urbanist felt that those who viewed the world from a plane could get a clearer, more detailed overall perspective.<sup>21</sup>

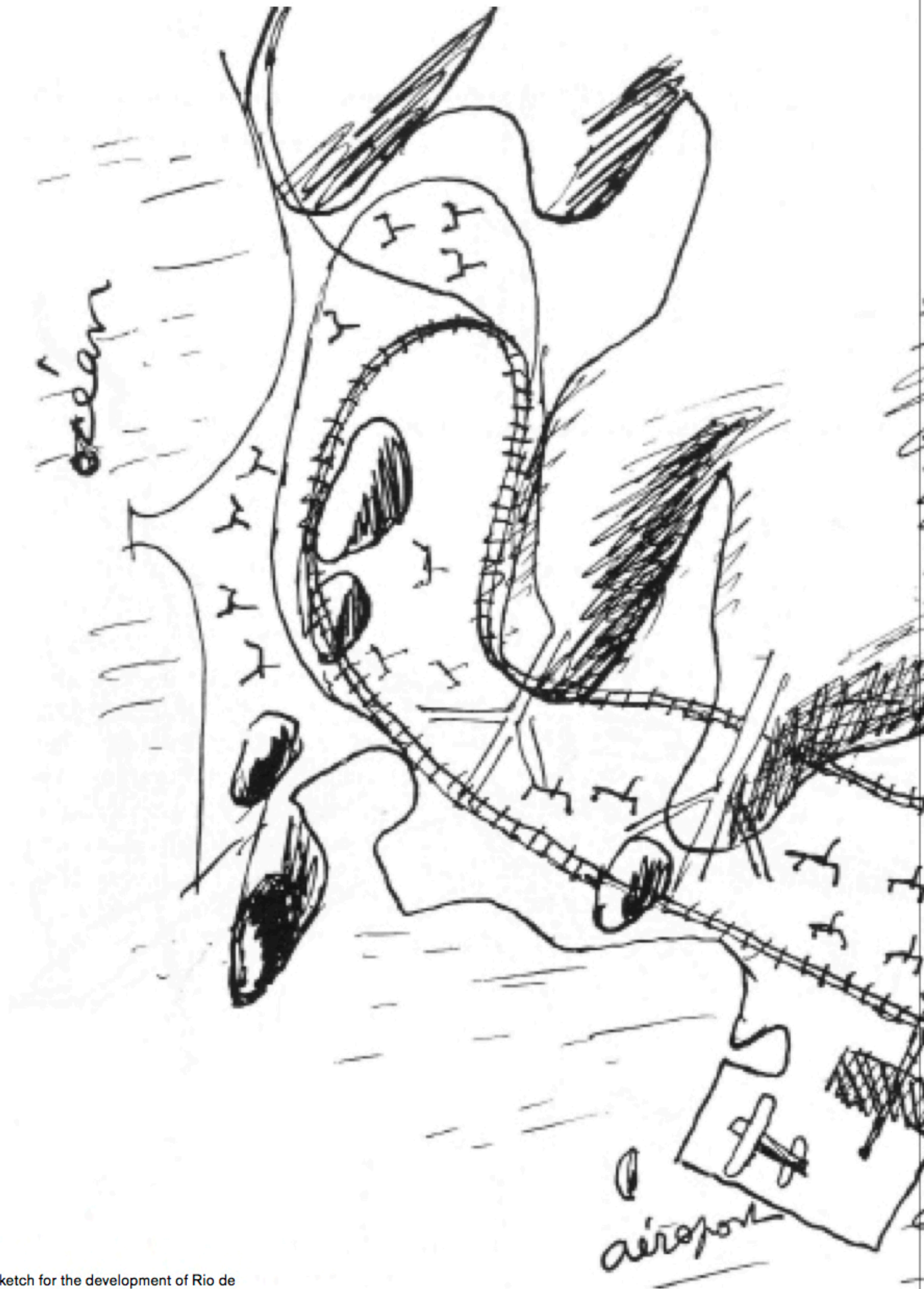


"Aerial Survey of Manhattan Island", 4 August 1921, Fairchild Aerial Camera Corporation, Library of Congress, Washington, DC



Frank Lloyd Wright, "Today, Tomorrow, America Tomorrow", *American Architect*, May 1932, Ill Ernest Born





Le Corbusier, "The Meander Law", sketch for the development of Rio de Janeiro, 1936, roqui da Implantacao da Auto-Estrada (Rio, 1936). *Oeuvre Complete 1934-1938*, 40.







