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DEDICATION

This dissertation is dedicated to my parents, John R. Kiely III and Pamela J. Oatis, to my brother R. Broer Oatis, and to Elizabeth Shelly, the mother who I have known only in spirit. And, of course, to my beloved four-legged companion, Maija, who has seen each step of this dissertation process come to fruition from that first snowy winter we found each other. All of your perpetual support has made every pursuit in life much more enjoyable, and this dissertation is no exception. Thank you for helping to strategize, to succeed in, and to escape the rigors of academic life.
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ABSTRACT

The office of Minoru Yamasaki and Associates (MYA) was an important actor in twentieth century American architectural production, yet Yamasaki himself appears as an ambiguous figure in postwar architecture. Until recently, practicing architects and historians alike have largely overlooked MYA’s many contributions, dismissing them as overly corporate or without significant formal innovation. At the same time, Yamasaki’s status as a Japanese-American growing up during WWII has been largely overlooked. Reconsidering MYA’s projects through the thematic lens of itinerancy and displacement, the dissertation explores connections between architecture and Cold War diplomacy, international travel, and global economic development. Over the course of four chapters, I examine the firm’s designs for airports, hotels, apartment, and governmental buildings as emblematic of global capitalism—but also as constitutive of new forms of global political and economic relations. Each building-centered case study discloses important partnerships constituted among architects, city planners, developers, private corporations, and foreign governments that influenced the production of American-designed buildings on a range of global sites. Looking beyond the World Trade Center and the Pruitt-Igoe public housing project, the dissertation reveals how MYA constructed postwar America in a global setting—at home and abroad—even as the figure of Yamasaki himself ambiguously reflects the costs of U.S. hegemony.
INTRODUCTION
Architecture, Global Mobility, and the Infrastructure of Itinerancy

In spite of his firm’s many successes, few architect’s achievements have been more publically mired in public destruction than those of Minoru Yamasaki. From the ill-fated Pruitt-Igoe Public Housing project in North St. Louis (Figure 1) to the World Trade Center in Lower Manhattan (Figure 2), Yamasaki’s prolific career is framed by what historian Emmanuel Petit has called, “world historical irony.”1 In the early pages of his title, Petit appeals to his readers, asking, “Can I submit that the ironic era of architecture started on 15 July 1972 at 3:32 PM, and ended on 11 September 2001 at 8:46 AM?”2 Using Yamasaki’s twin projects to frame his argument, Petit suggests further,

The strike on Yamasaki’s towers was an assault on modernist positivism, according to which reality can be steered, even engineered, if only sufficiently ‘scientific’ methods are followed. Yet the instrumental idealism of twentieth-century modern architecture took a hit both in St. Louis and on 9/11; after witnessing the fatal inversion of the good intentions of modernity, irony’s anti-positivism became the quasi-theodicean redeemer for architecture; that is, irony could bridge certain conceptual inconsistencies that arose in the confrontation of abstract thought with real time and space by making them conscious and manifest—often through

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1 Emmanuel Petit, *Irony: Or, the Self-Critical Opacity of Postmodern Architecture* (New Haven and London: Yale University Press, 2013), 3-4. In a section of the introduction entitled, “Towering Irony,” Petit discusses at length the juxtaposition between the *Village Voice*’s assertion in early 2001 the term “irony” appeared more frequently in the *New York Times* than it had in 1980. Later that year, following the events of September 11, and that of journalist Roger Rosenblatt, who suggested in a *Time* article that the one good thing that might come of the tragedy was “the end of the age of irony.”

2 Petit, *Irony*, 6
irony’s recurring spatial motifs of the labyrinth, the ruin, the fragment, and the scaffold.³

In the pages that follow, I argue that Yamasaki, and more importantly, Minoru Yamasaki and Associates (MYA), operated in the interstices between architectural modernism and postmodernism, neither fully rejecting the former, nor embracing the core tenets of what became to be known as the latter. Pruitt-Igoe and the World Trade Center offer architectural historians a central window into this disciplinary shift, ironic or otherwise: Pruitt-Igoe is without doubt a product of CIAM-era principles imported into the Midwestern United States. The World Trade Center, on the other hand, is the product of a Midwestern-based architect of international renown inserted into the dense fabric of Lower Manhattan; its surface treatment was too austere to be part of postmodernism’s wide-ranging ambition, and yet also precluded it from being truly modern. In short, the World Trade Center was truly ironic: it was at the same time a “both/and” and a “never was.” Neither project was a beloved architectural icon during its respective lifetime, and yet both have had a greater impact in their shared legacy of destruction. This, I propose, stands in stark contrast to Yamasaki’s own career, which was filled with more commissions and speaking invitations than the firm or the architect could reasonably handle, but whose legacy has been overlooked by architects and historians for too long.

Pruitt-Igoe and the World Trade Center may no longer be standing, yet the image of each project has made an indelible mark on history. Thanks to historian-theorist Charles Jencks’ bold assertion that modern architecture died at 3:32 PM on July 15, 1972 with the demolition of the public housing complex in the opening lines of The Language of Postmodern Architecture (1977), complete with vivid illustration, architects and students of architecture will forever recognize the project in its final moments (Figure 3). Similarly, the image of the United Airlines

³ Petit, Irony, 7
Boeing 767 flying into the South Tower of the World Trade Center while the North Tower billowed thick smoke into the September sky is an image that is both immediately recognizable and impossible to forget (Figure 4). The events of the day also prompted an unprecedented move: the Federal Aviation Administration halted all air traffic into, across, and out of the United States. Global itinerancy, as it intersected with the United States, encountered a momentary, but unprecedented, delay. And Yamasaki’s greatest achievement was taken down through the co-opting of commercial airliners by terrorists, turning modern feats of engineering against the country that produced them. The two powerful images that are in public circulation highlight an unusual situation: an architect’s career that is bookended by mass destruction and for whom the active demolition of his buildings are the very images by which they are best recognized. As a discipline, architecture lives on in both projects’ shadows.

September 11, 2001 at 8:46:40 AM

Like Pruitt-Igoe, the World Trade Center is remembered by the timestamp of its destruction when the first aircraft hit the North tower at 8:46:40 AM on September 11, 2001, forever changing global commerce, foreign diplomacy, and international travel. Originally commissioned by the Port Authority of New York and New Jersey in 1962, the World Trade Center was designed and constructed over a period of eleven years. From the beginning, Yamasaki and his team of designers were faced with myriad challenges, not the least of which was the small area of the site and the tight blocks that made up Lower Manhattan. Yamasaki saw this challenge as “a unique opportunity to create a group of tall and low buildings, combined with a significant expanse of open space at ground level,” although the main pair of towers that were to be a focal point of the project would be astoundingly tall, a fact that concerned the
architect and his associates. These early concerns about the sheer scale of the buildings were allayed by frequent visits to the Empire State Building in Midtown, reassuring the architect who later explained that with time “one becomes as comfortable standing next to a 100-story building as one forty stories high…” He suggested his associates do the same, and they too became convinced that “there was no diminution of the soul, no antlike feelings in the face of such a large object. Man had made it and could comprehend it, and its parts could be understood to relate to its whole.” Although the towers were loved by some, the project had many critics.

One of the more pointed debates between an architect and his or her critic might be that which arose in a series of strongly-worded newspaper columns and letters between Huxtable and Yamasaki during the World Trade Center’s construction. As early as 1966, in an article entitled “Who’s Afraid of the Big, Bad Buildings?,” Huxtable enumerated the many issues that plagued the architects, engineers, and planners as they sought design approval: opponents claimed that the buildings’ sheer size would “break the skyline” and be “barbaric, oversized wreckers of scale and sunlight” in lower Manhattan. However overwrought the criticism may have been, the World Trade Center did indeed tower above the city’s skyline as an unquestionable monument to power and wealth, and became the most visible landmark in the city for passengers arriving in New York by air. Given Yamasaki’s own rhetoric towards a human-scaled architecture, the architect struggled to reconcile the monumental demands of the World Trade Center. Nevertheless, the high demands for leasable floor area placed on the architect and his team by the clients, coupled with the small site, required that the architects create a pair of towers at an

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4 Yamasaki, *A Life in Architecture*, 115
outsized scale, or what a *Los Angeles Times* reporter called, “a monumental change in the façade of the nation’s largest city.”

By 1973, when the Twin Towers were completed, Huxtable published what was perhaps her sharpest criticism of the project, calling it “big, but not so bold.” Admitting the impressive scale and technological achievements of the towers, but noting the particular—and perhaps surprising—attention to the human scale, a signature move for Yamasaki, Huxtable criticized the project as decorative, disparagingly observing,

> These are big buildings, but they are not great architecture. The grill-like metal facade stripes are curiously without scale. They taper into more widely spaced columns of ‘Gothic trees,’ a detail that does not express structure so much as tart it up.\(^7\)

Huxtable asserts further, seemingly blaming the clients as well as the architects, “The Port Authority has built the ultimate Disneyland fairytale blockbuster. It is General Motors Gothic.” This was neither the first nor the last time people likened Yamasaki’s arched fenestration to an abstracted and appropriated Gothic arch, however, it was an assessment with which he did not agree. Whether or not Yamasaki’s inspiration for the arch form was Gothic, which is up for debate, the World Trade Center is assuredly an outsized megastructure:

> As design, the World Trade Center is a conundrum. It is a contradiction in terms: the daintiest big buildings in the world. In spite of their size, the towers emphasize an almost miniature module—3 feet 4 inches—and the close grid of their decorative facades has a delicacy that its architect, Minoru Yamasaki, chose deliberately.\(^8\)

Yamasaki, troubled by Huxtable’s interpretation of his work, responded to her column in a lengthy letter, written in numerous drafts, and with the advice of several colleagues. Turning to literary quotation to defend the formal attributes of the World Trade Center’s façade, the

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8 Huxtable, “Big, but Not So Bold”
architect called upon Ralph Waldo Emerson’s writings on beauty from the 1860s to describe his formal moves as a result of structural performance and efficiency. To this end, he quotes, “the line of beauty is a result of perfect economy...our art saves material by more skillful arrangement; and reaches beauty by taking every superfluous ounce that can be spared from a wall and keeping its strength in the poetry of columns.” This approach, Yamasaki claimed, was the inspiration for making the facades load-bearing and efficiently transferring the load to the ground, while still allowing an open and airy space for people and goods to pass through. He continued, “This delicate wall, which you call ‘dainty,’ is not only a very beautiful truss, but carries spans of sixty and thirty-seven feet...To me, this is one of the gifts of our technology...”

The marriage between structural efficiency and MYA’s brand of formal expression that relied on generalized historical forms and cultural references was much embraced by his corporate clients.

Although Huxtable and Yamasaki’s dispute over the project’s formal and structural choices was never entirely resolved, it provides a backdrop for understanding the myriad conflicting interpretations of the project that continued to accumulate throughout its existence. Yamasaki concluded his defense by offering that it would be the users of the building who would ultimately decide its worth: “I am not implying by this letter that these buildings are great. That is perhaps for neither of us to say, but for the people to decide during the many years in which the buildings will live.” A few weeks later, Huxtable replied, closing the debate, “You are the architect, and I am the critic, and it is an honest parting of the ways.” Of course, neither Yamasaki nor Huxtable could have predicted the twin towers’ short lifespan of only twenty-eight

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9 Ralph Waldo Emerson, as quoted in, Minoru Yamasaki, letter to Ada Louis Huxtable, April 10, 1973. Retrieved from “Minoru Yamasaki Papers” Box 13, Folder 14, Archives of Labor and Urban Affairs, Wayne State University
years. The very buildings that were once considered symbols of U.S. prosperity, and intrusions into Manhattan’s skyline, suddenly became politically-charged lacunae that singlehandedly challenged the United States’ worldwide political dominance.

It is perhaps in this context, then, that we might reconsider the World Trade Center, and the criticism of the project that came only after the towers were destroyed. Architectural critic Paul Goldberger has argued that the reception of the World Trade Center began with outright resentment, followed by reluctant acceptance, but the towers were never truly admired as architectural specimens, even in the wake of their demise. For Goldberger, as with Huxtable, the buildings were just too big, even if they did have a commanding presence with some positive attributes. Given the extensive use of metal in the facades, and relatively minimal amount of fenestration, the buildings “did wonderful things in the light; they reflected the warm sunlight of dawn and dusk especially well, but at all times they shimmered, and their texture gave them a richness that people did come to value.”\(^{13}\) But this alone was not enough to propel them into favor with architectural critics. As Goldberger viewed it, their outsized scale rendered them a modern paradox:

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\text{…the towers represented an ideal of modernity that seemed to communicate most effectively to people who were not particularly interested in modernity, if not outright hostile to it. Their hugeness and simplicity made them almost a cartoon version of gargantuan modern architecture—and as such, all the more attractive to tourists, who took pleasure in riding to the top of the buildings, and all the more pernicious to those who saw in them all of the evils of modern culture.}^{14}\]

Although architectural critics may not have revised their opinions following the towers’ destruction—and why should they?—the towers suddenly became a symbol of “American” freedom and prowess for many.

\(^{13}\) Paul Goldberger, \textit{Why Architecture Matters} (New Haven: Yale University Press, 2009), 175
\(^{14}\) Goldberger, \textit{Why Architecture Matters}, 177
As I examine in the chapters of this dissertation, borrowed architectural elements, historical references, and a reliance on a cultural imaginary were essential components of Yamasaki’s practice, though their employment was not exclusively the domain of MYA. With little exception, the architectonic borrowing employed by Yamasaki and his firm is not one of direct mimesis, but instead a kind of adaptation of elements inflected through the architect’s interpretation and application to a building in another programmatic or geographic context. In a certain sense, like his own public identity as an architectural “brand”—which was largely constructed through Yamasaki’s frequent portrayal as an “exotic other” in the popular and architectural press, his design aesthetic was engineered from within his own creative expertise and from his travels to places as disparate as France, Japan, and Iran. In addition, MYA’s brand of architectonic borrowing in buildings across the United States delighted the firm’s corporate clients with a showy, over-the-top aesthetic that in some cases bordered on the excessive. In still other ways, his work might be understood today as a kind of “orientalization” of U.S. late modern architecture, similar to how he was frequently portrayed in the media.

When Minoru Yamasaki appeared on the cover of TIME magazine on January 18, 1963, it was the eighth time the editors of the weekly publication had selected an architect for this honor (Figure 5). The Detroit-based Japanese-American architect joined Richard Neutra (1949), fellow Detroiter Eero Saarinen (1956), Le Corbusier (1961), and four others, in this prominent and public placement in American media.\(^{15}\) The highly stylized cover was produced by Russian-American illustrator Boris Artzybasheff (1899-1965), who frequently illustrated Henry Luce’s

\(^{15}\) If you include Daniel Liebeskind’s appearance in 2005, in TIME’s 94-year history, only twelve architects have ever been featured on the cover. The others include, Ralph Adams Cram (1926), Frank Lloyd Wright (1938), Wallace Harrison (1952), Ed Durell Stone (1958), William Pereira (1963), Buckminster Fuller (1964) and Phillip Johnson (1979).
publications, including *Life, Fortune, Architectural Forum*, and *TIME*, between 1941 and 1965.\(^{16}\)

Yamasaki’s head sits roughly centered, unconnected to a neck or body, as if he were floating above a reflecting pool of his own design, unlike earlier covers that represented architects as classically sculpted marble busts. Despite this departure, in a similar fashion to other *TIME* covers produced by Artzybasheff, the Yamasaki cover is playful, rather than serious. But in Yamasaki’s case, part of the architect’s chin is covered with a fountain modeled after an eight petaled lotus flower, a design from the reflecting pools at the Federal Science Pavilion complex in Seattle, that reads more like an Oriental fan shielding Yamasaki’s face than an architectonic detail. To represent Yamasaki in this manner was to emphasize his Asian ethnic identity over his American national identity, effectively treating him as a foreigner or outsider. Only eighteen years prior, he and his family—along with countless other Japanese-Americans living in the United States—had been forced to register as foreign agents during World War II. In both cases, he is treated simultaneously as an insider and an outsider.

Yamasaki himself embraced this identity, at least in part. During a trip around the world, a formative visit to India in 1954 cemented an important element of Yamasaki’s approach to design, which often included elements of “surprise, serenity, and delight”—three terms he frequently used to describe his work in lectures and writings. When comparing two formidable architectural experiences on his trip, Yamasaki reflected on the Taj Mahal, a building he once called “a vision,” recounting the lengthy procession to reach it amid reflecting pools and tree-lined paths. On the other hand, after a visit to Le Corbusier’s High Court in Chandigarh, the architect noted that from afar it appeared to be “absolutely magnificent…but as you come closer, it becomes overpowering. Its concrete surfaces are brutally crude.”\(^{17}\)

\(^{16}\) “Boris Artzybasheff Papers,” Special Collections Research Center, Syracuse University Libraries.

\(^{17}\) “The Road to Xanadu,” *TIME* (January 18, 1963): 54
Reacting against the hard lines of modernism, Yamasaki attempted to soften what he deemed overly austere and monumental—as much of the work of Le Corbusier. The manner in which he described his aesthetic and technical ambitions for architecture led designers and critics to link his work with a number of his contemporaries under the loose rubric of “New Formalism” or “New Romanticism.” Although he was not alone in assigning this style designation to architects such as Minoru Yamasaki and Edward Durell Stone, one of the earliest references to New Formalism appears in Marcus Whiffen’s *American Architecture Since 1780: A Guide to the Styles*, which ascribes the following general attributes to New Formalism.18 Such terms point to late modern architectural form that was born of developing architectural practices based on appropriation, or quotation, combined with the architect’s own design sensibilities. For MYA, this drive for individuality ushered in generalized abstraction of historical elements, filtered through the cultural consciousness of the time. Although Yamasaki argued that his work was a blend of tectonic ambition and formal expression, his many critics often pointed to his projects as simple exercises in surface treatment and ornamentation—in some cases even deriding the work as the product of “the spun sugar school of architecture” or liking it to a “decorated wedding cake.”19 At the same time MYA was experimenting with formal expression, there was a growing trend among some firms to explore what became known as an aesthetic of popular taste that

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18 Refer to: Marcus Whiffen, *American Architecture Since 1780: A Guide to the Styles* (Cambridge, MA: The MIT Press, 1969), in particular pages 257-62 including the following definition: “The buildings of the New Formalism are typically self-contained, free standing blocks, with strictly symmetrical elevations. Skylines are level, the building often being defined at the top by a heavy, projecting roof slab. Wall surfaces are always smooth and often glossy, a wide range of materials, natural and artificial, being used for facing. Columnar supports tend to be thicker and more fully modeled than in the International and Miesian styles, while the arc—altogether absent from both of them—appears in various shapes and may constitute the ruling motif of the design. Ornament is employed, most frequently in the form of patterned screens or grills of metal, cast tone, or concrete.”

appeared in projects across the country, in places as disparate as suburban Oklahoma and the Los Angeles Basin.²⁰

The question of popular taste also raises important issues related to signs and signifiers in MYA’s work. On a personal level, Yamasaki eschewed visual cues such as signs, flags or lettering on buildings in favor of a subtler approach to formal cues. In perhaps the most brazen display of this dislike, during the final design stages of his firm’s first tower, the 1963 Michigan Consolidated Gas headquarters in downtown Detroit, Yamasaki simply ignored requests from the board of directors for a sign that read “Gas is Best” placed atop the building. In the concluding moments of his presentation to the board, Yamasaki had the last laugh:

Finally, when the finished model was presented to the directors, Yamasaki was prepared for the inevitable question. When asked about the absence of the sign, Yamasaki said nothing, reaching into his pocket where he pushed a small button connected by a wire to a miniature ‘Gas is Best’ sign which then flashed through his shirt pocket. When the laughter subsided, Yamasaki said smilingly, ‘There is the sign—you can put it on me rather than on the building.’²¹

Although Yamasaki was overtly critical of the sign pasted on as an additive signifier of the building’s purpose, his work for federal government and corporate clients often incorporated

²⁰ Douglas Haskell, editor of *Architectural Forum* and longtime friend of Yamasaki, devoted particular attention to this new relationship between decoration and popular taste. In his 1958 “Architecture and Popular Taste,” Haskell outlines three main rationales for late modern architectural trends. First, he suggests, there was “a popular demand for more decorativeness and romance…what a more sophisticated critic might christen ‘the new Alhambra.’ Second, he saw a need for “a good show” in architecture, or what he later termed, “googie architecture.” And third, Haskell suggested that the public had a growing “desire for an architectural counterpart to jazz,” or more simply, if not more clearly put, a kind of “honky-tonk” architecture. Together, these three ideas form the basis of what Haskell refers to as “the new romanticism, the new baroque, and the new improvisation.” Although Yamasaki’s work combines the three categories, Haskell places his university campus work in the third:

The concrete and beams that will support Wayne’s forthcoming education building are to be prefabricated in the accepted ‘modern’ manner but with a big difference: they will be cast in the form of trees three story high, that will be as decorative in their own way as the columns and spandrels of Venetian Gothic buildings.

If this kind of work continues, Haskell argues, “the public will gain a popular architecture far more thoroughbred than most of its own gingerbread efforts, and, in the long run, far more rewarding.” For many of the architects producing work that embraced or exhibited this kind of popular taste aesthetic, architectural site visits during international travel played a key role in supplying a new decorative vocabulary from which to draw.

identifying elements. In the case of Michigan Consolidated Gas, reflecting pools were surrounded by gas jets emitting blue flames, and the lobby ceiling incorporated blue, further underscoring the product the company sold. These additions, and other formal attributes of the building, were heavily critiqued by historian Charles Jencks who decried their meaning in 1973, observing, “Gothic fretwork, crown of thorns, the eternal blue flame of the consolidated gas, good High Camp. Here is an attempt to transform urban realities into a nostalgic dream of a classical past; the forms are univalent, simple, and applied. This is ‘failed seriousness’ at its best, most horrible.” Jencks’ dismissive categorization of the firm’s approach notwithstanding, the fact remains that Yamasaki often employed abstracted, vaguely-historical elements as a means to distinguish his authorial signature from the majority of projects built in the 1950s and 1960s.

The rejection of Le Corbusier’s brand of modernism, and the development of a more ornamented sensibility, is reflected in Yamasaki’s built work: following the erection of Pruitt-Igoe Public Housing project on north side of St. Louis, which closely adhered to the tenets of modernist planning and the tower-in-the-park ideology, Yamasaki and his team turned to more ornate application of surface to form. Illustrating this aesthetic turn, the TIME cover features three buildings of Yamasaki’s design along with the architect’s head and floral fountains: on the left is a plastic sun-shading device developed for a YMCA in Northwest Detroit, on the right sits part of the Federal Science Pavilion in Seattle (Figure 6), and at the top of the tableau is the oversized, colonnaded entry portico to the Northwestern Mutual Life Building in Minneapolis (Figure 7). These three projects, though largely unrelated, illustrate the primary strategies

[22] Although these projects predated the Venturi, Scott Brown classification of the duck versus the decorated shed by ten years, in some ways, Yamasaki’s works may be understood as understated decorated sheds. Indeed, both the embassies and Michigan Consolidated Gas are neither pure “ducks”—buildings whose forms mimic its inherent program, as in Venturi and Scott Brown’s example of the Long Island Duckling shed in the shape of a duck which sells duck decoys—or the idealized decorated shed, that is, a simple box with a large and often ostentatious sign—or in their own words, “big sign—little building.” Refer to Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning From Las Vegas* (Cambridge, MA: Massachusetts Institute of Technology, 1972), 12

utilized in Yamasaki’s varied approach to design: in some cases, he found creative solutions in simple yet decorative elements, while in others he relied on structural innovation and monumental form. The former is best represented in the Reynolds Metals Regional Sales Office in Southfield, Michigan, just outside of Detroit, which uses large panels of arrayed gold anodized aluminum pipe sections to create a delicate façade that is both eye-catching to passing motorists and reduces the heat load on the interior office spaces (Figure 8). On the other hand, the 110-storey World Trade Center in Lower Manhattan towered above city dwellers and offered a monumental visual anchor in the Manhattan Skyline—and a bird’s eye view from Windows on the World restaurant at the top.

Over three decades, Minoru Yamasaki, and the firms with which he was involved, designed a number of federally-funded projects, both domestically and overseas, for a wide range of government agencies. Beginning in 1951, the newly-founded pair of firms—Hellmuth, Yamasaki and Leinweber (HYL) in St. Louis and Leinweber, Yamasaki and Hellmuth (LYH) in Detroit—designed the addition to the Federal Reserve Bank in downtown Detroit (Figure 9), a project which was followed by a large, six-story Military Personnel Records Building in St. Louis for the Department of Defense, constructed between 1952 and 1955 (Figure 10). Along with the Pruitt-Igoe Public Housing project in North St. Louis (see Figure 1), these early public commissions were an economic boon for the fledgling firms. Indeed, their principal architects had taken on significant risk leaving an established firm in search of promoting their own design agenda free from the strictures of a corporate architectural office.

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24 In his memoir *A Life in Architecture*, Yamasaki explains that there was one major design flaw in the building insisted on by the client: the omission of a fire suppression system. Although the architects urged the Department of Defense to install a sprinkling system, the client refused, citing that water did far more harm to records than fire. The building was destroyed by fire in 1973, and according to the National Archives, with it about 75-80 percent of its contents.

25 Yamasaki had moved to Detroit in 1945 to take the position of architectural designer at the well-established firm, Smith, Hinchman and Grylls.
The early Federal commissions not only provided an economic lifeline to the young architects, but also afforded the chance for the firm to forge important working relationships with governmental agencies. This in turn helped them establish an early legacy on which each architect was able to capitalize throughout his respective career. This was particularly true for the firm’s two main partners, Yamasaki and Hellmuth. Although they went their separate ways in 1955, after a dispute regarding the St. Louis Air Terminal (discussed in Chapter II), each had a lengthy and productive career. The capstone of Yamasaki’s career might well be the design of the World Trade Center complex in New York as the project, rising high above Wall Street in Lower Manhattan, became a symbol of American economic dominance through the prosperous 1990s—as demonstrated by its importance in advertising campaigns worldwide (Figure 11). But the towers also came to represent the seemingly fragile nature of Western democracy at the time of the World Trade Center’s unexpected destruction in 2001.

From the Aerial View to the Infrastructure of Itinerancy

In the late 19th century, the view from above was newly resonating with a wider public and ultimately fundamentally reshaped architecture and urban planning. With the advent of the Eiffel Tower as the showpiece of the World’s Fair of 1889, people could ride elevators to the top for an approximated aerial view of Paris high above the Champ de Mars. As the nineteenth century gave way to the twentieth, Italian Futurism took up flight as a recurring theme related to destruction, renewal, and rebirth, with F.T. Marinetti’s rousing “Futurist Manifesto” of 1909. Interwar versions of Italian Futurism took on the aesthetics of flight more directly, with painters such as Tulio Crali and Cappa Benedetta (Marinetti’s wife), using the aerial view and the speed inherent in flight as aesthetic drivers in their work that became a part of the “aerofuturist”
movement of the late 1930s. The aircraft helped dislodge notions of fixity and permanence, playing into the Futurists’ love of speed, obsolescence, and the abolishment of institutions.

At the conclusion of World War II, Futurism may have faded into history, but transience took on new meaning. People became more nomadic in their everyday lives, moving from city to city at a frequency unimaginable by the previous generation. As postwar suburban housing divisions were planned and constructed outside cities across the United States, commute times increased and the urban landscape became ever more dispersed across the large countryside. This was, in part, fueled by the individual ownership of automobiles, the expansive Interstate system, and the proliferation of air travel as a more widespread means of mass transportation. In other words, in the 1950s and 1960s, the citizens of United States—and the western world—became newly mobile and part of a growing itinerant group. This form of itinerancy, however, differed greatly from early notions of tribal nomadism inherent to the indigenous people of North America, Africa, and the Middle East who often moved with herds and the seasons in order to maintain vital living conditions. This new modern nomadism was not tied to necessity, but desire.

Although at first glance there may seem little in common with modern architecture and early visions of flight, I argue that this new kind of thinking, literally untethered from the ground plane, allowed architects in the twentieth century to rethink the built environment from a new vantage. Both Le Corbusier’s *Precision: The Present State of Architecture and City Planning* (1930) and his photographic essay, *Aircraft: The New Vision* (1935) spell out an early version of his understanding of the power of aerial views and aerial imagery for architecture and urban planning. This aerial thinking played out in numerous unbuilt proposals in the 1920s and 1930s, and which he revisited in writings in the 1940s, once airports and travel became more

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26 For a particularly recent treatment of this material, refer to the exhibition catalog for the Solomon R. Guggenheim’s exhibition, “Italian Futurism, 1909-44: Reconstructing the Universe,” curated by Vivien Green and which ran from February 21 – September 1, 2014.
commonplace, as discussed in Chapter II. The implications of flight on the built environment has been the subject of recent scholarship. In *The View from Above: The Science of Social Space* (2013), historian Jeanne Haffner employs a spatial critique of capitalism, arguing that the aerial view gave city planners and architects a new mode of rethinking an old problem, namely housing. At the same time, it provided a tool with which to theorize socio-political relationships in the built environment. Similarly, Charles Waldheim built on Jean Baudrillard’s discussion of spectacle and surveillance—“the society of the spectacle has been replaced by the society of surveillance”—arguing that the aerial view opened up new modes of seeing and perceiving the landscape, “especially along the flight patterns of urban airports, trajectories of mass aerial spectatorship suggest the possibility of twenty-first century flyways in much the same way that mass automobile ownership suggested urban drives and parkways in this century.”

More recently, Sonja Dümpelman’s research on landscape and the aerial imagination in *Flights of Imagination: Aviation, Landscape, Design* (2014) has convincingly shown the role of the airport as both an object of the landscape and a major driver of the modern economy—and in some cases, decommissioned airports have even been returned to the landscape as public parks and greenspaces.

In addition to providing the new vantage afforded by the aerial view, air travel is also implicated in the development of postwar architecture and the rise of the global architectural firm. Without commercial aviation, firms such as Minoru Yamasaki and Associates, and thousands of others, never would have competed for commissions and complete projects in locations remote

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28 Sonja Dümpelman, *Flights of Imagination: Aviation, Landscape, Design* (Charlottesville, University of Virginia Press, 2014). Spatially, airports have to be considered as hybrid architecture, landscape, infrastructure-based projects as they involve considerable measures from each of these disciplines.
from their offices. Many of these large-scale commissions involved designing and building new airport terminals, railway infrastructure, entirely new cities and towns, large-scale office complexes, embassies and consulates, along with hotels and high-rise housing. Flight allowed architects to work on multiple continents at the same time, and their work in turn produced new opportunities and new markets in public and private sectors. In other words, the postwar global architectural practice was both made possible and shaped by the rise of commercial aviation, and at the same time, the architects and engineers of these firms shaped the architecture of travel, foreign diplomacy, and global economic exchange. It is through these exchanges and developments that one can begin to track an emergent “itinerant architecture” that forms one significant part of an infrastructure of itinerancy.

With the theme of itinerancy in mind, I explore how the mandates of air travel, economic growth, and political ambition begin to engender a new form of U.S. global imperialism. Over the course of four chapters focusing on the work of Minoru Yamasaki and Associates and relevant comparanda, I examine the architecture of these newly itinerant professionals, which includes airports, hotels, apartment, and governmental buildings that dot the landscape, and which have become emblematic of global capitalism. Each building-centered case study presented below offers new insights into important partnerships between architects, city planners, developers, private corporations, and foreign governments that influenced the production of American-designed buildings. Looking beyond the World Trade Center and Pruitt-Igoe, I reframe MYA’s contributions to late modern architecture, revealing how they simultaneously reacted against and constructed postwar America in a global setting—at home and abroad. In so doing, I embed Yamasaki’s many built projects in twentieth century architectural history as read through the theme of itinerant architecture. Through an analysis of archival material, buildings,
and texts, this project reveals reciprocal tensions between capitalist aims, design, and foreign diplomacy in an era of unprecedented global interaction and exchange. Architecture is one of the physical manifestations of this otherwise largely invisible trend.

Chapter I, “Architecture’s Expanded Role: U.S. Consulates and World’s Fair Pavilions During the Cold War, 1952-69” explores three core federal commissions and one unbuilt proposal through which Yamasaki participated in the exportation of modern American architecture and design through the embassy-building program and world’s fairs in the decade after World War II. First, the United States Consulate in Kobe, Japan (1954-5) became an important symbol of political unity and reparations between former enemies after the war. Secondly, a last-minute commission from the U.S. Department of Commerce for the 1959 U.S. Pavilion at the World Agricultural Fair in New Delhi helped the United States avoid being publicly upstaged by the Soviet Union and other Communist nations at the first major fair focused on agriculture—an event in which American officials initially had not planned to participate. And lastly, in his hometown of Seattle, Yamasaki joined a long list of architects and designers hired to design the pavilions and infrastructure for the Seattle World’s Fair. Alternatively known as Century 21, the fair was intended as a grand display of U.S. advancement in science, culture, and technology with Minoru Yamasaki and Associates’ Federal Science Pavilion occupying a prominent position. The chapter concludes by considering a fourth, unbuilt proposal for the Interama fair in Miami, intended to be a major public-private partnership that would channel growth into the South Florida Region. Taken together, the projects set the stage for an exploration of the tension between scale, form, and program that plays out throughout MYA’s existence, arguing that even though Yamasaki referred to his practice as “American contemporary technological design,” the formal references made in the firm’s work were
everything but American. Formal and scalar tension are continuously complicated by newer, larger, and more complex projects in the chapters that follow.

The second chapter, “Tension in the Terminal: Iconic Form vs. Infinite Expandability, 1952-69,” explores the development of airport terminals in the United States for both public and private clients. The chapter focuses on three projects: the 1952 renovation of a Detroit-Willow Run airport hangar for passenger use, the 1956 St. Louis Air Terminal that invoked the drama of flight through form and gesture, and Eastern Air Lines’ Terminal A at Boston Logan, which re-imagined airport architecture by focusing on the efficient handling of bodies in space. In this chapter, the client figures as an important collaborator in architecture’s image and its organization. The tension between the formal ambitions of the firm and the functional expectations of their clients plays out in a series of formally distinct case studies across the United States, designed and built between 1951 and 1970. Whereas the St. Louis terminal—commissioned primarily by the municipal government—was considered a symbol of the city’s growth and prosperity, the Boston terminal functioned as an icon for its corporate patron. The chapter concludes by considering Yamasaki’s contribution to airport design at a time of rapid change, in relation to comparable projects by Eero Saarinen, John Carl Warnecke, and Hellmuth, Obata and Kassabaum. The chapter extends early discussions of form and tectonics from the first chapter, adding in the complexity of infinite expandability, corporate identity, and rapid obsolescence of type. Although it is often difficult to find a singular, unifying thread in MYA’s work, this chapter illustrates how the firm consistently played with form, construction materials, and techniques to create projects that were vastly different from one to the next, emphasizing the firm’s attitude towards form and expression.
Chapter III, “Satellite, Line, and Pier: Yamasaki and the Internationalization of U.S. Modern Architecture, 1958-90” examines the years following World War II, when the United States forged a close relationship with Saudi Arabia through architecture and design, which had a significant impact on socio-political relations. In addition to new diplomatic efforts, there was an equally important trend of U.S.-led design and construction across the globe championed by the private sector. In Saudi Arabia, this was driven by large-scale oil production and the desire by the United States to maintain a presence in a key region during the Cold War. Focusing on design as an object of export, this chapter examines the roles that the Army Corps of Engineers, MYA, and Bechtel Engineering played in the development of Saudi Arabia’s infrastructure for international trade. Yamasaki’s designs for the Dhahran Civil Air Terminal (1958-61) and proposals for its replacement—King Fahd International Airport in Dammam (1977-99)—were key elements in this endeavor, and added to the growing list of projects and proposals by architects such as Kenzo Tange and Edward Durell Stone in Saudi Arabia, Kuwait, and Algeria. The projects in Chapter III can be understood as an extension of the issues raised in previous chapters on the international stage, with the new implications of global politics and the rapid expansion of petroleum production and the capital associated with it. Although the airport projects incorporate elements of formal expression found in New Delhi and Kobe, there is also newfound interest in infinite expandability to accommodate rapidly changing modes of travel, combined with the logic and efficiency of construction present in the Boston terminal. These issues are further complicated by scale, extreme weather conditions, and the challenges posed by constructing in a relatively remote region of the world in times of political instability. At its core, the chapter argues for the shift in architectural practice, from a boutique approach to an infrastructural one, both in terms of the buildings, as well as how they were produced. In the
process of rapid scalar and technical expansion, terminals became functional tools, rather than expressive objects of design. In addition, the firms that produced them became one small part of the larger infrastructural hierarchy.

The final chapter, “From Permanence to Transience: Global Migration and the Infrastructure of Domesticity, 1959-80,” examines the relationship between modern architecture and transient domesticity, focused on the international hotel and apartment tower. Developed to support the needs of global capitalism, the architectural type of the high-rise hotel and housing tower reifies often-invisible economic and political forces that shape the environment. Through a series of focused case studies, this chapter argues that the aggregation of individual apartments and hotel rooms transformed the domestic into the infrastructural by looking at hotel and housing projects in California and Hawaii. The projects were largely a response to the rapid influx of tourism and the ensuing pressures put on the local housing markets as a result of increased mobility. This kind of tension was apparent in modern architectural projects across the country, including Pruitt-Igoe. The chapter concludes with a discussion of the decline and demolition of Pruitt-Igoe, in relation to housing, the postwar American boom, and gentrification in urban areas raised in the MYA-designed projects in California and Hawaii. Through the projects examined in this chapter, I argue that itinerancy frays into two distinct outcomes: the itinerant individual—whose mobility stems from his or her own agency in the decision—versus the displaced individual—who has little to no say in their movement—and how these two opposing forces became a quintessential part of the postwar American social and architectural landscape.

Throughout the dissertation, I also engage a wide range of scholarship, from late modern architectural histories to contemporary examinations that treat issues of travel, politics, and glamour in architecture. Annabel Jane Wharton’s *Building the Cold War: Hilton International*
Hotels and Modern Architecture (2001) offers a critical examination of the rise of the international hotel typology across the globe, focusing on Hilton International’s rapid expansion in the latter half of the twentieth century. “The Hilton was often the first significant Modern structure in its host city, as well as its finest hotel.” This, however, was not done without a significant impact on the host cities. Large Hiltons often replaced the old, landmark hotels of a rapidly disappearing era, which in turn impacted the built and social environment of the cities in which they were constructed: “The contrasts between the grand hotel of the past and the Hilton of the mid-twentieth century register the transformation of consumable space...The establishment of the Hilton—sometimes in conjunction with a new American embassy—modified the civic order.” In American Glamour and the Evolution of Modern Architecture (2010), Alice Friedman has convincingly shown the relationship between architecture and a growing consumer-based society that was increasingly focused on glamour, luxury, and spectacle. This played out at a variety of scales and through a number of distinct building types, including airports, sprawling estates, opulent hotels, and the architecture of Madison Avenue. Conspicuous consumption was exhibited by the architecture itself, as well as by its inhabitants. Furthermore, through Jane Loeffler’s The Architecture of Diplomacy: Building America’s Embassies (1998), we are presented with an exhaustive examination of the Embassy Building Program that promoted modern architecture as a symbol of U.S.-led prosperity, transparency, and democratic ideals across the globe.

