LAX: First Modern Airport, Last Relic of the Jet-Age

Juan M. Villafañe
AIA, Partner Krueck Sexton Partners

Abstract.

This paper investigates the architectural evolution of Los Angeles International Airport (LAX), tracing its continual transformation alongside enduring elements anchoring its identity. The perspective is informed by an architect's experience on multiple redevelopment phases. Rather than a fixed form, LAX is examined as a continuously reworked machine for movement, engineered to process people, aircraft, and cars. Its Jet Age reinvention embodied shifting technological, logistical, and cultural models that shaped its architecture.

The 1961 Pereira & Luckman masterplan rejected the monolithic terminal model in favor of a decentralized layout: a horseshoe-shaped road with a ticketing headhouse and airside satellites, coordinated but not unified. This configuration prioritized operational flexibility and throughput over formal cohesion. At its center, the Theme Building embodied the era's futurist ambition while the rest functioned as an engineering flow chart derived from passenger movement.

Later decades brought infill and modification in response to growing air-traffic and operational changes, fragmenting the spatial legibility of the original plan. LAX's evolution reflects airports as living infrastructure, continuously revised to accommodate new aircraft, logistics, and user expectations.

By situating LAX in relation to other mid-century airports including JFK and Dulles, this paper explores how different design strategies addressed the challenge of symbolizing modernity while functioning as high-capacity machines. LAX stands out for its early emphasis on segmented movement and adaptability, foreshadowing contemporary airports' evolution into complex, interdependent systems rather than singular monumental spaces: where architecture and infrastructure converge to service circulation and adaptation, a fluid space between city and sky.

“This is commonly called the jet age, but in reality we are just entering that age..."

General Elwood Quesada,1959
Federal Aviation Agency’s (FAA) first Administrator

1. MY LAX

In my second week at Krueck Sexton Partners, I first visited Los Angeles International Airport (LAX) in 2014 to orient myself for the Terminal 7 renovation. Only after studying the original plans did it become clear why the lozenge-shaped central hall existed within the otherwise linear concourse. This once free-standing “Satellite” building had been conjoined to the entry headhouse by a non-descript rectilinear concourse and a quarter-turned square hall at its southern end. Our scope was to modernize Terminals 7 and 8, an agglomeration of buildings representing years of disjointed renovations.

LAX’s original decentralized terminals and cellular planning allowed many Satellites to survive over half a century of aviation innovation, despite the complexity of modifying an operational airport. The jet-age revolution forced municipalities to accommodate larger airplanes and increased demand. Terminal 7 embodies this evolution making it a useful reference for understanding both the origins of this airport’s design and elements that endured whether intentionally or by circumstance. Because the airport must remain in continuous operation, some Terminal buildings have survived, not because they functioned particularly well but because closure and downtime would have been prohibitively costly.

2. THE 600MPH FUTURE

The 1961 LAX masterplan by Pereira & Luckman rejected the monolithic terminal in favor of a decentralized layout: a horseshoe-shaped road surrounded by a ticketing headhouse and airside satellites, coordinated but not unified. The plan emerged out of the anticipated demands of jet travel rapidly developed in the 1950’s. Few precedents exist where technology forced cities to rapidly mobilize globally for new infrastructure. Railways offer the closest parallel though their evolution unfolded over decades, not years.

“Jet-age” airports developed in parallel with aircraft technology. Boeing and Douglas Aircraft, leveraged wartime experience producing large aircraft enabling the travel market. Douglas’s DC-8 and Boeing’s 707 seated up to 177 passengers, and cruised at 600 miles per hour (mph), compared to the prop-driven DC-7’s 95 seats and 350 mph. Airlines ordered these jets years before test flights even occurred, catalyzing cities’ need to prepare for unprecedented demand. (Eastman, 42).

3. CIVIC GATEWAYS

In the United States, New York City, Washington D.C., and Los Angeles, contemporaneously commissioned masterplans which invented airport typologies in direct response to jet-age demands. Each produced unique solutions to address the anticipated growth. By contrast, other countries established airport planning at a national level following World War II. (Bednarek, 3). Paris's Charles de Gaulle Airport exemplifies this approach, originally governed by France's national civil aviation authority (DGAC). While the Federal Aviation Agency was established in 1958 to regulate aviation nationally, American airports remained defined by individual cities and corporate airlines, allowing municipal interests and local markets to drive design and planning.