In this long sequence of aerial takes on the world, vertical perspectives appeared to keep up with the uninterrupted progression of urban and metropolitan boundaries. Time and again, they made it possible to regain a global perspective on an urban cityscape that had been rendered illegible by repeated extensions. The verticality of the aerial dream involves a principle of order and lineage, and a narcissistic perspective that reveals the subject to the dreamer in condensed, transparent, and simplified form. It spurred Hugh Ferriss to develop a cartographic vision of the city and its territory:

How do buildings look? It depends considerably on the elevation of your view-point. From the lowest view-point, you are in the world of Architectural detail. But suppose you look at things from a helicopter, one that is flying slow and low, say at plus 250'. You are now in a world of architectural masses. ... Now suppose you are in a plane, one that is flying fairly low, say at plus 1200'. You still see buildings clearly but what you see even more clearly is their relations with their immediate surroundings- with the street system, the roads, the waterways, greenbelts, etc... You have entered the world of site planning, of neighborhood planning. ... When the plane flies faster and higher, you enter—say, at plus 5000' ... , you now feel like a town-planner, a city-planner. At plus five miles you turn into a regional planner! For right down there below you is a whole region plain to see, and you can't help wanting to design it, or redesign it. Try, someday, a series of thumbnail sketches in color showing how everything changes and simplifies as you go up.<sup>22</sup>

"Design it, or redesign it": first, the architect makes no distinction between vision and projection, as if they have become intertwined thanks to aerial clarification. Moreover, Ferriss simultaneously ranks and links relative elevations of viewpoints and scales of projection, further enhancing the powers of the architect who can now draw everything thanks to the aerial perspective. From ornament to planning tool, the relations between detail and outline, between architecture and landscape, and between city and region are expressed in verticality. Ferriss goes on to show us how he actually used aerial views in practice to study and draw the outline (more than the actual volumes) of the future location of the United Nations or to plot the landscape of the east coast, for example.<sup>23</sup>

### **Flight from the City: A Vectorial Imagination**

The experience of aerial elevation helped shift boundaries. It was ground-breaking heroism that explored – sometimes nervously – what lay elsewhere. Frank Lloyd Wright stressed the eminently utopian aspect of aerial perspectives that allow us to break free of physical and terrestrial constraints: "It takes some time for [man] to know that he can fly... But when he realizes he is free, and learns, he's gone. And after all, *he* is the city."<sup>24</sup> Here, "flight from the city" takes on a literal as well as a metaphorical meaning, allowing for physical emancipation from the city and utopian freedom from its reality.

This reforming vision was to define the contours of the aerial infrastructure for a long time to come. Its history begins just when aviation was being revealed to the masses at huge aeronautical events for which Gimpel ensured photographic coverage in France. And a handful of visionary city planners were to use the exploits of the airmen to renew contemporary urban imagery. A look at the work of the architect/planner Eugène Hénard, who worked extensively for the City of Paris and was one of the founders of the Musée Social, gives a good indication of how aviation and urban developments were shaping the work of planners.<sup>25</sup> By catalyzing a certain number

of key models in Hénard's reflections, the aerial vector becomes the backbone of his approach to the city of the future. "The profound revolution in thought generated by aviation is so powerful and opens such enormous perspectives that all manner of dream is possible. Air conquest will usher in an era of peace and wealth. The cities of tomorrow will be easier to transform and to embellish: their magnificent towers will welcome giant birds from all points on the horizon and perhaps, in time, the major capitals will build their beacons closer and closer to the stars."<sup>26</sup>

A transnational debate rapidly emerged around the city as a space that was likely to be completely recast by the introduction of aerial mobility. From Eugène Hénard to Harvey Corbett, from Le Corbusier to Hugh Ferriss, and from the futurists to the suprematists, architects began designing the means for bringing aircraft into the city: landing pads on buildings and skyscrapers, and concrete slabs and platforms were the most commonly conceived solutions for accommodating airplanes and taxi-planes. The entire city would be turned into aerial infrastructure and spatial projection of the values promoted by the invention of controlled flight: ubiquity, transcendence, elevation, and immateriality. As planes spread into the city, they would give free rein to the most audacious ideas: bigger scales, new ways of dealing with urban functions, dematerialized buildings, and exploration of the possibilities of the third dimension.<sup>27</sup>

This perception of infrastructure as a vehicle for urban renewal was similar to the thinking that would guide the design of international airports later on. Such links were to be all the more marked insofar as some of the "aerial city" visionaries became key players in the construction of pre- and post-war airports. Hugh Ferriss, for example, was involved in the design of the airports at LaGuardia and Idlewild (the future John F. Kennedy airport).