The prominence of architectural modernism and postmodernism largely overshadows the important developments architecture owes to Late Modernism, and specifically to the contributions of Minoru Yamasaki, Edward Durell Stone, Eero Saarinen, Gunnar Birkerts, and

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30 Wharton, Building the Cold War, 3
Paul Rudolph, among others—all architects central to the formation of a late modern American architectural form. The expressive forms employed by these architects were often borrowed or appropriated from historical or cultural sources far from the site of the project in question, as with Durell Stone’s U.S. Pavilion in Brussels (1958), Rudolph’s Jewett Arts Center at Wellesley College (1955-58), and Yamasaki’s Helen DeRoy Auditorium (1959) on Wayne State University’s campus in Midtown Detroit. Renewed interest in their contributions to the late modern architectural landscape have given scholars and students insight into the lives and careers of several key figures, including the edited volume, Phillip Johnson: The Constancy of Change (1999), Mary Anne Hunting’s Edward Durell Stone: Modernism’s Populist Architect (2013), and most recently, Timothy Rohan’s The Architecture of Paul Rudolph (2014), each of which enriches our understanding of the years between modernism and architectural postmodernism. In addition, sources such as John Harwood’s The Interface: IBM and the Transformation of Corporate Design 1945-1976 (2011) and Reinhold Martin’s The Organizational Complex: Architecture, Media and Corporate Space (2003) have helped shape how I consider the relationship between architectural form and identity in the work of MYA. These themes play out in both corporate projects as well as those commissioned by the Federal government. Scale and megastructure become important underpinnings of the projects explored in Chapter III, where Reyner Banham’s Megastructure: Urban Futures of the Recent Past (1976) plays a key role in understanding how the MYA-designed projects fit into larger global trends.

Until recently, however, there has been little scholarship on the life and work of Minoru Yamasaki, outside of his own autobiographical monograph A Life in Architecture (1979), which covers the architect’s early life and highlights from his career through 1979. Shortly after the events of September 11, 2001, David L. Salomon’s article, “Divided Responsibilities:
Architectural Authorship and the World Trade Center” (2002), appeared in Grey Room, exploring the relationship between heroic modernism, the “master builder,” and Yamasaki’s involvement in the design of the World Trade Center in the aftermath of its tragic destruction. Other books in the popular press discussed these events at length, but with little emphasis on the firm behind the project. More recently, the lack of scholarship on Yamasaki has begun to change with scholars’ renewed interest in MYA’s extensive body of work. In 2014, an issue of CLOG was dedicated to the World Trade Center and attracted the interest of historians and architects alike who submitted short, blog-length visual and textual analyses of the project. And in 2015, journalist and author John Gallagher’s Yamasaki in Detroit: A Search for Serenity presented a colorful snapshot of the architect’s life and career focused on MYA’s buildings in the Detroit area. Most significantly, architectural historian Dale Gyure’s monograph, Minoru Yamasaki: Humanist Architecture for a Modernist World (2017), provides a detailed examination of the architect’s life and prolific career focused on the humanist aspects of Yamasaki’s design praxis, from his early days in Seattle through to his death in 1986. The book is organized across seven chapters which span the architect’s lifetime, and each project is presented roughly in chronological order under broad themes, such as “A New Direction” and “Tall Buildings.” The chapters navigate what is undeniably a knotty career full of formal and technical twists and turns, and provide an excellent introduction to the extensive portfolio of Yamasaki and his firm’s many projects.

This dissertation builds on Gyure’s reclaiming of the architect’s career by focusing less on the individual and more on the output of the firm, Minoru Yamasaki and Associates, and their approach to formal and tectonic expression. I present the first thematically-based examination of MYA, providing the opportunity to delve deeper into the pavilion, airport, and hotel projects that
align with the theme of itinerancy and its many implications for global modernism. As a result, I am able to include important, lesser-known projects that are largely absent from Gyure’s title, including the Willow Run Air Terminal renovation and Queen Emma Gardens in Honolulu. In the process, I have attempted to avoid a celebration of authorship and focus on architectural history as a complex intersection of many visible and invisible forces, much like the act of building itself: it is rarely the work of a single individual, but rather that of a team and an often messy process. We might recall that the shift from a notion of the master builder to a network of labor was first identified in Henry Russell Hitchcock’s 1947 “The Architecture of Bureaucracy and the Architecture of Genius.” The production of history is similar and deserves a more complex register that includes both the physical projects and their cultural, economic, and political underpinnings during the politically-charged decades of the Cold War. At the intersection of international travel and architectural form, the buildings designed by Minoru Yamasaki and Associates were critical to the creation of an American modernist ideology—one conspicuously espoused by Henry Luce’s influential publications—and the resulting circulation of its image.


CHAPTER I
Architecture’s Expanded Role: U.S. Consulates and World’s Fair Pavilions During the Cold War, 1952-69

“The American Pavilion, a light and graceful structure dances in the sun. Inside was neat and uncluttered. One of the sights most impressive to all comers was an American farm kitchen—a dazzling porcelain-and-chrome spectacle, complete with refrigerator, disposal, deep freeze, automatic washer and dryer, and electric stove. Before it walked a procession of Indian peasant women. Long pendant earrings, bangles on arms and ankles, objects piercing their noses—these pieces of gold were their savings which they dared not put in the hands of banks….They stopped and stared in bewilderment. What was this? It was the image of America.”


A Global Setting for American Architecture

In late April 1959, Minoru Yamasaki and Associates were approached by the Department of Commerce and other agencies in the United States federal government, with a rather unusual proposal: the agency requested the architects to design a “building of indeterminate size for a fair somewhere in a foreign country.” Intrigued by the vague proposition, Yamasaki replied, “Until you can tell me where it is and how large it is, let’s say I would very much like to do it.” Shortly thereafter, the project was unveiled as the United States Pavilion at the World Agricultural Fair in New Delhi slated to open by December of that same year. Although most

34 Yamasaki, *A Life in Architecture*, 59
35 Yamasaki, *A Life in Architecture*, 59
commissions received by the firm did not begin in such an unusual manner, the exchange, as recounted by Yamasaki in his autobiographical monograph, *A Life in Architecture* (1979), illustrates the at times chaotic and happenstance nature of the architecture associated with global diplomacy. Often ostentatious, large-scale exhibitions—sometimes known as world’s fairs—and smaller projects focused on increasing diplomacy between foreign nations through strategically placed embassies and consulates. As a result, architects—and the projects they produced—were implicated in the image-making process, commissioned to reify political values into both temporary exhibition pavilions and more permanent sites of foreign diplomacy. Furthermore, Yamasaki’s Japanese heritage offered U.S. government officials a crucial chance to bring an international address to a range of state-sponsored projects, particularly in the Asia-Pacific region where the United States was trying to bolster its image after World War II.

The chapter explores the relationship between modern architecture, foreign diplomacy, and the display of economic prosperity in the latter half of the twentieth century as it appears in the work of Minoru Yamasaki and Associates. It opens with the political architecture of consulate and embassies before moving to international exhibition pavilions as sites of broad political and economic influence. During the 1950s and 1960s, a significant shift occurred at the highest level of government; instead of one-off projects hastily pulled together to meet the needs of the Federal government, a more orderly, concerted effort to project an image of U.S.-led prosperity to the world through an investment in modern architecture was initiated. These projects were also part of a concerted effort of U.S. foreign diplomacy funneled through international aid programs designed to offer assistance to struggling nations, and as a means to increase markets for U.S. produced goods and services. Each of the projects presented falls along a spectrum charting political and economic capital in architecture, whether through formal
ostentation or technological advancement. The U.S. government was working to seal the country’s position as a leading world power, and one way to achieve this was through unusually ornate architectural form that stood out from the clean lines of architectural modernism that had prevailed in the decades prior and was particularly evident in the work of MYA. And yet in spite of the historical references, which were often quite generalized and relied on cultural appropriation more than an exact replication of an architectural detail, the projects produced by the firm were only partially harbingers of what would follow once architectural postmodernism fully came to fruition.

In the years immediately following World War II, Minoru Yamasaki and the firms with which he was associated, executed a number of architectural design commissions on behalf of federal governmental agencies that turned to MYA in order to promote the United States as an economic and political powerhouse on the international stage. These early-career projects helped launch his fledgling firms and lay the groundwork for larger commissions from private corporations and the U.S. government in the following decades. In this chapter, I examine three of these projects and conclude with a fourth, unrealized proposal through which the impact of US government design commissions on a group of specific sites that were simultaneously confronting urban expansion and globalization can be examined. First, the United States Consulate in Kobe, Japan (1954-5) became an important symbol of political unity and reparations between former enemies after World War II. Secondly, with the 1959 pavilion described above, the U.S. Department of Commerce avoided being publicly upstaged by the Soviet Union and other Communist nations at the World Agricultural Fair in New Delhi—the United States had not initially planned to participate. Third, in his hometown of Seattle, Yamasaki joined a long list of architects and designers hired to design the pavilions and
infrastructure for the Seattle World’s Fair. Alternatively known as Century 21, the fair was intended as a grand display of U.S. advancement in science, culture, and technology with Yamasaki and Associates’ Federal Science Pavilion occupying a prominent position. The chapter concludes by considering a fourth, unbuilt proposal for the Interama fair in Miami, intended to be a major public-private partnership that would channel growth into the South Florida Region.

The Embassy as Architectural Project

In the tense postwar climate of international diplomacy, the United States exported ideas, goods, and services globally and developed a diplomatic presence in countries on every inhabited continent. The United States sought to define its world role as a superpower and a leader and promoter of democratic ideals. A central component of this ambition was the United States’ establishment of the Marshall Plan, officially known as the European Recovery Program, in 1947. The main thrust of the Marshall Plan was to help rebuild European economies and infrastructure after World War II. U.S. President Harry S. Truman and his then newly-appointed Secretary of State, George C. Marshall, however, had other agendas for it within a larger “Cold War grand strategy.”

Historian John Lewis Gaddis has suggested that the Marshall Plan worked on a series of premises, among them that

…the gravest threat to western interests in Europe was not the prospect of Soviet military intervention, but rather the risk that hunger, poverty, and despair might cause Europeans to vote their communists into office, who would then obediently serve Moscow’s wishes; that American economic assistance would produce immediate psychological benefits and later material ones that would reverse this trend; that the Soviet Union would not itself accept such aid or allow its satellites to, thereby straining its relationship with them; and that the United States could then seize both the geopolitical and the moral initiative in the emerging Cold War.

37 Gaddis, The Cold War, 32
The plan, while rejected by the Soviets and criticized by other nations, helped speed the European recovery that was already underway when the plan officially began in 1948.\textsuperscript{38} The Marshall Plan was just one of many large-scale economic plans funded and put into action by major world powers in the postwar era, many of which fueled economic growth, cultural and social integration, and the globalization of world markets.\textsuperscript{39}

Architecture was also central to this ideology-building process as architects were commissioned to design buildings at a range of scales on behalf of the U.S. government for political, cultural, and economic purposes. An article published in \textit{Architectural Forum} in March 1953 illustrates the close relationship that was thought to exist between diplomacy and culture: “No country can exercise political world leadership without exercising a degree of cultural leadership as well. Whether consciously or not, the US Government has now made US architecture a vehicle of our cultural leadership.”\textsuperscript{40} One current that ran between the political and cultural projects was the overt dissemination of American democratic ideology. This occurred both through highly visible channels—U.S. consulates and embassies—and in less obvious places—under the guise of information displays in cultural exhibitions in politically important regions of the world. The embassy-building program, inaugurated by the federal government in 1926, took on new significance after World War II.

As historian Jane C. Loeffler has noted, the U.S. embassy building program was intended as a goodwill gesture to promote international diplomacy by establishing a foreign presence across the globe and was not dissimilar to other diplomatic architecture in this regard. Beyond an

\textsuperscript{38} Gaddis, \textit{The Cold War}, 32
\textsuperscript{39} In the 1960s and 1970s, historian Walter LaFeber criticized the Marshall Plan as an American attempt to gain control in Europe through economic imperialism. For a more complete discussion on the topic, see \textit{America, Russia, and the Cold War, 1945-2006} (10th Ed.) (New York: McGraw-Hill, 2006) and \textit{Origins of the Cold War, 1941-47} (New York: John Wiley & Sons Inc., 1971)
\textsuperscript{40} “U.S. Architecture Abroad,” \textit{Architectural Forum} 98 (March 1953): 101
abstract concept of “goodwill,” however, modern architecture spread American ideology into politically important regions of the world by forging a connection between domestic affairs—in both the U.S. and host countries—and an overseas building program:

The embassy building program was, and remains, part of America’s largest effort to define its world role. Like the Fulbright educational exchange program—designed to promote international understanding and widely praised as a goodwill gesture—new embassies have been hailed as evidence of American goodwill and commitment, and their modern architecture, introduced in the late 1940s, has come to symbolize the openness of public diplomacy.⁴¹

Before the advent of widespread global televised news coverage, buildings played an expanded role in the image of a corporation, institution, or nation they represented. In the case of an embassy or consulate, presenting a transparent and democratic nation was paramount, but in many other cases, equally abstract concepts such as technological advancement or economic prowess helped promote governmental institutions and private corporations alike. An investment in modern architecture at many scales was one effective way to disseminate this message, from transient and nearly program-less pavilions to more permanent embassies and consulates in key countries around the world.

The U.S. Consulate in Kobe, ca. 1954

The planned United States Consulate in Kobe had program requirements of approximately 10,000 square feet, a modest commission that did not require extensive experience. As Loeffler has suggested, such projects “were not opportunities to reinvent the Lever House.”⁴² In some cases, there was a concerted effort to pair architects whose ethnic

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⁴² Loeffler, The Architecture of Diplomacy, 147
heritage was shared with the countries in question, and this is one reason why Yamasaki was an early contender for the Kobe project. In light of World War II and the United States’ devastating attack on Japan only a few years prior, the selection of a Japanese-American architect to design buildings representative of the United States is significant. What was intended as a goodwill gesture also represents a thinly-veiled display of dominance—a kind of aspirational imperialism over Japan. And although he was already a prominent figure in the architecture world, between Detroit and the New York scene, his Japanese heritage left Yamasaki with a complex. He was an insider, while also being an outsider. Architectural Record called the commission a “gracious double compliment” to the consulate’s host country. But the commission also played into the long cultural exchange between the Western tradition of architectural modernism and Japan, which shaped generations of young American and European architects beginning before World War II.

As a student and later a well-connected practicing architect, Yamasaki would likely have been aware of the architectural publications that came from European architects’ early trips to Japan. In 1933, Bruno Taut left Germany for Japan where he developed an appreciation for inherent minimalism found in aspects of Japanese temples, shrines, and domestic spaces. His 1937 title, Houses and People of Japan, soon found favor in Japan and overseas as a critical work that blended an appreciation for the architectural details of Japanese construction techniques with the bifurcated lens of cultural history and architectural form. In 1954, German architect Walter Gropius spent three months in Japan on his first and only trip to the island nation, and came away with the idea that one could blend past traditions with contemporary

43 Loeffler, The Architecture of Diplomacy, 148
44 In the foreword the first edition, Taut describes his ambition for the book, suggesting, “My greatest wish is that this book may make some contribution to international friendship. The true friends of Japan are not those that praise her indiscriminately. Even less are they those whose expressions of admiration are heard only while they are here.” See Bruno Taut, Houses and People of Japan (Tokyo: The Sanseido Press, 1937), ii
technology in service of a more nuanced form of architectural modernism, in a manner that resonates with Yamasaki’s own design approach that he cultivated in the 1950s and 1960s. In his 1955 essay, “Architecture in Japan,” Gropius described the Japanese approach as one of “a still living culture in which the past had already found the answer to many of our modern requirements of simplicity, outdoor-indoor relation, of modular coordination and, at the same time, variety of expression, and had thereby attained a common form-language uniting all individual efforts.”45 By the time he was settled in Detroit with his own practice, Yamasaki had also visited Japan twice, including a family trip in 1933 with his parents and siblings which left an early impression on the aspiring architecture student.46 As part of the U.S. Consulate commission Kobe and his first round-the-world trip, Yamasaki again visited Japan in 1954 and brought back with him many ideas that he saw as critical to softening the harsh lines of modern architecture and bringing a more human-centered approach to his design work. Although Yamasaki’s understanding of the utility of Japanese influence on modern architecture was quite distinct from Gropius’, the experience for the two men had similar consequences: both came away with a greater appreciation for detail and nuance in Japanese design. For Gropius, this was emphasized through the high levels of craftsmanship in traditional design and detailing, whereas for Yamasaki the salient feature was the relationship between patterns, light, and shadow in the design of temples, gardens, and houses.47 But for Taut, Gropius, and Yamasaki, it was the


46 Yamasaki, *A Life in Architecture*, 17

47 Frank Lloyd Wright also had ties to and interest in Japan in the early part of the twentieth century, centered around his Imperial Hotel Project, the design for which began in 1915. In 1923, only a year after its opening, the hotel survived a major earthquake that leveled much of Tokyo but was torn down in 1967 after falling into disrepair and out of favor with the traveling public, who by this time preferred “the bright, wide spaces of newer hotels.” For an in-depth discussion of the hotel’s history and demise, refer to Cary James, *The Imperial Hotel: Frank Lloyd Wright and the Architecture of Unity* (Rutland, Vermont and Tokyo: Charles E. Tuttle Co, 1968). See also chapter
perceived unity in design that best exemplified traditional Japanese architecture, and for Yamasaki, this aspect would be incorporated in his own projects in the years that followed.48

The Kobe commission also came at a pivotal moment for Yamasaki and his office, which at that time had only fifteen architects and many small yet demanding projects; the larger commission was welcome news.49 Just one year prior, Yamasaki had nearly died from bleeding ulcers, an affliction he attributed to a combination of overwork and a fatiguing commute between offices in Detroit and St. Louis. According to an interview with the architect in 1958, it was the ulcer that showed the architect his limitations: “I hadn’t been able to order my life,” Yamasaki explained, “I felt that something was missing and that I had to keep running after it. But look: everyone has a complex. It took the ulcer to show me what mine was—that I was Japanese.”50 In addition to this admission of his own concerns, the illness was one of the reasons why Yamasaki and Hellmuth parted ways, effectively closing the St. Louis branch of their joint firm. Yamasaki returned his full attention to the Michigan office, which in 1955 was renamed Yamasaki, Leinweber and Associates when it relocated to the Detroit suburb of Birmingham.51

The new compound for the U.S. Consulate was sited in Kobe, in an area where “most buildings are closely crowded together, occupying 100% of their lots, much like New York City.”52 The program requirements called for an air-conditioned consulate building with offices,
a separate apartment building for the employees of the United States, and a third building that housed carports and servants’ living quarters. A diplomatic front-of-the-house, as well as extensive residential quarters for consular employees and their staff, occupied different buildings in the compound, reflecting these different programmatic aims\(^53\) (Figure 12).

The main building, housing the offices of the Consul General, was a two-story rectangular structure that stood within the walled enclosure and was the destination for most of the general public visiting the consulate (Figure 13). In addition to the main entrance, there were a number of secondary entrances located strategically throughout the compound allowing the inhabitants points of entry and exit that did not interfere with consular duties. Half of the ground floor contained offices of the Consul General and Vice Consul,\(^54\) as well as a large consular section that handled administrative duties for American citizens and foreigners applying for visas (Figure 14). The other half was reserved for a variety of offices including the United States Information Agency (USIA)—an agency that among other undertakings handled American-driven propaganda campaigns for foreign audiences; in spite of popular criticisms to the contrary, the agency maintained that it strictly disseminated “information, not propaganda.”\(^55\) A variety of supporting consular services were located in the remaining areas of the upper floors. In addition to official consular affairs, events and parties were held by the Consul General to promote the United States and celebrate visiting U.S. dignitaries and government officials. Space for such events consisted of both indoor and outdoor areas that overlooked both the pond and garden, but also directly onto the parking drive and carport full of the latest models of U.S.-built automobiles.

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\(^{54}\) The highest consular rank is Consul General, followed by Vice Consul and Deputy Consul(s) who support the actions of the Consul General.

Material finishes were also an important aspect of the project that blended Western and Eastern sensibilities: the lobby in the main building featured polished terrazzo flooring and “gleaming marble walls,” which were popular in the United States at the time (Figure 15), while the other buildings incorporated quintessentially Japanese architectural detailing, examined below.

The two structures dedicated to housing had a different aesthetic that reflected their supporting role. The staff apartment building contained three floors of living quarters, with an open plan living and dining concept, a small kitchen, and up to three bedrooms off a central corridor. Each apartment had a balcony overlooking the garden or the city, an aspect of Yamasaki’s residential design that he incorporated in projects whenever possible in the following years.\(^{56}\) The servants’ quarters, attached to the carports, were more modest. The one-story building contained six small bedrooms located along a corridor with access to a shared kitchen, bathrooms, and a living-dining area (see Figure 14). These incorporated elements of Japanese design, ostensibly as a means to increase the efficiency of space: “The servant’s quarters are executed in the traditional idiom with sliding rice paper shoji for exterior walls and tatami, or floor mats. The latter permit daytime removal and storage of sleeping covers so rooms can be used for living and study. This could not be done, of course, were beds provided.”\(^{57}\) Tucked in the southeast corner, the servants’ quarters were largely out of view of the general public and out of the way of those working in the compound.

Aspects of Japanese design appeared throughout the project and were incorporated into the architect’s strategies in many projects that followed. First, the entire compound was surrounded by a perimeter wall made of lava stone—a decision Yamasaki made in order to meet United States security requirements and to avoid “putting up grilles over windows and rolling

\(^{56}\) As discussed in Chapter IV, the incorporation of balconies or lanais became an important aspect of Yamasaki’s later residential work and was a signature of his hotel room design.

\(^{57}\) “A Compliment to Traditional Japanese Architecture,” *Architectural Record* (February 1958): 163
steel shutters over doors for protection from agile, second-story men.”58 In spite of the client’s security requirement, enclosure walls were also common elements in Japanese architectural design, a fact frequently highlighted in the American architectural press. Incorporating an enclosure “permitted [Yamasaki] to design an office building of considerable delicacy, surrounded by a light grille of bronze with panels of shoji-like plastic shading the glass walls.”59 The screens were meant to both reduce glare from the sun and mitigate its effect on the cooling load, which during summers was a considerable consideration in Japan (Figure 16).60 Second, other Japanese materials and techniques were borrowed and incorporated throughout the project. The end façades of each apartment building incorporated “Araidashi consisting of 1/8 to ¼ in. round black stones set in concrete which is partly brushed away to provide an interesting and attractive textured surface.”61 This stone-setting technique was traditionally used for constructing sidewalks, and is similar in its finished form to unpolished and un-sanded terrazzo.

In addition to the focus on Japanese materials and construction techniques, each of the three buildings was perched atop an elevated cantilevered concrete platform two feet high. The reasons for this move were twofold. First, the architects considered it a nod to “the manner of the fine old Japanese temples”62 that Yamasaki had enjoyed on earlier visits to Japan, although the platforms and temples would have been constructed out of wood, instead of concrete and steel. Secondly, and perhaps more pragmatically, it was also a direct result of the floods that frequently plagued central Kobe; by lifting the buildings two feet off the ground, it was assumed that the interior would be spared any but the greatest floods. The walled enclosure took this prevention

58 “US State Department Overseas,” Architectural Forum (May 1955), 120
59 “US State Department Overseas,”120
60 This element is strikingly similar in function to the screen incorporated in the design of the Reynolds Metals Regional Sales Office in Southfield, Michigan of 1959.
61 “A Compliment,” 164
62 “Kobe Consultant [sic],” Minoru Yamasaki Papers, Archives of Michigan. Lansing, MI
one step further, acting as a dyke complete with “wooden flood gates, edged with rubber for water tightness, to help protect [the] garden.”63 The elements of the compound were sited around a lushly-planted central garden designed by Ken Nakajima (1914-2000), a well-known Japanese landscape architect whose gardens also appeared in projects in Australia, Canada, and Russia (Figure 17).64 Keeping with local tradition, an elevated viewing platform was incorporated into the design due to the architect’s understanding that “a garden presents its most favorable aspect when seen from above rather than from ground level, since the loveliest parts of plants and flowers are those reaching for the sky.”65 Given that the compound was sited in a region plagued by earthquakes, the project also had to include measures against this natural disaster. In order to keep the visual appearance of slender columns intact, the firm employed “a system of tile-clad, reinforced concrete shear walls between columns for lateral stiffness” (see Figure 15).66 Yamasaki’s acknowledgement of Japanese architectural formal traditions in this and later projects became a central focus of discussion in the U.S. architectural press in the years that followed this early-career commission, marking a lingering postwar fascination with Japan and Japanese culture.

At first glance, the American Consulate in Kobe seems like a one-off: the sleek lines and hard geometry of the squat buildings speak to a conservative high modernist aesthetic but are tempered with Yamasaki’s subtle allusions to vernacular Japanese architectural features, which he discussed in a 1959 interview given at the Detroit Institute of the Arts:

> Japanese architecture is very much copied in this country and in Europe. And we are told that it's a great influence for modern architecture. If you

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63 “US State Department Overseas,” 121
64 Because of this, in 1986 the Emperor of Japan awarded him the “Order of the Rising Sun” to acknowledge his achievements in promoting Japanese culture around the world. Perhaps coincidentally, this was also the year of Yamasaki’s death.
65 “A Compliment,” 161
66 “A Compliment,” 159
examine this, I think that you will find that it's the mechanics of Japanese architecture that have been thought of as the direct influence upon our architecture. In other words, such things as the simple use of post and beam which is used in our structures, or the integration of house and garden.67

The referencing of Japanese vernacular architectural forms does not simply situate the buildings within a Japanese context, but also acknowledges the larger stylistic concerns of American late modernism—such as responding to the interrelated nature of form and technology—pointing to a larger project of global American diplomacy through architectural form. As an extension of this interest, Yamasaki incorporated stylistic Japanese elements in later projects across the Midwestern United States that otherwise had no direct relationship to Japan as a way to further explore his Japanese identity and refine his design ethos. Although Yamasaki suffered from a complex related to his Japanese heritage, he frequently also used the fact to his advantage.

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The United States Consulate in Kobe was the only completed embassy or consulate designed by Yamasaki and his team. Yet the firm also produced an unsuccessful proposal for the London Embassy when the commission was first announced in 1955. The London project was ultimately awarded to fellow Detroit-based architect Eero Saarinen who had recently completed an embassy in Oslo at the time of the commission. The proposals for London were varied, but “Minoru Yamasaki’s scheme was perhaps the most eccentric—two connected parallel buildings wrapped in a lacy stone-clad screen with arched openings reminiscent of an English perpendicular Gothic façade. The architect’s rendering shows a de-emphasized American flag waving from a short flagpole to the right of the off-center entrance.”68 Even in buildings meant

68 Loeffler, The Architecture of Diplomacy, 197
to represent the image of the United States, Yamasaki was not keen on using flashy signs and large flags announcing the purpose or ownership of his buildings, preferring a more understated approach to markings.

As discussed in the introduction, although the firm was ostensibly tasked with creating “ducks” that represent the United States abroad, both the Kobe Consulate and the unbuilt London Embassy incorporate small, understated markings and flags that point to the program’s purpose without using extravagant signage, rendering them more like highly understated decorated sheds. In this sense, Yamasaki’s approach does not reflect the binary inherent in Robert Venturi’s “duck versus the decorated shed” argument articulated two decades later. As ever increasing numbers of architects were commissioned to design embassies and consulates on behalf of the federal government, each grappled with issues of form, the practicalities of function, and how to represent the United States while maintaining some level of deference to the local context. Well into the 1950s, the architectural press began to weigh in on design proposals of particular embassies, and published congratulatory spreads when they opened in places such as Japan, Ghana, and Norway. Chief among them was Architectural Forum, which along with Time, Life and Fortune was owned by Henry Luce. As Loeffler has noted, “Luce’s personal interest in architecture had prompted him to invest in architectural publishing, and he made no secret of his enthusiasm for modernism. More than an endorsement of political purpose, the Forum article was an endorsement of a design direction.”69 Put another way, the architectural proposals aimed to “show fresh design, befitting a progressive U.S., adapted without compromise to the traditional cultures of the friendly countries where they will stand. This is diplomacy translated into architecture, architecture into diplomacy.”70

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69 Loeffler, The Architecture of Diplomacy, 7
70 “U.S. State Department Overseas,” Architectural Forum (May 1955): 119
Because of the perceived link between architecture and diplomacy, the embassies, and what they represented, were not without controversy. In addition to criticism from members of congress and the news media, architecture critics also began to weigh in on the design proposals and the overall agenda of the program. In 1960, Ada Louise Huxtable asked her readers if the objectives—defined as “national character, architectural tact and businesslike efficiency”—of these buildings had been met. Critical of Eero Saarinen’s contested embassy in London, Huxtable took it as a starting point for the discussion, citing Londoners’ harsh proclamations that the building and the sculptural eagle perched atop it, were “aggressive,” “overbedecked,” and “consistent with the tragedy of Americanism” (Figure 18). Conversely, the Dutch claimed that Marcel Breuer’s embassy in The Hague was a “typically American building” that displayed “strong and noble character” (Figure 19).71

The issue of “Japanese-ness” in form and detail that was raised in the design of the U.S. Consulate in Kobe played out in later commissions that the firm received in the decades following the consulate’s completion, complicating discussions of context and place. This was particularly true for commissions by private corporations and clients—which came with fewer restrictions—where more fanciful applications of Japanese design elements began to appear in contexts completely unrelated to Japan. The Reynolds Metals Regional Sales Office in Southfield, Michigan (1959) (Figure 20) and the Oberlin College Conservatory of Music (1963) (Figure 21) share common design elements with the consulate, including elevated podia, sun shading shoji-like screens, and ornamental water gardens replete with lilies and koi. These elements became important idioms repeated by Yamasaki’s firms throughout his career. For example, the Reynolds Metals Regional Sales Office was set amid a large reflecting pool, a move that has more in common with Japanese temples than Detroit’s urban sprawl. Although

71 Huxtable, “Sharp Debate”
these projects were well received by their clients and the American Institute of Architects (AIA), like the Kobe Consulate, they were both relatively small structures out of the view of many.

The remainder of the chapter focuses on the design of two World’s Fair Pavilions similar in scale to the Kobe Consulate which were also mean to represent the United States, to domestic and international audiences. In these projects, the issues of local architectural and environmental context played out differently than in Kobe: in New Delhi and Seattle, the firm created two pavilion compounds that appear as though they are each a kind of fantasy world for the display of U.S.-led technological innovation and research. In both cases, the architecture is a shell that incorporates oblique references to contextual or historical forms which have little to do with the displays and dioramas housed within. One might also read the U.S. Consulate in Kobe in a similar manner: although the exterior of compound and the buildings housed within present a kind of Japanese appearance, that which takes place inside is decidedly for the advancement of American interests.

Postwar Pavilions of Propaganda

In a handful of MYA-designed projects, the United States’ rising prominence is underscored by an emphasis on advances in farming, science, medicine, and technology—areas which promised significant improvements for the health and well-being of United States citizens and populations across the globe. The advancements in technology brought exciting new possibilities in space exploration and flight, but with them came new threats, raising the specter of nuclear war and prompting a “space race” between the United States and the Soviet Union. These two opposing, but interrelated, historical conditions underpin the 1959 World Agricultural Fair in New Delhi and the 1962 Seattle World’s Fair, also known as “Century 21.”
At times, World’s Fairs were viewed as a collective display of technology, artistic achievements, inventions and discoveries, and occasionally became sites of intense rivalry between nations. Arguing for a reconsideration of cultural diplomacy in light of significant government and private partnerships during the Cold War, historian Andrew Wulf has suggested, “world’s fairs from the beginning have expressed through nationalistic displays certain dualistic functions that satisfied on the one hand the virtues of brotherhood, education, and free trade, with the morally and physically corrupt hegemonic pretensions of the nation displayed on the other.” Indeed, during the industrializing nineteenth century, exhibitions took on greater significance as a means for individual countries to compete with one another on a very public and international stage, in the dual realms of economic and cultural superiority. The pavilions representing nations worldwide at these expositions were often focused on the exceptional qualities of each country and the industrial advancements or scientific breakthroughs they achieved. In the 19th and 20th centuries, cultural exceptionalism became closely associated with the United States as a result of Alexis de Tocqueville’s 1831 observation that it was a core quality of the newly formed nation and its people. This was particularly evident in World’s Fairs and expositions universelles, where the core ambition lies in the idea of cultural exceptionalism, essentially following de Tocqueville’s observation. These events have been

72 In some sense, all such exhibitions displayed a kind of rivalry, both within a country between tradesmen or craftsmen vying to outdo one another, or an international rivalry between nations. The Great Exhibition of the Works of Industry of All Nations was the first large-scale example of this competition. Taking place during the summer of 1851 in London’s Hyde Park, the Great Exhibition showcased industrial products that were aimed at creating a more prosperous future, foregrounding British inventions as a central component of the future. This exhibition sparked decades of competition between England and France, and as historian Pierre Francastel has noted in Art and Technology in the Nineteenth and Twentieth Centuries (1956), during this time “a new ideology developed, giving rise to the ideas of the mechanization of the modern world and the conflict between art and industry.” One common theme of these exhibitions is the idea of cultural exceptionalism, essentially a perception that a person, nation, or entity exhibits superior or extraordinary qualities surpassing others in the same category. Although the initial use of the term implied temporal associations, the more common usage is applied to nations or regions—in other words, national exceptionalism.

73 Andrew James Wulf, U.S. International Exhibitions During the Cold War: Winning Hearts and Minds through Cultural Diplomacy (Lanham, MD: Rowman and Littlefield, 2015), 23

called everything from “great exhibitions,” “world’s fairs,” and “expositions universelles,” to simply “international exhibitions” later in the twentieth century. The idea of cultural exceptionalism is closely tied to notions of cultural superiority that persisted into the twentieth century and beyond. For the United States, the embassy building program and participation in world’s fairs exemplified one angle of this idea: technologically and structurally advanced forms of modern architecture were built in far regions of the world, underscoring U.S.-led cultural dominance in design and construction, as well as in less tectonic avenues such as political ambition and stability.

World’s fairs reflected the increasingly interconnected and interdependent world in the twentieth century. This was fueled in part by an expanding global exchange of goods and services, and significant advancements in shipping and aviation, which meant that a much wider group of people visited the exhibitions. In the United States, fairs and expositions allowed Americans of many social, economic, and regional backgrounds to gather and learn about advancements and discoveries from across the nation. As the authors of *Fair America* (2000) have noted, the impact of such fairs was manifold: they influenced how people understood themselves and the world at large, were sources of pleasure and entertainment, and introduced new technologies, inventions, and products to the masses, including telephones, the X-ray machine and new materials such as asphalt and plastic. But most importantly, they were an effort to building future markets for selling goods and increasing a nation’s export product. But the fairs were also overtly political, serving as instruments of cultural hegemony, as historian

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75 The preface to John E. Findling and Kimberley D. Pelle, eds., *Encyclopedia of World’s Fairs and Expositions* (Jefferson, NC: McFarland and Company, 2008) provides a helpful summary of the origins of world’s fairs and expositions, which can be loosely traced back to ancient times when people gathered for large feasts that included sporting events and marketplaces. Furthermore, during medieval times large fairs were “held at major crossroads of trade and were a mixture of commerce, entertainment, and theater.” The modern world’s fair considered in this chapter, however, is dated to the Great Exhibition of 1851.

Robert Rydell suggested in *All the World’s a Fair* (1984). Citing Antonio Gramsci’s Marxist writings, Rydell argues that “world’s fairs need to be understood as vehicles intended to win popular support for national imperial policies.” This was true in both fairs for which Yamasaki designed, but perhaps with different audiences. The 1959 World Agricultural Fair in New Delhi aimed to represent the United States as a major world power on the international stage and in the early days of the Cold War while building U.S. economic strength by establishing new markets for U.S. machinery and products. The 1962 Seattle World’s Fair, on the other hand, addressed a primarily American audience, many of whom had never traveled abroad, and thus could newly learn firsthand about foreign cultures at the many national pavilions.

Before being commissioned to design the U.S. Pavilion in New Delhi and the U.S. Federal Science Pavilion in Seattle, Yamasaki attended and exhibited at the “International Building Exposition” in Berlin (1957), in the American Pavilion in Brussels (1958) and the “American National Exhibition” in Moscow (1959). These three events took place in a post-World War II climate overshadowed by mounting nuclear concerns and the specter of a nuclear war among the world’s superpowers—the race for world domination seemed imminent. But the exhibitions that formed a central component of the expositions also played a key part in the Cold War that hid subversive political ambition under the guise of culture, often through covert data collection. Fred Turner’s research on Cold War media practices in *The Democratic Surround: Multimedia and American Liberalism from World War II to the Psychedelic Sixties* (2013) has convincingly shown how radical liberalism and socialist-democratic ideals in the early Cold War years underscored open and inclusive ideas of communication and expression. One important example of this was the world’s fair or international exhibition. As Turner notes, “Because of

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78 Projects on display included the 1956 St. Louis Air Terminal, discussed in Chapter II, as well as Detroit-area elementary and high schools.
their primarily national rather than commercial orientations, world’s fairs served as a premier ideological battleground across the Cold War. They also provided a set of propaganda opportunities that few other media could supply.”79 The focus on a cultural exchange should not minimize the extent to which these World’s Fairs also had commercial ambitions, particularly for American products.

The 1958 fair in Brussels was the first major exposition to take place after World War II. In a time of political uncertainty, Expo ’58 emphasized atomic energy, featuring the massive Atomium structure that towered over attendees. The unusual building took its form from a massively oversized reproduction of an iron crystal composed of nine iron atoms which housed exhibition spaces and a restaurant at the top—an architectural representation of invisible elements of atomic energy, prominently displayed.80 According to Turner, the expo took place as “memories of the national unity of World War II had faded, the Cold War had if anything become chillier, and racial tensions had leapt to the fore.”81 Indeed, for United States officials, the Belgian fair was seen as a kind of “dress rehearsal” for the Moscow exposition and they did not want to be outdone in either, least of all by Communist countries.82 The U.S. Federal government hired American architect Edward Durell Stone to design the pavilion, underscoring their commitment to the fair and to modern architecture. From an architectural standpoint, Stone’s design ambitions shared commonalities with Yamasaki’s own work: each architect attempted to create a less austere form of modern architecture through the use of repeated motifs and what could be considered decorative elements. Both critics of the era and historians have

80 “‘Atomium’ Rises for Belgian Fair: Reflection of Sky,” The Christian Science Monitor (June 17, 1957): 4. The Atomium was designed by Belgian engineer André Waterkeyn, and was meant to represent the fair’s theme: “Building a more human world in the atomic era.”
81 Turner, The Democratic Surround, 231
82 David Caute, The Dancer Defects: The Struggle for Cultural Supremacy during the Cold War (New York: Oxford University Press, 2003), 33
referred to these tendencies as “New Romanticism” and “New Formalism,” although there is little consensus. Yet the formal affinities employed by Yamasaki, Stone, and others, are not strictly romanticist in nature, but point to a more complex combination of cultural and architectural references expressed through new materials and technologies, rather than to the primacy of individual expression. This tendency is particularly evident in the circular form Stone proposed for the triangular site in Brussels, with a large outdoor forecourt replete with an elliptically-shaped reflecting pool (Figure 22). The building was a two-story structure with an open plan free of structural columns and devoted entirely to flexible exhibition space. The pavilion and its adjacent theatre were wrapped in what architectural historian Mary Anne Hunting has called “a trellislike grille” due to its screen-like form that also appears the following year in Minoru Yamasaki and Associates’ 1959 Reynolds Metals Regional Sales Office.