3.1 New York – Terminal City

New York City's 1955 masterplan exemplified the municipally driven design process. Architect Wallace Harrison's plan for Idlewild Airport, renamed "John F Kennedy" in 1963, created the Terminal City concept. Known for directing the United Nations Building in New York, completed in 1951 with contributors including Oscar Niemeyer and Le Corbusier, Harrison allocated plots along the airport roadway loop for individual airlines to develop their own terminals.

The International Arrivals Building (IAB) designed by SOM opened in 1957 and occupied the airport's center. Surrounding it, the iconic forms of the Pan Am and Trans World Airlines (TWA) terminals came to symbolize the airport as an international gateway. These airlines' international flights required proximity to the IAB's Customs facilities. Pan Am's Terminal 3, the Worldport, opened in 1960 with an elliptical plan defined by a massive overhanging roof. Designed by Walter Prokosch of Tippetts-Abbett-McCarthy-Stratton (TAMS) with Ives, Turano & Gardner Associated Architects, the overhang allowed aircraft to dock within its perimeter, creating an unprecedented sense of interaction as airplanes maneuvered to park nose-forward facing the terminal. Despite its innovative form, its geometric limitations contributed to its demolition in 2013.

North of the IAB stood Eero Saarinen's TWA Flight Center, which opened in 1962. Its concrete shell form and enclosed "Flight Tubes" advanced both formal and operational innovation, anticipating Saarinen's later work at Dulles. The two Flight Tubes were red-carpeted tunnels, referencing TWA's red logo, creating an immersive procession through windowless, top-lit cylinders that connected the main entry hall to Flight Wings and, ultimately, the aircraft. Preserved through advocacy, the Flight Center was adaptively reused as a hotel and conference center in 2019.

While JFK followed a masterplan, airlines were encouraged to compete architecturally, resulting in limited interconnectivity and overall coherence. This was acceptable at the time, as the airport functioned as a destination

rather than a connecting hub.

3.2 Dulles

While Eero Saarinen's Washington Dulles opened the same year as the TWA Flight Center, his Dulles concept shaped not only the terminal building but the entire airport operation. The core principle held that walks at airports were excessive, and "high performance equipment…might well rebel if required to provide passenger convenience where it's really needed". (Eames, 0:37). The solution was the Mobile Lounge, colossal roving rooms which transported passengers from the main terminal to their aircraft. The Mobile Lounges radically dispersed infrastructure and eliminated the need for separate terminals accommodating the aircraft. Saarinen, who had worked with Charles Eames in 1941 on their prize-winning Museum of Modern Art's *Organic Design for Home Furnishings* competition, again collaborated with the Eames office to produce T*he Expanding Airport* animated film. The film was prepared on behalf of Saarinen's office and functioned as an engaging marketing tool explaining the concept. The terminal's swooping roof and canted facades evoked movement, creating an open plan intended as the sole passenger building. From within, the forward leaning glazing invited views out. The terminal remains as the main gateway to the airport. The remaining Mobile Lounges now shuttle passengers to terminal buildings, no longer expressing their original purpose.

In Los Angeles, a much simpler masterplan would emerge. But that vision did not start simple. In 1951, William Pereira and Charles Luckman were commissioned to develop a schematic concept for LAX. Their vision incorporated a huge, glazed dome housing the ticketing area and with its central structure acting as both focal point and traffic control tower. Interior renderings show a lush conservatory at its perimeter, and arc-shaped bridges connecting passengers spanning its six-hundred-foot diameter. In plan, six petal-like fingers emerged out of the center dome each planned for ten airplane berths. The walking distances anticipated Saarinen's Mobile Lounge concept, but the scale of the LAX proposal was far ahead of other cities' visions for next-generation airports. While the de Havilland Comet jet plane had only flown its first commercial flight from London in May 1952, air traffic at LAX was already approaching capacity. The proposal was wildly visionary but lay dormant until a new plan would be commissioned a few years later.