Obviously the transition from the ideal to the real was not problem-free. World War II produced both the emergence of a formidable aviation industry and a realization that aircraft could constitute a weapon of mass destruction. It also ended the dream of individualized transport, and signaled fairly clearly that the future lay in increasingly cumbersome collective transport with more constraints attached. At the same time, there was a shift from the ideal city recast around aerial mobility to a quest for the airport as urban alternative. The current period has been marked by a gradual emancipation of the airport from the urban. The physical and institutional extraterritoriality of airports was embodied in the emergence of autonomous structures such as Aéroport de Paris (the Paris airport authority) or the Port Authority of New York, which wrested the concessions to run four major airports from the cities of New York and Newark following a fierce struggle. It also reflected this striving to create a parallel and global universe, functioning as an autonomous place over which perfect control could be exercised precisely because it was completely circumscribed. The isolation that is characteristic of contemporary airports was compounded by the use of architectural forms or functional processes that reinforced their introversion. The megastructure predominantly used for terminal buildings underpinned this wish to create a world apart. The "Terminal City"<sup>28</sup> metaphor employed for the new Idlewild Airport built in New York in the early 1950s or that of a "pump" for the first terminal of Paris Roissy Airport harked back to this idea of an independent body whose operations were condensed into a single system.

### **Learning from the Airport**

Locating airport complexes away from their urban environment by no means erases urban issues: each time the airport is removed outside



of the city, the intention is to reconfigure it as a new alternative milestone or showcase project. This territorial distancing makes it possible to assess reality differently and facilitates construction of a pioneering object that transcends the constraints of the "host city" while regularly addressing the related urban debates and recreating a separate universe by redesigning the contours of the contemporary city. This magnetic role gives rise to a specific process that we may compare to the aerial view.

The possibility of emancipation from the urban – through high-speed transport links or the colonization or even reclamation of land<sup>29</sup> – goes hand in hand with the reconstitution of a city apart, a sort of utopian bubble that brings together and intensifies all of the latest urban amenities: shops, leisure, travel facilities, etc. In return, physical distancing and the sheer size of airports have resulted in the wish to bring airport-type features back into "the center." These have crystallized in the form of downtown "terminals" that offer all of the attributes you would expect to find in an airport, apart from planes. In such attempts to match the city with the airport and erase this physical distance, the urbanization of the airport through a host of signs and urban codes is closely bound up with what we would term the "airportization" of the urban sphere, reflected in the emergence and influence of these airports without planes that are creeping into urban hypercenters.

This hybridization built around mutual attraction and repulsion is a two-way process: the airport as an urban fiction come true has become one of the favored observation platforms for theoreticians of urban questions, who analyze them as a prism of live issues for the contemporary city.<sup>30</sup> Airports conjure up fascination and bitter criticism in equal measure – they are even described as counter-utopian, technicist or societal. They embody a sort of critical lesson whereby, like a deforming mirror, they illustrate the confusion of scales increasingly present in our contemporary environment: hybridization of the global and the local, of gigantism and detail, of intensity and dissemination, of ubiquity and expectation, of power and failure, and of future and "anteriority."

This singular position along the urban frontier is reflected in the capacity of such spaces to transcend limits. The virtually ceaseless exploits that we have witnessed since the advent of air conquest, space travel, breaking of the sound barrier, the sheer gigantism of airport facilities and the related technical prowess, have their immediate corollary in the latent risk so bluntly expressed in the myth of Icarus. Catastrophism is never far away where airports are concerned, as illustrated by the recurring articles, photographs, and other information related to breakdowns, accidents, and crashes, couched in spectacular language and imagery. Similarly, the hypermobility provided by aerial ubiquity makes the long moments of inactivity that precede and last for most of the trip all the more acute as we become mere passive spectators.