The American National Exhibition in Moscow’s Sokolniki Park of 1959 included a display of recent projects completed by American architects, among them, Hellmuth, Yamasaki and Leinweber’s St. Louis Air Terminal of 1956. Photographs of these and other of the firm’s projects’ were displayed under a series of interconnected “plastic umbrellas” designed by George Nelson, along with Edward Steichen’s photographic exhibition *The Family of Man*, which was

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83 Although he was not alone in assigning this style designation to architects such as Minoru Yamasaki and Edward Durell Stone, one of the earliest references to New Formalism appears in Marcus Whiffen’s *American Architecture Since 1780: A Guide to the Styles* (Cambridge, MA: The MIT Press, 1969), which ascribes the following general attributes to New Formalism: “The buildings of the New Formalism are typically self-contained, free standing blocks, with strictly symmetrical elevations. Skylines are level, the building often being defined at the top by a heavy, projecting roof slab. Wall surfaces are always smooth and often glossy, a wide range of materials, natural and artificial, being used for facing. Columnar supports tend to be thicker and more fully modeled than in the International and Miesian styles, while the arc—altogether absent from both of them—appears in various shapes and may constitute the ruling motif of the design. Ornament is employed, most frequently in the form of patterned screens or grills of metal, cast tone, or concrete.”


85 In spite of the American pavilion’s size—US officials claimed it was as large as the Roman Coliseum—and strikingly light construction techniques, it came in fourth place in the architecture competition, with Czechoslovakia winning first place. Refer to, Caute, *The Dancer Defects*, 33
first shown in 1955 at the Museum of Modern Art in New York. The show focused on the commonalities between people across the globe through photographs depicting everyday life on each inhabited continent. A number of people in the U.S. federal government considered this “far too humanistic an undertaking to put the American message across.”\textsuperscript{86} Taken together, the many aspects of the United States on display at the fair portrayed a nation that was a leader in science and technology of the day, forging domestic advancements easing the everyday life of ordinary Americans, and full of exciting new promise—through convincing political and economic propaganda.

One of the most popular attractions at the fair was a large, gold anodized geodesic dome (Figure 23) housing exhibitions and a film by Charles and Ray Eames entitled, \textit{Glimpses of the USA}. The exhibit, projected on seven screens, depicted vast differences in life in the United States from urban centers to bucolic farming communities; a display that became its own type of architectural space (Figure 24).\textsuperscript{87} As Beatriz Colomina has argued, “The huge array of suspended screens defined a…space within a space. The film breaks with the perspectival view of the world. In fact, we find ourselves in a space that can only be apprehended with the high technology of telescopes, zoom lenses, airplanes, night-vision cameras, and so on, and where there is no privileged point of view.”\textsuperscript{88} In other words, the display put together by the Eameses privileged the fast flow of information from screen to viewer in mosaic form, rather than through a linear storyline. But this also reflected the core message U.S. officials hoped to impart to their Soviet audience. From the first image to the final frame, Colomina argues, “the film emphasized

\textsuperscript{86} Turner, \textit{The Democratic Surround}, 258
\textsuperscript{87} Jack Masey and Conway Lloyd Morgan, \textit{Cold War Confrontations: US Exhibitions and their Role in the Cultural Cold War} (Baden, Switzerland: Lars Müller Publications, 2008), 179. Although the dome is often attributed to architect Buckminster Fuller, it was most likely the work of California-based Welton Becket.
\textsuperscript{88} Beatriz Colomina, “Enclosed by Images: The Eameses’ Multimedia Architecture,” \textit{Grey Room} 02 (Winter 2001): 12
universal emotions, while at the same time it unambiguously reinforced the material of one country…we are the same but, on the material level, we have more.”

This kind of international one-upmanship was a common approach to national exhibitions at world’s fairs.

The American National Exhibition was part of “a reciprocal exchange of national scientific, technological and cultural exhibitions” initiated by American President Dwight D. Eisenhower and USSR Premier Nikita Kruschev. During the summer of 1959, the United States would exhibit in Moscow and the USSR in New York. Although the exhibition in Moscow was outwardly intended as an amicable exchange of culture and technology, chief among its other goals was surreptitious data collection by the U.S. Government. As David Caute observes, “Rivalry was intense, competition ferocious: this was the era of Sputnik and Khrushchev’s ‘We will bury you.’” It may not have been obvious at the time, but the start of something new also had underlying commercial and propagandistic agendas. Jack Masey—who worked as a designer for the United States Information Agency (USIA) from 1951 to 1979—and Conway

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89 Colomina, “Enclosed by Images,” 13
90 Masey and Morgan, Cold War Confrontations, 155
91 This most notably took place through an IBM 305 RAMAC machine, which was essentially an interactive display calibrated to collect information from viewers by answering pre-programmed questions that gave the United States government key clues about how the USA was viewed in the USSR, which amounted to “9,596 enquiries during the first ten days.” See Caute, The Dancer Defects, 48-9. For a detailed account of the USA’s participation in the 1959 fair in Moscow, refer to Chapter 2, “The Gladatorial Exhibition,” pp. 33-51.
92 Caute, The Dancer Defects, 33. One of the more notable outcomes of the fair was the great “Kitchen Debate” between Richard Nixon and Nikita Khruschev, the lengthiest portion of which took place in the kitchen of the American “Splitnik” house mockup on display, aiming to show to Russia what modern, affordable housing looked like in the United States. In this highly unusual exchange between the Premier of the Soviet Union and the Vice President of the United States, many saw two nations trying to find common ground as a means to avoid confrontation. During the debate, the two men discussed capitalism, communism, and each nation’s advances; as the conversation went on, it morphed into a verbal war of showmanship. Nixon’s performance going head-to-head with Khruschev was met with positive reception in the United States, and as historian Yanek Mieczkowski has described, “burnished the vice president’s reputation and enhanced his prospects for the 1960 GOP nomination.”
93 Exactly what implications this exchange would have for the world were unclear at the time, but people were hopeful that it was the beginning of a new kind of relationship between the USSR and the USA. For a more in-depth examination of this topic, refer to Yanek Mieczkowski, Eisenhower’s Sputnik Moment: The Race for Space and World Prestige (Ithaca and London: Cornell University Press, 2013), 204
94 In the lead up to the fair in Moscow, the Unite States Congress approved a relatively small sum of $3.6 million for the USA’s presence at the fair. This prompted President Eisenhower, among others, to ask American industrial leaders to sponsor various aspects of the events, a turn which would ultimately showcase the companies’ products. Among them were RCA, Pepsi-Cola, and Dixie Cup. For a lengthier discussion on this topic, refer to Caute, The Dancer Defects, pp. 43-6.
Lloyd Morgan suggest, “what was offered by the USA to the people of the Soviet Union was more than a cornucopia of consumer goods: the American Exhibition was an attempt to create a kind of ‘tourism in reverse’ experience for Russian visitors, most of whom would never be able to visit the United States.”\(^{94}\) The exposition depicted the United States as a country focused on investments in architecture and expression in the arts. But the grand displays also served an economic purpose: by introducing a wide array of new products intended to enhance everyday life, U.S.-based corporations hoped to expand their sales by tapping into large, global markets, including in the USSR in the late 1950s.

The experiences attending and exhibiting at world’s fairs not only increased MYA’s visibility and international profile, but were also formative ones for Yamasaki himself, who would draw upon his personal experiences at the fairs for the design for the 1959 U.S. pavilion in New Delhi and the 1962 U.S. Science Center in Seattle. According to the architect, the design of the pavilions was a direct response to his dislike of Soviet pavilions he had seen at fairs in Chicago (1933-34) and New York (1939). After the Moscow exposition, Yamasaki’s firm became more directly involved in the architecture of the world’s fairs, landing two commissions in the span of just three years.\(^{95}\) Examining the two pavilions designed by the firm between 1959 and 1962 foregrounds the role this architecture played in creating a perception of North American exceptionalism and forging new economic opportunities for U.S.-based corporations. MYA was a central component of this endeavor, and Yamasaki himself embraced his role in adding beauty to the landscape, suggesting,

\(^{94}\) Masey and Morgan, *Cold War Confrontations*, 211. Among the everyday experiences the fair offered were popular baking demonstrations, displays of American fashion, and tutorials on current trends in Western ladies’ makeup fashions.

\(^{95}\) This may have been a result of his longtime friend George Nelson, who was closely involved in the exhibition design in the fairs of the 1950s, particularly in Brussels.
We live in one of the most naturally beautiful countries in the world. We can experience great mountains and valleys, myriad lakes and rivers, exquisite parks, and exceptional varieties of green in the trees, shrubs and flowers distributed throughout our land...We are [also] one of the most affluent countries in the world and, supposedly, the most powerful as well, yet we have difficulty approaching a national dedication to aesthetics...We must overcome our willingness and desire to abandon the valuable results of man’s efforts, such as buildings and automobiles, through so-called planned obsolescence.96

This kind of attitude propelled Yamasaki to promote the United States through beautiful architectural form, even when that form had seemingly little in common with U.S. technology and mass production. Throughout his career, the projects produced by MYA often fell outside the status quo and were lauded by corporate clients for their exotic interpretations of modern architecture. As a Japanese American based in the industrial center of Detroit, the tensions between his heritage and his “American-ness” were often made clear: Yamasaki was an accepted outsider, by his friends, clients, and the discipline at large. This tension can often be read in the formal aspects of his work, particularly in the 1959 U.S. Pavilion in New Delhi. Like the beautiful landscapes across the country, Yamasaki sought to represent the United States with a similarly beautiful, if ostentatious, pavilion.

“Golden Architecture” of the World Agricultural Fair, New Delhi, India, 1959

The World Agricultural Fair in New Delhi, considered to be the first of its kind, ran for two months from December 1959 through February 1960, and attracted around 5,000,000 visitors to see displays of fifteen foreign nations, constructed alongside entries from each of the seventeen Indian states or territories, nine Government ministries, thirty-eight Government institutions, and over sixty private enterprises (Figure 25).97 The U.S. participation in the fair

96 Yamasaki, A Life in Architecture, 35-36
came amid rising tensions between India and Pakistan, as well as along India’s border with China, threatening to destabilize the region. Although the fair was seen as a symbol of progress in the region, the United States also sought additional markets for its export products. This economic endeavor would further expand with the development of the United States Agency for International Aid (USAID), which was also linked to fighting Communism through the spread of capitalism, discussed below.

The U.S. Pavilion showcased the magnitude of American farm production made possible by research and technological advances that had catapulted American agricultural yields to the highest per acre level in the world. The World Agricultural Fair in New Delhi was scheduled to take place at a critical moment in worldwide agricultural production, after a disappointing 1957-1958 growing season which saw no net world increase from the previous year—and due to poor weather in North America, production was significantly down. By the 1958-1959 growing season, however, the Food and Agricultural Organization (FAO) of the United Nations provisionally reported a four percent increase in worldwide agricultural production from previous years, primarily due to increased output by the U.S.S.R., and countries in North America and Oceania due to a combination of factors including clement weather.98 Furthermore, although reports show that wheat production in the United States had risen significantly from a prewar average of 19.5 million metric tons to a new record level in 1958-1959 of 39.8 million metric tons, this is still lower than wheat production in Western Europe from 1957-1958, which measured 40.5 million metric tons.99

99 United Nations, The State of Food and Agriculture 1959, 70. U.S. wheat production in 1958/1959, however, was the highest in the world, with Western Europe’s production dipping to 39 million metric tons, a decrease of 1.5 million metric tons over the previous growing season. By all accounts, 1958 was a good year for U.S. crop production which from 1947 to 1957 had increased only 6%, but in one year from 1957 to 1958, production had increased by 11%. Livestock production, however, experienced a slight decline. Refer to United Nations, Food and
According to Yamasaki’s memoir, United States government officials also wanted to “best Russia” on the international stage while showcasing the latest advances in research and technology through new farming equipment and the possible positive impact nuclear energy would give agricultural production. Critical of Soviet pavilions in Brussels’58 and Moscow’59, which the architect saw as overly ostentatious, Yamasaki sought to present this project by appealing to a broader understanding of humanism in architecture than a visually-excessive architectural “showpiece” might, suggesting his motives were quite distinct from those of the Soviet Union at previous fairs:

…the later [Soviet ones] were full of promises of what the country was going to accomplish with its five-year-plans and boasting of achievements such as the Sputnik. Their displays of art, weaving, and sculpture were always poorly executed. My impression was that their advances were rather limited when compared with those of America. In reviewing my recollections of those past exhibits, I decided that we would create a building that was friendly rather than boastful.

Although the design of the pavilion may have been welcoming to the gathered crowds, the true message of American exceptionalism was called into question by its exoticized façade and the large-scale golden domes which suggested a boastful approach. From its last-minute inception the U.S. pavilion was an object with a dual purpose that overtly foregrounded U.S.–Indian relations by displaying agricultural aid as a means of linking the two countries economically and politically. The U.S. Pavilion in New Delhi referenced both American and Indian cultural practices, and was intended as a hybridized county fair-turned-harvest celebration, called “Mela,


100 Although this must be an exaggeration, in his memoir, *A Life in Architecture*, Yamasaki claims that the only real requirement for the pavilion was, according to the Department of Commerce, to “best Russia.” Unsurprisingly, to date I have not been able to corroborate this claim from official U.S. sources, but the sentiment remains clear in the final product. The project is less about the image of the United States as it is a gesture of what kind of ostentation the U.S. is capable of producing, discussed below.

101 Yamasaki, *A Life in Architecture*, 59
USA” or “Amriki Mela.” The idea stemmed from the Sanskrit word *mela* that indicates a gathering or festival—in this case a celebration that occurs each year after the harvest.

As designed, “Amriki Mela” occupied an L-shaped site (Figure 26). Visitors entered the pavilion through a water garden filled with flowers and a series of stilted gilded concrete domes forty feet high and seventeen feet wide before entering “Building A” dedicated to U.S. Agricultural Progress. The exhibit continued with an outdoor area of brightly colored Indian silk tents displaying American handicrafts and goods such as hooked rugs, jams, and jellies. The latest American-produced agricultural farm machinery was also on display on an area of topsoil imitating the rural U.S. farmland. The selection of equipment, however, was critiqued by fair attendees as being inappropriately advanced for the agricultural scene in India at the time, and thus, largely unhelpful to the typical Indian farmer (Figure 27). This instance clearly suggests that proving the technological achievements of American industry—and creating new economic markets for its products—was as or more important than providing useful information and tools to empower the individual farmer.

The pavilion also included a quintessentially American barn—called “Building B”—and the only barn Yamasaki ever designed, a fact the architect was quick to point out in his autobiographical monograph. Inside were eight cows lent by the Allahabad Agricultural Institute, as well as four hundred Leghorn chickens that American officials expected to be producing eggs by the opening of the fair. In addition, a second outdoor exhibit area, called the “Children’s Zone,” included a carnival zone where President Eisenhower, who presided over the fair’s opening, delighted crowds by riding the Ferris Wheel and the Merry-Go-Round, the design of which suggested a space age theme with rocket ship and airplane-shaped rides. The futuristic

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103 Yamasaki, *A Life in Architecture*, 60
104 “U.S. Farm Exhibit…India”
looking rides further underscored the American emphasis on research and technology, and they referred to the recent Soviet Sputnik launch that captured attention around the globe (Figure 28).

A third outdoor area repeated the water gardens and golden domed-motif of the entrance, but also incorporated an area of entertainment complete with a theater. But nothing signaled the future more than the 17,000 square foot Atomic Energy Building presenting what “atomic energy can do for the future farm.” The exhibit included a “tank-type nuclear reactor” that produced radioisotopes thought to be useful to agricultural production at the time. In addition, the Atomic Energy Commission sponsored seed irradiation demonstrations that promised to help eradicate Oriental fruit flies, invasive pests on the subcontinent and an impediment to robust agricultural production.

This highly visible form stood out against other countries’ simpler pavilions to attract large numbers of visitors, a measure of success for some U.S. officials (Figure XX).

Discussing his design agenda for the project, Yamasaki suggested:

Our concept was that of a walled complex of gardens and buildings with a continuing series of surprises—we hoped delightful ones. We wanted to capture an Indian flavor, to show our friendship and respect for India and her ancient culture. The series of domes...would be seen from a distance, and would be intriguing in contrast to the bulky buildings of the other countries.

There was a deliberate attempt in Yamasaki’s design to invoke a sense of context, although at times this appears to be fabricated; the gardens appear to only vaguely reference landscape traditions in Asia—a blend of Indian and Japanese garden design, with which Yamasaki was already very familiar due to his travels. The gilded domes, on the other hand, appear to invoke

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105 “Golden Architecture,” 176
106 “U.S. Farm Exhibit…India”
107 “U.S. Farm Exhibit…India”
108 “U.S. Farm Exhibit Prepared in India”
109 Yamasaki, as quoted in, “Golden Architecture,” 176. It should be noted that although the architect refers to the model as a “maquette,” I prefer the term diorama as a way to differentiate between the more conventional definition of the former as an artists’ preliminary model or sketch. The maquette Yamasaki refers to is, in fact, a didactic display.
the form of Chhatri—domed, umbrella-like architectural canopies, which are either used as entry points in traditional Mughal architecture or as cenotaphs; in either case, they denote wealth and power. Indeed, Yamasaki’s admiration of the Taj Mahal was well known at the time, and a building he once called “a vision” that inspired him, and one of the most prominent formal attributes of the Taj Mahal are its oversized Chhatri which make a bold statement (Figure 29). In the U.S. Pavilion, however, the golden domes appear anti-tectonic, more like playful objects of industrial design intended to reflect the sunlight—an architecture that externally related to aspects of the local context, while internally promoted the United States.

The series of instructional exhibits housed within began with the history of American agricultural production, illustrating that contemporary Indian yields matched the output of the United States half a century earlier through large dioramas and real-life installations. According to Clarence Pusey, deputy manager of the American exhibit, “We want principally to show Indian farmers the kind of American methods they can adapt and use for themselves…we hope that by borrowing from us they can compress into a generation or less the productivity we achieved in three generations.”\(^{110}\)

The agricultural fair in New Delhi took place twelve years after Indian independence. For the first time, India was asserting itself as an independent nation on the international stage, having been freed from British Crown Rule with the partition of 1947.\(^{111}\) The first seventeen years of Indian independence, during Prime Minister Jawaharlal Nehru’s leadership from 1947 until 1964, were undeniably difficult for the nation, and for Nehru himself. As historian John

\(^{110}\) Large, “India’s Sensitivities…Fair”

\(^{111}\) Although its colonial ties extend back to the 17th century, India had been under full British Crown Rule since the War of 1857-58. As historian Stanley Wolpert has suggested, the conflict was “far more than a mutiny, the name that British pride has always preferred, yet much less than a first war of independence, as some Indian nationalists like to call it.” Refer to: Stanley Wolpert, *A New History of India* (Oxford and New York: Oxford University Press, 1993), 238
Keay has argued, the biggest challenge of Nehru’s credibility within India was in the realm of foreign policy, rather than his domestic agenda: “As in matters of religion, language, or economic development, he favoured a position of superior neutrality between the confrontational orthodoxies of the day. Standing aloof from the Muslim versus Hindu, Hindi versus English, Marxist versus capitalist rivalries, he would similarly position India outside the East versus West global confrontation.”

Nehru was also immediately faced with issues that hindered the population’s health and well-being as well as the growth of the country’s economy:

Poverty, rural conservatism, illiteracy, and superstition, as well as the increasing population pressure (ten million a year by 1959), limited water resources, and lack of chemical fertilizers, electricity, and power all conspired to make Indian rural uplift one of the world’s most difficult problems.

A central component of Nehru’s plan to increase India’s food security and self-sufficiency was a Five Year Plan that spanned from 1956 to 1961, ending shortly after the World Agricultural Fair concluded. The plan, which was focused on a number of sectors—including transportation and communication networks, power facilities, and expanded irrigation infrastructures—was only partially successful, largely due to the growth of the population which outpaced increases in development. Over the course of five years, the production of grain for human consumption rose to 80 million tons, but still fell far short of the amount necessary to comfortably feed India’s population.

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112 John Keay, India: A History (New York: Grove Press, 2010), 532. Furthermore, Keay suggests, “Europe’s ‘iron curtain’ and Asia’s ‘bamboo curtain’ were not destined to be drawn together along the length of the Himalayas. An even-handed India would keep them open, be a conduit between the ‘free world’ and the communist bloc, and offer a peace-loving alternative to both.”

113 Wolpert, A New History of India, 360

114 The Five Year Plan approach was put into place in 1947 by Prime Minister Nehru’s cabinet, overseen by the Planning Commission, as a way to help India overcome financial troubles as an independent nation. To date, there have been a total of twelve Five Year Plans, with the current one ending in 2017.
population, which by 1961 had swelled to 440 million. The ongoing struggle to feed the nation’s population set the stage for the agricultural fair.

The fair also took place during an important point in Indian relations with the United States, which was in part a result of a significant shift in President Eisenhower’s leadership in the final two years of his presidency when he developed a new interest in diplomatic missions overseas. As historian Yanek Mieczkowski has suggested, “[Eisenhower] believed that he could use his personality and reputation as diplomatic assets, going abroad to improve America’s relations and world image.” The first of two such trips took Eisenhower to South Asia, Europe and North Africa. In a show of goodwill to India, President Eisenhower visited the World Agricultural Fair during his first trip, which took place between December 9 and 14, 1959. In his opening address to the fair on December 11, the President remarked, “Today, we have the scientific capacity to abolish from the world at least this one evil, we can eliminate the hunger that emaciates the bodies of children; that scars the souls of their parents; that stirs the passions of those who toil endlessly and earn only scraps.” The American president further underscored the peaceful nature of the event, elaborating on the four themes expressed in the U.S. exhibit—food, family, freedom, and friendship, suggesting that these four words were “mightier than arms and bombs.”

115 Wolpert, A New History of India, 361
116 Wolpert, A New History of India, 361
117 The following year, Henry Luce’s TIME magazine declared Eisenhower the “Man of the Year.” This was a radical departure from how the president had been seen previously. As the Daily Mail of London reported, “The sick man leaning away from leadership has become the keen-eyed, confident head of state ready to cope with anything.” London Daily Mail, as cited in Yanek Mieczkowski, Eisenhower’s Sputnik Moment: The Race for Space and World Prestige (Ithaca and London: Cornell University Press, 2013), 223-24. This was a sentiment that was also echoed by the New York Times.
118 Mieczkowski, Eisenhower’s Sputnik Moment, 224
120 Eisenhower, “Remarks at the Opening…”
The U.S. Pavilion in New Delhi was discussed at some length in the architectural and news presses worldwide. *Architectural Record* praised Yamasaki’s design, suggesting the golden architecture of the pavilion “stole the show.” *LIFE* magazine echoed this view in a January 1960 issue, calling it a “handsome hit” (see Figure 25). For the architect and his team, the endorsement was seen as a vote of confidence that they had achieved the American officials’ goal of “besting” the Soviet Union on the world stage but by producing architectural forms meant to resonate with the local context. This laudatory sentiment was also echoed in accounts of Eisenhower’s perceived popularity with both the general population and Indian Parliamentary government officials, who saw the president—coupled with his policies on world peace—as “a symbol of democracy.”

What at first seems like an architectural bait-and-switch may actually have been a means to disguise the United States’ overt boastfulness by appealing to the local architectural and landscape context.

Australian architect and critic Robin Boyd discussed the project in a 1961 article entitled, “The New Vision in Architecture,” for *Harper’s Monthly Magazine*, noting, “Yesterday’s Functionalist architecture, with its rigorous dogma and moral self-righteousness is giving way to a new and freer kind of monolithic design…full of surprises and invention.” Boyd describes two fundamental ways to make monolithic architecture: a box-like form (which he refers to as “a suitcase”), and a cellular form (like honeycomb, or in his terms, “a bunch of grapes”). The latter, Boyd argues, takes a number of like objects and groups them into a singular object meant to be read as a whole, as he suggests is the case for the Delhi pavilion:

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123 This argument, he contends, places monolithic architecture in two categories, or as he calls it, “the suitcase and the bunch of grapes.”
The individual grape in the bunch may also be exotic fruit, as in the purely decorative and frivolous U.S. pavilion at the World Agricultural Fair in New Delhi, where Minoru Yamasaki used a golden Fiberglas Eastern dome as a sunshading [sic] grape. He could have added as many domes as required by the exhibition authorities without embarrassment to the bunch.124

Boyd’s essay recalls other discussions of the split in late modern architecture between a complete object, such as a pavilion or monument (a suitcase), and an infinitely expandable form (a bunch of grapes). These two approaches became remarkably apposite in air terminals designed for civic and corporate clients, examined in the next chapter. While some comprised units intended to be infinitely expanded, others were complete objects with no practical possibility for expansion—or in Boyd’s terms, a suitcase. This, too, prefigures the question of the “duck” and the “decorated shed,” which is published over ten years after Boyd’s assertion. The duck was itself an entirely composed as a unit, unable to be expanded logically, whereas the decorated shed allowed for much greater flexibility in its function and expandability. The U.S. Pavilion in New Delhi, and other Yamasaki-designed work, falls into a third category in between that has historically been treated with less clarity and which some have considered a truly “American” architecture, as discussed in the introduction.

Yamasaki’s Asian heritage—which he once considered a possible detriment to his career—seems to have become an asset to the U.S. government’s global agenda in the years after World War II. The U.S. officials’ decision to hire MYA was not solely due to the principal’s popularity as an architect, nor his ability to produce designs quickly. Given that he was of Japanese heritage, U.S. officials hoped his work in India would “win the Asians’ notice”—a fact that was highlighted in a 1959 Wall Street Journal article, which noted, “Designer of the pavilion itself is Minoru Yamasaki, an American citizen whose Oriental name is splashed about

124 Boyd, “The New Vision…”, 75
prominently in the fair literature.”

But perhaps more importantly than the architect’s heritage, the building was designed to transmit an image of American achievement to an international public. To this end, historian Daniel Boorstin noted,

The American Pavilion, a light and graceful structure dances in the sun. Inside was neat and uncluttered. One of the sights most impressive to all comers was an American farm kitchen—a dazzling porcelain-and-chrome spectacle, complete with refrigerator, disposal, deep freeze, automatic washer and dryer, and electric stove. Before it walked a procession of Indian peasant women. Long pendant earrings, bangles on arms and ankles, objects piercing their noses—these pieces of gold were their savings which they dared not put in the hands of banks….They stopped and stared in bewilderment. What was this? It was the image of America.

In reality, the pavilion appears as a total fantasy world, displaying an idealized version of “America” and India under the guise of happiness, serenity, and delight. In so doing, the project focuses on what might be read as a vaguely “Indian” and quintessentially “American” blend of imagery: gilded domes, lotus-petal fountains, a red barn, and mini-spaceships.

The fair closed after a two month run, and although the festivities had concluded, the “Amriki Mela” was intended to have a lingering afterlife in India: On April 14, 1960, United States Ambassador Ellsworth Bunker gave the pavilion to the Indian Government, suggesting that the gesture signified “the close friendship existing between the two countries.” In either case, a representative from the Indian government even suggested the U.S. Pavilion was “one of the best showpieces put up by the U.S. anywhere.”

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125 Large, “India’s Sensitivities…Fair”
127 128 The decision to give India the pavilion may also have stemmed from a desire to avoid the costs associated with its deconstruction. In his opening address at the fair, President Eisenhower presaged the closer relationship between India and the United States, suggesting, “Whatever strengthens India, my people are convinced, strengthens us, a sister-Republic dedicated to peace. This great nation of 400 million people, rich in culture and history, courageous in the resolve to be free and strong, is a mighty influence for an enduring and just peace in the world. And this is true of every nation so courageous, so determined, so inspired as is India.” Refer to Eisenhower, “Remarks at the Opening…”
129 “Agricultural Fair Pavilion”
demolished, but the World Agricultural Fair was part of a more significant outcome for U.S. foreign policy. Building on the perceived successes of previous foreign aid policies since the Marshall Plan of 1947, President John F. Kennedy inaugurated USAID on November 3, 1961 with the passage of the Foreign Assistance Act. Much like the U.S. Pavilion in New Delhi, and previous U.S.-led aid policies, USAID was focused on both “creating markets for the United States…in developing countries” and, at the same time, working to diminish “the threat of Communism by helping countries prosper under capitalism.” USAID continued to rise in prominence throughout the twentieth century with a mission that was in near constant flux, adapting to the changing global landscape, ultimately shifting its focus from an overtly anti-Communist stance to one couched in terms of humanitarian aid in service of providing basic human needs to countries in need.

The U.S. pavilion ostensibly aimed to demonstrate to India how advanced farming techniques could help feed its exploding population, but it was also one small part of U.S. propaganda during a time of growing worldwide tensions. The fair took place between the death of Joseph Stalin in March 1953 and the Cuban Missile Crisis in 1962 as tensions between the United States and the Soviet Union rose, attested in part by the competitive nature of the two countries at the fair—as well as by the unfolding “space race”. After the U.S. Consulate in Kobe, the agricultural pavilion in New Delhi was the second overseas project designed by Minoru Yamasaki and Associates, though not the last. In addition to overseas commissions, the firm took on numerous projects throughout the United States, including a number for federal

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131 In the decades that followed, the firm received commissions from a variety of clients in Japan, Singapore, and most significantly, Saudi Arabia. Beginning in the 1950s, and continuing through the 1980s, the U.S. Army Corps of Engineers and Saudi Arabian leaders looked to the firm to design a variety of projects in Saudi Arabia, including office buildings and airport terminals, examined in Chapter III.
government agencies. One such project was the U.S. Federal Science Pavilion at the Century 21 Exposition.


The United States Science Exhibit, which later became known as the Federal Science Pavilion, was commissioned in 1959 and aimed to promote “the role of man in a search for truth in science.” Furthermore, it sought to stimulate young people to take a greater interest in what science might offer society. The pavilion was one part of a larger section of the Seattle World’s Fair, or Century 21, that focused on scientific and industrial discoveries. The exploration of space was a central component of the overall fair, with many exhibits reflecting this largely mysterious area of the universe that had newly captured worldwide attention—and was evident in exhibition materials in the MYA-designed pavilion. Because of the extensive materials included in the United States Science Exhibit, Yamasaki worked with designers Charles Eames, Raymond Loewy, William Snaith and George Nelson, and the Seattle-based firm of Walter Dorwin Teague Associates. Nelson and Loewy were both friends of Yamasaki’s, with whom he had previously worked during his time New York, and after relocating to Detroit in 1949.

Located near the south entrance to the fairgrounds, the Federal Science Pavilion was composed of a series of five buildings arrayed around a central water feature and landscaped gardens (Figure 30) that suggested an overall formal connection the U.S. Pavilion in New Delhi

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133 “United States Science Exhibit,” 8
134 The I.B.M. Pavilion, Nalley’s Space Age Theater, and the National Aeronautics and Space Administration’s pavilion were all located near the U.S. Science Pavilion, along with exhibits showcasing electric utilities, the oil industry sponsored by Standard Oil, a generic gas industry pavilion, and Bell Telephone systems.
135 This Seattle-based firm was a pioneer in industrial design, promoting improved products and graphic design as a means to enhance corporate image. The firm played a large role in early World’s Fairs, as well as in Seattle’s aviation and space industries.
Unity in the design was reflected in the complex’s overall form; each building had a different footprint and height, but the formal attributes remained similar, bringing visual cohesion to the project (Figure 31). Visitors arrived at the complex via an elevated entryway composed of five vaulted towers set amid reflecting pools and lighted fountains (Figures 32 and 33). The effect was particularly spectacular at night (Figure 34). Attendees worked their way through the entire exhibit, moving from building to building with the occasional opportunity to step outside and view the reflecting pool and fountains as a break from the exhibit halls. Unlike the U.S. Pavilion in New Delhi, visitors exited the pavilion from the same place they entered, after concluding the circuit of exhibits.

The program comprised four themed areas, a resting zone, and an exhibition summary near the exit. Each offered graphic displays, theatrical demonstrations, or films introducing fairgoers to new research and developments that agencies of the government had undertaken in recent years (see Figure 30). The first pavilion housed a theatre which introduced attendees to the “Frontiers of the Future.” Alternatively called “The House of Science,” the exhibit focused on science as an area of research that was constantly evolving. The animated film inside utilized an architectural metaphor to convey its message. “Science is seen as a house that grows a room at a time over many centuries in increasing complexity and size but with an essential inherent unity of design.”

Visitors next entered the exhibit hall entitled “Law of Science” or “The Development of Science,” followed by the much touted “Spacearium” in which a domed auditorium featured a film that every fifteen minutes took viewers on a “60-thousand-billion-billion-mile roundtrip into space.” As the fair’s Official Guidebook explained, “The imaginary 10-minute excursion to the outer galaxies simulates what in actuality would be a two-billion light

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136 “United States Science Exhibit,” 9
year journey.” A smaller rest area offered respite to exhibitgoers with an internal space (Figure 35) as well as an outdoor patio overlooking the reflecting pools and towers of the central courtyard. The final two buildings of the pavilion housed “The Spirit of Science” and lastly a “Summary” exhibit that recapped the many new and varied discoveries, inventions, and investigations presented within the pavilion, which included a hands-on laboratory for children between the ages of eight and thirteen called “Doing Science.”

Although the United States Commerce Department ascribed the significance of the number of towers to the five basic laws of science, according to the architects, this decision was “made entirely for design reasons” (Figure 36). According to Yamasaki, the main reason for this arrangement was to emphasize a sense of enclosure, giving visitors an internal focal point. This, the architect hoped, would limit what he saw as visual competition from neighboring pavilions he had experienced at previous world’s fairs, and came from his own observations of the Swedish Pavilion at the 1939 New York World’s Fair, which he characterized as “remarkably beautiful…designed around a small garden courtyard.” Furthermore, the pavilion was one of a handful of fair buildings that was intended to be permanent after the fair’s closure, and remains in existence today much as visitors found it at the opening.

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137 “United States Science Exhibit,” 14-15
138 “United States Science Exhibit,” 22
139 Yamasaki, A Life in Architecture, 70. Initially the design team had planned a single tower 110-feet high, but that was scrapped in favor of five smaller ones due to the nearby Space Needle, which at a height of 650 feet, they worried would visually compete with their design.
140 Yamasaki, A Life in Architecture, 70
141 Yamasaki even recalls returning a few years later for a private party and remarked at how well the pavilion and its courtyard had been maintained, calling it “one of the greatest signs of appreciation that [an architect] can receive.” See Yamasaki, A Life in Architecture, 70.
 Named to direct the imagination to a future beyond the year 2000, the overall aim of Century 21 was “inspired by the promise of a new age before the world—the age of space.”¹⁴² The space age had never had more meaning, or been more apparent to the world, than in the wake of the Soviet Union’s Sputnik launch in 1957 and the formation of NASA by the United States in 1958, resulting in the so-called “space race.” The Sputnik launch alarmed the U.S. population. At a news conference on October 9, 1957, President Eisenhower suggested that the satellite marked progress in scientific developments, not a military threat.¹⁴³ As Yanek Mieczkowski suggests, “the Sputnik uproar was more apparent than real. It was the press and politicians who generated noise, capitalizing on the event for attention and electoral gain.”¹⁴⁴ The launch propelled the United States into deeper development of space technology. New scientific research became intertwined with political and militaristic advancement as the world’s major powers rushed to gain a competitive economic advantage over one another. In the United States, these efforts were in part undertaken by the USIA and various initiatives set forth by President Eisenhower, including the “Atoms for Peace” project, further expanded in January 1958 to simply “Science for Peace,” which ultimately became a “priority theme” for the remainder of 1958.¹⁴⁵ As part of this, Eisenhower “proposed that the United States and the U.S.S.R. begin by pooling efforts to wipe out malaria, and then move on to cancer, heart attacks, and even hunger.”¹⁴⁶

¹⁴⁴ Mieczkowski, *Eisenhower’s Sputnik Moment*, 2
¹⁴⁶ Cull, *The Cold War and the United States Information Agency*, 152. U.S.-led space research began with the National Advisory Committee on Aeronautics (known as NACA) established in 1915 as a way to keep President Woodrow Wilson apprised of new technologies and developments in the burgeoning aviation and space industries. The federal agency initially focused on developing military and scientific technologies for space missions, including aircraft and missile developments. By the 1950s, popular support for the agency had begun to wane. As a direct
The Seattle World’s Fair was originally conceived by the organizing committee as “a festival for the West” commemorating the Alaska-Yukon-Pacific Exposition, a popular regional fair that had taken place in 1909. As plans for the exhibition came together, the festivities morphed into a larger operation combining the commemorative fair with a celebration of Seattle’s new civic center. Given the enlarged scope of the program, the entire state of Washington became involved, and state agencies began sponsoring exhibitions promoting the state’s many, varied resources. One of the initial goals of the fair was to help “speed up the Pacific Northwest’s slow population growth,” which lagged far behind the East Coast and Sunbelt regions of the United States. Despite Seattle’s relatively small population, at the time result of the Sputnik launch, widespread public interest in the agency was reinvigorated and the program was strengthened and streamlined. Members of the Space Council settled on a revised name, the National Aeronautics and Space Agency, or simply NASA. The agency officially took over duties from the NACA, along with an expanded role in space research, on October 1, 1959—just four days after Russian Premier Nikita Kruschev concluded his first visit to the United States. One might also recall that in 1957, TIME magazine named Kruschev the “Man of the Year,” suggesting the leader “outran, outfoxed, outbragged, outworked, and out-drunk” his rivals.

Although it was initially unclear to many whether NASA should be primarily a civilian or military operation, Eisenhower suggested that “A civilian setting will emphasize the concern of our nation that outer space be devoted to peaceful and scientific purposes.” The creation of NASA came at a pivotal time when the United States was preparing to host a major World’s Fair in Seattle. The fair would showcase many developments in space and technology in a city that was home to the nation’s leader in aviation, The Boeing Company, originally founded in 1916 as Pacific Aero Products. Although Century 21 lasted for only six months, the fair had a lingering impact on the region’s growth and vitality, particularly in the aviation and space technology industries which spawned new urban growth in the metropolitan region. See also, Dwight D. Eisenhower, as quoted in “NASA,” Time (April 14, 1958): 17.