4. A NEW PLAN

In 1956, the City of Los Angeles issued a bond to proceed with a new airport, and Pereira & Luckman were again hired to develop the masterplan with Welton Becket & Associates and Paul R. Williams. Their plan was organized around a Central Terminal Area (CTA) with the iconic Theme

Building at its center. (Figure 1, LAX Aerial View 1966). A horseshoe shaped road 3500' long and 930' defined the CTA where cars drive counterclockwise to each terminal for passenger drop off or to park within its sprawling 5,000-car lot. Hand-drawn sections from Pereira and Luckman's 1958 *International Airport Workbook* suggest that the architects originally envisioned a five-level airport as a layered apparatus separating operational circulation from passengers, with parking below the terminals (Hines, 32,33).

The final plan was sectionally simplified to three levels, but with a massive invention hidden in plain sight. The invention was a vast parking lot excavated one level below the apron, the surface where aircraft are parked and serviced. (Long, 8:14) By building below the apron, passengers entered the ticketing halls at the same level as the tunnels. These "channels", as labeled in the 1961 drawings, connected to the dispersed Satellites creating a seamless route for both departures and arrivals. The channels featured colorful, ¾-inch mosaic tiles stripes, humanizing the otherwise stark six-hundred-foot-long tunnels. American Airlines' Terminal 4 was the first at LAX to incorporate moving walkways, dubbed the Astroway, with Terminal 7 following three years later with the installation of its own moving walkways. (Display Ad 15).

4.1 Dispersed Satellites

The Satellite terminal concept was one of the critical innovations of LAX's masterplan. (Figure 2, Satellite Terminal 3 with Boeing 747 at runway side, 1970). By building the passenger channels below the apron, the dispersed Satellites allowed flexibility around the airplane (airside) operations. Separate baggage channels created a series of tunnels below the apron, connecting the Satellites. While the planners were aware of the new aircraft dimensions, many other questions would have been theoretical such as refueling time, baggage unloading times, and other operational questions. In early drawings of the Satellites the airplanes were docked within the footprint of the buildings, injecting their noses within the building perimeter. Eventually the Satellites incorporated jet-bridges into their plans. San Francisco airport was the first to install a jet-bridge only in 1959, resolving the problem of accommodating weather-protected access to airplanes of various sizes. (San Francisco International Airport Website.)

Satellites 7 and the linear Terminal 8 were the first buildings from the master plan to open, in the summer of 1961. United Airlines at the time operated "more flights through Angeles International than any other line and the only [airline] to be assigned two satellites". (Hawkes, 40) While seven Satellite buildings were planned only six had been constructed by the end of 1961. Because the Satellites were detached buildings, this separation allowed flexibility. Each lozenge-shaped Satellite, 178' wide and 308' long, contained two escalators at its center bringing passengers from

the connecting channels to a central core. This arrival point housed restrooms and mechanical functions and opened to concession areas at the capsule's short sides. Despite their flexibility as detached buildings, modifications to the Satellites occurred swiftly to meet the demands of the jet-age.

4.2 Continual Change

By 1969, plans were under way to add a large square hall to Terminal 7's runway-facing south end to accommodate the larger Boeing 747 aircraft, whose size would make maneuvering between terminals challenging. By 1980, plans to connect the Ticketing Hall to Terminal 7 with the aptly named Connector building, would obviate the need for the below grade channels. While the Satellites evolved, the CTA was also adapted, and by 1964, parking garage plans were underway for lots adjacent to Terminal 5, with additional garages planned in 1965. The horseshoe was on its way to becoming the car-focused hub that passengers continue to experience. The 1984 Olympics created a deadline which transformed the CTA into the model of modern airport circulation, bifurcating arrivals and departures traffic. Above-grade Connectors joined the Satellite terminals to ticketing, and LAX's transformation was completed when the massive roadway infrastructure project added the upper level road for departures while designating the lower level for arrivals, where the below-grade baggage handling was adjacent to arriving passengers collecting their luggage.

4.3 Theme Building

At the center of the CTA is the iconic Theme Building whose "Host International Gourmet Restaurant" was suspended within two intersecting 131' tall arches (Figure 3, Theme Building). Design credit for the building has often been misattributed to Paul R Williams (probably both due its fame and to the great number of architects involved in the design of the airport) with the design concept developed by James Langenheim who worked at Pereira & Luckman. (Steele, 191) The building has come to symbolize Los Angeles in popular culture, but its usefulness beyond an icon has been marginal at best.