It is not only physical, spatial or technical limits that are exceeded but temporal limits as well. The airport as a futurist spectacle runs headlong into "anteriority" given that the future too has its own history. The phenomenon of chronic airport obsolescence, already identified as early as 1962 by Reyner Banham, is all the more acute as it is compounded by the prototypical dimension of airports in general.<sup>31</sup> Dealing with an airports' various project-specific temporalities when developing it within a context of increasing uncertainty and heavy investment also raises heritage-type questions concerning the value of monuments that are dedicated first and foremost to the future.



Eugène Hénard, "Vue à vol d'aéroplane d'une ville de l'avenir" [Birds'-eye view of the city of the future], in "Les villes de l'avenir", *L'Architecture*, 13 November 1910



Roissy 1 Terminal, Source Photothèque Aéroports de Paris



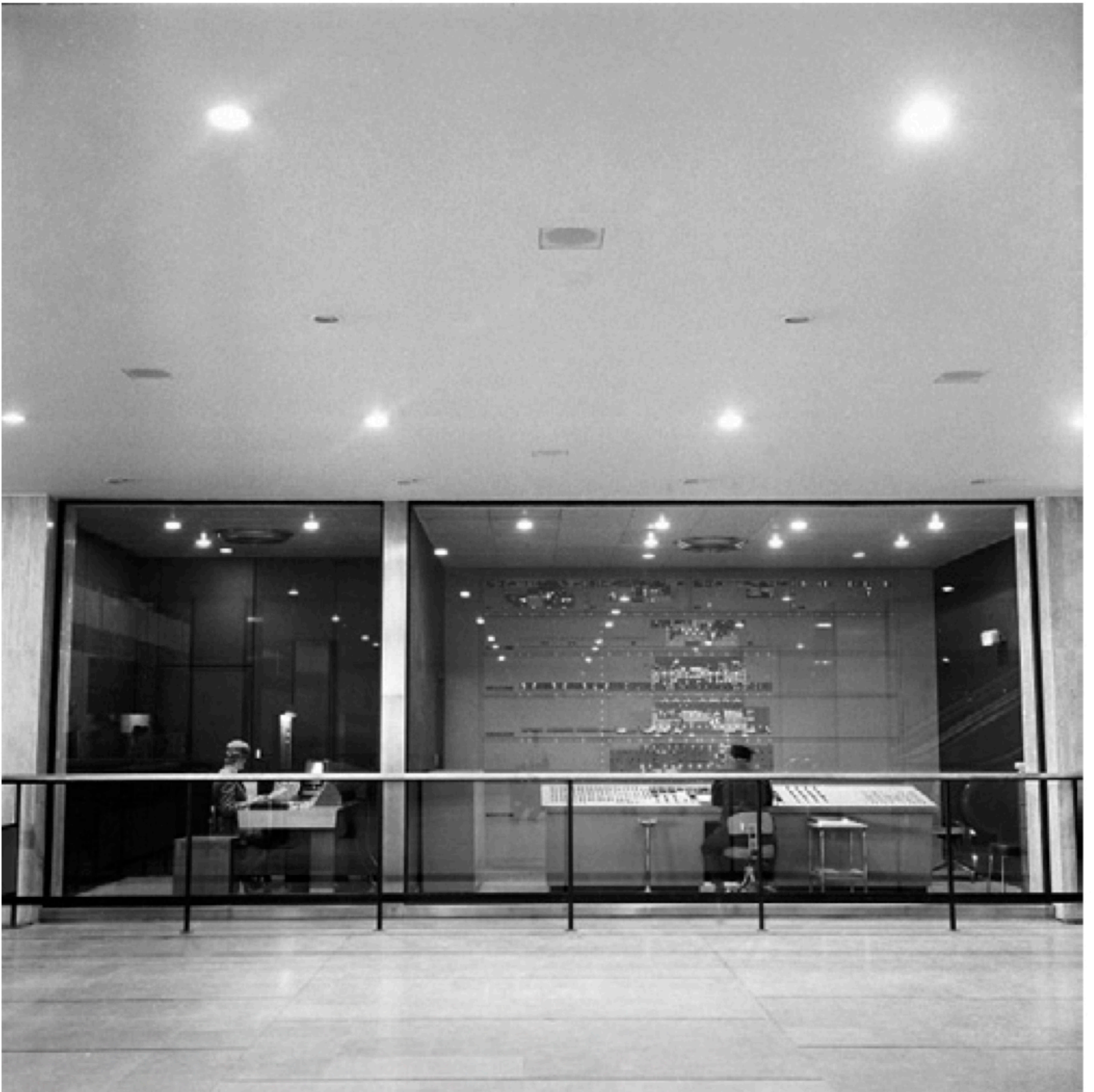
The "megastructure" of Orly Sud Terminal, circa 1963, Source Photothèque Aéroports de Paris