At the helm were Seattle businessman Edward E. Carlson, Chairman of the Century 21 Corporation, with Ewan Dingwall as the Director and James N. Faber as the assistant director. Carlson was an important Seattle figure who also had ties to the hotel and airline industry. Most notably, he was the President of Western International Hotels (later shortened to Westin) and for a brief period of time as the CEO of United Airlines during which time UAL and Westin formed an early airline-hotel alliance and co-ownership. For more Edward Carlson and Western International, refer to Chapters II and IV of this project.

For a concise scholarly summary of the Seattle World’s Fair, refer to John Findlay’s entry “Seattle 1962” in John E. Findling and Kimberly D. Pelle, Encyclopedia of World’s Fairs and Expositions (Jefferson, NC: McFarland & Co., Inc., 2008), 323-330. As the author outlines, one concern of Seattle residents and city officials was the rapid suburbanization of the metropolitan area, fueled in part by Boeing’s plants necessarily located far from the city center. It was hoped that by bringing a World’s Fair to downtown Seattle, the city’s core would be both reinvigorated with development, rendering Seattle a more cosmopolitan city, and consequently, more attractive to workers and families from across the United States. The Seattle fair was the first of three such expositions in the United States that aimed to catalyze development in cities that had struggled to grow their populations. Like Century 21, fairs in both San Antonio (1968) and Spokane (1974) had positive outcomes in this regard. These good fortunes
it was barely 600,000 inhabitants, the city was able to attract the official designation as a world’s fair and thus secure $13 million in federal funding for the exposition—just under four times the amount approved by Congress to spend on the U.S. entry in Moscow in 1959.  

Although the exhibition was planned and organized during the Eisenhower administration, newly-elected President John F. Kennedy presided over its opening on April 21, 1962. A decorative key, made from gold nuggets excavated during the 1896 Klondike gold rush and first used by President Taft to open the 1909 exposition, symbolically opened the fair. Prior to the fair’s conclusion on October 21, Kennedy canceled his attendance at the last minute citing an upper respiratory infection; in reality, the beginning of the Cuban Missile Crisis meant that he was needed elsewhere. On October 22, President Kennedy announced the Cuban blockade, formally establishing the Executive Committee of the National Security Council and implementing strict measures regarding the transportation of goods between Cuba and the United States. These actions began a chain of events that had a lasting impact on Cuban-American relations and helped shape U.S. foreign policy in the decades that followed.

The fair was roughly divided by an elevated skyway system into two main parts spread out over 74 acres. The south and west portions of the exhibit were primarily dedicated to science, commerce, and industry, whereas the northeast quadrant placed a greater emphasis on arts, entertainment, and culture (Figure 37). The Skyride was intended as both a popular attraction in its own right, as well as an efficient means to transport fairgoers across the compound from the Monorail terminus to the “International Mall” which housed pavilions representing nations,
organizations, and city-states. Among those present were the United Nations as a distinct exhibitor, the continent of Africa, the nations of Thailand and India, as well as the city of Berlin and the city-state of San Marino. The ride also gave fairgoers a taste of the future, for those who had not yet flown, through an “aerial tour” of the exposition’s grounds. The exhibition was further subdivided into eleven distinct zones, featuring five themed “worlds”: World of Science, World of Century 21, World of Commerce and Industry, World of Art, and the World of Entertainment, along with privately-sponsored exhibits (Figure 38). The fair included six additional zones spread throughout the exposition, including, “Show Street,” “Gayway,” “Boulevards of the World,” “Exhibit Fair,” “Food and Favors,” and the “Food Circus.” All of this was meant to appeal to a wide audience, many of whom had traveled some distance to attend the fair and who might also encourage family and friends back home to attend.\footnote{Once the fair received international recognition and official World’s Fair status, much needed to be done to convince Americans across the country to make the lengthy journey to Seattle and make the event a financial success. In the early 1960s, a cross-country journey was neither simple nor affordable for the average American. With this in mind, fair officials knew they needed to provide ample reason to attract visitors—and excite them enough to entice their friends and family to visit as well. This was achieved both through formal advertising campaigns and by word-of-mouth among fairgoers. Once in Seattle, visitors also needed ample reason to stay and explore the Pacific Northwest. The state of Oregon ran color advertisements touting to fairgoers its “free beaches,” “air-conditioned climate,” and “scenery galore.” Alaska Airlines further suggested attendees extended their trip northward to Alaska via their “Golden Nugget Jet Service” which provided all the latest in Jet-Age comforts. Even in the 1960s, the fabricated lore of the west was strong, and civic leaders and corporate heads were eager to capitalize on Americans’ deep curiosities about their own country, in addition to the world’s cultures and inventions the fair showcased.}
“Peep,” a backstage show that featured scantily-clad, female models directed by Hollywood star LeRoy Prinz. Morality around the fair was unevenly regulated. Even though women were allowed to bare their breasts during the shows, and Seattle residents could evict permanent tenants to profit from fair going attendees—two rather large concessions—the sale of alcohol was still banned on Sundays, which to many seemed like a missed revenue opportunity. Indeed, the offerings at the fair ranged from the intellectual to the tawdry—and even the profane.

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When Century 21 opened in April of 1962, John Canaday of the New York Times suggested the “event has spectacle and significance”—a combination that might best be represented in Yamasaki’s delicate design for the Science Pavilion. The symbiotic relationship between technology, nature, and art might also be understood in the journalist’s unlikely observation: “One weather satellite on display is abstractly as beautiful and expressively more powerful than the sculpture commissioned to decorate the fair, which is not bad sculpture at that. This could mean that we must accept the equality of the scientist-technician with the creative artist as the expressive agent of our century.” The following January, however, the editors of Time suggested something quite different:

Though the Pavilion was devoted to showing modern science, it looked as if it could have been the setting from a poem by Coleridge. From any angle, it cast a spell. It had reflecting pools, stage set lighting, delicate bridges, six buildings decorated with Gothic tracery. Inside, it subtly lured visitors along, stopped them just where the designer intended that they should pause and look.

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156 “The Road to Xanadu,” TIME (January 18, 1963): 58. Yamasaki and his firm were the lead architects of record, in collaboration with the Seattle-based firm Naramore, Bain, Brady and Johnson.
158 “The Road to Xanadu,” TIME (January 8, 1963): 54
In spite of this observation, the interrelationship between art and technology was not directly expressed in the structural aspects of the pavilion’s design, but rather, in a cultural sense—not unlike the formal attributes and underlying characteristics of the New Delhi Pavilion. As previously discussed, Yamasaki often positioned his brand idea of architectural formalism as “American contemporary technological design,” albeit one that was heavily indebted to the past. This approach and theme is readily apparent in both pavilion projects, and also masks the underlying political nature of the two pavilions. Furthermore, the conspicuous visual excess apparent in both the U.S. Pavilion in New Delhi and the Federal Science Pavilion in Seattle calls into question Yamasaki’s complaints about the “boastful” Soviet pavilions of previous world’s fairs. In New Delhi, in fact, the architect had done similarly, but this time as a representation of and for the United States.

In the Federal Science Pavilion, on the other hand, the formal attributes employed by the architects included historical motifs, which some referred to as Gothic-esque arches, to create another kind of architectural world of its own by formally abstracting the arch and modernizing its production by using new materials and precast concrete panels with roof spans up to 135 feet.159 From inside the complex, the geometric latticework framed against the night sky suggested a Modern infrastructural architecture that also recalls Gothic tracery. The ethereal or space age theme is further underscored in the light fixtures suspended from the towers which appear as though they are satellites orbiting in space (see Figure 36). This space-age theme, and its implications for architecture, is further underscored in a proposed major world’s fair—Interama in Miami—that never came to fruition in spite of having broad support from governmental agencies, architects, and local and international corporations.

159 Yamasaki, A Life in Architecture, 70
Unrealized Grandeur: Miami, Interama, and the Fair that Never Was

An examination of MYA-designed structures for World’s Fairs would be incomplete without considering the firm’s proposal for a project anchoring a proposed exposition in Miami. Interama, short for the Inter-American Cultural and Trade Center, was slated to take place in the mid-1950s, but after a series of postponements and revisions through the early 1970s, was ultimately canceled. Before its demise, however, Interama was intended to be more than a transient affair that its organizers suggested “will be the first permanent international exposition in the world” and one that was “designed to bring to the peoples of all nations the best examples of culture, festivals, sports, government, industry and leisure activities” in four main areas.160 In many ways, Interama was a kind of culmination of the best attributes of world’s fairs leading up to it and focused on entertainment and education while also providing spaces “for government leaders, businessmen, scientists, educators, religious and labor leaders and others to meet, discuss mutual needs and problems and reach workable solutions.”161 Interama had great ambitions, and a slogan to match: “The American Way of Life—Progress With Freedom.”162 By 1965, the committee had also assembled a team of six American architects to design the pavilions and other buildings located on the grounds, including Marcel Breuer, Louis Kahn, Paul Rudolph, Jose Luis Sert, Edward Durell Stone, and Harry Weese. Minoru Yamasaki joined the group a few years later to design what would likely have become the symbol of Interama—dubbed the “Tower of Freedom”—which was planned to rise 1,000 feet above the exposition grounds (Figure 39).163 The tower would have connected the International Area to the rest of the

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161 State of Florida, “What is Interama?,” 1
162 State of Florida, “What is Interama?,” 1
163 It should be noted what significance this name has after the destruction and replacement of Yamasaki’s World Trade Center with Daniel Liebskind’s “Freedom Tower.”
grounds via three suspended bridges and featured a revolving restaurant and an outdoor observation platform (Figure 40).\textsuperscript{164}

In spite of receiving nominal support from no fewer than six presidential cabinets including that of President Nixon, Interama was never more than a fanciful project on paper. The ambitious but unachievable goals of the committee were reflected in many aspects of the project’s promotional literature, and is perhaps best captured by the description of Yamasaki’s tower, which the organizers assumed “would take its place among the other major monuments of the world, illustrating man’s desire to reach ever upward in intellectual, spiritual and physical freedom.”\textsuperscript{165} Indeed, one of the exposition’s core problems may have been that the organizers were too singularly focused. As historian Robert Alexander-Gonzalez has suggested, “Interama’s organizers were perhaps too transfixed by the seductive excursions that Pan-American Airways advertised, and not in touch with a city quickly being transformed by the Cubans.”\textsuperscript{166} In other words, too much emphasis was placed on the possible synergies a major exposition might bring to the city, instead of focusing and capitalizing on the changes that were already taking place due to Miami’s rapidly expanding, and shifting, population.

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The U.S. Consulate in Kobe, the U.S. Pavilion in New Delhi, the Federal Science Pavilion in Seattle, and Interama in Miami begin to show the interrelationship between international architectural commissions from the U.S. government, Yamasaki’s Japanese heritage, and architecture as a political agent that together form a pattern in the firm’s approach to design. Yamasaki and his team argued that the work they produced was directly influenced by

\textsuperscript{165} State of Florida, “What is Interama?,” 2-3
\textsuperscript{166} Alexander-Gonzalez, Designing Pan-America, 178
new technologies and building techniques, however, the architecture of both U.S. Pavilion in New Delhi and the Federal Science Pavilion in Seattle were not related to their specific themes in a traditional architectural sense, but perhaps played to peoples’ vague notions of an “Oriental” or a celestial “other.” In other words, the firm was less focused on an investment in history as precedent, but rather, in cultural allusion—in the former, to Hindu architecture, and in the latter, to a space-age aesthetic. In so doing, the projects reference formal aspects beyond themselves, indexing objects and histories that were well known to the general population, and not just to practicing architects. Both projects offered fairgoers a human-scaled complex as a kind of relief from other grand, projective, and future-forward pavilions at the fairs; even though the MYA-designed pavilions were grand in their own right, they became easily consumable objects of dominant cultural references in their respective contexts. Although the overt political nature of the pavilions may have been lost on the average fairgoer, in both cases, the U.S. government was working tirelessly to seal its position as a leading world power reified through architectural form.

The consulate and world’s fairs examined in the chapter all point toward increasing globalization that had begun to seep into everyday life in the United States and became important to governments worldwide. Although some fairs were intended as goodwill measures, such as in New Delhi, for example, each event intended to raise the visibility of participating nations’ new technologies and products as a way to increase export product and create new capitalist markets worldwide. In addition, increasing numbers of people traveled to these and other fairs hoping to catch a glimpse of the latest inventions and learn about nations and cultures far removed from their own daily lives, particularly for fairs in the United States. As a result, I argue, the fairs became part of the spectacle of modern life and can be related to Guy Debord’s 1967 conception of spectacle, but an architectural one.
If this chapter focused on how MYA-designed buildings began to present the United States in a foreign context, as well as those meant to bring foreign exhibits to a domestic setting, the next chapter focuses on Yamasaki’s path breaking buildings for air travel and global interconnectivity, by examining the rise of the late modern air terminal within the firm’s caseload. This relatively new typology was quickly becoming an essential component of a globalizing world as MYA grew and became a major force in American architecture. As architects were called upon to imagine and reimagine solutions to the increasing volume of air travelers and rapidly changing technologies, they struggled to achieve formal clarity for the airline executives that hired them, while managing expectations from city officials and airport management agencies for a flexibility of function that would carry the airport and the region well into the future of air travel. MYA developed multiple major airports and airport designs, becoming a leader in this growing professional subfield of professional practice. His formal capacities, combined with the firm’s ability to undertake large projects quite quickly, made MYA a prime candidate for airport design. The tension between the formal ambitions of the firm and the functional expectations of their clients plays out in a series of formally distinct case studies across the United States, designed and built between 1951 and 1970, that will be considered in the next chapter. As the firm received international airport commissions, their reputation for this building continued to grow, the subject of Chapter III.
CHAPTER II
Tension in the Terminal: Iconic Form vs. Infinite Expandability, 1952-69

“The greatest problem for any airport designer is to remember that a terminal is nothing but a transit shed and that the main object is to get passengers out of the plane and on their way, or vice versa, with as little architectural obstruction as possible.

Of course everyone who has anything to do with the buildings agrees with that—but they want to except themselves. The airlines want their service counters blocking the way so they can confirm the passenger’s return ticket and thus keep other airlines away.

The building owner wants the passenger to go through a maze of concessions so that percentage rents go up. The restaurant man can see no reason why the bar cannot be the focus of the entire plan.

The designer is so blocked from all sides by everyone that in spite of himself he loses sight of the objective, and if he doesn’t lose sight of the objective, someone forces him to ignore it before he is finished.”

- George J. Wimberly, AIA (1952)

Shortly after Yamasaki and partners Joseph Leinweber and George Hellmuth left Smith, Hinchman and Grylls to found their own pair of firms, they received two important commissions that influenced their respective careers. First was the now-infamous Pruitt-Igoe public housing project in North St. Louis, and second was the Lambert-St. Louis airport terminal, examined later in this chapter. Terminals designed by Yamasaki and his associates, while distinct in their formal

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167 These were known as Hellmuth, Yamasaki and Leinweber (HYL) in St. Louis, and Leinweber, Yamasaki and Hellmuth (LYH) in Detroit.
and structural composition, were key to the development of late modern airport technologies. The chapter begins by exploring corporate branding and iconic architecture as techniques by which airlines distinguished themselves from competitors and created a corporate culture that was appealing to passengers. Building on the discussion of formal technique broached in Chapter I, by which MYA successfully launched in the late 1950s, this chapter shows how formal technique met new building technology and new commercial requirements in a new and rapidly evolving type. It continues by exploring other ways in which architects worked around the complex requirements of this new building type, similar only in name to the 19th and 20th century rail terminals.

The chapter begins by exploring a small and relatively unknown early example of an airport project that Minoru Yamasaki and Associates undertook at the Detroit-Willow Run Airport. The modest hangar renovation, however, provides an unlikely link between the interwar European avant-garde and Yamasaki’s early career. In 1955, Yamasaki’s office hired MIT graduate Manfredi Nicoletti as lead project architect for the interior renovation of the Willow Run Airport in Ypsilanti, Michigan. The renovation was intended to keep airlines from moving to the newly constructed Detroit Wayne-Major airport, and was one of the first projects in the region undertaken by Yamasaki’s Detroit-based office. Although it was the first of a handful of terminal commissions received by the firm, Willow Run offers insight into the new typology of the commercial air terminal, what it meant in U.S. late modern architecture in the 1950s, and how MYA approached it.

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168 Although present from the founding manifesto of 1909, the obsession with flight is particularly evident in the Second and Third Wave Futurist movements in the 1920s and the 1930s.
The chapter continues with two significant air terminal projects undertaken by the firm between 1952 and 1969. First, the Eastern Airlines Terminal A at Boston Logan (1965-69) was a project in which MYA re-imagined airport architecture by focusing on the efficient handling of passengers in a single-airline terminal. This terminal also underscores the interrelationship between modern architecture and corporate image. Building on numerous links between corporate branding and architecture, so well examined in the case of the IBM corporation, this portion of the chapter considers MYA’s Boston project in relation to other single-airline terminals such as the “Sundrome” for National Airlines (I. M. Pei, 1970; later known as Terminal 6) and the TWA Flight Center (Eero Saarinen, 1962), both at John F. Kennedy International Airport in New York (formerly Idlewild). The Eastern Terminal provides a telling contrast to the South Terminal at Boston Logan (John Carl Warnecke and Associates, 1974; now Terminal C), a building that solved the frequent lack of flexibility inherent in the single airline terminal by the employment of an infinitely expandable system that also had a flexible internal logic.

Lastly, the chapter examines the Lambert St. Louis Air Terminal, the second major publicly funded project, after Pruitt-Igoe, that helped put the young team of architects, including Yamasaki, George Hellmuth, and Joseph Leinweber, in the national spotlight. The terminal opened in May 1956, including a series of thin-shell concrete domes in the main terminal that could in theory be endlessly repeated as the airport expanded, after four years of planning and construction. The architects used expressive form to address problems of this new building type, specifically the requirement of large interior clear-spans. Unlike the Eastern terminal, which was funded primarily through private sources and acted as an icon for its corporate sponsor, the St.
Louis project was entirely underwritten by the municipal government and was used by all airlines serving the city.

Throughout the chapter, political, social, and economic developments shed light on changing airport design, at a range of scales, affecting passengers, airline corporations, and the air travel experience. Through these case studies, this chapter examines both built and unbuilt designs for MYA’s mid-twentieth century air terminals, tracing the work of a leader in airport design. In conclusion, I consider Yamasaki’s and his contemporaries’ terminals as a critical phase in the development of megastructural airports from the late 1960s into the 1980s. These large-scale projects relied as much on site engineering as on architectural design—a topic that is further considered in Chapter Three. In each case, image—combined with a larger cultural vocabulary—played a central role in the development of the projects that turned to formal iconography in the development of a new technological form.

**Branding vs. the Evolving Business Model of Airport Architecture, 1956-75**

In the early days of commercial aviation, airlines easily attracted passengers to their flights. But as the number of flights increased, fueled by consumer demand, individual airline companies sought to distinguish themselves from their competitors. Since the aircraft were more or less the same, differentiations in onboard service, frequency of flight schedules, and flexibility of fares became important. Airlines also turned to architecture and design to further set their product apart from the competition. Pan American World Airways (Pan Am), along with Eastern, Trans World, and National, invested in architectural and interior designs in city ticket

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169 Other large-scale architecture and engineering firms such as Tippets-Abbett-McCarthy-Stratton (TAMS), Hellmuth, Obata, Kassabaum (HOK), and Skidmore, Owings and Merrill (SOM), executed immense airport projects of their own while also providing consulting and engineering services to smaller firms.
offices, airline-sponsored World’s Fair pavilions, and ultimately, in their proprietary air terminals. Architecture and airlines became important partners, attempting to fuse corporate image to national identity.

One of the largest and most prominent carriers from the 1920s to the 1960s was Pan Am, an airline that demonstrates two recurrent tensions in terminal design, one around restrictive business models, the other between formal legibility and programmatic flexibility.\textsuperscript{170} The airline was initially limited to international air services, a fact which may have contributed to its financial decline in the late 1970s and 1980s due to its inability to transport feeder traffic to its long-haul operations with only a modest network of domestic flights.\textsuperscript{171} Throughout its existence the company promoted itself as not simply a U.S. carrier, but an airline for the world. By 1982, Pan Am’s route network included destinations as distant as Pago Pago, Johannesburg, and Dhahran, and one of the final company slogans of the late 1980s reflected the airline’s worldliness: “Every country has an airline. The World Has Pan Am.”

In reference to this claim, the airline’s New York terminal was referred to as the “Worldport” (Figure 41), designed by William Prokosch of Tippets, Abbot, McCarthy, and Stratton (TAMS). The terminal opened in 1960 as a symbol for the vast airline network, and offered travelers “an unchecked panorama of wide areas of the airport through its glass walls and outdoor viewing walks...It has no art inside; the building is the exhibition.”\textsuperscript{172} The building became synonymous with its “umbrella-like roof” covering an area of four acres that shielded aircraft and workers servicing them from the elements—an aspect of the design that complicated

\textsuperscript{170} As John Harwood has noted in his conclusion, post-IBM, Eliot Noyes also worked to redesign Pan Am’s aircraft interiors and its overall corporate image.

\textsuperscript{171} As a result of a limited domestic network, the airline may have had a harder time dealing with fluctuations in the international air travel market. This was also a time before partnerships and code-sharing with other airlines became a common solution to filling aircraft without having to operate one’s own domestic network.

later modification efforts to handle larger aircraft.\textsuperscript{173} This further highlights the apparent tensions between formal legibility and flexibility of function in air terminal design. Often, the buildings which are most striking are also the ones least able to be modified or expanded as air travel demands change, as was also the case in Yamasaki and Associates’ design for Eastern Airlines in Boston, examined below.

From its hubs in New York and Miami, Pan Am mapped new flights to remote parts of the world that previously lacked air service and heavily invested in its ground operations and reservations facilities. As a way to advance the airline’s worldwide image and Manhattan presence in the 1960s, Pan Am executives commissioned a 10,000 square foot New York ticket office and travel center that was purported to be the largest in the world at the time. Although the plan of the overall space was rectilinear, the interior design was anything but rigid (Figure 42). According to a feature in the August 1963 issue of \textit{Architectural Forum}, the dramatically molded interior by Charles Forberg and Edward Larrabee Barnes, “shares the same sculptural, flight-evoking quality so evident in recent U.S. airport design.”\textsuperscript{174} Indeed, the interior space reflected a futuristic aesthetic: white, flowing wall surfaces served as a backdrop against which “floating” circular ticket islands and semi-circular waiting benches greeted future travelers with the promise of global adventure and modern efficiency (Figure 43).\textsuperscript{175}

\footnote{174 “Pan Am Ticket Office: An Airy Sweep of Sculptural Space,” \textit{Architectural Forum} (August 1963): 99}
\footnote{175 To operate such a vast network, however, required large numbers of employees focused on the airline’s organization and operations. In order to make its operations more efficient as the airline grew, in 1962 Pan Am hired IBM to develop and implement a new reservation system, Panamac, which would “link 114 cities on six continents with the data processing center [in New York].” Beginning in 1963, this system streamlined flight reservations, aircraft maintenance logs, employee payroll, and made it possible for Pan Am agents to book rooms directly at the airline’s own Intercontinental Hotel chain properties worldwide. This advanced communications network allowed the many aspects of the airline’s operations to interface in one internal, centralized system. For more on this topic, refer to, “Pan Am Will Use I.B.M. in Bookings,” \textit{New York Times}, March 13, 1962.}
Another important patron of modern architectural design was National Airlines. Unlike Pan Am, which claimed to be an airline for the world, National proclaimed itself the airline of Florida. The airline’s focus on Florida became a driving force behind the carrier’s operations and prompted National to invest in a new terminal at Idlewild. The airy glass structure (I. M. Pei, 1962-70) was constructed on a 22-acre parcel in the middle of the airport grounds and became known as the National Airlines “Sundrome.”\textsuperscript{176} The National terminal joined what many considered a chaotic collection of terminals at the airport, which included Eero Saarinen’s TWA Flight Center located immediately adjacent to the Pei project.\textsuperscript{177} As the eighth terminal at Idlewild, many suggested it would “complete the ‘airline city’” when it opened (Figure 44).\textsuperscript{178} The design of the terminal was unprecedented in a number of ways; first, a strict division of labor between arrival and departure traffic aimed to reduce congestion. Instead of both being located on one side of the terminal, arriving passengers would collect their baggage and be picked up on a lower level that was airside, leaving the front of the terminal for departures. In order to achieve this, the architects relocated baggage-handling facilities below ground.\textsuperscript{179} Second, expansive glass walls with glass mullions in the central lobby and a seven million pound roof structure supported by sixteen massive concrete columns surrounding the building kept the interior space truly open (Figure 45).\textsuperscript{180} The flexibility of the open lobby accommodated easier modification to keep pace with changing demands through the 1970s and 1980s, the first of

\textsuperscript{177} In 1984, the New York Port Authority commissioned a master plan to redevelop the entire JFK airport complex from I. M. Pei and Partners. Due to budgetary constraints, however, the plan was shelved in favor of smaller, more financially manageable improvements. For more on this discussion, refer to Paul Goldberger, “Architecture View: Blueprint an Airport That Might Have Been,” \textit{New York Times}, June 17, 1990.
\textsuperscript{179} Phillip Jodidio, ed, \textit{I. M. Pei: Complete Works} (New York: Rizzoli International Publications, 2008), 77
\textsuperscript{180} Jodidio, \textit{I. M. Pei}, 79
which arrived with the Boeing 747.\textsuperscript{181} The terminal’s nickname, “Sundance,” suggested the sunny destinations to which most passengers would be traveling, also re-inscribing the airline’s corporate image and evoking the building’s sun-filled interior. Both National and Eastern used architecture, together with clever and appealing—and at times, risqué—ads to create brand identity.\textsuperscript{182}

In the 1960s, Eastern launched a total rebranding by designers Lippincott and Margulies, focused on bringing a fresh, modern look to all aspects of the airline, from in-flight cutlery to the tailfin logo.\textsuperscript{183} Around the same time, the airline had begun an advertising campaign that treated aircraft as though they were architectural objects in their own right. The first, launched just prior to the rebranding, depicts the newly delivered 727 “Whisperjet” in front, side, and top views, annotated with dimensions such as an architect might indicate on a building elevation or plan (Figure 46). By the 1970s, Eastern had adopted the slogan “The Wings of Man,” and took the architectural treatment of aircraft one step further when the Lockheed L1011 “Whisperliner” was delivered. The advertisement, with the tagline “If this weren’t such a fantastic plane, we’d tell you about its lounges,” depicted architectural-like drawings of the aircraft showing the front view (nose-centered elevation), a longitudinal section, a lateral section through each cabin, as well as a horizontal section that treated the interior of the aircraft as though it were an floor plan of a building. The collection of illustrations (Figure 47) advertised Eastern, the engine maker

\begin{footnotesize}
\begin{enumerate}
\item Jodidio, I. M. Pei, 79
\item As author William Stadiem has suggested in Jet Set: The People, the Planes, the Glamour, and the Romance in Aviation’s Glory Years, “the prevailing stereotype before Betty Friedan’s tome hit the stands was that, sexually, jet-age Europe was a satisfaction-guaranteed sure thing, a continent of conquests. Every American could be his own James Bond.”\textsuperscript{182} Refer to William Stadiem, Jet Set: The People, the Planes, the Glamour, and the Romance in Aviation’s Glory Years (New York: Ballantine Books, 2014), 244, and a National Airlines advertisement, featured in New York Magazine (November 15, 1971): 83
\end{enumerate}
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Rolls Royce, and commercial air travel more generally. Consumers could request a reproduction suitable for mounting—an inexpensive way to expand the company’s advertising campaign on a grass roots level.

The interest in distinct branding—conceived from the coffee cup to the city—often put individuality and flexibility into tension. This was particularly true at the scale of the air terminal. Terminals that foregrounded formal identity over a logic of expandability—such as the TWA Flight Center—later posed significant problems for airlines due to a lack of flexibility, both financially and physically. One of the most notable examples of this tension is the Yamasaki-designed terminal at Boston Logan, which opened in 1969 and redefined Eastern’s Northeastern U.S. base of operations, but which also proved difficult to modify or expand in response to changing needs of travelers and airlines alike.

John Harwood’s 2011 *The Interface: IBM and the Transformation of Corporate Design* examines how IBM hired industrial designer Eliot Noyes—along with a team of designers that included George Nelson, Edgar Kaufmann, Jr, Paul Rand, and Charles Eames—to re-imagine its corporate branding, from the scale of office supplies and computers to the company headquarters. As Harwood notes, there was no cohesive design agenda for the IBM corporation before Noyes began working with the company, which is particularly interesting given the technologically advanced core IBM product: the computer. Indeed, in the 1910s and 1920s, at its most considered, “IBM’s architectural appearance was eclectic, tending, if any tendency can be perceived, toward a conservative, classicizing image not unlike that of contemporary bank architecture,” and at its least, “less important facilities were often simple variations on the local
In the postwar era, the image of IBM’s position as an important, multinational corporation became tied to the corporate branding imagined by the designers, who also influenced IBM’s product design. This, Harwood argues, stems in part from the idea of “the interface”—or, in his case, “the crucial but often overlooked element in what ergonomics identifies as the ‘man-machine system.’ It is the hyphen between ‘man’ and ‘machine’ that articulates the system as a whole.” In the case of airlines and airport architecture, ergonomics is perhaps less salient, however, the overarching notion of “interconnectedness” could not be more relevant. Harwood articulates further,

Analyzing the interface also allows an architectural history to extend its scope beyond the building to the other, related, media that were so crucial to the overall conception of the IBM Design Program: graphics, industrial design, multinational production networks, and exhibition and spectacle design. As I have already suggested, all of these, alongside architecture, were understood by the managers and design consultants at IBM as media not only in an artistic or material sense, but also as a means of communication: ways to integrate and organize a vast, far-flung corporate enterprise into a coherent, organic whole.

Here, the relationship between image, media, corporate design and the airline becomes clear: in addition to being its own image, the airline’s brand becomes synonymous with the image of the state, city or country it represents. Essentially, airlines became extensions of their place of origin; for example, Air France’s image and approach to service underscored “Frenchness” as much as anything else—as in the case of Roland Barthes reading of “Italianicity” in the Panzani advertisement whose visual components signify Italy without using words or labels. This form

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185 Harwood, *The Interface*, 9
186 Harwood, *The Interface*, 11
of cultural corporate branding was further translated across the globe in air terminals and city ticket offices. This is especially evident in the aircraft themselves, where colorful tails and fuselages became graphic billboards in their own right, efficiently crossing time zones to deposit and collect passengers, before returning to their main base of operations, ready for a new mission. The aircraft connected an otherwise disparate collection of buildings and facilities as a network for connectivity and communication. Although Harwood acknowledges that the interrelationship between industrial design and corporate image extends back into the history of architecture, the need for a coherent image and corporate brand in the airline industry emerged in the postwar period. This need for an image plays out in each project examined below, either as a means to advertise corporate prowess or civic pride, as well as a need to carve out a distinct market share in order to survive. This was true for both airline companies as well as the municipalities they served.

**Detroit-Willow Run versus Detroit Wayne-Major, 1955-57**

The Detroit-based office of Yamasaki’s firm was hired to upgrade the airport terminal facilities to entice airlines to stay at the Willow Run airport in Ypsilanti, Michigan, rather than join Pan American World Airways, then the sole carrier at the newer and larger Detroit-Wayne Major. When American Airlines’ announced its intention to join Pan Am as soon as 1957, Willow Run launched these extensive renovations in an attempt to keep Capital, Eastern, Delta, Northwest, United, and Trans World airlines from making the same move. The growing numbers of air travelers departing from Detroit signalled that renovations and expansions were necessary. During the fiscal year ending June 30, 1956, 1,105,224 passengers had embarked from Willow
Run, a sizeable increase from the previous year’s 957,251 embarkations.\textsuperscript{188} It was anticipated that the planned renovations would ensure that the airport could meet the needs and expectations of air travelers until at least the mid-1960s—a relatively short term solution that seemingly acknowledged the terminal’s eventual obsolescence.\textsuperscript{189} According to the management of the airport, the Airlines National Terminal Service Company (ANTSC), the project involved “changes designed specifically for the comfort and convenience of the air traveling public.”\textsuperscript{190} Among the many improvements, the airport aimed to offer faster baggage delivery service, improved entrances and exits, and “magic carpet doorways”—today known as automatic sliding doors. Furthermore, the coffee shop was expanded to include a cafeteria, a new bar was constructed, and the restrooms were completely remodeled (Figure 48). Although the renovations combined a completely new look with upgraded features aimed at the hurried business traveler, the terminal was still little more than a reimagined and repurposed aircraft hangar. As Willow Run was in a region known for material manufacturing, the architects employed new construction techniques, repeated material elements, and simple moves to achieve a prominent visual effect. This was done within the context of a limited budget and a limited scope: the architects aimed for only a five-to-ten year return on the investment, rather than a more permanent solution for the region’s air travel needs.\textsuperscript{191}

The project relied heavily on Nicoletti’s technical education and expressionist training, as well as on his own latent theoretical ambitions. Before coming to the United States on a

\textsuperscript{188} \textit{Detroit Free Press}, December 8, 1956


\textsuperscript{190} \textit{Ann Arbor News}, June 15, 1956

\textsuperscript{191} The Willow Run airport had been an important site of aircraft production during World War II, producing the B-24 Liberator at an on-site factory designed by Albert Kahn and Associates. At 2.5 million square feet, the factory was so large that Charles Lindbergh reportedly called it “a sort of Grand Canyon of the mechanized world.” For more on this, refer to the Ypsilanti Historical Society at www.ypsilantihistoricalsociety.org

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Fulbright grant to study at M.I.T., Nicoletti spent five years studying under Italian Futurist painter Giacomo Balla (1871-1958) and engineer Pier Luigi Nervi (1891-1979), two formative experiences for the young architect that visibly played out in his architectural career. In an interview with Cristina di Stefano in Architecture Expressionism Today (1999), Nicoletti highlights the importance of his long-standing relationship with Balla, which began at the age of fifteen. For Nicoletti, the expressive movement taught by Balla—seen in paintings such as Caproni Aeroplane Forces (1915) (Figure 49)—was an important aspect of design and abstraction, and one that is reflected throughout Nicoletti’s later work as an architect. One also sees this expressive movement in the Willow Run Terminal. Nicoletti continues,

I believe that Giacomo Balla’s idea of Futurism was Expressionist, not just because he was interested in motion, but because he was able to express it in an abstract and symbolic way; I mean, express the essence of motion not represent things in motion. Boccioni also expressed motion, but in realistic ways.

The expressionism described by Nicoletti might be read through the manner in which the ceiling’s interior was articulated in the renovation. Under Yamasaki’s direction, Nicoletti articulated the renovated central gathering area as a system of modular, plastic boxes suspended from the ceiling following the gentle arc of the hangar’s roofline (Figure 50). The “boxes” were simultaneously organically expressive and rigidly orthogonal, and provided an aesthetic veneer while also serving a functional purpose: air-conditioning ducts and automatic fire extinguishers were hidden in the space between the modular system and the ceiling (Figure 51). The visual

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192 In a biographical sketch included in Architecture Expressionism Today, Nicoletti notes that his Fulbright studies at M.I.T. were under the direction of Pietro Belluschi, John Johansen, Buckminster Fuller, Minoru Yamasaki, and Eero Saarinen. In addition, he worked in the office of Walter Gropius, and was an assistant to Sigfried Giedion. From 1955-57, Nicoletti worked on the Detroit-Willow Run air terminal at Yamasaki’s Detroit-based office before traveling to Mexico to study pre-Columbian architecture. For further reference, refer to Cristina Di Stefano and Manfredi Nicoletti, Architecture Expressionism Today (Rome: Diagonale, 1999), 18-19
193 Cristina Di Stefano and Manfredi Nicoletti, Architecture Expressionism Today (Rome: Diagonale, 1999), 9
194Di Stefano and Nicoletti, Architecture Expressionism Today, 8
effect of the ceiling, which resembles digitally fabricated work of the late 20th century, was further dramatized with up-lighting that added highlights and shadows to the already dynamic surface. Passengers might have lingered over a drink at the bar, taking in the dramatic interior effect before catching their departing flight or while waiting out an inevitable delay—a frequent occurrence in the early days of widespread commercial aviation.

The renovation was ultimately unable to prevent airlines from moving to Detroit-Wayne Major, which was more convenient and proximate to downtown Detroit, but probably extended the usable life of the airport by a few years. The Willow Run project, however, illustrates the firm’s early interest in ornamentation—perhaps even the earliest—that builds on the projects discussed in the previous chapter. This interest would be expanded further in projects throughout Yamasaki’s career and MYA’s many commissions.\textsuperscript{195} Although Nicoletti returned to Italy in the late 1950s, the two architects remained in contact over the years through written correspondence and occasionally discussed the possibility of future collaboration, which never materialized. In 1970, the Willow Run interior renovation was published in \textit{Casabella} 347, an achievement Nicoletti shared in a letter to Yamasaki, further explaining how the project had helped him win a major Sicilian airport terminal competition in the 1960s.\textsuperscript{196} For both architects, the Willow Run renovation thus led to further commissions that formed a backbone for their individual careers; Yamasaki continued working with airports and airlines on new air terminals in the following years, including two projects examined below.

\textsuperscript{195} At the time of its construction, ornamentation would likely have been the best way to describe the ceiling treatment, however, it strikes this author that the repetition of simple forms actually resonates more closely with parametric modeling and common contemporary methods of design, such as arraying everyday materials or objects to produce a field condition, and thus a new form in its own right. This was also true in the Yamasaki-designed Reynolds Metals Regional Sale Office in Southfield, Michigan, with an intricate façade composed of arrayed gold anodized aluminum tubing sections. The result takes on a new form completely distinct from its parts.

Form vs. Flexibility at Boston Logan

By 1964, Boston had become Eastern’s fourth largest consumer market and its Boston facilities needed overhaul and expansion to meet demands for increased air service. Plans for a new air terminal were unveiled by Eastern’s Senior Vice President and General Manager Arthur D. Lewis the following year to be designed by Minoru Yamasaki and Associates in concert with local architects Desmond and Lord. Eastern’s company newsletter, *The Falcon*, highlighted MYA’s recent noteworthy projects, including the U.S. Science Pavilion at the Seattle World’s Fair, the 1951 commission for the St. Louis Air Terminal, and the World Trade Center in New York, by this time already in development (Figure 52). A quote from the architect’s reflections on a recent trip to Japan indicate his priorities:

> I was overwhelmed by the serenity that can be achieved by enhancing nature...It was [in Japan] that I decided that serenity could be an important contribution to our environment, because our cities are so chaotic and full of turmoil.198

Eastern sought such a serene environment for arriving and departing passengers. One executive even asked rhetorically, “Who could do this better than Yamasaki?” 199

The new terminal’s imposing form and location at the southwest corner of the airport, made it the first to be seen by those arriving to Logan by car (Figure 53). 200

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glass and bronze entry doors met those arriving by car service or taxi, and the oversized canopy shielded passengers from weather (Figure 54); passengers parking their own vehicles had a separate entrance. After parking in the 1,000-space car park located above the terminal’s lobby, drivers would take a dedicated elevator to the check-in area below (Figure 55). Transverse sections of the building reveal that parking areas were mostly contained within the building in the upper three floors and were largely invisible from the exterior at ground level, with additional surface parking between the airport roadway and the terminal (Figure 56). At either end of the terminal, helical access ramps deposited drivers and their automobiles on the appropriate parking levels. Underneath the canopy, the parking was shielded from view by a “finely scaled” plastic screen, helping to preserve aesthetic coherence in the terminal’s main façade.