The building is effectively two structures: a base cylinder surrounded by a 26' tall white, precast-concrete screen, and above it, the saucer suspended by heroic arches. A slender cylinder containing the vertical circulation core connects the two structures. The 27,000 square foot ground floor cylinder was generically labeled "concessionaire" in the original construction drawings, with only a barber shop and bank identified. The USO now occupies approximately half the base, with the remainder unused. Programming the building remains a significant challenge since it is disconnected from the terminals and located pre-security. Currently, the saucer and its rooftop observation platform are unoccupied, and despite an

earlier seismic upgrade, the building's future occupancy remains tenuously dependent on another seismic retrofit to comply with current code.

5. LAX TODAY

A primary cost driver for upgrade work to any existing airport project is constructing while maintaining operations. Preserving passenger flow during construction means building temporary security walls, adding temporary mechanical systems, continuous night-shift work, and careful phasing. United Airlines has occupied Satellite Terminal 7 since its original construction in 1961, and within the competitive airline industry, determined that maintaining an operational terminal was economically essential. Not all the Satellites have survived, and at the time of this writing Terminal 5's Satellite is being demolished (Figure 4. Demolition of Satellite Terminal 2), meaning that by 2026 only Terminal 6 and 7 Satellites exist in some form. While this may seem minor, for any airport building to survive over fifty years of continual use is remarkable. At Terminal 7, total demolition and reconstruction, although more efficient architecturally, would have taken 13 gates out of service for at least two years.

The story of LAX continues and its original strength was a dispersed plan with independent satellite buildings, below-grade parking, and connecting tunnels that supported incremental expansion.

I served as Project Manager for Krueck Sexton Partners, design architects for the Terminal 7 and 8 redevelopment with HNTB as Architect-of-Record. We are now leading improvements to the CTA arrivals roadway, where I serve as Lead Technical Architect. Our firm is also collaborating with Corgan and PGAL on the new Terminal 5, slated for completion in 2028, though I am not part of that team.

The 1984 Olympics helped realize Pereira and Luckman's early vision of a multi-layered airport. With the 2028 Olympics approaching, LAX is again preparing for renewal. Much of that future remains rooted in elements of the original design, including the CTA's parking logic, the adaptability of the remaining Satellites, and the Theme Building's untapped potential. With the APM scheduled to open in 2026, Pereira's vision of a multi-level, convenient airport lives on.

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BIOGRAPHY

Juan M. Villafañe is an architect and partner at Krueck Sexton Partners

in Chicago. He earned his Bachelor of Design with Highest Honors from the University of Florida and a Master of Architecture from the Harvard Graduate School of Design. Early in his career, he explored craft through self-fabricated wood and metal details before advancing to mega-scale projects such as the SkyPark at Marina Bay Sands in Singapore and multiple modernizations at LAX. Juan is dedicated to improving the urban environment and serves as co-chair of ULI Chicago's Public Policy Committee.

IMAGES AND IMAGE CAPTIONS

Figure 1. Pereira and Luckman, Welton Becket & Associates, and Paul R. Williams, LAX Masterplan, Los Angeles, United States, Constructed 1961, Aerial View of Los Angeles Airport. © Credits (Los Angeles Times Photographic Collection, Bruce H. Cox, 1966).

Figure 2. Pereira and Luckman, Satellite Terminal 3, Los Angeles, United States, Constructed 1961, Aerial View of Satellite Terminal 3 with 747 at its North side. © Credits (Los Angeles Times Photographic Collection, John Malmin, 1970).

Figure 3. Pereira and Luckman, Theme Building from APM, Los Angeles, United States, Constructed 1961, Unoccupied Theme Building. © Credits (Photo by Author, Juan M. Villafañe, 2023).

Figure 4. Pereira and Luckman, Satellite Terminal 2, Los Angeles, United States, Constructed 1961, Demolition of Satellite Terminal 2. © Credits (Los Angeles Times Photographic Collection, George R. Fry, 1988).