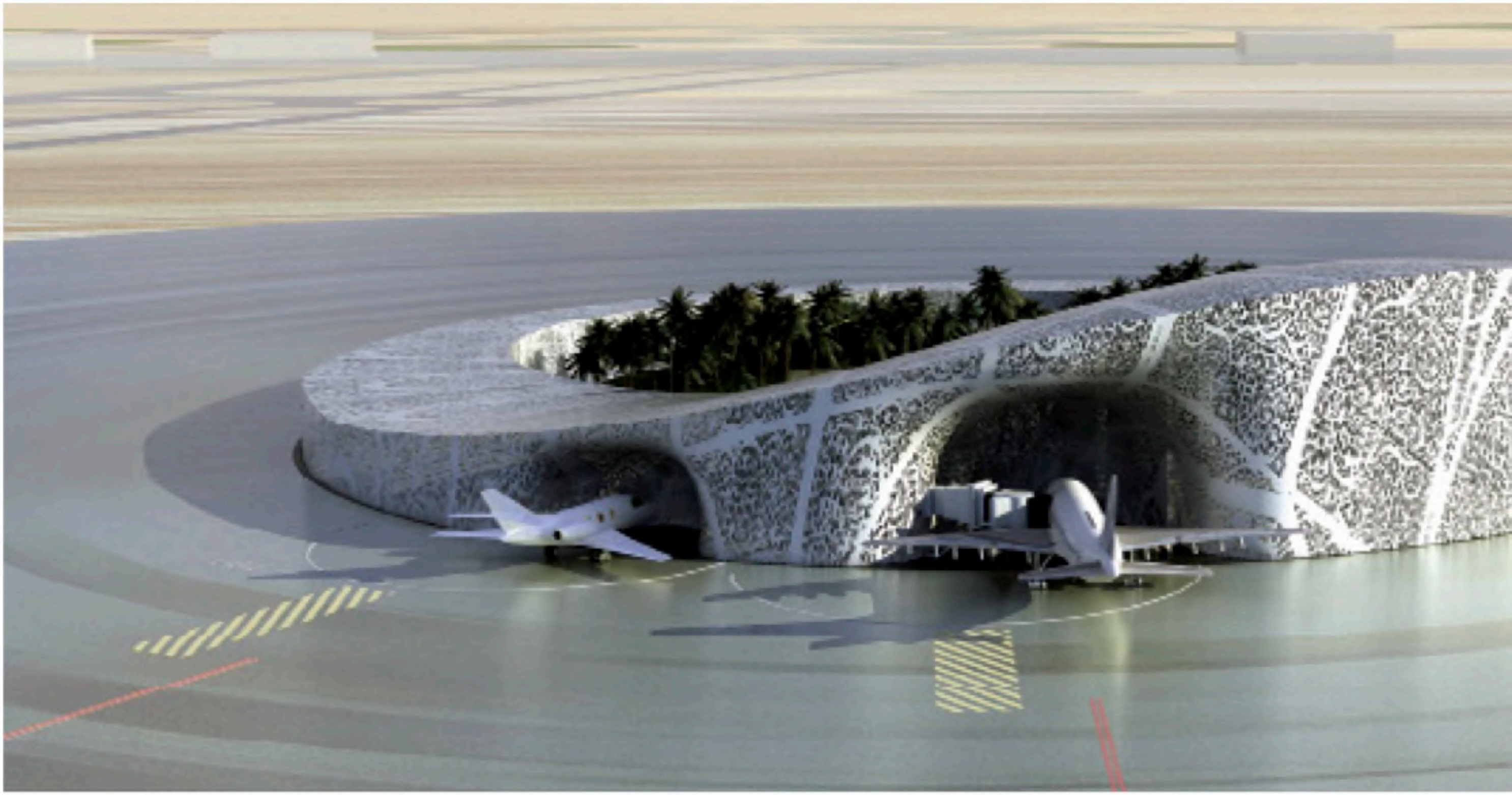
Aerial View of Roissy 2, 2005, Source Photothèque Aéroports de Paris.