In plan, the terminal is a rectilinear volume with two satellites protruding from its ends and a third proposed for future expansion plans (Figures 57). With a ceiling height of 73 feet, supported by exterior columns complete with arches to hold the roof structure in place, the main lobby was designed to impress passengers. After passing through the entrance portico, passengers would check in or purchase tickets in the three-story lobby area that journalists described as spacious and “softly-lit ceilings…appear to reach to the sky.” An emphasis on naturally lit, large interior clear spans became a common trope for architects designing airport terminals as many associated the feeling of expansiveness with flight. Each concourse satellite had six gate positions with covered loading bridges. With the addition of the third satellite lounge, Eastern’s terminal could ultimately have had eighteen in-service gates.

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200 Reporter James Hammond suggested in a *Boston Globe* article of November 6, 1969, “As a person makes a right hand turn and heads up the ramp—that is if he is departing from Boston—the first impression is awe-inspiring.” Refer to James H. Hammond, “Separate Terminal at Logan First of Kind in U.S.,” *Boston Globe*, November 6, 1969.


The West Satellite serviced Eastern’s longest flights from Boston, while the East Satellite concourse was the Air-Shuttle’s dedicated base of operations, from which both jet-propulsion and propeller-driven aircraft operated the airline’s shorter, regional routes. The Director of the Air-Shuttle Frank J. Stulgaitis noted, “Travel convenience is the main thing on these flights.” As a result, the design for the new terminal employed technological advancements aimed at improving a previously manual system of baggage handling. This was particularly useful for last-minute Air-Shuttle passenger hopefuls, who could thus...carry his luggage into the satellite and be ticketed 50 feet from his plane and have his luggage dropped via a conveyor belt to the belly of his plane while he races through the telescoping passenger loading bridge into the cabin of his craft. This system worked due to the terminal’s compact design, a critical selling point for the airline’s many business travelers and commuters, but became a liability when demand grew and additions became necessary. As a cohesive object, the terminal worked efficiently, but was unable to be easily expanded (Figure 58).

The main waiting area in the new Eastern terminal at Logan also offered amenities for departing passengers. Beyond the ticketing and concession area, there were two passenger

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203. By 1972 these included Atlanta, Charlotte, Hartford, Houston, Miami, New Orleans, New York, Orlando, Philadelphia, San Juan, Tampa, and Washington, D.C.

204. The New York Times estimates that nearly three million passengers were traveling between New York and Boston in 1969, accounting for 37 percent of all traffic at Boston Logan. Due to the short flight times and the ability to purchase tickets on board, convenient concessions in the terminal were essential to the operations as flight attendants could not sell tickets and complete an in-flight food and beverage service.


207. In an era of individual airline terminals, distances passengers had to walk became an important distinguishing feature. It was not uncommon for airlines to tout short distances through ad campaigns or specially designed brochures. One particularly good example is National Airlines’ brochure showing a floor plan of its new arrivals facilities in Miami, with the path from aircraft to landside roadway clearly delineated. Airlines strove to make air travel easy for passengers in an attempt to attract ever greater numbers of high-paying customers.
lounges, a restaurant and a cocktail bar. By the early 1960s, Eastern had developed a network of Falcon Lounges for high paying customers, as a strategy to beat the competition by providing passengers with luxuries, both on the ground and in the air.\(^{208}\) As airlines began to compete more heavily with one another, distinguishing their individual products became paramount. These distinctions were articulated at a range of scales, from brightly-colored flight attendant uniforms to investments in newer, quieter aircraft—or even simply a different approach to on-board service. In addition to the invitation-only lounges, Eastern provided waiting areas, cocktail bars, and restaurants for all passengers. The view from the public Portico Lounge and the adjacent Gallery Restaurant was intended to attract travelers eager to “sip a drink and watch the lights glitter on jets taking off.”\(^{209}\) The passengers were not the only ones encouraged to take in the expansive views of the apron and the aircraft movements; on the roof of the terminal, adjacent to the parking area, there was an observation deck overlooking both Eastern’s old facilities and the city of Boston in the distance (the approximate view of the city is evident in Figure 55).

When the new terminal opened, the airline took out full-page advertisements in the *Boston Globe* to explain how to use the new facilities so that passengers would not “feel like a tourist” during their first visit. The cartoonish sketches depicted the terminal in both plan and section, pointing out the salient features of the new building, concluding, “Both of us have come a long way” (Figure 59). Indeed, the atypical advertisement acted as an instruction manual for the building—almost a caricature of a blueprint that was intended to describe and direct the

\(^{208}\) According to a company newsletter, “Beautifully furnished lounges have all comforts of a private club: chair-side phone service, variety of current reading materials, desks for paperwork, color TV, separate children’s play area, complimentary soft drinks, ‘coffee and.’ Alcoholic beverages may be had at moderate cost. Complete flight info available at all times. Falcon Lounges will be open from 7 AM to 8 PM, staffed by specially selected hostesses. Lounges are latest EAL innovation in setting higher first class service standards.” Refer to: “Falcon Lounges Open, staffed,” *The Falcon*, December 21, 1961, p.1. Box 2, Folder Eastern Airlines: *The Falcon* 1961, Eastern Air Lines Collection (Acc. 1991-0070). Archives Department, National Air and Space Museum, Smithsonian Institution.

\(^{209}\) Eastern Airlines Advertisement, *Boston Globe*
experience for the first-time passenger. The terminal marked a significant improvement for Eastern’s Boston operations, but the unprecedented design was difficult to modify or expand as the airline’s needs changed over time. Although architects across the country experimented with new and unusual air terminal designs in the 1960s and 1970s—including parking-focused designs in Minneapolis and Kansas City—the design of the Logan terminal was never repeated.

The Boston terminal did not embrace a typical air age aesthetic like some air terminal projects of the postwar era—including Eero Saarinen’s Trans World Airline Flight Center in New York, and Yamasaki’s St. Louis Air Terminal—but rather, the architects employed construction techniques that enhanced structural and spatial efficiency, maximizing performance with a minimum amount of material and space. This was also a common and necessary practice in the construction of aircraft themselves. In place of standard steel frame construction, the architects employed a steel-reinforced post-tensioning system in which a series of cables were tightened once the material had reached eighty percent of its desired strength—a practice which is quite standard today, though it was new in the 1960s.210 Upon completion, due its technical advances and streamlined program, the building was considered “a model...of advanced terminal design” for years to come.211 The project was obsolete by the 1990s due to the rapid increase of aircraft size, ever larger numbers of air travelers, and a general move away from the single-airline terminal in favor of larger, shared facilities.212 In *A Life in Architecture*, Yamasaki briefly discusses the possibility of adding an additional terminal satellite and parking deck, but this kind of expansion is limited to a small addition that is formally dissimilar to the main terminal, rather

212 It was demolished in 2002 to make room for a new Terminal A to house Delta Air Lines’ Boston operations—including the Delta Shuttle to New York. In an unintended nod to Yamasaki and his original partners, the replacement terminal was designed by Hellmuth, Obata, Kassabaum (HOK), and opened in 2005.
than part of a larger, repeatable scheme. Indeed, the rapid obsolescence of type had been a common problem among earlier air terminal design, and persisted into the later twentieth century.

Unsurprisingly, Eastern touted its achievement in Boston, and the local news media also weighed in, suggesting that this was one of the first airport terminals designed with the passenger, rather than the aircraft, in mind. News outlets suggested that as a single airline terminal, it was “the first of its kind in the United States” and that it blended “aesthetic beauty with functional design.” A February 1970 issue of *The Falcon* asserts,

> By all counts, Yamasaki’s new terminal design for Eastern’s Boston base was an operational, economic, and customer service success from the start. One passenger in Miami reportedly entered a travel agent’s office exclaiming ‘Book me on Eastern. I want to use their new terminal.’

Although press reports on air travel are often more heavily focused on in-flight experience and safety, not architecture, in this case architecture became the key selling point.²¹¹⁴

For Eastern, the praise came with an economic boon, and it was thought that the new terminal facilities directly contributed to the airline’s rapid growth in the Boston market and corresponding increases in revenue. Indeed, with the advent of the new Boston facilities, Eastern posted a gain of 24,000 passengers between November 7 and February 20 over the same period the year before. According to Roy Auger, director of customer services and operations, the December Boston traffic was up by 8.2 percent over 1968, while the entire Eastern system only

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²¹⁴ The Boston terminal was just one part of the overall plan to expand and improve “the new Eastern,” a quest that was perhaps best reflected in an advertising campaign entitled, “Smiling Faces Going Places.” In this and other advertisements, flight and cabin crews were depicted almost as architectural elements in their own right. Photographed striding in front of gleaming jets and standing atop aircraft maintenance towers, clad in brightly colored uniforms, the employees became as much a symbol of the airline as any logo-emblazoned aircraft or airport terminal.
increased by 2.3 percent in the same period. An article in The Falcon further suggested “terminal convenience and comfort do make a difference in the jet age.” Other statistical details show increases in Eastern’s Boston traffic in a variety of markets and by a number of measures, but perhaps the most important factor was what the new terminal offered employees and passengers alike: “Our people are enthusiastic about the new facilities...the building basically makes it much easier for us to assist our customers and the entire environment is more pleasant.”215 The new terminal offered the airline a better tool to deliver better service at every level—and one that was through to be visually appealing. This trend played out in the latter half of the twentieth century, in countless examples, among them Eero Saarinen’s Trans World Airlines Flight Center, and later still with the advent of the “Bilbao Effect” that spawned a new culture of major architectural commissions by museums worldwide as a way to increase their visibility in the twentieth and twenty-first century. Along with the art housed inside, architecture became an object to be collected. In a similar fashion, along with the aircraft that served them, airlines could collect architecturally-significant terminals to entice passengers and increase profits.

Yamasaki was initially pleased with the project, and shared Eastern executives’ sentiment that it might be one of his best designs, recalling,

> Eastern Airlines came to me with their program, their requirements, the available land and stipulated the things they wanted to accomplish. But it was then up to our firm...to come up with the solution and I feel this is going to be a good building...I really feel it’s going to be one of our best buildings.216

216 Minoru Yamasaki, as quoted in, “Eastern Terminal to Please Passengers,” Boston Herald Traveler, Thursday November 6, 1969
By here asserting the firm’s authorial creativity, Yamasaki suggests that form does not simply follow function, but rather, the success of the project stemmed from the ingenuity, foresight, and hard work put forth by the designers, resulting in a style he refers to as “American contemporary technological design.”\textsuperscript{217} From the outset, Yamasaki was interested in imbuing the project and its interior space with a sense of place and excitement that changed as one moved through the building, noting,

As you move from space to space in a building, you should have new interests. You shouldn’t have all the same ceiling heights, the same columns. You can make a building a very pleasurable place to be in or the most boring thing you’ve ever seen.\textsuperscript{218}

As with the St. Louis terminal, the architect wanted to create a sense of entry and gateway to the city, but without overpowering the human scale, adding, “I believe that it is impressive—graciously impressive—but not such a huge, massive bulk that a person feels lost and overwhelmed by it.”\textsuperscript{219}

Historical references are less overt in the Boston terminal, although columns divide the terminal into arched bays somewhat reminiscent of groin vaults. In an article published in \textit{The Boston Herald Traveler} in 1969, Yamasaki defends his approach of blending historic forms with modern technology, suggesting:

People say I use Gothic and Roman arches, and perhaps I do, but in a modern idiom with modern materials. I think if you look at their weight-bearing qualities, a modern arch is one of the most efficient devices for achieving lightness, reducing mass and maintaining strength.\textsuperscript{220}


\textsuperscript{218} Minoru Yamasaki, as quoted in, “Eastern Terminal to Please Passengers”

\textsuperscript{219} Minoru Yamasaki, as quoted in, “Eastern Terminal to Please Passengers”

\textsuperscript{220} Minoru Yamasaki, as quoted in, “Eastern Terminal to Please Passengers”
Yamasaki further laments the present state of the discipline’s desire to move away from the past, maintaining that an architect can certainly employ historical forms and references as a modernist:

“One problem with architecture today is that everyone wants to run away from the thing we’ve done in the past. That’s wrong. The arch, for example, is better in concrete and steel than it ever was originally in stone and it is extremely effective, both in the structural and aesthetic sense.”

For Yamasaki, historical form and technological advancement were not in opposition, but could be productively combined, as was the case throughout architectural postmodernism. One might take note of the overt historical references in Cesar Pelli’s 1997 terminal at Washington National Airport, which employs a series of sky-lit modular domes reminiscent of the US Capitol building, albeit abstracted. In a July 16, 1997 interview with the Washington Post, Pelli echoed Yamasaki’s assertion of designing spaces with the human scale in mind, suggesting, “The domes make spaces designed on the scale of people, not on the scale of big machines.” The historical references in the Eastern Terminal, and other projects, however, drew the attention of critics. A critique from Jane Holt Kay of the Boston Globe on November 23, 1969 criticized Yamasaki’s approach, suggesting,

“The terminal’s] architect, Minoru Yamasaki of Michigan is favored by conservatives and corporations alike for the air of nobility he bequeaths on rather routine buildings. Critics call his work ‘the decorated box school of design.’ Here, as elsewhere, he solves service needs; then dresses up his buildings using neohistorical forms—the arch, the column—to give a cosmetic air of grandeur.”

This was not the first time his work had been categorized as a “decorated box,” nor would it be the last time critics attacked his projects for being effeminate, dainty, and stylized.

221 Minoru Yamasaki, as quoted in, “Eastern Terminal to Please Passengers”
Part of Kay’s critique highlighted the lack of an overall master plan of which the Eastern terminal would be one part. This was also true of other terminals such as Saarinen’s Flight Center and I. M. Pei’s “Sundrome”—both of which were also obsolete within a few decades of opening. Citing TWA, Kay critiques Saarinen’s design, arguing, “The grandiose approach has characterized airport architects like Saarinen seeking to symbolize the soaring flight of the plane in a concrete structure.” This trend toward monumentality, she suggested, will soon be replaced by the jetport, and a new typology for air terminals will focus on more integrated services within the architecture instead of “individual aggrandizement.” Among these three buildings, all arguably monumental forms, there are two distinct similarities. First, each project was driven by the airline rather than the airport operator or municipality which it served. Second, all three projects were essentially infill sites within a constricted area. Yet the sites could have been part of larger plans. Kay championed Warnecke’s South Terminal, whose extensively integrated design will “make the [sic] Yamasaki’s southwest structure look even more inappropriate.” Kay concedes, however, that the Eastern “terminal is condensed and convenient.”

The South Terminal project was so complex that historian Reyner Banham denoted it a “megastructure,” relating the project to the growing trend of “super airports” in the United States and abroad, designed and built by large-scale architecture and engineering firms in the 1960s and 1970s. The structure incorporated as many as thirty-four gates and concourse piers arrayed around a central roadway (Figure 60). Banham referred to this design as “dark-glazed air-

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223 Kay, “A Temple”
224 Kay, “A Temple”
225 Kay, “A Temple”
conditioned monumentality.” Throughout the terminal’s length, a multi-story parking structure could house spaces for 8,000 vehicles and its overall form is more or less a direct response to its internal circulation. This was perhaps the first large-scale integration of parking and air terminal facilities in one concrete structure. While the terminal was a complex, seven level building that included everything from parking to waiting areas, strictly in terms of size, it was not a massive air terminal but a programmatically packed building that did dwarf adjacent terminals at Logan, including MYA’s Eastern terminal.

In a September 1969 issue of *Progressive Architecture*, author Don Raney examined the “linear terminal concept” using the South Terminal as its consummate example:

Architecturally, the building establishes a vertical, layered relationship among its components: deplaning, concourse, emplaning and parking, in that order, from the ground up. Interlevel transitions are made by elevators and moving stairs, spaced, to deliver the passenger from the various levels as near as possible to and from the aircraft.

As at the Eastern terminal, parking is located above the terminal waiting areas, reducing the distance a passenger must walk to the area in which his or her flight departs. On arrival, passengers would deplane, descend one level to baggage claim and head either directly out to be picked up or via elevators up into the parking levels. The South Terminal was also designed to accommodate future expansion by adding modules horizontally. Furthermore, it was thought that due to its built-in flexibility, the structure would easily adapt to changes in aircraft size. The South Terminal offered a new vision for air terminals: expansive, massive, and yet also compact, with a vertically-stacked program in an effort to minimize lateral walking distances for passengers.

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227 Banham, *Megastructure*, 179
228 Don Raney, “People and Planes! Can Airports Bridge the Gap?” *Progressive Architecture* (September 1969): 108
229 Raney, “People and Planes!,” 108
Unlike the Yamasaki-designed terminal, Warnecke’s South Terminal remains a central figure in Boston Logan’s current collection of terminals. This may be partly due to its overall plan. “Granted differences in site,” Kay continues, “Warnecke’s straightforward demonstration of the lines of car entry and garage function can be ‘read’ from the building. His functionally meaningful exterior stands opposed to Yamasaki’s architectural camouflage for the Eastern interior.”²³⁰ The Eastern terminal, she argued, parodies a Grecian temple instead of embracing the modern approach to terminal design that Warnecke employed, which emphasized a monolithic parking structure, roadways, and terminal spaces in one, packed shell. Indeed, it is important to recall that these two projects had very different program requirements and overall ambitions. The Eastern terminal housed a single airline’s operations. Conversely, Logan’s South Terminal was expressly designed for use by multiple airlines—a collective terminal building. Although it may not be true for all megastructures, the South Terminal demonstrates how carefully considered large-scale design has stood the test of time in a typology that frequently obsolesces due to increasing aircraft sizes and changing modes of air travel.

The Eastern terminal was never a beloved architectural icon for Boston architecture critics. In 1993, critic Robert Campbell underscored his discontent with the terminal, suggesting it was an example of “the Sugar Spun school of architecture of the 1960s,” “a tragedy of hubris,” and “a piece of architectural confectionery.”²³¹ The tension inherent between an airline’s quest for brand identity and the city or port authority’s desire for flexibility of function appears in the criticism that followed the terminal’s completion. Campbell had a point: the terminal itself was indeed an icon for Eastern: “The architectural grandiosity was little more than an advertising

²³⁰ Kay, “A Temple”
gimmick, a logo for Eastern Airlines.” Campbell also suggested that the terminal was not a matter of good corporate citizenry, as Eastern had previously asserted, but rather a self-serving one. Warnecke’s South Terminal, however, was largely able to address issues of expandability and function by effectively surrendering architectural value. Without a corporate patron to please, the terminal needed to function, rather than perform.

Branded Form and Flexibility for Municipal Architecture: Lambert St. Louis Air Terminal, 1952-6

By the early 1900s, St. Louis had become an important city as a transportation base for goods as they moved along transcontinental rail, road, and waterways. In the booming postwar economic climate, the city needed a new air terminal to replace its 1933 facility, which by 1950 was considered “a symbol neither of the air age nor of the growing strength of the city of St. Louis” (Figure 61). The City of St. Louis, seeing unprecedented growth in air travel and technological advancements in aviation, saw the need for a new terminal facility and a chance to rethink airport design. Located at the “Gateway to the West,” the new terminal needed to reflect St. Louis’s geographic location, as well as its unique history as the birthplace of aviator Charles Lindbergh.234

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232 Campbell explains further: “Eastern wanted to make it nearly impossible for a passenger to make a connection with any other airline. There are no bridges or tunnels to the rest of Logan. You have to go outdoors, braving the weather and the traffic, and when you do, you don’t find sidewalks or clear directions.” Refer to Campbell, “An Act.”
233 Joseph Passoneau, The Story of a Building (St. Louis, MO: The School of Architecture, Washington University, ca. 1957), unpagedinated
234 The city, interested in commemorating the United States’ westward expansion, had recently hosted a competition for a new gateway monument. Ultimately, the city awarded the commission to Detroit-based Finnish-American architect Eero Saarinen in 1947 for his striking “gateway arch” proposal, which would be completed in 1965 on the western banks of the Mississippi River. In the years following the competition, the city took on the project of replacing its outdated air terminal, and commissioned MYA to develop an overall design.
The St. Louis Air Terminal was one of the first major public works for Yamasaki’s fledgling firm, designed at the same time as Pruitt-Igoe, on the north side of the city. In addition to designing a wholly new terminal that would relieve the extant structure of its commercial air service role, the project required significant expansion and the relocation of existing airport infrastructure. Hellmuth, Yamasaki, and Leinweber teamed with Cincinnati-based airport consultants Landrum and Brown to complete an economic analysis, along with a terminal building and area design study in preparation for the new facilities, which came to be known as the Lambert St. Louis Municipal Airport. The architects and consultants issued a 68-page document of existing and projected conditions for benchmarks such as passenger traffic, revenues, and scheduled flights (Figure 62). The plan also included an overall design scheme for the site and terminal layout, and included a potential phasing plan that imagined the airport growth over fifty years, depicted in a general site plan (Figure 63).

After much preliminary research—during which Yamasaki and his colleagues traveled extensively throughout the United States examining existing air terminals and railroad stations—the team settled on a centralized approach for the basic design scheme. In such a design, all major functions would be housed in the core terminal building, with piers or fingers extending out onto the apron, from which passengers would emplane and deplane the aircraft. This configuration was already in service at airports such as Washington-National and Detroit-Wayne Major. Although not slated for the initial construction phase, an airport motel was sited across the main roadway adjacent to the car park.\textsuperscript{235} The inclusion of a hotel as part of the airport

\textsuperscript{235} It was thought then that the addition of a thirty- to forty-unit motel would sufficiently address the needs of overnighting airline crews and “transient airport and highway traffic.”
terminal, or nearby on an adjacent site, was then a relatively new practice but became commonplace in the years to come, as discussed in greater depth in Chapter Four.

In plan, the main terminal is a rectilinear volume initially composed of three domed bays. Two long piers extend out from the east and west ends, each with four aircraft parking stands. One central pier with eight parking stands extends between bays two and three. The first-phase of the airport was designed to service sixteen aircraft parked at the terminal at any given time (Figure 64). Additional apron space could handle aircraft in excess of that number, so long as the plane was not actively loading or unloading. The final (proposed) site plan shows a further three bays in the main terminal—one added to the west and two to the east—making the end result symmetrical along the vertical axis with six centrally-planned, domed bays. In the final build out envisioned by Yamasaki and his team, the central pier remained roughly unchanged, but each flanking pier (Figure 65) included space for an additional nine aircraft parking stands, for a total of thirty-four gates with only four central domed bays.²³⁶

The main terminal area, located under the domes, was designed to welcome travelers through a novel grand entrance (Figure 66). On departure, passengers would be dropped off underneath the protection of a canopy; an entry vestibule provided shelter along the short walk into the terminal itself. As the passenger approached the terminal building, the vaults rose up above him or her, framing the sky above in an undulating pattern, behind and above which aircraft would take off and land (Figure 67). As it was built in the first phase, the main entrance to the terminal on the departure level was to the east, which opened into the interior between two vaults. Airline ticketing desks and their associated offices were located to the right, in the

²³⁶ The plans also depict additional services such as an expanded hangar area for aircraft storage and maintenance, as well as a tripling of the airfreight facilities.
southeast corner of the terminal’s most eastern bay (Figure 68). The central bay was dedicated to a waiting area with seating that overlooked the ramp area where aircraft were parked (Figure 69). Adjacent to this were concessions and ground transportation, as depicted in the passenger level plan drawing (Figure 70), with a cocktail bar, coffee shop, and restaurant with expansive windows and a view toward the terminal’s interior spaces (Figure 71).

The majority of furniture and signage located throughout the terminal was designed by Harry Bertoia and Charles and Ray Eames, supporting Yamasaki’s goal of a visually unified space: “Whenever possible the forms of fixtures and furniture are open and transparent, giving one the feeling of being suspended in an open platform above the field and overlooking the main runway.”237 The architect and his team also controlled the other subordinate elements, such as color and signage, but the main focal point was Bertoia’s multi-colored screen separating the dining area from the main terminal hall (Figure 72). Warmer, brighter colors faced the busy concourse, while cooler colors were chosen for the restaurant side in an attempt to create a more relaxed atmosphere at the center of the bustling terminal. At 48 feet long by eight feet high and two feet deep, the screen itself had a commanding presence and was a large element in the space—an important part of the interior architecture.238 This sculptural piece added a splash of vibrant color to an otherwise muted interior, and as such, became a focal point in the airy terminal that literally placed modern art and designed objects in close quarters with modern modes of travel.239 Throughout the remainder of the twentieth century, artists were frequently commissioned to create sculptures and paintings for corporate patrons’ office lobbies, and often worked with architects during the design phase of the projects.

238 Pickens, “Proud Architecture,” 200
239 Unfortunately, during one of the terminals renovations, the screen was “lost” and has never been found. A maquette of it is preserved at the St. Louis Art Museum.
Aware of the continued growth of the air travel market, Yamasaki and his team wanted to ensure that the terminal could be expanded in future, without disrupting the overall experience of the space:

…the air transportation industry as such has to be extremely flexible…it has grown, doubled, tripled, and quadrupled in a very short period, within the past decade. Consequently all air terminal buildings must be able to be expanded readily and must have this characteristic of looking like a complete building at each stage.240

The architects initially planned for as many as six identical barrel-vaulted modules. The result was a terminal that had little in common with Saarinen’s TWA Flight Center in New York or Yamasaki’s own Eastern Airlines terminal in Boston—heroic modernist monuments to their corporate clients, rather than flexible solutions that were readily expandable. With enough available land, the St. Louis system was an infinitely replicable model—a kind of systems architecture or that akin to a production line, which became one of its main selling points. Even after it was constructed, the terminal was not yet complete. This recalls earlier discussions regarding tensions between airlines and airport operators, offering a rather simple solution that has maintained relevancy today.

In order to achieve the desired interior effect, the design team settled on a repeating series of thin shell concrete domes that Yamasaki related to aircraft design (Figure 73): “Flight is exciting—I am always thrilled by the beautiful plane that brings me to the airport. A plane, like our terminal vaults, gets its strength from the fact that it is structurally a thin shell. The passenger, coming from plane to building, can’t help but feel this kinship.”241 For Yamasaki, there was a design strategy to create a building that shared certain formal commonalities with

240 Yamasaki, interview with Virginia Harriman at the Detroit Institute of Arts, August 13, 1959
241 Yamasaki, as quoted in Passoneau, The Story of a Building, unpaginated
aircraft, even if the overall form was quite distinct. Indeed, the aircraft’s structure is akin to a thin shell structure in that a wooden or metal interior structure is sealed together with a taught skin—first cloth, and later, thin aluminum. To achieve this structural effect in concrete, the St. Louis project required a large team of consultants, which included Ferris and Hamig as the electrical and mechanical engineers of record, and the L and R Construction Company of St. Louis as the general contractor. In addition, the firm worked closely with structural engineers Roberts and Schaefer on the design of the domes, with Anton Tedesko as the lead consultant. William C. E. Becker oversaw the structural engineering aspects of the project, and published an article on the terminal in a 1955 issue of Civil Engineering. As constructed in the initial phase, the terminal is 415 feet long by 123 feet wide, and incorporated three levels. Because the site was located on a hillside, there are two levels landside and a third airside, which helped the building’s overall efficiency while accounting for the necessary levels for simultaneous passenger and cargo traffic flow (Figure 74). The lower two levels had floor-to-ceiling heights of twelve feet, while the main passenger level rose to thirty-two feet at the center of each dome.

The spacious central area—called “the great room”—was the architect’s answer to the technical requirement of a 120-foot wide clear span, insisted on by city officials to allow ease of transit for large numbers of passengers (Figure 75). But it also offered the ability to be repeated consecutively, giving it what some have termed a “rhythmical sequence.” The floors of the terminal are flat slab construction and the columns are twenty-four feet on center with the exception of the bays, which are twenty-six feet on center. The concrete shells are themselves graceful, and owing to the addition of diagonal rib vaults on the exterior of the domes, the shell

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243 Becker, “Intersecting ribs,” 58
244 Pickens, “Proud Architecture,” 198
thickness at the crown is four-and-a half inches. Each side of the dome incorporated a 13-foot triangular overhang, which was both structural and aesthetic (Figures 76 and 77): “while the triangular overhanging segments add interest to the appearance they are also helpful structurally in that the perimeter stiffening ribs produce reverse bending in the shell at its maximum span.”

In order to reduce construction costs while improving the efficiency of erection, the contractor employed a common system by which the concrete formwork could be reused for the construction of each subsequent shell (Figure 78). This included eleven different segments, each of which was “mounted on wheels and were moved on a system of steel rails at right angles to each other.” As a result, it took no fewer than eighteen distinct moves for the eleven segments:

- each segment was provided with jacks for vertical adjustment for decentering and clearance, so that a form segment could be relocated for the next dome. The use of these movable forms required the erection of temporary falsework on one end of the building, and its re-erection on at the other end, to relocate the forms in the last dome constructed.

Although the roof structure was not the most expensive the architect had entertained, it was also not the most economical, as each dome took 400 cubic yards of concrete and 60 tons of reinforcing steel to construct (Figure 79). Despite its modern form, the design also made historical references—a move Yamasaki’s firm often employed in the years that followed. Indeed, the terminal’s structural form was not an entirely new design, but rather one “borrowed” from the Romans. In an interview for the St. Louis Globe-Democrat, Yamasaki explained, “When I completed the plans I remembered where I had seen such concrete shell-type construction. It was the Roman baths of Caracalla, built in the Third Century. The building was 80-ft square, on the same principle.” In a similar fashion, the concrete domes vaulted over the interior space, but in St. Louis, the shells sprang from the ground rather than resting atop supporting walls. Formally this provided a gentler arc that many read as reminiscent of flight—the abstracted arc of an aircraft’s journey from takeoff to landing—rather than the ancient Roman bath complex. Refer to “Idea for Terminal Roof ‘Borrowed’ From Romans,” St. Louis Globe-Democrat, March 11, 1956.
from the Romans. In an interview for the *St. Louis Globe-Democrat*, Yamasaki explained, “When I completed the plans I remembered where I had seen such concrete shell-type construction. It was the Roman baths of Caracalla, built in the Third Century. The building was 80-ft square, on the same principle.” But in fact the terminal was not a replica of Caracalla, rather it evoked the image of its form while making significant alterations to it: the concrete domes vaulted over the interior space, but in St. Louis, the shells sprang from the ground rather than resting atop supporting walls. Formally this provided a gentler arc that many read as reminiscent of flight—the abstracted arc of an aircraft’s journey from takeoff to landing—rather than the ancient Roman bath complex. But it was the evocation of the aircraft—best expressed by the formal ambition of the thin-shell roof structure—that brought the city and the architect critical acclaim from coast to coast, as a plethora of articles in local newspapers and national journals show. In addition, the AIA awarded the project its prestigious First Honor Award in 1956.

Thin shell concrete structures rely on steel reinforcement and wooden formwork that shape the end product. Due to its ability to withstand bending, the wooden formwork can be molded into curvaceous forms that produce undulating surfaces and non-rectilinear forms. In the early days of aircraft design, the structure of the craft was constructed out of wood and sheathed in a skin of stretched fabric, which produced an aerodynamic form. In later designs, both wood and fabric were replaced by a metal substructure and an aluminum skin. This development, in turn, allowed larger aircraft to be constructed, as well as lengthening the lifespan of each aircraft. Even though corrosion became a new problem, metal was stronger and easier to maintain over

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longer periods of time. Thin-shell concrete structural systems made such sculptural and aerodynamic forms possible.

Yamasaki was of course not alone in his interest in the formal possibilities of concrete. Architectural historian Adrian Forty has described concrete as the consummate material of modernity: “Concrete is modern…it is one of the agents through which our experience of modernity is mediated.”252 Furthermore, “concrete realized the prospect of transforming nature, and of transforming ourselves and our relationship with each other.”253 Previously, the utility of concrete as a material for airship and aircraft hangars had been explored in the 1920s by Eugène Freyssinet and Claude Limousin (Figure 80), as well as by Pier Luigi Nervi (Orvieto, Italy, 1935) (Figure 81)—projects with which Yamasaki likely would have been familiar. At nearly the same time that MYA was designing the St. Louis project, countless architects were exploring and expanding the possibilities of thin-shell concrete construction, in a formally similar manner, including Félix Candela, Eero Saarinen, Ove Arup, Walter Bird, Robert Maillart, and many others.

In the months leading up to the terminal’s official opening, articles appeared in the local and national architectural and popular press, hailing it as a “proud architecture” and a “Grand Central of the air.” When the St. Louis terminal officially opened in May 1956, it was met with great excitement, and a frequent feature in architectural journals and trade magazines. Perhaps for the first time, a modern air terminal seemed to formally suggest the transportation mode it serviced.254 In that sense, the project aimed to provide a more seamless transition from land to

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252 Adrian Forty, Concrete and Culture: A Material History (London: Reaktion Books Ltd., 2012), 14
253 Forty, Concrete and Culture, 14
254 It should be noted that while the St. Louis Terminal was among the first large-scale airport terminal to respond to the formal affinities of aviation and aerodynamics, it was part of a growing trend of projects produced by architects and engineers working thin-shell concrete. Eugène Freyssinet’s airship hangars at Paris Orly Airport (1923) were an
sky and back. Its formal affinities, borne of a translation of flight and aerodynamic form into built architecture, helped imbue it with both a sense of place for arriving passengers and a sense of anticipation for those departing. Many claimed that the project was a true symbol of the air age. Locally, the Mayor of St. Louis, Raymond Tucker, praised its style, symbolism, and efficiency in an article written for the *St. Louis Globe-Democrat* on Sunday March 11, 1956, noting that it marked “an important forward step in the city’s program to make St. Louis one of the outstanding air centers of the world.” Furthermore, in a reference to Charles Lindbergh, Mayor Tucker suggested, “the building is a dramatic symbol of the New Spirit of St. Louis.” Although by all accounts the terminal was efficient in its function, the city’s pride in the project likely stems from the firm’s break with formal convention. Unlike the simple, rectilinear forms of early twentieth century air terminals, the design for St. Louis offered travelers a spacious harbinger of air travel’s future, welcoming them to the city with an important aviation legacy. Lightness in architecture was a driving element; the design team suggested that the terminal avoided any “association with heavy locomotives or bus depots,” achieved by its thin, undulating form and emphasis on views of the ramp and sky beyond. The terminal thus illustrates a case where a municipality—St. Louis—essentially employed architecture to attract business to its growing economy.

The interior space indeed privileged a more direct relationship between land and sky, between interior and exterior: “…the new arches had a combination of lightness and tension which, when supported on the square base, seemed to float like bulbous clouds or to suggest symbolically the graceful cross-section of an airplane wing from which the ‘lift’ is actually

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255 Pickens, “Proud Architecture,” 199
derived.” Predictably, the new terminal proffered many aerial associations. From this vantage, the awaiting passenger views “the largest planes, airborne, pass by almost close enough to touch.” The glazed archways added to this sensation, through which a waiting passenger could “follow the planes throughout 360 degrees as they circled the field.”

Echoing Le Corbusier’s 1945 assertion that an airport should share formal affinities to the aircraft that operate from it, some called the new addition to Lambert Field the first airport terminal that actually belonged next to the sleek lines of the aircraft it serviced—much like Yamasaki had suggested. In the year the of its opening, Buford L. Pickens, Dean of the School of Architecture at Washington University in St. Louis, wrote a lengthy review of the project for *Architectural Record*, during which he observed, “the terminal is worthy of study for it is architecture whose bid for greatness does not come from novelty, nor from a technical tour de force,” but rather from “the dedication by its architects to a bold and imaginative concept which, once stated, was carried through despite conflicting pressures to compromise.” Underscoring Yamasaki’s desire for the terminal, Pickens argued, “Here, perhaps for the first time, an airport looks, feels and even acts as though it belongs amid aircraft—whether you view it from the inside, outside, or circling the field above.” This point is key, not for its praise, but for its understanding of the air age: Pickens saw the terminal as *sharing* a visual language with the aircraft it serviced, rather than being a necessary but foreign entity.

Yamasaki was initially content with the project, but had reservations about aspects of the design. In a 1959 interview with Virginia Harriman at the Detroit Institute of Arts, Yamasaki

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256 Pickens, “Proud Architecture,” 199
257 Pickens, “Proud Architecture,” 198
258 Pickens, “Proud Architecture,” 198
259 Pickens, “Proud Architecture,” 197
260 Pickens, “Proud Architecture,” 197
expounded on his perception of the terminal’s shortcomings. “There are several things wrong about the building. I don’t like the way it comes down to the ground at the back. I realized now that we should have expressed the strong corners of the building in the rear façade, also in front; but it’s less conspicuous.” Yamasaki continued to discuss details that he wished he had incorporated to maintain formal consistency, arguing, “as a painter is consistent or as a sculptor is consistent. Architecture must also be very consistent.” This was particularly true in the flat roadway canopy, which the architect saw as a missed opportunity:

I realized it would be interesting if we had some kind of arched canopy. But scurrying between Detroit and St. Louis I wasn’t able to find a real satisfactory solution for this idea that I had, and consequently went to a flat canopy which is normal, and which is possibly modern, the ‘modern’ thing to do.263

The terminal also received critical attention from two of Yamasaki’s contemporaries, Félix Candela and Eero Saarinen. Both architects were familiar with the project during the design phases of their own projects in Mexico City and New York, respectively.