Orly Sud Terminal, View of the general control room, 1961, Source Photothèque Aéroports de Paris.





Office for Metropolitan Architecture, Project for the new international airport of Jeddah, Terminal for the royal family, 2005, Source OMA

### Scales of Invisibility

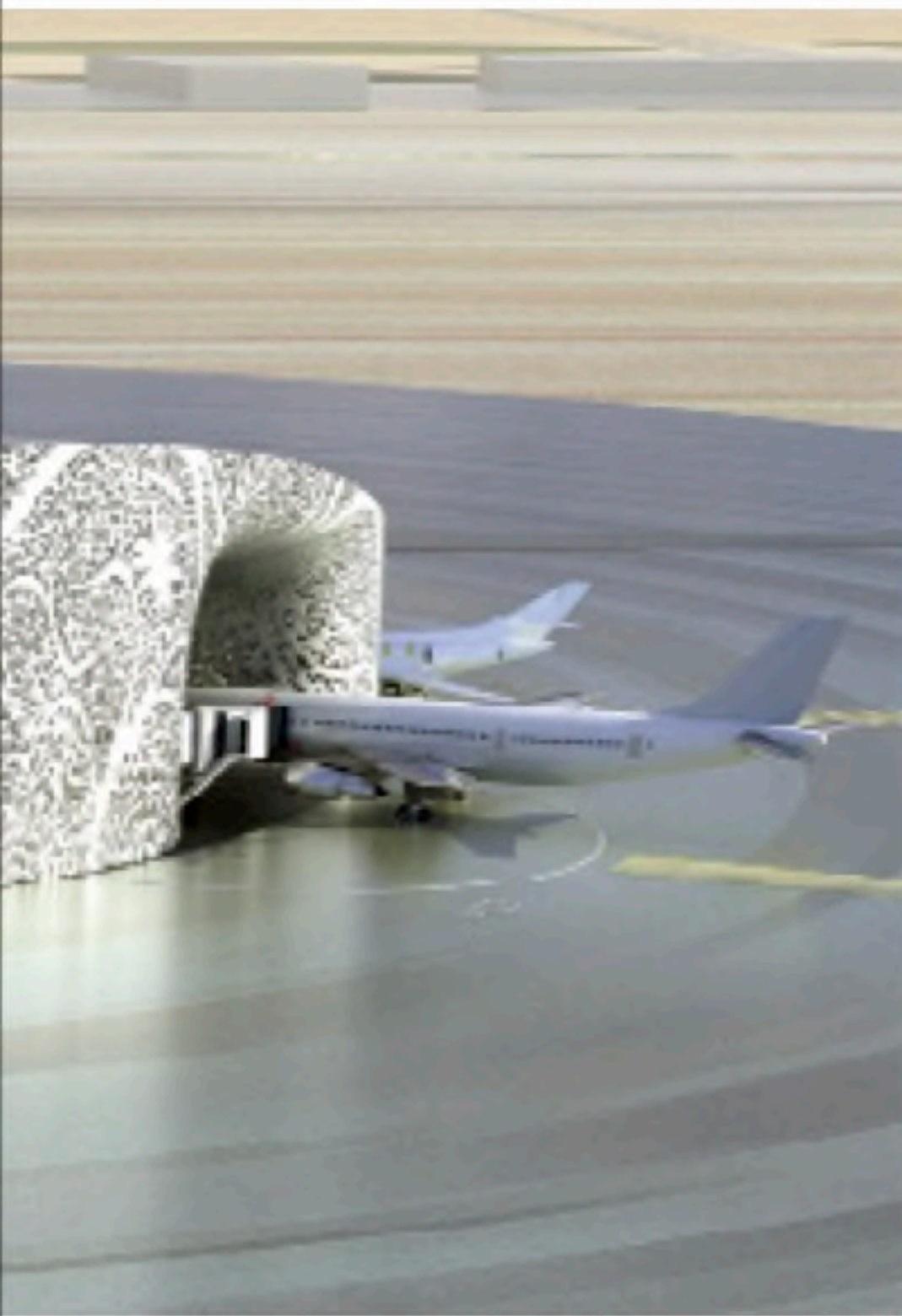
There is an ongoing conflict in this blend of the ideal and the real, of mirror and subject: the spectacle of the city viewed from the air; the reality of urban globality finally made whole once again; the spectacle of the airport, which both imitates and outdoes the city without being able to fully embody it; the reality of an artifact that heightens expectations in our contemporary societies. Standing apart from the city all the better to observe and redesign it, moving closer to the same city so as to understand and outdo it all the more effectively, the city viewed from the air can be defined vis-à-vis the existing city in a sort of a game that devices such as clarification, rationalization, panoptics, transcendence, and spectacularization. This conclusion finesses the all too frequent description of airports as non-places inasmuch as they define themselves first and foremost in relation to the city that they look toward.