Candela was among the best known thin-shell designers at the time, which he applied to many programs across Mexico, including a restaurant in Xoximilco, a chapel in Cuernavaca, and most similar to the St. Louis terminal, the Bacardi Rum factory outside Mexico City (1956). The design of the latter was, in fact, a reaction to Yamasaki’s St. Louis terminal: after seeing its design, the Spanish architect-engineer claimed he could achieve a more impressive structural form.264 Even though the structural system and the programmatic functions of the projects are completely different, the formal affinities between the two projects are readily apparent (Figure

261 Minoru Yamasaki, as quoted in an interview with Virginia Harriman, Detroit Institute of Arts, August 13, 1959
262 Yamasaki, Interview with Virginia Harriman
263 Yamasaki, Interview with Virginia Harriman
264 Based on an interview with the architect, quoted in Maria E. Moyrera Garlock and David P. Billington, Félix Candela: Engineer, Builder, Structural Artist (New Haven, CT and London: Yale University Press, 2008), 154.
82). And although the two projects had different programs, they shared a need for a large clear span; the airport for the efficient handling of people, and the factory for the efficient bottling of rum. Candela’s Bacardi factory was composed of six concrete vaults in two rows of three, forming a more solid rectangular appearance when viewed from above. Inside, the shells provide a large interior space with two long clear span bays; the fenestration on each exterior wall, combined with the glazed seams of the vaults where each dome came together, provided a large amount of natural light illuminating the factory floor (Figure 83). Compared with Yamasaki’s St. Louis terminal, the manner in which Candela’s parabolic shells rest on the foundation appears lighter, and the shells are significantly thinner (Figure 84). At only 1.578 inches thick, Candela’s shells are approximately one third of the thickness found in the St. Louis terminal.\(^{265}\) This formal similarity for two very different programmatic requirements challenges notions of type-specificity; an air terminal and a factory seemingly have little in common. The formal relationship in this case, however, has less to do with the specific programs, but rather issues of scale: large-scale consumption of goods demands large-scale production. In a similar fashion, increasing demand for air travel puts pressure on small-scale infrastructure in favor of larger, open interior spaces replete with shops and restaurants for the ease and comfort of passenger transit. More time spent shopping and dining in air terminals translated into higher profits for airport operators.\(^{266}\)

In addition to Candela, Detroit-based Finnish-American architect Eero Saarinen also employed reinforced concrete in his design of monumental airport terminals at New York


\(^{266}\) The multi-celled but singular form is an old construction technique, and has also been applied to many programs requiring clear spans in the 20th century, including the Brynmaur Rubber Factory by Architects Co-Partnership and Ove Arup (Brynmaur, South Wales, UK, 1947-50), Minoru Yamasaki and Associates’ West Gym at Carleton College (Northfield, MN, 1964), and many others.
Idlewild and Washington Dulles in the 1950s and early 1960s. As two figures rising to prominence in the Detroit architecture scene, Yamasaki and Saarinen were well acquainted. According to Manfredi Nicoletti, during his time working for Yamasaki, members of Saarinen’s office would frequently pay visits to their firm, and the two architects would share drawings with one another. One such visit occurred while Saarinen was working on the design of TWA and Yamasaki was working on St. Louis. Nicoletti recalls, “When [Saarinen] built the TWA Terminal Building it was a shock. There was a continuous exchange between the people of Yamasaki’s office and Saarinen’s. They would come on a pilgrimage to give us a look and vice versa.”

Many critics and historians point to Saarinen’s TWA terminals as the project most emblematic of flight in built form—a visual appearance that has been likened to a bird in flight (Figure 85). Unlike the St. Louis terminal, which was not built for one particular airline, the TWA Flight Center was designed as an important symbol of Trans World Airlines’ prowess as a major international airline—as was the case with Eastern’s Boston terminal. The terminal itself became a stylish base of operations for TWA’s transatlantic gateway in New York and an icon for the airline. This is particularly evident in the extensive use of red—the airline’s signature color—in the interior finishes, such as carpeting and cushion fabrics (Figure 86). Although, unlike Candela’s assertion, there is nothing to suggest Saarinen attempted to “outdo” Yamasaki in his design for TWA, he did suggest the final outcome in St. Louis “left something to be

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267 Di Stefano and Nicoletti, *Architecture Expressionism Today*, 11. Yamasaki and his firm were also interested in the solution for the TWA terminal, and had come up with their own historicist scheme. According to Nicoletti, “When we found out he had received the commission, we saw a solution based on the idea of a hypostyle hall. It was almost square space or at least developed on a strictly square mesh: each pillar supported an element that was a small part of the roof and these elements were staggered in such a way as to form a ceiling through which light poured from above. We thought it was a good solution, derived from Wright, and above all Mies, a rigorous basis with a metaphysical modularity, endlessly expanding.”
desired as a flight terminal,” primarily because its groin vaults did not encourage passengers to move forward, but rather incited people to stay beneath them."268

Yamasaki was not the only architect to suffer heavy-handed critiques for producing corporate branded form. Saarinen’s TWA Flight Center opened to critical acclaim six years after Yamasaki’s St. Louis project was completed, but also to critical opposition. In a November 25, 1962 column entitled “Idlewild: A Distressing Monument to Air Age,” Ada Louise Huxtable lamented the chaos that defined Idlewild as a whole, the architecture of which she characterized as “a strange mixture of World’s Fair flash and pedestrian bad taste.”269 At that time, the airport was a collection of individual and shared air terminals, each designed by a different architect. The TWA terminal, she argued, was a tour de force that stood out from the rest and a “subjective demonstration of sculptural form.” But Huxtable further criticized the project for making no revolutionary breakthrough in airport design as she claims was the case in his later Dulles terminal. The best attribute, Huxtable suggests, was the interior’s “stunning manipulation of reinforced concrete into unconventional forms of arbitrary but dazzling grace.”270 Although many praised the Flight Center for its birdlike form when viewed from the exterior, Huxtable took a different tone, suggesting that while the exterior appears heavy, it was actually the interior that took flight. She concluded on a particularly damning note, observing, “the promise of the air age, which was bold and brilliant, has petered out into a world of petty vulgarity and perpetual Muzak.”271

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268 Allan Temko, Eero Saarinen (New York: George Braziller, 1962), 46
270 Huxtable, “Idlewild”
271 Huxtable, “Idlewild”
Since the first late modern airport projects broke ground in the early 1950s, by the 1970s much had changed in the way the type was conceived and built. This is largely attributable to a building type that was evolving rapidly, fueled by changing technologies and increasing numbers of air travelers. Terminals that were serviceable for 50-70 seat turboprop aircraft were far less capable of handling jet aircraft, seating upwards of 250 passengers, in an efficient manner. This forced many airports to make short term changes that were both operationally unsatisfactory and aesthetically undesirable, until new terminals designed and built from master plans were ready for service. In many cases, cities were limited by a lack of open space suitable for newer, larger airports, and in some cases, had to place airports long distances from city centers. This was the case with O’Hare, located nineteen miles from downtown Chicago, a distance which took 65 minutes to cover in 1956.272

The often opposing demands of the airlines and the municipalities that owned the airports and air terminals put pressure on the tension between architectural form and flexibility of function. While airlines wanted to distinguish their products, in part with iconic air terminals, city governments preferred investing in terminals that could be easily expanded or adapted to changing patterns of travelers and shifting aircraft sizes. Hellmuth, Yamasaki and Leinweber’s St. Louis terminal and Warnecke’s terminal in Boston, demonstrate this case. Most importantly, there was no single solution that could be applied to airports across the country and an expectation of obsolescence became more readily acceptable—and as Daniel Abramson has suggested, obsolescence was often even built into the economic model of architecture.273 Until the 1960s, no truly large-scale airports had been constructed, forcing architects and civic leaders

273 Daniel M. Abramson, Obsolescence: An Architectural History (Chicago: University of Chicago Press, 2016), 37
to seek ideas from the nation’s largest rail terminals. Indeed, while designing O’Hare’s new
terminal master plan, officials examined Chicago’s Union Station, which already handled
seventeen million passengers each year, as a means to help to scale the airport plan for an
expected capacity of 24-32 million passengers.274

As Hellmuth, Leinweber and Yamasaki’s design for St. Louis demonstrates, iconic form
and flexibility of function were not always at odds. Dramatic, concrete shells with a
constructional unit-based logic meant the terminal was relatively simple to expand. And
furthermore, the terminal at Washington-Dulles (Saarinen, 1962), with its graceful catenary
construction and series of mobile jet bridges—later replaced with midfield terminals—set out to
achieve infinite expandability by an embrace of an open terminal plan and lack of fixed waiting
areas while still emphasizing sculptural form. In the late 1970s, the emphasis on form took a
backseat to function in airports such as the midfield terminal design at Atlanta Hartsfield-
Jackson International. The repetitive series of separate, rectilinear terminals connected only by
an underground train and walkway, was proposed in 1977 as a collaboration between
architecture firms Stevens & Wilkins, Minority Airport Architects & Planners, and Smith,
Hinchman & Grylls—the firm which prompted Yamasaki’s move to Detroit in 1945. The
terminal system is still in use today in nearly its original form.275

While quite different in form, function, and constructional logic, each of the Yamasaki-
designed or renovated terminals examined in this chapter offer insight into the myriad problems
and solutions faced and employed by architects and city officials in an era of unprecedented air
travel growth. Of these, only the St. Louis terminal remains in operation today, more or less in its

274 Although they have added additional terminals, O’Hare currently handles over 75 million passengers per year
and over 850,000 individual aircraft movements. Figures for the past ten years are available from the Federal
Aviation Administration and the Airports Council International websites and publications.
original capacity, although some necessary interior modifications have been made and the piers have been replaced or expanded.  

Having lost its commercial status in the mid-1960s, Willow Run primarily serves as a base for significant cargo operations and a general aviation alternative to the crowded—and proximate—Detroit Metropolitan Airport. The Eastern terminal was demolished in 2002 to make room for a new Terminal A to house Delta Airlines’ operations at Logan.  

Building on the projects examined in Chapter I, this chapter begins to illustrate the fact that the myriad approaches to design employed by the firm makes it difficult to locate a single, unifying thread. Rather, MYA consistently played with form, construction materials, and techniques to create projects that were different from one another but which emphasized the firm’s attitude towards form and expression. The pavilions of the previous chapter point toward the firm’s interest in addressing local context and climate conditions, while capitulating to the programmatic needs and requirements of the Federal government, the airport terminals in this chapter complicates the firm’s approach due to the nature of the projects. The architects had to contend with complex spatial, material, and structural elements in the design of air terminals, as well as keep pace with their continuous evolution and development—often during the design and construction phases. At the same time, as passenger numbers increased, the airports and the agencies that managed them began to understand the air terminal as a significant contributor to the local economy. Airlines paid facility fees to operate from the airports, but even more importantly, as passengers spent increasing amounts of time in air terminals, they spent more on

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276 With the bankruptcy of Trans World Airlines in the 1990s and its subsequent merger with American Airlines after September 11th, 2001, St. Louis airport has lost its position as a major crossroads of domestic air travel, but remains an important artery for the city and the immediate region.  
277 In an indirect nod to the firm’s early days, Yamasaki’s Terminal A has been replaced with a new pair of buildings designed by Hellmuth, Obata, Kassabaum, better known today as HOK.
incidentals such as newspapers, meals, and drinks. In the best planned version, airports called on architects to respond to the growing need for increased commercial space within the terminals during the design phase, as in MYA’s Boston terminal, while in others the buildings needed to be retrofitted to accommodate this need.

Continuing this formal and structural evolution, the next chapter further complicates these issues with global politics and international trade. Furthermore, the MYA-designed projects in Saudi Arabia were all sizeable, or part of new, large-scale developments that began to shift the issue of morphology into questions of function and form at an infrastructural scale. As with the St. Louis terminal, the Saudi Arabian air terminals reflected the growing trend from the proprietary single airline terminal to large, collective terminals shared by numerous airline companies and often controlled by separate agencies. For MYA, in addition to tackling complex spatial arrangements, the firm was also challenged to find solutions that incorporated their own signature formal expression while responding to the complexity of infrastructural design.
CHAPTER III

When an international flight cross Saudi Arabia, the hostess announces that during the overflight the drinking of alcohol will be forbidden in the aircraft. Land = society = nation = culture = religion: the equation of anthropological place, fleetingly inscribed in space. Returning after an hour or so to the non-place of space, escaping from the totalitarian constraints of place, will be just like a return to something resembling freedom.

-Marc Augé, Non-Places: An Introduction to Supermodernity (1992)

After World War II, private corporations such as Standard Oil of New Jersey, Standard Oil of California, and Texaco funded and constructed oil pipelines throughout Africa and the Arabian Gulf region. In concert with these efforts, large-scale architecture and engineering firms such as Bechtel Engineering and its regional division, Arabian Bechtel, established entirely new cities in the Arabian Desert, and built massive shipping ports and large-scale airports in order to serve growing international trade networks fueled by the sale and export of oil. Indeed, at their core, the vast majority of these projects had to do with the production and trade of fossil fuels, and as a result they had an outsized impact on global foreign relations in ways previously unimaginable. In his 2011 book Carbon Democracy: Political Power in the Age of Oil, Timothy Mitchell suggests that “Fossil fuels helped create both the possibility of modern democracy and
Indeed, developed countries with similarly rich natural resource often have similar economic patterns and political trajectories. But in those that rely on heavy petroleum extraction, democratic systems have not tended to prosper:

The wave of uprisings that spread across the Arab world in 2011 appeared to confirm this relationship between large oil earnings and the difficulty of mounting claims to a more democratic and egalitarian life. By and large, the less oil a country produced, and the faster its production was declining, the more readily the struggles for democracy unfolded.279

This is especially true in Saudi Arabia, an epicenter of fossil fuel production. The foundation of Saudi Arabia’s modernization, oil motivated significant foreign investment. In turn, Saudi Arabia’s airports and infrastructure grew, fueled by interest from the United States, Western Europe, and Japan. This was particularly so throughout the Cold War. Saudi Arabia was a key location for the United States and its allies to monitor activities in the Middle East and North Asia.

Increased private investment in Saudi Arabia and the region meant that corporations were suddenly eager to enter an expanding market, building airports, hotels, and office parks to serve the agents of international trade as well as a burgeoning tourist market. Many architectural and engineering firms were involved in these projects, including Minoru Yamasaki and Associates and Bechtel Engineering. Focusing on design as an export product, this chapter examines Yamasaki’s Dhahran Civil Air Terminal (1958-64) and its 1985 replacement in the adjacent city of Dammam. The United States Army Corps of Engineers and private architects’ development of Saudi Arabia’s international transportation infrastructure provide key context for this historical development. Here we see MYA’s design techniques expanding yet again to embrace a new set

279 Mitchell, *Carbon Democracy*, 1
of protocols related to carbon democracy. As a result, the projects in Chapter III can be understood as a hybrid of the issues raised in New Delhi and Kobe (formal expression), St. Louis (infinite expandability), and Boston (logic and efficiency of construction), further complicated by scale, extreme weather conditions, and the challenges posed by constructing in a relatively remote region of the world with respect to Western Europe and the United States.

Arabian Gulf-based projects in Yamasaki’s office were part of a growing market, in which private investment and international trade intersected with architectural design, foreign affairs, and global diplomacy, all loosely situated within a regional design tradition and context.\textsuperscript{280} MYA’s two projects allow for an exploration of the growing tensions between form and function in large-scale projects with corporate patrons that are also part of a civic or governmental endeavor. A smaller airline terminal in Dhahran in the context of a large-scale airport development in Dammam provides one linked example. In the Saudi Arabian projects, defining the identity of the client is complicated: the Royal Family, governmental ministers, and the national airline constitute an intertwined, public-private entity rather than three separate clients. Furthermore, international investment from both U.S. governmental agencies and private corporations means that politics and issues of foreign diplomacy played a larger role in the Gulf than similar forces did in U.S.-based air terminals built between the 1950s and the 1970s.

\textbf{The US Army Corps of Engineers and the Dhahran Airfield, 1939-49}

\textsuperscript{280} It is also be useful to consider Kenzo Tange’s Kuwait Air Terminal (1967-79) for its incorporation of Islamic detailing in the concrete façade, and his proposal for Algiers International Airport (1976, unbuilt). In addition, there are further developments in the late 1970s and early 1980s in Saudi Arabia’s Eastern Province, including Bechtel Engineering’s massive Jubail City project (1976-88), and King Khalid International Airport (1983) in Riyadh, whose terminal was designed by Hellmuth, Obata, Kassabaum (HOK), (the St. Louis-based successor firm to the original Hellmuth, Yamasaki, and Leinweber.)
The Dhahran Airfield and its Civil Air Terminal provided a base for the American military in the Arabian Gulf and secured access to a nearby oil supply for the United States and its allies. In order to fully explicate the U.S. Army Corps of Engineers’ role in the construction of this project, events leading up to the construction of the Civil Air Terminal in the early 1960s and to the expansion of the Dhahran Airfield facilities over the following two decades set the stage. The project was undertaken in two phases in what was a private-public partnership. The Army Corps of Engineers designed and constructed the airfield, while MYA designed the passenger air terminal, the construction of which took place during the second phase of the project.

Official United States–Saudi Arabian foreign relations—formally established in the 1930s—were still nascent during World War II, when the importance of an American presence in the region quickly became clear. In addition to its relative proximity to the Pacific Theater, Saudi Arabia offered the United States access to large-scale oil production, a critical resource during war. By 1943, the U.S. government sought an oil supply for its army and ongoing war efforts domestically. Saudi Arabia’s oil wealth was newly strategic. As American oil consumption rose sharply, during and after World War II, the political relationship between Saudi Arabia and the United States looked promising.

281 Historians and U.S. officials offer slightly different accounts of the timeline and status of the United States’ recognition of Saudi Arabia. According to the U.S. State Department’s Office of the Historian, the first recognition of Saudi Arabia took place on May 1, 1931 when the U.S. acknowledged the Kingdom of Jejaz and Nejd and its Dependencies. The name was changed to the Kingdom of Saudi Arabia on September 18, 1932. The formal establishment of diplomatic relations occurred on February 4, 1940, followed by the establishment of a U.S. Legation on May 1, 1942 in Jeddah. This was upgraded to embassy status as of 1949. Refer to “Saudi Arabia,” U.S. Department of State Office of the Historian, https://history.state.gov/countries/saudi-arabia, Last accessed: May 6, 2018.

The monarchic ruler of Saudi Arabia at the time was Abd al-Azziz ibn Abd al-Rahman Al Faisal Al Saud, or as he came to be known, Abd al-Azziz. As historian Irvine Anderson has suggested, the Kingdom of Saudi Arabia under Abd al-Azziz’s rule differed quite remarkably from the past due to his strict Islamic practice. Once enthroned in 1932, Abd-al-Azziz faced serious financial problems, as Saudi Arabia was primarily an “impoverished desert, dependent in large measure on income from the annual pilgrimage to Mecca and on customs dues for revenue.” Though previous attempts to find oil beneath the desert had proven unsuccessful, Standard Oil of California (Socal)—which later became Chevron—won the rights of extraction for a Saudi Arabian oil concession over the British in 1933. Within five years Socal had struck oil, an event that would effectively transform Saudi Arabia into one of the world’s most important economies. The exportation of oil, it seemed, would at last provide an economic lifeline to the Kingdom and further its ties to nations worldwide. With Socal’s success, Abd al-Azziz chose to expand the U.S. land contract in 1939 to cover 444,000 square miles—an area close to half of all Saudi territory.

Although the United States’ interest in Saudi oil laid the groundwork for an expanded relationship between the two countries, it does not account for the economic and social importance of the relations. Historian Rachel Bronson suggests that strategic location and a mutual understanding of religious identity in the two nations were also an important part of this alliance. Furthermore, Saudi Arabia was a strategic point of transfer in the Allied Forces’

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283 Anderson, *ARAMCO*, 9
285 Bronson, *Thicker than Oil*, 19
286 Although this time it was more successful, the 1930s oil connection to the United States was not Saudi Arabia’s first foray into the exportation of petroleum, which began in the early 1900s spearheaded by Winston Churchill and the Anglo-Persian Oil Company, which later became British Petroleum.
supply chain during the Second World War. In 1944, the United States proposed new facilities at Dhahran’s airfield “to shorten the air route to the Pacific Theater.”\textsuperscript{287} The King gave clearance to the United States and in late fall 1946 officials from the U.S. War Department visited possible sites in Saudi Arabia. They selected a location near an existing airfield that had been developed by the Arab-American Oil Company (ARAMCO) near the city of Dhahran and Socal’s existing oil concession.\textsuperscript{288} Construction began on the expanded airfield in January 1946. The United States established a military presence in February, and the initial construction was completed by November.\textsuperscript{289} Although World War II had ended, the project was still seen as politically important to the United States and its foreign allies, as was continued oil extraction and trade networks developed by private corporations. Both United States governmental agencies and private corporations had a vested interest in propagating these networks.

As part of expanding relations between the United States and Saudi Arabia, the U.S. proposed a twelve-year extension of the initial 5-year lease of the Dhahran Airfield—slated to end in 1949—but the two nations instead settled on a year-to-year arrangement.\textsuperscript{290} In 1951, however, this relationship was deemed overly cumbersome and the two nations switched to a five-year plan called the Mutual Defense Assistance Agreement (MDAA). As part of the MDAA, the United States sent troops to train with the Saudi armed forces, further strengthening

\begin{itemize}
  \item \textsuperscript{287} Bronson, \textit{Thicker than Oil}, 24
  \item \textsuperscript{289} Significantly, the Dhahran Airfield expansion was part of a larger planned development in Saudi Arabia’s Eastern Province. This development included plans for a deep-water port built by ARAMCO in nearby Dammam, linked to the airport and the adjacent oil fields by a new railway line. These developments relate to Bechtel Engineering’s efforts in Saudi Arabia in the construction of the new city of Jubail and the King Khaled International Airport in Riyadh, both of which occurred while Yamasaki and Associates were designing the King Fahd International Airport in Dammam from the late 1970s to the 1990s.
  \item \textsuperscript{290} Bronson, \textit{Thicker than Oil}, 57-8
\end{itemize}
the two nations’ shared interests. In 1956, during a visit to Washington, D.C., King Abd al-Azziz and President Dwight D. Eisenhower came to a renewal agreement for Dhahran that expanded U.S. presence. Under the 1957 contract, the United States would fund further improvements to the civilian terminals as well as provide additional military support. This ultimately led to the establishment of the U.S. Military Training Mission, based in Dhahran, prompting further American-backed investment in the region.

The Dhahran Civil Air Terminal Rises in the Desert, 1958-64

By 1958, the United States was eager to get the Dhahran Civil Air Terminal project underway, awarding the engineering contract to the Pasadena-based Ralph M. Parsons Company. It was unusual, even in governmental projects, for the contractor to be selected before the architect was commissioned, and may have been due to the complex nature of the project and its remote building site. The following year, Parsons retained Minoru Yamasaki and Associates as lead designers of the terminal building and its ancillary structures. Initial design work began shortly thereafter, which included dealing with a number of unusual challenges posed by the site’s remote location and extreme weather conditions:

It is to be built on a desert, as all of Arabia is. While I was there the temperature was 130 degrees. It’s a very difficult place in which to build buildings. So what we had hoped to do was to be able to precast the whole building outside the country and to just simply erect it in Arabia. And I am not sure yet how the contractor is going to do this, but the building is under construction.

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291 Bronson, *Thicker than Oil*, 58
292 Herring, “A Lasting Legacy”
By May 1959, the terminal’s design was featured in *Architectural Record* in drawings, renderings, and model photographs depicting the terminal as it was expected to look upon completion. The design team assembled by the firm included project associates Gunnar Birkerts, Cass Wadkowski, and Henry Guthard, with the help of outside consultants. The US Army Corps of Engineers oversaw the entire project.

The Dhahran Civil Air Terminal was the firm’s first project in the region and an early project related to larger concerns of foreign diplomacy and oil—which soon acquired the nickname “liquid gold” or black gold.” It is important to note that the nickname closely ties the plentiful natural resource to the financial marketplace. According to Michael S. Northcott, author of *A Political Theology of Climate Change*,

> The metaphor of oil as liquid gold indicates the close association between the liquidness of oil and the growth in monetary liquidity in the twentieth century. The rate of consumption of oil and gas, together with coal, correlates to the growth in the money supply and to the growth in GDP in almost every nation-state.

As the twentieth century grew increasingly reliant on oil, nations worldwide began looking for reliable sources. The Dhahran Civil Air Terminal played a key role in this development, acting as transportation link between Saudi Arabia’s newly opened oil concessions and outside investors.

As a transfer point between the West and Saudi Arabia, the terminal needed to handle a relatively large amount of international traffic and a relatively small amount of domestic traffic. This posed a design challenge from the start. King Abd Al-Azziz wanted to ensure that the domestic and international terminals appeared more or less equally weighted (Figure 87).

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294 These included Cincinnati-based airport consultants Landrum and Brown, with whom the firm had worked during the design and construction of the St. Louis air terminal a few years prior.

strict programmatic division between the two terminals, along with their vastly different size requirements, required a visual sleight of hand that was achieved by the addition of a large exterior oasis (Figure 88). Linking the terminals with a lushly planted garden gives the impression that the conjoined terminals are in fact one lengthy building rather than two separate ones, as depicted in the site plan (Figure 89). From the circular roadway, the two entrances appear to be the same size, although the interior spaces beyond are vastly different in scope and scale (Figure 90). The terminal complex rises to a height of 45 feet and covers 107,000 square feet, organized into a large grid delineated by forty-foot-on-center columnar spacing, four bays deep (160 feet) and thirteen bays long (520 feet) (Figure 91). 296

The domestic terminal occupies eight bays to the north of the garden/roadway zone, two bays wide (80 feet) and four deep (160 feet). The main floor of this significantly smaller terminal covers only 12,800 square feet of space and houses a lobby, domestic check-in counters, airline offices, a snack bar, a waiting room, men’s and women’s lounges, a baggage pick-up area, and airport administrative offices. The second floor, which occupies exactly half the floor area of the main level, includes space for more offices, operations centers, an office for the Minister of Defense, and 2,400 square feet of un-programmed space designated as future offices (Figure 92). The departing passenger would be dropped off in the garden area, and enter the modest lobby before checking into his or her flight. When the flight is called, a passenger would exit the terminal on the eastern side, and out onto the apron, shielded in part by a covered walkway (Figure 93). The exact number of aircraft that could be parked at any given time varied greatly based on their size, and as was common in early terminals of this scale, there were no predetermined gates but simply an exit onto the open apron which provided the airport operators

296 Minoru Yamaski Papers, Box 6. Archives of Michigan, Lansing, MI.
and airlines maximum flexibility. Likely a byproduct of strict Islamic law that forbids the sale and consumption of alcohol in the Kingdom, the terminal lacks commonplace “leisure spaces” for departing travelers that include restaurants and bars. The domestic terminal included no formal dining area but a small snack bar was located in the southwest corner of the terminal.297

The twenty-eight bays that make up the international terminal cover a main floor area of 33,600 square feet and house a more complex interior program (see Figures 91 and 92). As one enters from the garden oasis (landside), the international check-in counters are directly across the lobby and surround the nine airline offices. Upon entering the lobby, on the left is a nursery, post office, and women’s washroom; to the right, the men’s washroom flanks a bank and small shop. The northeast corner of the terminal has a 1,600 square foot private reception room, a separate waiting area for the Royal family. Beyond the spacious check-in area, departing travelers would pass through passport control into the controlled transit lounge where there were dining facilities and newsstands. On arrival, disembarking passengers would enter into a holding room before proceeding through customs and immigration and into the lobby area. Unlike the firm’s previous terminal in St. Louis, all passenger facilities were located on one level, resulting in no vertical division between arriving and departing passengers.

The second floor is reserved for offices and mechanical equipment and occupies a smaller footprint; the balance of the floor area is a double-height space open to the main lobby and check-in area (Figure 94). The remainder of the programmed second floor space was dedicated to weather observation and forecasting facilities, as well as ground control, and a

297 These restrictions also apply to flights to and from the Kingdom, during which there is a cessation of alcohol service while in Saudi Arabian airspace. As Marc Augé wrote in the epilogue to Non-Places: An Introduction to Supermodernity, “When an international flight cross Saudi Arabia, the hostess announces that during the overflight the drinking of alcohol will be forbidden in the aircraft. Land = society = nation = culture = religion: the equation of anthropological place, fleetingly inscribed in space. Returning after an hour or so to the non-place of space, escaping from the totalitarian constraints of place, will be just like a return to something resembling freedom.”
special division of air traffic control services that handled aircraft movement on the airport grounds. According to Yamasaki, achieving the feeling of a large interior space in the Dhahran International terminal was more challenging than in St. Louis, given the increased division of labor required between the expanded programmatic requirements of an international terminal.

“Arabian” Design and the Ornamented Structural Form

Correctly or incorrectly, in Yamasaki’s own view there were very few local stylistic architectural contexts to be found in the Arabian Gulf. As a result, the team focused on developing a style that responded to the local climate and weather conditions, while attempting to create a hybridized modern “Arabian” formal aesthetic:

There was a deliberate attempt to imbue the project with a Moorish character or Arabian character in the building,” Yamasaki describes in a 1959 interview, “because we felt that an Arabian building should look Arabic. Curiously enough, 99% of the buildings in Arabia are patterned after European modern buildings—and very bad patterns. So that the rather Arabian-looking building that we are constructing will be all by itself in Arabia.298

This ambition was not a requirement of the project, but it became a central focus of the design team, despite confusion over distinctions between “Moorish” and “Arabian” architectural character. Indeed, this formal blending of past precedents and a cultural imaginary is decidedly Western, though clearly not Islamic. Rather, the references that inspired these formal moves were derived from a Western absorption of non-Western artifacts, which was also the case in the U.S. Pavilion in New Delhi and, to a less overt extent, in the U.S. Consulate in Kobe. Yamasaki borrowed forms from Islamic architectural traditions, including stylized *muqarnas*—a geometric

repeated form, usually on the underside of a dome or a vestibule, often in mosques (Figure 95). In the Dhahran terminal—and in projects built in the United States—oversized, highly abstracted *muqarnas*-like ceiling treatments appear. In addition, there is a clear if indirect relationship to the *mihrab* in the recessed mosaic work of the building’s facades (Figure 96).²⁹⁹ A mosque’s *mihrab* carries deep symbolic meaning; located on the wall nearest Mecca, the *mihrab* indicates the direction that the congregation prays. Here it is little more than an ornamental element applied to the façade (Figure 97). Exactly where Minoru Yamasaki and Associates found these specific references is not clear, but his office did put together an extensive packet on Islamic architecture with pages from architectural textbooks and news clippings. However non-Western the formal ambitions of the project appear, they were also not contextual. Like the U. S. Pavilion in New Delhi, the St. Louis Air Terminal, and many other MYA-designed projects, the form is not precisely related to local architectural tradition, yet neither is it particularly American. Rather, the architects attempted to create an image of Saudi Arabian modernity for both a local and international audience that referred both to larger trends in modern architectural design, but also to idea of “Saudi Arabian-ness” through visual cultural signs and connotations. Again, this can be understood as a similar case to Barthes’s reading of “Italianicity” in the Panzani advertisement, discussed earlier. In the Dhahran terminal, the fenestration and architectural detailing suggest the Arabian peninsula without utilizing any purely Islamic elements. The resulting design in New Delhi and Dhahran is a kind of exotic “other” amassed from world travel and abstracted architectural details. The firm’s formal interests transcended traditional Western

²⁹⁹ Indeed, Yamasaki’s incorporation of Islamic elements can also be read throughout his career, in buildings in the United States as well as abroad. Unlike the Dhahran Civil Air Terminal, most of these projects—such as buildings on Wayne State University’s campus in Midtown Detroit—had nothing to do with Islam. Additionally, Yamasaki frequently used abstracted Gothic arches, both in this terminal, as well as in many other projects, including the World Trade Center in New York.
notions of beauty to incorporate tectonic, formal, and spatial ambition. Beauty was more than attractive surface treatments and ornamented elements; it could also be found in the efficient or innovative use of materials in the production of a building, as is the case in the St. Louis air terminal.

During the bidding phase, the design team entertained two possible methods of pre-cast construction. Yamasaki had previously toured the Schokbeton pre-cast concrete factories in Kampden, Holland and was impressed by the company’s superior product. The entire building could have been pre-cast in Holland and shipped to Dhahran via the Suez Canal, but the high insurance premiums associated with the process made the total cost $400,000 higher than the on-site alternative. Other consequences of a remote provider might have resulted in lengthy delays: “if the ship sank, the entire building would have been lost.” Despite concerns about pouring concrete in high temperatures, MYA chose the less expensive on-site proposal, and much of the work took place under significantly cooler night temperatures.

In order to achieve the project’s so-called “Arabian look”—which appears more like a Westernized image based on a mythical Arabian past than a design rooted in reality—Yamasaki and his team blended structural simplicity with delicate ornamentation (Figure 98). First, the structural bents “were deliberately shaped as segments of a Moorish arch” and were erected one by one to form a vaulted structural system that supported the poured-in place reinforced concrete roof slab. The pre-cast concrete columns were hoisted into place by large cranes, locking together back-to-back in order to create the internal support structure for the terminal.

The columns gave the façade an undulating overall form—as seen in the elevation (Figures 99

300 Yamasaki, A Life in Architecture, 64
301 “Civil Air Terminal,” 184
302 1963 application to the AIA Honor Awards Program, Courtesy Archives of Michigan
303 “Dhahran…An Air Terminal to Remember,” The Daily American, December 1, 1960
and 100)—and lent the interior a feeling of an airy, colonnaded space that the architects used to suggest an “Arabesque appearance, which would harmonize with its Middle East setting and at the same time meet the practical needs of Dhahran’s increasing air traffic in the new jet age.”

Indeed, it was an architecture ready for consumption in an age of intense economic growth.

The façades were constructed of pre-cast tilt-up wall panels, measuring approximately 40 feet by 40 feet, which locked in place between the poured-in-place concrete floor and roof slabs. According to Yamasaki, “the wall panel ribs (necessary for stiffness) were designed to create a visual illusion of laciness, in keeping with traditional Arabian grille work.” Throughout the project Yamasaki suggested that, “The Arabian look was very easy to obtain because, if the structural process is examined, it is built of a system of rigid frames which form this Arabic arch.”

As suggested by the design, the architects sought to minimize the cooling load as the interior was air conditioned, avoiding large expanses of fenestration and limiting openings, using only those that fit within their design aesthetic. Minimal glass was used in the buildings’ facades and was primarily limited to ground-level fenestration. In addition, tall and thin stained-glass pointed arches delineate the repeating bays of the façades—a third aesthetic move that was entirely distinct from the core structure and the wall treatments, yet played into the overall formal ambition of the project.

This tripartite construction is one case where the project resonates with Islamic construction techniques, which often includes distinctive elements such as wooden grilles or panels inserted into the buildings, creating a hierarchy of spatial divisions—

304 “Dhahran…An Air Terminal to Remember”
305 “Dhahran…An Air Terminal to Remember”
307 A similar desire for context-based design will appear again in the work of Kenzo Tange later in this chapter, and serves as an important comparison for Yamasaki’s work in the region.
such as in the galleries in a mosque. The Dhahran terminal, however, privileges the construction frame, whereas Islamic architecture was often based on masonry construction and built stereotomically.

The opening of Dhahran Civil Air Terminal—one of the first major air terminals in the country—was met with excitement by Saudi Arabian officials and King Abd al-Azziz, who had the building’s image printed on the one Riyal banknote in 1968 and again in 1977 (Figures 101 and 102). American military officials objected vehemently to the terminal’s aesthetic appearance. In an address to the Newcomen Society in Washington, D.C., General Emerson C. Itschner—who oversaw the construction of airfields in the Lower 48 States—suggested the design was “too imaginative for Disneyland,” further criticizing the repeated “concrete, monolithic mushrooms 35 feet tall” that formed the building’s core structure.308 The project ostensibly did not follow Itschner’s instructions to build “soundly but without embellishment,” most likely in keeping with the established status quo in the United States’ domestic military airfield projects.309 This disjunction indicates a gap between the design profession and its governmental client. Although the Dhahran Civil Air Terminal was architecturally unique, it was not significantly more expensive: in spite of its distinctive and decidedly embellished design, “an analysis comparing the design with a conventional reinforced concrete structure showed that the

309 Itschner, as quoted in, Grathwol and Moorhus, Bricks, 165
elaborate design was cheaper to build.”310 This may have been aided by the availability of cheaper labor in Saudi Arabia at the time.311

In contrast to criticisms, the American Institute of Architects awarded the project a First Honor Award.312 While some found it aesthetically pleasing, the terminal was more than simply a functional building housing the program necessary to service military and civilian aircraft in the rapidly-growing region. The Dhahran Civil Air Terminal became a critical gateway to Saudi Arabia’s vast oil deposits and at the same time, an important symbol of the nation’s progress during a time of rapid modernization and rise to economic importance. The image of Saudi Arabia as an important player in the world market was fueled by the production and sale of oil and symbolized, in part, by the airport’s design. Returning to the discussion of iconic branded form in the previous chapter might shift the focus to image-making for a new nation state, rather than a single, private corporation. Yamasaki’s design helped create a look that was at the same time international and acknowledged the local context. The loose formal associations with Islamic, “Arabian,” and Moorish architectural traditions meant that elements could even be replicated or further explored in the years that followed by MYA and other architects authoring projects in the region.

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Saudi Arabia never became a major transit hub in the Gulf Region, as many of its neighboring countries did. But as the country modernized and its population grew, it nonetheless needed an entirely new infrastructure for the transportation of Saudi Arabian goods and citizens.

310 Itschner, as quoted in, Grathwol and Moorhus, Bricks, 166
311 Another version of this section on the Dhahran Civil Air Terminal was first published by the author in conference proceedings for the Society of Architectural Historians of Australia and New Zealand’s annual meeting in Melbourne, Australia, July 2016.
312 Itschner, as quoted in, Grathwol and Moorhus, Bricks, 166
around the country and the world. The influx of international workers and the outflow of oil
necessitated new airports, rail lines, seaports, and even whole cities in the desert. The next
project that Minoru Yamasaki and Associates completed in the Gulf was a new headquarters
building for the Saudi Arabian Monetary Agency (SAMA), a timely commission for the firm as a
downturn in the U.S. economy that had begun in the late 1960s meant that fewer domestic
commissions were available. Furthermore, the Saudi Arabian commission underscores the
growing relationship between Yamasaki and Saudi Arabian leaders—and the latter’s
appreciation of the architect’s contextual modernism relatable to the desert region.

Satellite, Line, or Pier? Designing in the Desert, 1974-99

In spite of many radical and visionary proposals for airport designs in the 1960s and
1970s, architects, engineers, and airport operators were often faced with the mundane realities of
budget, tectonic constraints, and the necessity to move millions of people through relatively
small spaces. As a result, many constructed airports, especially large-scale airports, were more
often efficient conduits for people and goods than architecturally significant projects in their own
right. As the economic downturn of the 1970s deepened, architects began to look abroad for
commissions to keep their design practices afloat. The rapidly growing Gulf region was a boon
for many firms, including MYA. Due to the popularity of the 1964 Dhahran Civil Air Terminal
among the Saudi Royal Family and governmental officials alike, the firm found new work in
partnership with large-scale architecture and engineering firms already working in the region,
including Bechtel Engineering and the Ralph M. Parsons Corporation. Large corporations
worked with smaller, design-focused architecture firms such as MYA and The Architects
Collaborative (TAC) on projects that signaled the exportation of western political and economic
ideals through modern architecture and infrastructure in Saudi Arabia and across the Gulf region. Examining this kind of arrangement further clarifies developing relationships between architect and engineer in the postwar period. Arindam Dutta in “Marginality and Metaengineering,” shows how the “architect is merely a boutique reliant upon—if not nestled within—a much larger global delivery operation to service its clients” in his analysis of Arup and Partners. In many cases throughout the Gulf Region, the projects were effectively large-scale infrastructure—the airport grounds and environs—combined with boutique architecture—the passenger-focused air terminals, as is readily apparent in the KFIA project.

The first post-Dhahran commission came in 1970, when governor of the Saudi Arabian Monetary Agency (SAMA) Anwar Ali inquired whether MYA would design their headquarters in the newly formed capital city of Riyadh. Citing an abundance of work in the United States, Yamasaki initially declined the offer. By 1973, however, due to the oil embargo and the U.S. economy, the firm was keen to take on new projects for sympathetic clients. Returning to Saudi Arabia, Yamasaki was presented with an unexpected number of commissions. Since the office was not equipped to take on all of the projects presented by the newly cash-rich Saudis, the firm selected three that most interested them: the Saudi Arabian Monetary Agency headquarters which, among other financial services, housed the gold bullion that underwrote the Saudi

313 A recent publication, OfficeUS: Atlas (2015) came as a result of the 2014 US Pavilion at the Venice Biennale and recounts the formation of American architecture offices and their projects in the twentieth century. As the authors suggest, this compilation of people, places, and projects “frame key historical narratives through which to enter this century [20th century] of US architectural export.” Rather than a complete synthesis of the projects presented, the volume acts as an encyclopedia of related projects, grouped by thematically, and serves as a useful companion to the projects presented through the end of this chapter. Refer to Eva Franch I. Gilabert, et al, OfficeUS Atlas (Zurich: Lars Müller Publishers, 2015), 13

314 Arindam Dutta, “Marginality and Metaengineering: Keynes and Arup,” in Aggregate, Governing by Design: Architecture, Economy, and Politics in the Twentieth Century (Pittsburgh: University of Pittsburgh Press, 2012), 238. Ove Arup formed a number of partnerships over the course of his career; the name Arup & Arup Ltd., was in use until 1946, after which the firm went by Arup and Partners, followed by Arup Associates in 1963.
Arabian economy, the Eastern Province airport project (later renamed King Fahd International Airport), and the royal reception pavilion at the newly-planned Jeddah International Airport.315

MYA sought to endow the design of the Monetary Agency (Figure 103) “to reflect Islamic tradition and yet have monumental qualities appropriate to its intended use,” not unlike the effect the architects’ felt they had achieved in the Dhahran Civil Air Terminal.316 Although the two projects had similarities, they were quite distinct from one another. The Dhahran terminal was a kind of gateway to Saudi Arabia, and outwardly-focused project built to facilitate the flow of passengers and goods on arriving and departing passengers, whereas the Monetary Agency was an inwardly-focused building that privileged interiority and security due to the nature of the building’s role. The project included administrative facilities for the Saudi Arabian central banking system as well as secure vaults for the storage of currency and the country’s gold bullion reserves. By some measures, the six-story building has a rather unassuming appearance, but in its desert context, the building stands tall, measuring 138 by 158 feet and rising to a height of 100 feet above the desert.317 At the ground level, tall windows recall some of Yamasaki’s so-called regionally inspired details employed in the Dhahran project, a kind of local architectural “idiom.” In the Monetary Agency’s design, the fenestration’s blend of Gothic and Eastern arches seem even further abstracted than in the air terminal. The minimal amount of fenestration was again an attempt to mitigate the harsh environment of the desert climate by reducing the heating and cooling load on the building. As with the Dhahran Air Terminal, the structure was mostly composed of pre-cast concrete panels and supports (Figure 104). According to structural engineer Alfred Yee, with whom Yamasaki had first worked in Hawaii on the Queen Emma

315 Further office commissions in Riyadh would follow the SAMA opening.
316 Yamasaki, A Life in Architecture, 175
317 Yamasaki, A Life in Architecture, 175
Gardens project (see Chapter IV), the agency’s “structure was built with precast concrete columns, load bearing façade walls, beams and slab soffits all tied together with an *in situ* reinforced concrete topping to integrate all precast elements into a monolithic structure resisting gravity and seismic loads.” This structural system allowed the building to have a column-free central atrium and a large perimeter skylight that filled the interior space with indirect natural lighting. This design builds on modernist spatial continuity between interior and exterior, found in many projects in the twentieth century, as well as in Hellmuth, Yamasaki and Leinweber’s design for the Reynolds Metals Regional Sales Office in Southfield, Michigan (1959).

Although the exterior has a somewhat reserved appearance, the interior program was arranged around a well-appointed, six-story atrium-style air-conditioned courtyard lit by diffused sunlight from the overhead skylights (Figure 105). The atrium was intended as a respite from the heat of the desert, offering office workers a space in which to relax, surrounded by a reflecting pool, lush gardens, and finished with sumptuous materials and gilded elements, inside and out (Figure 106). The firm also commissioned Lee DuSell, a Syracuse University professor and artist, to create decorative sculptural elements for the entryway (Figures 107 and 108). When it was completed, the Monetary Agency headquarters totaled one million square feet of modern office space in the middle of the rapidly growing capital region. The project itself became a catalyst for further growth, investment, and development, much of which focused on the expansion of the oil trade network between Saudi Arabia and the outside world. As with the Dhahran Civil Air Terminal, the Monetary Agency ultimately printed the image of its own Yamasaki-designed headquarters on a one Riyal banknote first issued in 2007, thus circulating

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318 Alfred Yee Associates, Precast Design Group
319 Yamasaki, *A Life in Architecture*, 175
the image of the U.S.-backed Saudi Arabian regime that was contributing to the world capitalist system through its newly robust oil-driven economy, on the monetary instrument that fuels it (Figure 109). In addition to the Monetary Agency, MYA worked on a collection of office buildings in Saudi Arabia’s capital region, as well as on a handful of airport and terminal commissions around the country—in particular, the new regional airport for Saudi Arabia’s Eastern Province, ultimately named King Fahd International Airport. This project ushered in a new era of design work for Minoru Yamasaki and Associates.

By the late 1960s and early 1970s, Saudi Arabia initiated a wave of infrastructural development in an effort to promote international trade and travel within its own borders, thereby increasing its wealth and prominence in worldwide capitalist markets. Several major airport projects were in the planning or construction phases, including new international airports in Jeddah and Riyadh. San Francisco-based Bechtel Engineering was involved in both projects, and along with MYA, would become a prominent figure in the development of the third major international airport in the country, King Fahd International. Located 30 kilometers to the northwest of the old Dhahran facility, the new airport replaced it, better serving the fast-growing region (Figure 110).

This project presents an interesting case and a difficult one to decipher; from initial design to final construction, the airport took nearly three decades to complete. As such, the history of the project unfolds over several stages of the airport’s lengthy development: the initial request for proposals; the version published in Yamasaki’s autobiographical-monograph *A Life in Architecture* (1979); the “back-to-the-drawing-board” planning stages and manifold design proposals of the late 1970s and early 1980s; and lastly, the final as-built airport, which was completed in the late 1990s. The lengthy design development process was due to a variety of
factors, including the changing landscape of air travel in Saudi Arabia, the growth of the international oil export economy, and the instability in the region caused by the Iran-Iraq war from 1980 to 1988.

The ever-changing needs of commercial aviation are further reflected in the complex nature of the project and its ultimate form. KFIA needed to operate as a major international airport, a regional transit hub, and to provide extensive program supporting the needs of local residents—including a large-scale mosque and landscaped plazas for leisure and recreation. MYA, as a firm, were architectural image makers as much as they were architects. The Kingdom of Saudi Arabia appreciated this quality of their work so much in the Dhahran Civil Air Terminal it became a central reason for retaining them for the larger KFIA project. The remainder of this chapter reconstructs the projects’ gestation and a design-by-committee approach, and places it within the specific contributions of MYA, raising tensions between the formal, image-making qualities of architecture put forth by the firm and the practical, ever-changing concerns that needed to be addressed to satisfy the needs of the client and design committee. In other words, the project took so long, and became so complex, the process itself was entirely different than the manner of the Dhahran Civil Air Terminal. The lengthy, and at times convoluted, design process ties the project’s overall conception and form to the internationalization of U.S.-led late modern architectural and infrastructural design.

Saudi Arabia’s Eastern Province predictably outgrew the capacity of MYA’s relatively modest Dhahran Civil Air Terminal, in large part due to rapidly increasing aircraft sizes, which the firm recognized during the early planning stages of KFIA. Due to the popularity of the 1964 terminal, Saudi Arabian officials turned to Yamasaki to discuss options for a new airport better suited to the region’s growing needs. From the beginning, Saudi officials were determined to
relocate the airport and build a new facility that was equipped to handle rapidly increasing air traffic levels in the 1970s and 1980s. Yamasaki initially disagreed, proposing a more conservative—and faster—course of action, by expanding the existing Dhahran terminal to handle the larger Boeing 747 and Lockheed L-1011 wide body aircraft. Yamasaki suggested, “The Dhahran terminal is rather an easy one to expand and, I would think, relatively inexpensive since the panels can be re-used just by pushing out the necessary walls and building new columns and new foundations and rearranging the interior equipment.” 320 Yamasaki argued further, “It was suggested that a better location for a new military airport would be in the center of the country rather than along the shore of the Gulf of Arabia. Both from an air traffic and a security standpoint.” 321 In spite of Yamasaki’s urging, Saudi Arabian officials decided that a new, relocated civilian airport was the best course of action. 322

Anticipating the unprecedented pace of air travel growth, Yamasaki insisted on designing for passenger capacity beyond 1960s predictions in an attempt to avoid repeating current problems that plagued American airports in the 1970s, including lengthy walks, insufficient


321 At the height of the Cold War, it is unclear on whose behalf Yamasaki is making this recommendation—the United States or Saudi Arabia—but presumably the architect had his client’s best interest in mind. In either case, it is perhaps quite unusual for an architect—a professional whose involvement is generally limited to the design of structures or landscaping—to make “security” or air traffic recommendations to the governing officials of a foreign nation. Beyond the curious nature of this situation, I do not think any real political significance can or should be read into Yamasaki’s suggestion of relocating the military facilities and corresponding expansion of the Dhahran Civil Air Terminal’s capacity.

322 In Yamasaki’s mind, the firm deserved at least some credit for some of the region’s success: “We were impressed by the economic growth of the city of Dhahran, the dynamic feeling of the community, the increased air traffic, the new hotel, offices and commercial buildings, and the expanding business activities of the area. We feel that this pattern of economic growth is in some measure made possible by the proximity and convenience of the nearby Dhahran Civil Airport facility.” Refer to Minoru Yamasaki, letter to M. Mahdi, undated, 1974. “Minoru Yamasaki Papers,” Box 27, Folder 18, Walter P. Reuther Library, Archive of Labor and Urban Affairs, Wayne State University.
interior space, and what Yamasaki considered “rather grotesque additions.” As part of the long-range planning process, in 1974 Yamasaki recommended hiring Tippets-Abbett-McCarthy-Stratton (TAMS) as the aviation engineering consultant of record, reasoning “their credentials include important airport developments throughout the world, including the runways and aviation facilities for the recently completed Dallas-Ft. Worth Airport, and they are actively developing new airports in Africa and the Middle East.” Under this arrangement, MYA would be the lead architect for the project, responsible for the overall master plan, the terminal, and any ancillary structures, and TAMS would be responsible for technical consultations, civil engineering, and the development of paved areas such as runways, taxiways, and the aircraft apron. Before settling on the final form, the architect and his design team went through many formal exercises. As the remainder of this section will show, they ultimately settled on their initial satellite concept, yet the architects returned to the drawing board a number of times, generating solutions that were more easily expandable in order to handle the spike in projected air travel growth that became evident as the 1980s approached.

As outlined in an Executive Summary sent from Bechtel Engineering’s Civil & Minerals department to Minoru Yamasaki on February 22, 1985, King Fahd International Airport was the result of a complex development and construction process. The firm completed an initial master plan for the Eastern Province International Airport (EPIA) in 1977, proposing to connect a

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324 Minoru Yamasaki, letter to M. Mahdi, undated, 1974. “Minoru Yamasaki Papers,” Box 27, Folder 18, Walter P. Reuther Library, Archive of Labor and Urban Affairs, Wayne State University. The relationship between KFIA and Dallas/Fort Worth rises in importance during the design development phase, after its director joined the team of consultants.

centrally-planned terminal to remote satellites via automated people movers (Figure 111). This form is strikingly similar to the design of the Tampa International Airport, completed in 1971 by Cuban-American architect Carlos Alfonso, Sr. (Figure 112). According to MYA’s design team, the goal was to create an “oasis from [the] 800 square kilometer site of virgin desert which is characterized by stationary and traveling sand dunes, an occasional palm tree and scrub-type vegetation.” As the early site photos depict, the scale of the desert and sky was overwhelming, challenging the team to find a way to physically demarcate the space in three dimensions against a strikingly barren backdrop (Figures 113-117).

The passenger terminal was sited at the center of the project, and as with the original Dhahran terminal, concocted new Islamic tradition in its design. According to the design team, “The buildings are modern in structure and design, with a distinct Arabic influence compatible with the desert environment.” The architects continued their description, suggesting that the proportions employed in the design aimed to make them “elegant and graceful” and that it “will be a national landmark, full of visual interest and designed to reflect both the tradition and progress in Saudi Arabia.” The overall experience was particularly important to the team considering that widespread air travel in Saudi Arabia was relatively new. As such, it was important for it to have a larger social program for people to “not only accompany departing passengers and welcome arriving passengers, but...also come for recreational, educational, and religious pursuits.” This unusual situation bears questioning. In what ways were the Detroit-

327 Award Submittal to the Detroit AIA Chapter, 15 October 1987
based architects, many of whom had never visited Saudi Arabia, capable of producing an “image” of the Saudis own culture? The formal aspects of the projects appear to reference general allusions to the desert region and Islamic practices. As in the case of the pavilions discussed in Chapter I, the result was less a direct citation of history and more of a series of references meant to evoke a cultural understanding of place—again, not dissimilar to Barthes’ discussion of “Italianicity.” The forms were not so much Islamic as they were suggestions of “Islamic-ness” based on research from afar.

The Satellite Phase

The initial design concept was featured in a four-page spread in *A Life in Architecture* in 1979, with a short description and a handful of photographs depicting early models of the terminal. Since the book was published more than a decade before the final design for KFIA was completed, but four years after the firm formally received the commission, it presents its reader with an unusual case. This snapshot offers a perspective on the project that perhaps most closely aligns with Yamasaki’s *ideal* view of the airport’s design, but which differs from his initial thinking outlined in correspondence with Saudi officials, the ambitions for which the architect described as follows: “we hope to build one of the most exciting airports in the world, one that will be comfortable and easily comprehensible to the occasional as well as the experienced traveler.” The accompanying description in *A Life in Architecture*, however,

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330 The 195-page monographic-autobiography enumerates and illustrates through photographs, drawings, and text highlights of the firm’s projects from the 1956 St. Louis Air Terminal through to key projects in the 1970s and 1980s, concluding with King Fahd International Airport and the architect’s own residence in Bloomfield Hills, Michigan.

331 Yamasaki, *A Life in Architecture*, 180
suggests a different story than the one told by the letters and archival materials dated from 1974, when the project began.

After the firm received the commission for the Saudi Arabian Monetary Agency Headquarters, the Ministry of Defense and Aviation contracted with MYA to expand the Dhahran facilities. In a seeming about face from his previous arguments for a renovation of the 1964 Dhahran terminal, Yamasaki describes that the firm was “happy with [Saudi Arabian officials’] enthusiastic confidence in us and with the fact that they did not opt for an addition that might be unsympathetic to our original design,” rather, choosing to build an entirely new “regional airport at a different, larger site.” Under this scheme, the old Dhahran facilities would be converted to a dedicated military and air force facility and the twenty-seven square miles of land that had initially been acquired for the airport’s expansion could be used for other purposes, such as office and housing developments, to meet the growing needs of the immediate region. Relocating civilian air traffic would help reduce noise disturbances in the commercial and residential sectors, as well as decrease potential “airspace conflicts” with other new regional airports, including one slated for construction in nearby Bahrain. The new location also afforded an expanded opportunity to serve the growing cities of Dammam, Alkhobar, Abqaiq, along with Bechtel Engineering’s newly planned city of Jubail (Figure 118).

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332 Yamasaki, A Life in Architecture, 180
333 Yamasaki, A Life in Architecture, 180. MYA was not the only American player in the development of Saudi Arabia’s Eastern Province. In addition to working with Yamasaki and his team, Bechtel Engineering also developed the country’s massive oil production, and helped construct what was at the time called “the world’s largest civil engineering project.” The development of new cities and ports in the region was closely tied to the design and construction of the airport infrastructure with which Yamasaki was involved. The most significant of the projects was the new city of Jubail, which Bechtel called “a place for industry.” As the company touted in a 1980 brochure, “Even a quick glance from an airplane circling high above the site tells a visitor that Jubail is no ordinary construction project. For one thing, it seems to stretch for miles on the eastern Saudi desert coast. The pieces of equipment appear to number in the thousands, as do the workers.” Jubail was located on the shores of the Arabian Gulf at one end of the new crude oil pipeline that traversed Saudi Arabia from the port city of Yanbu, on the Red Sea. For more, refer to “Update on Jubail,” Bechtel Briefs, November 1980, 4
In a move formally similar to MYA’s Saint Louis terminal, the initial proposal included a pair of large vaulted shells spanning a distance of 360 feet between the two terminals and each covering an area of 450 by 900 feet (Figure 119). From a practical standpoint, the shells shielded passengers and airport employees from the hot sun. But the dramatic shells would also act as a formally-unifying agent in the project that the architects described as “a symbolic gateway to the entire eastern region of Saudi Arabia and [one that would] signify the importance of one of the major entrances to the country; [the shells] represent the greatness and progressive aspirations to which the leaders of Saudi Arabia are so devoted.” The notion of a “gateway” for a city or region is a recurring one for the architect and his team, and one that was first explored in the St. Louis air terminal. In other words, for Yamasaki, a gateway or threshold could exist at many sizes—from the scale of a building’s vestibule to that of an entrance to a city. A parking structure for 6,900 cars, along with rental cars and employee parking, was located under the central roadway and concrete shells.

Sited far from the city centers in the middle of the desert, the view of the airport and its sweeping concrete shells was designed to be enjoyed from the air by arriving and departing passengers: “With their large scale and long-distance visibility, the great shells of the terminal will be the focus for the entire eastern region of Saudi Arabia (Figure 120). Planes approaching from the Arabian Gulf to the east or from the Arabian Desert to the west fly over vast areas of sand and sea that are devoid of buildings except for the airport itself.”

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334 Yamasaki, *A Life in Architecture*, 180
335 Yamasaki, *A Life in Architecture*, 180
336 The proposal also called for a mosque adjacent to the domestic terminal and a 300-room hotel adjacent to the international terminal, both connected by moving walkways.
337 Yamasaki, *A Life in Architecture*, 180
become a kind of oasis in the desert, welcoming arriving passengers to a fast-growing region and center of the burgeoning oil industry (Figure 121).

Once the site for the new airport had been finalized the firm settled on a general design scheme, a satellite concept with two core terminal buildings and four smaller satellites serving domestic and international flights (see Figure 119). In plan, the scheme is approximately symmetrical along two primary axes, with mosque and hotel on opposite sides. As with Tampa International Airport and Houston International,338 this design scheme required a separate air train or passenger shuttle between the central terminal and the passenger satellites. The overall aim was to reduce lengthy internal distances passengers must walk, a revision to the “seemingly endless concourses” of airports like Tokyo-Haneda and Chicago-O’Hare, with which Yamasaki was very familiar due to his frequently grueling travel schedule.339

Even at this stage, Saudi officials were not yet convinced by the satellite concept, and in 1981, tasked MYA and Bechtel Engineering with another revision to the master plan. By August, it was agreed that three basic design configurations—satellite, line, and pier (Figures 122-125)—would be the primary focus of the firm’s investigation, evaluated on the basis of technical, economic, and architectural criteria.340 Over the course of the following three and a half years, MYA produced hundreds of drawings, schematic layouts, and diagrams while finding a solution

338 The multi-airline Houston International Airport (now Bush/Intercontinental) was the result of a joint design venture between local architects Pierce and Pierce and Eastern Airlines in 1961—an unintended partnership that came about in an unusual way. An early supporter of the new terminal project, but unhappy with the design proposals, Eastern Airlines inquired whether the airline could put forth a fourth proposal of their own design, a modular concept that included a central core terminal with satellites connected by long piers. Their request was granted and on July 15, 1963, and subsequently, city officials adopted Eastern’s proposal. For more on this topic, refer to: “Houston Intercontinental: First Airport Built with Passengers in Mind,” The Falcon, July 4, 1969, p.4. Box 3, Folder Eastern Airlines: The Falcon 1969, Eastern Air Lines Collection (Acc. 1991-0070). Archives Department, National Air and Space Museum, Smithsonian Institution.
339 Yamasaki, A Life in Architecture, 180
appropriate to the desert climate, the airport’s programmatic demands, and the client’s desires for opulence and grandeur. Among them were two designs that were not selected for further study, but which provide a deeper understanding of the struggles with which the firm grappled. First, a centrally-focused pier layout incorporated two identical sets of five piers that extended out from a long walkway attached to the main terminal ticketing lobby and associated program. In this scheme, aircraft would park along the piers and embark or disembark passengers from telescoping jet bridges. The forty gates would handle both domestic and international flights with two large parking structures straddling the airport’s control tower, located at the center of the complex.

By October 1981, a meeting was convened with representatives from the International Airports Projects (IAP), Saudia employees (the national airline of Saudi Arabia), the Portland Cement Association (PCA), and members of MYA’s architectural design team. The parties gathered agreed that “the evaluation results did not provide a clear basis for final terminal concept selection” and that “two of the concepts (satellite and linear) would be developed in greater detail based on common functional criteria.”

Additional programmatic requirements were outlined, which included facilities for “the control tower, public parking for 8,000 vehicles in 1995, a mosque for 5,000 worshippers, stations for bus and train traffic, a Royal Pavilion, north and south access roads, and any gateway feature necessary to signify EPIA as a gateway to

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341 While this group is not identified in the document beyond the acronym PCA, the Portland Cement Association was founded in 1916 in the United States, and provided major assistance in the development of reinforced concrete aprons that would withstand the high temperatures in Saudi Arabia, as well as frequent use by heavy Lockheed L1011-500 aircrafts due to join the Saudi Arabian Airlines fleet. For more on the specifics of the concrete studies and calculations, refer to M. G. Arora, et al, “Portland Cement Concrete Apron Pavement Design Study for King Fahd International Airport in Saudi Arabia,” in Jim. W. Hall, ed., *Airport Pavement Innovations: Theory to Practice* (New York: American Society of Civil Engineers, 1993), 216-32.

Saudi Arabia. In addition, the group discussed the possibility of a medium-density “airport community” to be developed nearby for ancillary and support services, including housing for airport workers, industrial and commercial space for related industries, as well as additional hotel space to meet the anticipated growth in air traffic.

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As the architects and airport officials grappled with how to approach the design, numerous proposals were entertained that mimicked the main themes of contemporary air terminal design. Some featured large-scale terminal structures, while others preferred a series of smaller units, interconnected via concourses and transit corridors. One rather outlandish proposal to expand the satellite design depicts as many as ten satellite concourses radiating from the central terminal (see Figure 123). It does not appear that this version gained traction, and the firm instead invested significantly more time fleshing out linear terminal concepts. Although the design went through significant revisions in the months that followed, the dual-terminal linear scheme formed the basis for the final design.

Although other large-scale airport projects often took longer than initially planned, King Fahd International had an unusually long gestation period, due to a variety of compounding factors. Chief among them was the country’s fairly remote location relative to the pockets of specialized expertise in airport design and the ensuing length of transit it took to reach the site. Simply put, it was not an easy task to convince North American and Western European specialists to move to the Arabian Peninsula for undetermined lengths of time. Companies went to great efforts to construct entire towns that recreated or approximated the comforts of “home” in the relatively undeveloped and remote location of the world.

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343 Bechtel Engineering Eastern Province International Airport, Executive Summary
During the initial development phase of KFIA, several other major airports in Saudi Arabia had opened for service, and as such, provided useful feedback about the importance of aesthetics and the appeal to a wide public across the Kingdom. Having opened in Riyadh in 1983, the King Khalid International Airport (KKIA) (Figures 126 and 127)—a joint project between Bechtel and HOK—was overwhelmingly well-received by the general public, in part due to its “large open spaces accommodating major fountain structures and flower displays.”344 Nothing of the sort had been considered at KFIA, with those involved instead focusing on producing an “extremely functional” building while still “providing attractive architecture.”

Given the success of a central gathering area at KKIA, the design team was once again tasked with coming up with schemes that included a “central visual feature,” whose purpose was “to provide the terminal visitor and both the arriving and departing passenger a chance to experience a landscaped water display within an exciting spatial environment.”345 In other words, the committee wanted to add architectural spectacle to the terminal’s design. This seemingly small change led to a number of radical redesigns throughout the building and landscaping.

In order to add this kind of public-pleasing feature, the terminal area had to be expanded by ninety meters in length and thirty meters in width, a shift which came at a high cost. This change also spurred the arrival and departure roadways to be stacked, ultimately “providing better alignment of the vertical circulation elements and visual continuity for the central feature.”346 Over time, these changes caused a number of design aspects to be modified, including the addition of exterior glass walls that provided expansive views of the airport grounds. Furthermore, it was thought that by expanding the structural bay dimensions from

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344 Bechtel, “Executive Summary,” 9
345 Bechtel, “Executive Summary,” 9
346 Bechtel, “Executive Summary,” 10
fifteen to eighteen meters, the terminal would offer users better visual proportions and more efficient handling of subjects as they transferred from one flight to the next, or passed through customs and immigration on arrival.

After a thorough review of multiple schemes for the new feature, it was decided that the central area would “include large floor openings that would visually connect all levels, vertical circulation provisions to allow users to move through the feature exposing them to a variety of views.” The design allowed both landside and airside passengers to experience the space, without them physically intersecting in order to maintain two distinct flows of people and traffic. Skylights and clerestory fenestration provided natural light for the interior garden and water feature. The octagon shape was settled on as a “unifying element” to be repeated throughout the terminal in material finishes and formal details (Figures 128 and 129).

Due to the lengthy design development phase, plans for KFIA had to be continually updated in order to keep apace of major airport developments worldwide. Time and again, the original schemes were outmoded before ground had ever been broken—a common problem with rapidly changing technologies and the specter of obsolescence. By 1984, however, the design schemes had been finessed to the extent that the project was ready to proceed to the next phase. And although the airport had still not been built, by 1987 the work of the architect was essentially finished. At this time, the firm believed the project embraced state-of-the-art design and would become the next significant gateway to Saudi Arabia. Due to their perceived success, Yamasaki and his team submitted the project to the AIA in October of 1987 to be considered for an award in the unbuilt category.347 Planning for such a large-scale development takes a great

347 “The Kingdom of Saudi Arabia has embarked on the development of a new international airport for the Eastern Province that will serve as the Kingdom’s gateway for international travel and as the Province’s regional hub for
deal of time, and King Fahd International was no exception. By this time, it was assumed the proposed design would easily handle the current traffic needs, as well as those anticipated to rise to sixteen million passengers annually by the year 2005.

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After many years of design development and extensive negotiations between client, architect, and various consultants, progress was finally made on the design of King Fahd International Airport and construction began (Figures 130-132). As it was built, the airport was designed to include just over 3.5 million square feet in the terminal and concourses alone, similar in size to Dallas/Fort Worth when it opened in 1974 with 3.16 million square feet of covered terminal space in four equally-sized terminals. In addition, the airport’s ancillary structures included a 44,800 square foot control tower, a thirty thousand square foot on-airport mosque, and a large royal reception pavilion for the Saudi royal family’s exclusive use. In a similar vein to many of the proposals examined in the previous sections of this chapter, the final airport design had two separate, side-by-side terminals accessed by a multi-level roadway (Figure 133).

As transverse sections and cutaway drawings depict (Figure 134), the final design incorporates a departures-level covered roadway that shielded passengers from the weather (Figure 135) and a large ticketing lobby with high ceilings (Figure 136). Both moves are reminiscent of Yamasaki’s designs for the Eastern Airlines terminal at Boston Logan of 1969
domestic air travel. The Eastern Province area has seen continual economic growth and the objective of the current plans is to make the region one of the most intensively developed and aesthetically attractive areas in the kingdom.”

Award Submittal to the Detroit AIA Chapter, 15 October 1987. Minoru Yamasaki Papers, Archives of Michigan, Lansing, MI.

348 For a succinct history of Dallas/Ft. Worth airport, refer to Art Leatherwood, “Dallas-Fort Worth International Airport,” The Texas State Historical Association, https://tshaonline.org/handbook/online/articles/epd01, Last accessed July 4, 2018. According to Reyner Banham in Megastructure: Urban Futures of the Recent Past, the entire airport grounds of DFW is larger than the island of Manhattan, and this is indeed true: at a total of 29.8 square miles, the airport’s grounds eclipses Manhattan Island’s 23 square miles.
(see Figure 54 for comparison). The interior of the ticketing lobby of each terminal features an open plan, with airline baggage check-in desks as “island” counters floating in the spacious area. One of the most striking elements is the highly-articulated ceiling, which has a repeating geometric pattern that was loosely associated with by some with a perceived Eastern quality. This was first introduced in the Dhahran Civil Air Terminal where geometric forms were also referenced, albeit differently. Here, the reference is more true to the original form and relies less heavily on modern abstraction. The central feature ties the landside programming with the airside functions (Figure 137). The architects modified the boarding bridges by building short piers that extended from the terminal, off of which one or two telescoping jetways attached to the waiting aircraft (Figure 138). To complete the lavish appearance, interior finishes were an important part of the design scheme, and rich materials were used on most surfaces, including marble, stone, and terrazzo tiling. The materials had a dual purpose: they were perceived as luxurious finishes befitting an international gateway and could also withstand the heavy use officials anticipated the airport would see in the coming years.

Given the project’s emphasis on regional context, Islamic religious traditions, and the importance of the call to prayer throughout the day, the design team paid close attention to the programmatic need for an airport mosque. In an effort to familiarize themselves with the task’s requirements, the firm compiled a significant collection of research on mosque design and the salient aspects of the Islamic faith, pulling from news sources, architectural textbooks, and religious scholarship to elucidate its many requirements. The design and siting of the mosque was a key discussion that was debated throughout the design process for the terminal itself, beginning in 1977. It went through a similar series of design developments, albeit less rigorously
given its more straightforward programmatic requirements and many precedents throughout the country and the region.

By mid-winter 1983, the mosque design came under more significant review by the committee, who subsequently determined it was “inappropriate for the prominent position if occupied within the mosque plaza.”349 As a result, the design team was tasked with undertaking a new approach and one that was more similar to the on-airport mosque at KKIA (Figure 139), which opened that same year and which could hold 5,000 worshippers. By July, the team presented another version of the mosque, featuring “a pointed dome and decoration similar to the Medina mosque, a stained glass clerestory band, and a colonnade around the exterior”350 (Figures 140 and 141). The mosque at KFIA was still planned to be significantly smaller than at KKIA, with a goal of accommodating 2,000 worshippers, making it rather small by large-scale Islamic mosque standards. The entire complex was designed to be surrounded by lushly landscaped gardens similar to the oasis in the Dhahran project—another outlier in the desert climate. The structure is a centrally planned, domed space that is ringed by a perimeter arcade, helping to balance the overall formal composition (Figure 142). Given its siting atop the multilevel car park, the mosque has a unique relationship to the overall airport and terminal layout, becoming an integral part of its program and one that is directly connected to the adjacent terminal buildings. Although it would not be constructed for a number of years, this was the final design that was completed when the project opened in the 1990s. A photograph of the airport as built shows the spatial relationship between the control tower, mosque, and main terminal (Figure 143).

349 Bechtel, “Executive Summary,” 6
350 Bechtel, “Executive Summary,” 7. The incorporation of stained glass fenestration may have been an unusual Christian import, rather than a particularly Muslim tradition.
Underlining its significance as a religious structure and a symbol of the Kingdom, material finishes of the interior and exterior played an important role in the overall composition. To this end, the design team suggested: “The mosque is embellished inside and out with precious materials and finishes, including rare marbles, bronze, and stained glass.” As a result, the design “gives the feeling of richness commensurate with the mosque’s importance to the people of Saudi Arabia.” Indeed, mosque design calls for certain, highly ornamented surfaces, including the interior of domes—or qubba—that have religious importance, signifying heaven.\(^{351}\) The focus on material finishes was critical to nearly every aspect of the airport, and became a focal point in the examination of the Royal Reception pavilion.

As with any civilian airport project in Saudi Arabia, the Royal Terminal and Reception Pavilion allowed the Saudi Royal Family and their guests a secluded place to prepare or recover from travel. In the Dhahran Civil Air Terminal, this was no more than a modest series of rooms housed in the main terminal. Initially, the Royal Reception Pavilion at KFIA was planned to be included in the concourse itself. By 1983, two years after Bechtel and Yamasaki were asked to revise the Master Plan, the committee decided that the best course of action was to design and construct a separate terminal for dedicated Royal Family use. This went through several design phases (Figures 144 and 145). The new remote location of the Royal Terminal offered direct access from the north access road and helped to alleviate predicted traffic problems with the regularly scheduled commercial services. In addition, it was decided that the Royal Terminal itself should offer three distinct user flow patterns: one for the King, one for male VIPs, and a

separate one for female VIPs and families. Architectural renderings indicate the correspondingly different spaces for each of the main user groups.

By April 1983, however, a new site was chosen for the Royal Terminal which afforded easy landside access to roadways as well as direct airside connections to taxiways and the west runway. Furthermore, the new location placed the terminal in a visually prominent site without compromising security concerns. From a formal perspective, perhaps the most significant change was the shift to a three-building proposal, based on the three user groups and their distinct paths through the terminal. Further developments and modifications were discussed and adopted over the course of the year. By July of the following year, a singular terminal design was presented that “featured a central shell enclosing the main reception hall” and that would be the basis for further investigation. Ultimately the committee settled on an eight-sided design (Figure 146). During the design process, the team made a comparison diagram with two other Royal terminals: the HOK-designed Royal Pavilion at KKIA and Yamasaki’s own 1982 terminal in Jeddah (Figure 147). As constructed, the Royal Terminal offered 281,835 square feet of luxurious privacy that included sumptuous waiting areas, separate lodging facilities for male and female members of the family, dressing rooms, prayer rooms, and modern jet bridges for boarding aircraft (Figures 148 and 149). The facility is anchored by the Central Pavilion housing the King’s formal reception hall, and is flanked by structures for the use of visiting dignitaries and guests, including conference rooms, administrative offices, and a press room.

The Royal Terminal also emphasized procession, an important aspect of formal architectural design throughout history, and particularly evident in the 18th and 19th centuries.

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352 Bechtel, “Executive Summary,” 6
353 Bechtel, “Executive Summary,” 7
354 Bechtel, “Executive Summary,” 12
355 Yamasaki and Associates, project notes. Archives of Michigan, Lansing, MI.
Charles Garnier’s *Opéra de Paris* (1861-75), for example, different entry sequences existed for the elite (side entry portico), the performers (back of the stage), and the general public, who proceeded up the main entry stairs and through a grand, neo-Baroque loggia that extended from the end of Avenue de l’Opéra. This siting indicated the theatre’s strong relationship to the axial urban forms of Haussman’s Paris, and as a public gathering space as an extension of the square outside. Internally, the main lobby was marked by a grand staircase that directed people from their points of entry to upper level seating. According to architectural drawings and archival materials, in the case of the Royal Terminal, from the airside there were three distinct entrances, one for the King and Royal Family (denoted by the designation H.R.H.) with women to the right and men to the left as they entered the terminal. The Royal Family’s path through the terminal was more or less direct, elevated, and through the main reception hall, indicating their higher status. The guards and supervisors were housed in a separate building that was an attached concourse to the main terminal, which was modest in its design.

King Fahd International was one part of a major infrastructural push by the Kingdom of Saudi Arabia in the 1970s and 1980s. King Abdulazziz International Airport in Jeddah (KAIA) opened May 31, 1981, followed by King Khaled International Airport (KKIA) on December 5, 1983, but KFIA had a much longer development and construction period.\(^{356}\) Although the initial site work began in 1983, and workers broke ground on the new terminal facilities as early as 1984, by 1988 the Phase I of KFIA’s development was not expected to be fully operational until 1995, with Phase II expected to open in 2005. The first operations were initially planned for 1989 with 32 percent of the construction having been completed by 1984. As many as eighteen contractors were already working on the airport by 1987, with more slated to come on line later.

\(^{356}\) “KFIA construction well under way for end-of-decade opening,” *Airport Forum* (March 1988): 27
that year as new contracts were awarded for the outstanding projects, including the Royal Terminal.\textsuperscript{357} According to Fahad Ibrahim Al Zamel, KFIA project director, coordination was essential: “What we are doing is building an airport to meet the present need, and also planning for growth at least 20 years ahead.”\textsuperscript{358} Once the new airport opened, all military operations would be based out of the old Dhahran airport and its Civil Air Terminal, giving the military and air force greatly expanded facilities for operation. Although the major infrastructure was completed by 1990, the beginning of the Gulf War delayed its official opening for nearly a decade. The airport did not go unused, however, and served as a strategic base for Allied Forces during the war, making it the second airport in Saudi Arabia that played a key role in the United States’ overseas military actions.

In the late 1980s, however, the Dhahran-Dammam region saw a decrease in passenger traffic, when a number of airlines received landing rights at Riyadh and subsequently withdrew service from the Eastern Province altogether. Still other companies drastically reduced service in the market, and the United-States-based Pan Am, which “catered to the largest expatriate group [in the Eastern Province], pulled out as it lost its landing rights in Dhahran.”\textsuperscript{359} Undeterred, airport officials went ahead with the ambitious project, citing projections of at least 5.2 million passengers per year and new service planned by airlines as disparate as Emirates, Royal Nepal Airlines, and Garuda Indonesia. When it finally opened to commercial service in 1999, the airport offered state-of-the art facilities, and today, the airport services flights by over two-dozen airlines and has become the third largest hub operation for Saudia, after Jeddah and Riyadh.

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\textsuperscript{357} “Fahd on course for 1990,” \textit{AIRPORTS International} (October 1987): 7
\textsuperscript{358} “Fahd on course for 1990,” \textit{AIRPORTS International}, 7
\textsuperscript{359} “Fahd on course for 1990,” \textit{AIRPORTS International}, 7
The airport terminal projects in this chapter extend the discussion of designing for the air age from smaller, simpler projects to major infrastructural undertakings. This marked a significant shift in the manner in which they were approached: no longer were the projects being spearheaded by architecture firms, but rather, the architect became one small part of the design operation. In many cases this resulted in less focus on formal expression, and more on the efficient handling of passengers and cargo. Terminals became functional tools, rather than expressive objects of design.

The next and final chapter turns attention to housing and hotels, with the international hotel chain forming a key part of postwar globalization and a natural extension of air travel and airport infrastructure. The design of hotel common spaces and rooms is closely associated with a postwar housing boom and the development of large apartment buildings. This is particularly evident in the Los Angeles Basin and in Honolulu, Hawaii where MYA designed and built a number of significant projects. The demand for hotels and housing is also closely tied to the increase in air travel and the advent of the international business traveler, and by necessity, very often associated with airports and as part of larger airline networks.
CHAPTER IV
From Permanence to Transience: Global Migration and the Infrastructure of Domesticity, 1959-80

“A man who stays the night in a strange place is still a member of the human community, and still needs company. There is no reason why he should creep into a hole, and watch TV alone, the way he does in a roadside motel.”