Photographers specialized in aerial photography continue this aerial exploration by scrutinizing "artificialized" territory on a continental scale. For the past thirty years, Alex MacLean has been striving for ecological reform through in-depth studies of changes in the American way of life.<sup>32</sup> From planes to satellites, the aerial view prism has continually expanded, simultaneously rolling out the immense scope of the "urbanized" carpet and setting in motion a constant reconfiguration of landscape and territory. From the American megalopolis mapped out in the early 1960s by the geographer Jean Gottmann<sup>33</sup> to that of Osaka-Kobe or the Pearl River in South China observed by analysts of planetary urbanization, aerial views now focus on megapolitan phenomena. And they have recently moved into the next phase as Google Earth allows users to interact with the Earth's panoramas, thus creating new bases of perception and projection.

But by offering such apparent mastery over a situation that seems beyond our control, the aerial view reveals its own limits. This vision, which had such objective and universal pretensions, can go from being all-encompassing to totalitarian. It points up, by default, the relative absence of tools for representing and clearly depicting the confused reality surrounding all things urban and this unsettling of spatial dimensions, and the need to come up with another way of rendering intelligible the urban phenomenon together with all its *exteriority*.

– Translated from the French by Neil O'Brien.





## NOTES

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3. Hubert Damisch, *Skyline: The Narcissistic City* (Palo Alto: Stanford University Press, 2001), 12.
4. Eugène Ivanovitch Zamiatine, "Herbert Wells," *Le métier littéraire*, (Lausanne: L'âge d'homme, 1990), 87-8; Zamyatin was the first counter-utopian author of the twentieth century: Yevgeny Zamyatin [1924], *We*, Penguin Books, 1993.
5. By eds. José Corti, Paris.
6. "La grande semaine de Champagne", *L'Illustration*, no. 3471, September 4, 1909, 153-164.
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8. "La grande semaine de Champagne," 163; see also Léon Gimpel, "Mes grands reportages" [1944], extract published in *Etudes photographiques*, no. 19, Décembre 2006, 120-39.
9. Thierry Gervais, "L'exploit mis en page, la médiation de la conquête de l'air à la Belle Epoque" in Musée du Jeu de Paume, *L'événement, les images comme acteurs de l'histoire* (Paris, Editions Hazan, 2007) 60-83.
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11. Christoph Asendorf, *Superconstellation, Flugzeug und Raumrevolution* (Berlin, Springer, 1997) 119-122.
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16. Le Corbusier, *Aircraft* (London, The Studio Publications, 1935).
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21. *Ibid.*, 51 and, concerning Patrick Geddes, see Armand Mattelart, *Histoire de l'utopie planétaire, De la cité prophétique à la société globale*, (Paris, La Découverte, 2000), 223.
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23. *Ibid.*
24. Frank Lloyd Wright, "Today, Tomorrow, America Tomorrow", *American Architect*, May 1932, 17. This extract also features in *The Disappearing City* (1932).
25. Nathalie Roseau, "Reach for the skies, Aviation and urban visions circa 1910", *The Journal of Transport History*, vol. 30, n. 2, 2010.
26. Eugène Henard, "Les villes de l'Avenir", Town Planning Conference, Royal Institute of British Architects, 14 October 1910, Published in *L'Architecture*, 13 November 1910, 387.
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28. Read the text by Wallace K. Harrison presenting the concept of *Terminal City* for the Port Authority, 16 February 1955, Archives of Wallace K. Harrison, Box 3, Drawings and Archives, Avery Architectural and Fine Arts Library, Columbia University, New York.
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