- Christopher Alexander, A Pattern Language (1977)

On April 22, 1967, George Nelson, a prominent American designer and a longtime friend of Yamasaki, wrote a critical essay for the American periodical Saturday Review, discussing at length the age of international travel and the idea of formal sameness, suggesting:

The universal architectural response to mass travel is mass modern. One could do an article about a quick trip around the globe and use only two photos, one showing a glass air terminal and the other a glass and concrete hotel stuffed with cells. While the story wouldn’t be entirely true, it wouldn’t be entirely false, either...The words for what has been happening to travel architecture since the war are ‘everywhere,’ ‘mass,’ ‘sameness,’ ‘big,’ ‘modern.’ There are no more replicas of the Baths of Caracalla in the travel business.

Nelson penned these words from the Hotel Leningradskaya in Moscow, one such example of a large building stuffed with small hotel rooms lacking character and regional charm. Formal

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360 George Nelson, “Architecture for the New Itinerants,” Saturday Review, April 22, 1967. This also raises an interesting formal problem relating to Yamasaki’s own work, in particular the St. Louis Air Terminal, examined extensively in chapter two. This one-off project the architect himself relates to the Baths of Caracalla, although this author maintains that project bears a better resemblance to McKim, Mead, and White’s Pennsylvania Station, unceremoniously torn down in October 1963.
“sameness” was an integral strategy of growth for international hotel chains, such as Hilton, Hyatt, and Intercontinental Hotels—many of which were tied to airports and air travel, a twentieth century revision to the close relationship between railroad stations and hotels of the previous century. This new hotel typology—which Conrad Hilton once referred to as “little Americas abroad”—introduced a formal sameness that appealed to the international business traveler, a central figure of the global capitalist system and, ultimately, transnational relations. In spite of replacing older methods of regional and contextual design with a kind of international modernism, hotel companies frequently launched advertising campaigns that simultaneously touted sameness and difference, indicating that the modern traveler could have both, such as in Hilton’s 1962 advertisements highlighting “the Hilton smile” which was the same worldwide (Figure 150). In addition to a new formal sameness, hotel design was increasingly being tied to the corporate branding of the hotel chains to which they belonged—and architecture firms such as Portman and Associates and MYA were keen to develop close working relationships that led to multiple commissions. This is particularly evident in Portman’s work with Hyatt in the late 1960s and early 1970s in the development of the modern atrium hotel typology, discussed below.

Hotels, high-rise apartment buildings, and urban redevelopment projects illuminate twentieth century urbanization and densification of human habitation as postwar image-building through

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361 As art historian Annabel Wharton has noted in *Building the Cold War: Hilton International Hotels and Modern Architecture*, “The Hilton was often the first significant Modern structure in its host city, as well as its finest hotel.” This, however, was not done without a significant impact to the host cities. Large Hiltons often replaced the old, landmark hotels of a rapidly disappearing era, which in turn impacted the built and social environment of the cities in which they were constructed: “The contrasts between the grand hotel of the past and the Hilton of the mid-twentieth century register the transformation of consumable space…The changed locations of the city’s most prestigious transient address map the social and economic drift in the urban plan. The establishment of the Hilton—sometimes in conjunction with a new American embassy—modified the civic order.” As they proliferated in capitals worldwide, hotels became ambassadors in their own right to the host city and country, but also immovable representatives of their corporate and national identity, literally inserted into foreign territories. Refer to Annabel Jane Wharton, *Building the Cold War: Hilton International Hotels and Modern Architecture*, Chicago: University of Chicago Press, 2001.
civic and domestic investment, fueled by international travel and trade. Individual hotel rooms and apartments transformed domestic space into an infrastructural network; the buildings they constituted reshaped the postwar landscape in the United States and abroad.

If Chapter I presented the buildings and pavilions that paved the way for foreign diplomacy and international trade, Chapters II and III focused on the buildings that made international travel physically possible—airports. Building on the discussion of migratory modernism taken up in the earlier chapters, the projects in this chapter focus on housing and hotel developments that responded to both the needs created by the products of the previous chapter—international travel and trade—and the resulting pressures put on local municipalities by the very same phenomenon. In other words, transient and permanent housing that came to be as a result of the ever-expanding exchange of people, goods, and services throughout the United States and across the globe. The chapter begins by discussing the close ties between air travel and the rise of the large-scale business hotel and housing complexes. As an extension of these developments, I turn to postwar developments in the Los Angeles Basin, focusing on the efforts of Minoru Yamasaki and Associates in the newly developed Century City. First, the Century Plaza Hotel (1961-66) was an anchor in the development aimed at capitalizing on the growing film industry and Los Angeles’ significant postwar expansion and adding to the growing list of requirements of a large, modern hotel. The hotel quickly became an iconic property for Hollywood stars, governmental officials, and visiting foreign dignitaries. The hotel was just one part of the larger Century City development, which included The Century Towers, a pair of triangular-shaped office towers, also designed by MYA, commissioned by Alcoa and constructed

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362 This project was further expanded by the addition of the Century Towers (1975), a pair of 44-story, triangular office towers across the street from the Century Plaza Hotel. Together, these projects anchor a large area of development related to the burgeoning Hollywood film industry.
between 1970 and 1975. Together, these two projects acted as the commercial real estate anchor for Century City, complementing additional hotel, shopping center, and apartment building developments, including projects by I. M. Pei, Welton Becket, and Charles Luckman.

The chapter continues by exploring Yamasaki-designed projects in the Hawaiian Islands, largely in response to the pressure placed on the housing market during the postwar tourist hotel boom. A westward expansion in the United States, along with the development of Hawaii as a vacation destination were fueled by ever-increasing aircraft size, the addition of new airlines and flights, and the newfound ability for more of the U.S.-based population to travel for leisure purposes. The firm’s first project in Hawaii was a renovation and addition to the popular Tropical Isle Hotel in Waikiki, although it was never completed. Secondly, Queen Emma Gardens (1959-64), a high-rise apartment complex introduced much needed modern housing in Hawaii’s capital while attempting to embrace aspects of the local context through space and form. Some of these formal elements were subsequently translated into other Yamasaki-design projects across the United States. The project was soon followed by a high-rise condominium project known by its address, 1350 Ala Moana, a luxury housing property located near the waterfront between downtown Honolulu and Waikiki Beach, whose overall form is similar to Queen Emma Gardens. Both projects replaced what city officials considered to be urban blight with dense housing as a catalyst for future investment, a frequent approach to urban redevelopment in the 1960s and 1970s across the United States.\(^{363}\) The rapid expansion of an itinerant architecture

\(^{363}\) We might also recall the Pruitt-Igoe Public Housing project in North St. Louis, a largely unsuccessful federally-funded housing project which fell into disrepair shortly after its opening in 1952. It was demolished in 1972. On the other hand, the smaller Cochran Gardens public housing designed by the firm, also in North St. Louis, operated successfully until 2008, when it, too, fell into disrepair after being taken over by the city over ongoing tax problems. While Queen Emma Gardens is different in that it was not intended as public housing, it is clear that Yamasaki changed his thinking on the design of high rise housing in the decade between Pruitt-Igoe and Queen Emma Gardens.
simultaneously opened new opportunities for architects and developers, and also put pressure on the buildings and networks that were a product of this expansion as they became outmoded or outpaced. This is particularly evident in the MYA-designed Hawaiian projects that replaced lower density housing and commercial development with high-rise apartments, hotels, and office towers. This quickly changed the landscape of Honolulu and other cities in the island chain in ways that were not always the result of careful planning and execution, creating new problems to be solved by architects, planners, and city officials nationwide.

The chapter concludes with a discussion of the decline and demolition of Pruitt-Igoe, which builds on significant issues of housing, the postwar American boom, and gentrification in urban areas raised in the MYA-designed projects in California and Hawaii. The St. Louis project indicates a different problem and trend with respect to housing-oriented urban renewal policies for their frequent lack of investment in infrastructure and a plan for reinvestment in the longer term that often spelled disaster, as in the case of Pruitt-Igoe. These issues will be further considered in light of the European context, as a means to understand the larger complexities at stake in postwar urban housing.

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The interrelationship between mass travel and the need for associated lodging is a trend that began with the development of large-scale railway systems in the late nineteenth century in the United States and across the globe. Train stations were often designed with hotels inside or immediately adjacent to them, offering easy respite and a temporary home to travelers on long journeys. As historian Susan R. Braden has analyzed, hotel development along Florida’s Atlantic Coast in the late nineteenth century gave way to what historian now call an architecture of leisure. Growing need for vacation-oriented hotels and resorts reflected a growing leisure class and an
upwardly mobile middle class across the United States. Although not uniquely tied to railroad expansion, these developments date back to industrial railroad entrepreneurs, Henry Flagler and Henry Plant, who channeled development throughout Florida by “erecting contextually stylish and technologically innovative luxury winter resort hotels along the routes of their respective Florida railroad empires.”\textsuperscript{364} This development was significant for a number of reasons: it had a direct connection to Flagler and Plant’s own railroad empire, and it promoted a high level of grandeur and excess that was newly affordable to a growing number of Americans. Although most American families took some sort of summer vacation, the idea of a winter escape promoted exclusivity:

Clearly, a long stay at a winter resort implied vast wealth (conspicuous consumption) and enough free time to travel great distances (conspicuous leisure) in order to be seen prominently enjoying evocative, amenity-rich architecture in a warm and beautiful setting (conspicuous luxury).\textsuperscript{365}

While much of the new travel was for business purposes, there was also a growing class of elite who traveled to warm-weather resorts to escape inclement weather at home. The architectural response to this elective mobility was never more apparent than in the work of Morris Lapidus. Lapidus’ iconic South Beach properties in Miami beckoned the elite from near and far to glittering pools and sunny beachfront locations, among them the 1956 Eden Roc Hotel (Figure 151). The emphasis on leisure and escape, however, was not solely in the domain of the wealth and soon came into reach of a much more economically diverse group of Americans. As

\textsuperscript{364} Susan R. Braden, The Architecture of Leisure: The Florida Resort Hotels of Henry Flagler and Henry Plant (Gainesville, FL: The University of Florida Press, 2002), 1

\textsuperscript{365} Braden, The Architecture of Leisure, 15. In 1931, Conrad Hilton became the managing firm for the Waldorf-Astoria in New York, and in 1949 it was fully purchased by Hilton Hotels Corporation. (For more on the early history, refer to Conrad Hilton, Be My Guest. Englewood Cliffs, NJ: Prentice-Hall, 1987.) The name, Waldorf-Astoria, is currently a sub-brand of the Hilton portfolio, focusing on a collection of luxury hotels and resorts, located across the globe and with a number of properties in Florida, Puerto Rico, and Hawaii. One of the finest winter resort hotels built by Flagler—albeit after his death—the Casa Marina Hotel (1918-20) in Key West, Florida remains in operation today under the Waldorf-Astoria banner since 2008. As of 2015, the hotel is fully owned by Hilton Worldwide Holdings, Inc.
Matthew Gorden Lasner has suggested in *High Life: Condo Living in the Suburban Century*, "Along with a house, car, and television set, the postwar American dream increasingly came to include a summer cabin, trailer, or beach apartment." The trend of owning a second home or cabin increased quickly between the 1950s and 1960s during which time estimates for second home construction doubled to 100,000 new homes per year, fueled in part by pensions and the relatively new Social Security program. Although Yamasaki and his family did not own a second property in a resort area, like many working Americans, he frequented lavish resorts in Puerto Rico and Hawaii during Christmas holidays and throughout the winter season as an escape from the cold Michigan climate.

Out of this architecture of leisure grew a modern architecture that responded to a newly heightened sense of glamour and style, a topic that has been thoughtfully explored in Alice Friedman’s *American Glamour and the Evolution of Modern Architecture*. Friedman considers the role of modern architecture in the development of a glamorous postwar lifestyle, unburdened by the tumult of World War II and fueled by the sleek lines and new possibilities of Jet Age culture. As Friedman suggests, in spite of issues of gender, national identity, the specter of Cold War communism, and the threat of nuclear war that still plagued the U.S.:

what had defined America in the postwar decades was a profound confidence in the power of institutions—political, cultural, and architectural—to create systems that could change lives for the better, and

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367 Lasner, *High Life*, 163
368 According to the architect’s travel itineraries in archival collections, he often played golf in Dorado and increasingly spent Christmases in Hawaii during the development and construction phase of Queen Emma Gardens in Honolulu, often with his friend and engineering consultant Alfred Yee. The men enjoyed taking their wives and children to new resorts such as the Mauna Kea Hotel near Waikiki and the Dorado Hilton, both architecturally significant properties. “Minoru Yamasaki Papers,” Box 9, Folder 6, Walter P. Reuther Library, Archive of Labor and Urban Affairs, Wayne State University.
a belief in the power of design to create environments for modern life that would foster both individual development and community engagement.\(^{369}\)

One such development was the *institutionalization* of the international business hotel, which came to the fore by the 1950s and 1960s. Many of the standard amenities and luxuries that hotel guests have come to expect today are a product of this development, particularly the early innovations by entrepreneur Ellsworth Milton Statler (1863-1928) whose career paved the way to what would become one of the largest hotel chains in the world, Hilton Hotels International. These new developments are closely adhered to in the design of MYA’s Century Plaza Hotel and in the Queen Emma Gardens apartments.

As twentieth century air travel grew, the need for transient accommodation closely connected to airports expanded rapidly, particularly after World War II when commercial air travel became more commonplace. Airlines correspondingly expanded their route networks and turned to hotel acquisition as a way to increase profits and streamline operations. The Intercontinental Hotel Group was launched in 1946 as a result of Pan American World Airways’ global vision and need for hotels in remote locations that served as both stopovers and destinations for the airline’s passengers and crew. In addition, Hyatt’s first hotel was a small motel called the “Hyatt House” which opened at Los Angeles International Airport in 1957 (Figure 152), long before the company used John Portman’s striking designs to become a household name. In 1967, Hilton Hotel International was acquired by Trans World Airlines and became an integral part of the airline’s worldwide presence and marketing strategy. The idea was a seamless transition from flight to lodging: hotel locations were marked on TWA’s round-the-world flight route maps and in flight schedules. Furthermore, United Airlines formed a close

partnership with Western International Hotels in the 1970 after Edward Carlson, who was previously the president of the Seattle-based hotel chain, was hired as president of the UAL Corporation. Just one year earlier, Western International Hotels had merged with UAL, Inc. under Carlson’s direction, a move that sparked decades of industry-changing developments in hotel services and travel alliances. The combination airline-hotel corporation was viewed as an ideal business model: each portion of the company supported and relied on the other.

As both Los Angeles and Honolulu experienced rapid growth fueled in part by an increase in air travel and mobility, large-scale urban developments and redevelopments became a critical part of the expansion strategy. Major projects afforded architects and developers the opportunity to experiment with new building forms and construction materials, as seen in MYA-designed hotel and mass housing projects. In Yamasaki’s case, the firm focused on the employment of aluminum as an architectural material in the design of the Century Plaza Hotel, the Century Towers, and in Queen Emma Gardens, and was a frequent guest of and contributor to the Aluminum Company of America’s (Alcoa) funded and organized events across the globe, discussed below.

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370 Significantly, the company changed its name twice in the span of a few decades. It was originally founded as Western Hotels, but added international to its name in 1963, signifying its growing worldwide presence and perhaps signaling future ambitions. On the occasion of its fiftieth anniversary, the company again changed its name from Western International Hotels to simply Westin—a compound of Western and International—in an attempt to simplify its corporate brand and remove any regional associations as it expanded around the United States and the world.

371 Born the year before Yamasaki in 1911, Carlson’s hotel career began at an early age when he began working as a part-time bellboy at the Benjamin Franklin Hotel in Seattle while he attended college at the University of Washington. From the mid-1930s until he entered the Navy in 1942, he held a variety of positions at hotels and social organizations in the immediate region, including the Mount Vernon Hotel and the Rainier Club. When he returned to the industry in 1946, he began on a path to higher management, rising from assistant to the president, to the executive president, becoming president of the brand in 1961, the same year Western International commissioned Minoru Yamasaki Associates to design the Century Plaza Hotel. Refer to “Edward E. Carlson is Dead at 78; Former Leader of United Airlines,” New York Times, April 6, 1990.
Alcoa, MYA, and the Century Plaza Hotel and Towers

The deal to develop a large area of land fourteen miles west of Downtown Los Angeles began in the late 1950s, when New York real estate mogul William Zeckendorf, president of Webb & Knapp, Inc., purchased 260 acres of land from Twentieth-Century Fox president, Spyros P. Skouras. At $60 million, the transaction was significantly more than the $1.5 million Skouras had paid for it thirty years prior, however there was some playful contention between the two men at the groundbreaking event. During an interview for a New York Times article on the festivities, Skouras suggested that Zeckendorf had outsmarted him into selling the land for a third of its perceived value, resulting in a sale that was any developer’s “dream.” In response, Zeckendorf pointed out that his firm had in fact paid more for the Century City land than the United States had paid for Alaska, the Louisiana Purchase, and the Virgin Islands combined. In short, the outsized real estate transaction foreshadowed significant growth and development in the entertainment capital, and had significant effects on architecture and urban development in the Los Angeles metropolitan region.

By 1960, Webb & Knapp—financially overburdened by the purchase—sought to improve their financial position by selling “a substantial minority interest” in the project to Alcoa, as well as by selling three large parcels of land in Manhattan to other investors and developers. By 1961, Alcoa took control of two-thirds of the development, a figure that rose in 1963 to 70 percent. The total area comprised 260 acres of former movie lots owned and operated by Twentieth-Century Fox Film Corporation for the development. Under the development plan, 180 acres were to be redeveloped while Alcoa would lease the remaining 80 acres back to the

entertainment company to support its film industry. As the New York Times reported in 1963, the initial impetus for the shift from movie lots to urban redevelopment stemmed from a decrease in the formulaic “assembly-line movie production” strategies championed by Fox, and as a result, the large tract of land in a fast-growing area of Los Angeles became a heavy tax burden on the corporation.376

This was a significant move for Alcoa, which was simultaneously investing in major urban development and renewal projects around the country. In addition to Century City, by November 1962, Alcoa held controlling shares in large-scale projects in Indianapolis, Pittsburgh, and San Francisco. Although the real estate itself was considered a good investment, there was a secondary motive for Alcoa’s involvement in the projects at an early stage. Aluminum was newly being used for architectural applications, which had reached as much as 21% of the industry’s total production,377 and Alcoa was eager to increase this figure. By being an early partner with the developers Webb & Knapp, it was thought that as a building material producer, Alcoa’s association with the project “would provide the opportunity to use a ‘city within a city’ as a giant laboratory to improve building design and devise new construction methods.”378 Chief among the interests was to test out the aluminum curtain wall construction in large-scale housing developments, an application which Zeckendorf predicted would prove to have a lengthy future. Alcoa’s president Frank L. Magee agreed, suggesting that his company’s interest lay in “the unprecedented opportunity to develop new uses for aluminum in apartment buildings and other structures.”379 The use of aluminum, while present throughout the projects in Century City, was

378 “Huge Coast Plan is Aided by Alcoa”
379 Frank L. Magee, as quoted in, “Huge Coast Plan is Aided by Alcoa,” New York Times, August 26, 1960
never more apparent than in the pair of office towers MYA designed for Century City in the 1970s.

Yamasaki, and his firms, had used aluminum in a variety of projects, from the 1959 Reynolds Metals Regional Sales Office outside Detroit to the 1973 World Trade Center in New York, and his success with the product did not go unnoticed by Alcoa and other aluminum manufacturing corporations. In 1970, the architect was invited to present at the ALCOA Aluminum Associations “Aluminum in Architecture” conference held at the Palmer House in Chicago in early March. Yamasaki’s talk, entitled, “Aluminum in Architectural Design” covered a variety of projects undertaken by the firm, including the relatively modestly-sized Reynolds Metals building. Perhaps as recognition of the architect and his firm’s successes in using the material, Yamasaki gave the first presentation after the keynote address on the opening day of the conference. This was also likely as a way to bolster the conference’s economic aims. The vast majority of presentations focused on aluminum’s many applications for architecture, from wall systems to windows to surface treatments, and on the economics of aluminum finishes.380

The master plan for the $500-million-dollar project called “a city within a city” was designed by the Los Angeles firm Welton Becket & Associates (Figure 153). Along with a pair of office towers flanking each end of the city within a city—Gateway East and Gateway West—the firm relocated its main offices to a $3.5 million dollar building on the site of their own design. In addition, architects I. M. Pei and Charles Luckman381 were retained to design apartment complexes housing up to 12,000 permanent residents. The Century Tower Apartments (Figure

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381 Charles Luckman is known for designing a number of iconic mid-century buildings related to travel including the Theme Building at Los Angeles International Airport (1961), as well as the Hyatt Regency Dearborn and Hyatt Regency Phoenix, both completed in 1976.
Pei’s pair of 27-story buildings, provided 368 luxury apartments, while Luckman’s Century Park Apartments rose twenty-stories above the development, bringing to the area an additional 480 units. The rental rates varied widely, and in 1966, were estimated to range from $300 to $4,000 per month, indicating that portions of the development were aimed at a high wealth clientele, while others were set to attract people of more modest income.

Commercial retail was a central component of the development, which complemented the office and residential real estate. The Century Square Shopping Center provided 280,000 square feet of space for specialty stores and luxury boutiques, and the convenience of underground covered parking with direct access to the shopping areas. In addition to the services provided for residents and office workers, the development called for a hotel to serve a transient crowd of tourists and business travelers, as well as become an anchor for special events. Alcoa contracted with Western Hotels of Seattle to develop and manage the property, which involved selecting an architect. The Century City development occurred at a time when hotel design was beginning to be reconsidered, with better-known architects at the helm. This shift challenged the inveterate double-loaded corridor design that had prevailed in the first half of the twentieth century. Furthermore, newly formed hotel groups were vying for visibility and brand recognition, and in some cases looked to architects to help define their image. One such case was the relationship that developed between John Portman and the Hyatt Hotel Corporation during the development of the Hyatt Regency in Atlanta in the mid-1960s.

To architects and architectural historians, John Portman is best known for the Westin Bonaventure in downtown Los Angeles, contributing to the creation of an ordered postmodern,

capitalist space—a topic extensively treated by Frederic Jameson, Reinhold Martin, and Edward Soja. But to the hotel industry—and the millions of guests who stay at its properties—Portman is best understood as the progenitor of the atrium hotel concept. However ubiquitous the design has become today, when it was developed in the 1960s, it was a novel approach to interior design that at first was not immediately accepted by the established hotel industry, which theretofore had preferred the double-loaded corridor. Significantly, this typological development marked a turning point in Portman’s career and the beginning of a relationship with Hyatt that resulted in a number of hotels around the United States.

Breaking with convention, Portman designed the hotel around an interior central atrium space that rose up from the lobby to a height of twenty-three stories (Figure 155). As described by Portman and Jonathan Barnett, co-authors of The Architect as Developer (1976),

The hotel is built around an exceptional indoor space, 120 feet on each side, which is surrounded by twenty-two floors of balcony-corridors that give access to the hotel rooms. The elevators have curved glass windows that look out into the main space, so that the journey to your hotel room provides the same sort of thrill as a ride in an amusement park.

Indeed, the result was a new version of the architectural promenade, a journey from check-in desk to hotel room during which time the guest was continually on display. But the prototypical

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385 As Edward Soja has suggested, “a concentrated representation of the restructured spatiality of the late capitalist city: fragmented and fragmenting, homogeneous and homogenizing, divertingly packaged yet curiously incomprehensible, seemingly open in presenting itself to view but constantly pressing to enclose, to compartmentalize, to circumscribe, to incarcerate.” See Edward Soja, Postmodern Geographies: The Reassertion of Space in Critical Social Theory (London: Verso, 1989), 243

386 Until the mid-1960s, Portman’s office primarily designed for local clients in his home state of Georgia. During this time, however, Portman developed his entrepreneurial side in tandem with his architectural practice, a kind of “design-develop” hybrid practice that afforded him the ability to have greater formal freedoms, if not enormous economic ones at the outset. The anchor for this developer-architect agenda was the Peachtree Center in Atlanta, which began construction in 1961, and was part of the city-within-a-city model for urban development that proliferated across the country in the 1960s and 1970s. The Peachtree Center development offered its users and visitors extensive commercial office space, restaurants, shopping plazas, parking, public transit connections, and hotels. Although the seventy-story Peachtree Tower anchors the project, the Hyatt Regency Atlanta, completed in 1967, was the most significant formal contribution to architecture and hotel design the development made.


388 Portman and Barnett, The Architect as Developer, 10
design offered more surprises for the transient inhabitants: “The revolving rooftop restaurant is reached by a similar elevator, which shoots you up through the roof and then a glass-walled tube that gives you a glimpse of the surrounding city before you arrive at the Polaris Lounge, which does indeed feel as if it is orbiting above the hotel.”

The addition of a rooftop restaurant or lounge that often broke with the formal consideration of the rest of the building became a common element in hotel design in the 1960s and 1970s, also seen in Charles Luckman’s 1976 Hyatt Regency Dearborn (Figure 156), not far from Minoru Yamasaki and Associates’ main office and a project with which the firm would have been familiar.

The unusual design was initially hard to sell to potential clients—Hilton and Sheraton both rejected it—but the Chicago-based Pritzker family, who had recently acquired a small group of west coast-based hotels under the name Hyatt House, was interested. The first Hyatt property had opened at Los Angeles International Airport in 1957 as Hyatt House, a hotel aimed at the departing or arriving air traveler on business. By the 1960s, the Pritzker family saw an opportunity to grow the company into a national brand, focusing on hotels in both airport and central city locations. In Portman’s unusual atrium-based design, the Pritzkers identified a strategy to fast-track brand recognition by aligning the Hyatt name with a new formal typology that would be immediately recognizable to the traveling public. Once completed, the hotel’s unique design was an immediate success, giving both Portman and Hyatt the national recognition each party sought, and Hyatt continued to invest in atrium-style hotels around the world.

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389 Portman and Barnett, *The Architect as Developer*, 10
391 As Paul Goldberger has suggested, “The Hyatt Regency Atlanta was wildly popular from the beginning, and it tied the reputation of the Pritzkers to architecture to such an extent that a dozen years later the family established the Pritzker Prize.”

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the atrium design also had ramifications for urban planning and the spatial organization of urban centers across the United States. Historian Charles Rice has argued for an “atrium effect,” which he has defined as “the demarcation and enclosure of a specific temporal and geographical territory. In this way it might be seen as restrictive, omitting as much as it includes abut relationship between architecture and urban transformation in a postwar, or postmodern, context.”  

What became Portman’s architectural, and Hyatt’s corporate, signature also became the sign of a shifting spatial relationship in downtown areas that in many cases ultimately contributed to the decline of the street life in American cities. One of the more profound examples of this is Portman’s towering complex of towers that comprise the Renaissance Center (constructed 1973-77) in Downtown Detroit, which was commissioned by the Ford Motor Company for its headquarters and which included a large-scale hotel initially managed by Western International Hotels.  

The collaboration between Portman and Hyatt was seen as a harbinger of future possibilities between architects and hotel corporations. This kind of relationship between architecture firm and corporate client was something MYA was eager to cultivate; as intra-office communications indicate. Yamasaki suggested to colleagues that he wished that the firm could develop its own working partnership with Hyatt, which had recently rebranded itself as Hyatt International to reflect its global ambitions, effectively adding real estate ambition to the many   

designed by John Portman for Hyatt, it was soon joined by a project near Chicago O’Hare International Airport and a third adjacent to the Embarcadero Center in San Francisco.  


Portman’s designs have been the subject of much scholarship on the relationship between interior and exterior urban space in the 1970s and 1980s. See particularly Reinhold Martin, Utopia’s Ghost: Architecture and Postmodernism, Again (Minneapolis and London: University of Minnesota Press, 2010) and Frederic Jameson, Postmodernism, or the Cultural Logic of Late Capitalism (Durham, NC: Duke University Press, 1991), both of which discuss Portman with respect to the Westin Bonaventure Hotel in Los Angeles.
aspects of MYA’s endeavors. Although none of the projects came to fruition, the firm did a number of preliminary sketches for Hyatt properties in Singapore (Figure 157), Kuala Lumpur (Figure 158), and discussed the possibility of designing a Hyatt Regency in Guam. In Yamasaki’s later years, however, the firm did complete additional hotel projects, including the Hotel Miyako in Tokyo (1979) (Figure 159) and the Troy Marriott in the Detroit suburbs in the 1980s. By far the most significant contribution Yamasaki and his firm made to hotel design was the Century Plaza Hotel (Figure 160), located on the Avenue of the Stars in Century City, commissioned by Edward Carlson of Western International Hotels.


Since the site was located in a then fairly remote area of Los Angeles, and the hotel commission was an early project, the design team had relatively few restrictions, but great aspirations for the project:

As we examined the overall master plan for the 1,800 acre site, we realize that in contrast with office buildings, which tend to be rather quiet after six o’clock in the evening, a hotel is alive day and night and should be at the center of activity of the entire complex.394

The firm chose a site that faced a large fountain in the middle of the Avenue of the Stars, directly across from the future site of the Century Towers, which were also designed by MYA, a decade later (Figure 161).

The project had an initial budget of $12 million and was anticipated to add 500 hotel rooms to the area to support business and tourism in rapidly growing South Los Angeles.395 In addition, the hotel featured an expansive array of amenities, including banquet facilities, garden

394 Yamasaki, A Life in Architecture, 97
cabanas, outdoor pools, and an underground parking structure for 2,000 cars.\textsuperscript{396} By 1963, the hotel’s design had grown in size to 800 rooms, including sixty suites that would be used to house visiting dignitaries, governmental officials, and the Hollywood elite.\textsuperscript{397} As it was constructed, the building was seventeen stories high and 400 hundred feet long (Figure 162).\textsuperscript{398} According to the architecture firm’s records, it ultimately encompassed just over one million square feet with a total of 750 guest rooms and an underground parking structure for 800 cars—a significant increase over initial plans.\textsuperscript{399} It connected directly to the future office developments across the Avenue of the Stars via an underground pedestrian walkway, and featured a series of ballrooms and event spaces on the lower levels of the hotel.

In addition to being designed for travelers’ overnight stays, the hotel aimed to host large events, entertainment galas, and even played host to a series of smaller-scale nightlife concerts and jam sessions over the years. In keeping with the overall theme of Century City, the leisure spaces were on a large scale. Indeed, the California Level featured an outdoor plaza that was larger than a football field sunken below the entrance and the Avenue of the Stars (Figure 163) and the ballroom was slated to be “the largest in the west…able to seat more than 2000 at a banquet.”\textsuperscript{400} The common spaces of the property were also designed with more casual engagements in mind. As originally built, the main lobby area featured a sunken seating area, which served as the hotel’s main cocktail lounge at Carlson’s suggestion, which according to Yamasaki’s memoir, “turned out to be the most popular cocktail lounge in the area, if not in Los

\textsuperscript{396} “New Hotel for Los Angeles,” \textit{New York Times}  
\textsuperscript{397} “Start Luxury Hotel in Century City,” \textit{Los Angeles Herald Examiner}, date unknown. “Minoru Yamasaki Papers” Box 2, Folder 11, Archives of Labor and Urban Affairs, Wayne State University  
\textsuperscript{398} Yamasaki, \textit{A Life in Architecture}, 97  
\textsuperscript{399} Century Plaza Hotel Project Sheets, Minoru Yamasaki and Associates. “Minoru Yamasaki Papers,” Archives of Michigan, Lansing, MI.  
\textsuperscript{400} “Start Luxury Hotel in Century City,” \textit{Los Angeles Herald Examiner}, date unknown. “Minoru Yamasaki Papers” Box 2, Folder 11, Archives of Labor and Urban Affairs, Wayne State University
Angeles.” The sunken design (Figure 164) allowed guests entering the lobby to have relatively unobstructed views through the hotel onto the outdoor leisure area—referred to as the garden side—which included landscaped ponds, pools, and lush gardens (Figure 165). Exotic foreign travel was a theme in the restaurant offerings, which included six unique establishments including what was effectively a replication of the Plaza Hotel in New York’s Persian Room and another restaurant with a Southwestern desert theme. Given the entertainment industry-centered focus of the project, the entryway featured a celebratory “cantilevered, skylit canopy, glittering with low-wattage lamps at night” highlighting the guests’ comings and goings (Figure 166).

The architects also worked to make the guest floors a distinct respite from buzz of Los Angeles urban life and the frequent goings-on in the lobby area below. One part of this effort had an impact on the overall composition of the building. Having traveled extensively for his own firm’s vitality, Yamasaki considered long, straight-line hallways daunting for travelers with heavy luggage at the conclusion of a long journey. The gently arcing curve that accentuates the overall formal composition of the hotel (Figure 167) attempted to reduce the visual sightlines on the guest-room level, keeping the hallways more within what he thought to be a human scale, even if it did nothing to reduce the distance a guest had to travel. As a result, “for most of their distance, [the corridors’] termini are invisible. This eliminates the bowling-alley effect of ordinary hotel corridors.” The curve, while evident from the exterior and in the corridors, is almost imperceptible in the hotel rooms themselves.

401 Yamasaki, *A Life in Architecture*, 97
402 Hill, “New Stop on the Tourist Map”
403 Yamasaki, *A Life in Architecture*, 97
The Century Plaza was a leader in luxury and personal convenience and each hotel room was furnished with a color television, an FM radio, a private bar, and an electric blanket. Once inside the room, each guest was treated to floor-to-ceiling views of the Avenue of the Stars or the garden area behind, as well as the city beyond. Rooms facing the Avenue offered expansive views of Century City and Beverly Hills, and every room had a seventeen-foot balcony or lanai where guests could either smoke or enjoy fresh air in the privacy of an extension to their own rooms (Figure 168). Private balconies were not entirely uncommon in the 1960s, but the incorporation of the specific typology of the lanai into the Century Plaza design was likely due to Yamasaki’s work in Hawaii in the early 1960s, which was concluding at the time the firm received the commission for the California project.

The hotel opened against a backdrop of Hollywood-style spectacle and fanfare complete with a “President’s Preview” party and dedication, held from June 10-13, 1966. The three days of festivities began on Saturday with a pair of luncheons hosted by Edward Carlson and his wife; the guests came together that evening for dinner reception and dance (Figure 169). The remainder of the weekend was filled with previews of hotel amenities and features, culminating in a Dedicatory Lunch on the afternoon of June 13th with an extensive guest list, including Yamasaki and his wife. On June 26, 1966, the New York Times called it “an architectural spectacle,” with a “view from the hotel is that of a vast, adult Disneyland, a spectacle of architecture and urban planning that is brimming with implications of what can be done elsewhere.” In subsequent years, Century City would be criticized for lengthy distances between buildings, which contributed to low walkability and a lack of street life, but for the

406 Invitation to President’s Preview and Dedication, “Minoru Yamasaki Papers” Box 38, Folder 11, Archives of Labor and Urban Affairs, Wayne State University
407 Hill, “New Stop on the Tourist Map”
moment there was a celebratory mood. Through the Century Plaza and its surrounds, many felt as though they had glimpsed the future of urbanism in Southern California.\footnote{The hotel proved so popular with the public that by 1970 both Western International Hotels and Alcoa wished to expand the property, announcing plans for an additional tower with a further 800 rooms, effectively doubling its size. According to the Los Angeles Times, the addition was slated to take only two years, for an opening in 1972. MYA was again retained for the design, along with consulting contractor Turner Construction Co. The plan called for a 35-story tower sited just south of the existing hotel, and called for the addition of new restaurants, a health club, and as many as seventeen new meeting rooms, significantly expanding the available conference and banquet facilities. The new structure would be “an architectural match with the existing Century Plaza Hotel….built with an opposite curve to that of the existing structure.” The two buildings were to be connected via an underground concourse and at the lobby level, but the project stalled. In late December 1973, it was again reported that construction would begin on a 450-room addition to the Century Plaza to be completed by 1975, but this proposed addition also failed, likely due to the economic downturn across the United States. In the 1980s, however, the addition was revisited as a 30-story tower with a smaller footprint, designed to be a luxurious complement to Century Plaza’s more modest rooms. The addition was ultimately designed by Skidmore, Owings & Merrill (SOM) and included 322 rooms at a project cost of $80 million. Refer to “Century Plaza Hotel to Double Capacity with Tower Addition,” Los Angeles Times, February 19, 1970 and Dick Turpin, “Century City at Halfway Mark,” Los Angeles Times, December 23, 1973. Furthermore, during these years, Minoru Yamasaki Associates undertook a number of projects overseas, particularly in the newly oil-wealthy Gulf Region, select projects of which are discussed at length in Chapter III. Yamasaki’s firm was not the only U.S.-based architecture firm to seek work overseas. An excellent source for an overview of these projects is OfficeUS Agenda (2014).} One of the most significant outcomes for MYA was the fact that the Century Plaza and Century Towers projects brought the firm closer to real estate development that Yamasaki was keen to explore for financial reasons, not unlike the work of John Portman in Atlanta. Although many such development projects were considered in Hawaii in the decades that followed, none came to fruition as planned (discussed in the next section of this chapter).

Although the tower addition was popular with entertainment moguls and foreign dignitaries alike, perhaps the most significant regular guest was Ronald Regan, who so frequently occupied the penthouse suite that the Century Plaza was once referred to as “The Western White House.” The suite was later renamed in his honor. The Century Tower addition, which originally was slated to be completed by MYA (Figure 170), but was eventually designed by SOM (Figure 171), has since been converted to luxury condominiums and is no longer a part of the Century Plaza Hotel grounds. From 2006-2016, the hotel was managed by Hyatt under the
name Hyatt Regency Century Plaza. Although the lobby no longer featured a sunken cocktail bar, and the pool area had undergone significant changes since it first opened in 1966, significant portions of the building were still largely intact as MYA had designed them.409

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The need for large hotels, such as the Century Plaza, to accommodate international tourists and business travelers alike grew steadily in the decades leading up to the 1960s and 1970s, when the demand reached unprecedented levels. According to Herbert Weisskamp, author of Hotels: An International Survey, this boom had its origins in the exceptional growth of air travel.410 But this development was not limited to North American and Western Europe. Newly formed countries in Africa and Asia also fueled increased demand, causing a shift in their international image: “Once-dreaded outposts of diplomacy soon began to boast a new airport and a luxury hotel belonging to one of the international hotel chains, and all over the world the new facilities seemed to stimulate demand rather than satisfy it.”411 As airline networks expanded, the need for hotels in previously unimaginable places expanded with them. One such location was Hawaii, which saw rapid growth and development post World War II, fueled by the rapidly expanding tourist trade.412 This in turn spurred large-scale investment in sprawling, upscale hotels and resorts that had an outsized impact on Hawaii’s economy, which had previously relied on military contracts and trade routes through the Pacific. This was both positive and

409 Today, the hotel has been closed for significant changes, including reducing the number of rooms by almost half and constructing two residential towers in the former pool and garden area. The renovations and additions are being designed by Pei Cobb Freed & Partners and the hotel is scheduled to reopen as a luxury property in 2018 under the Fairmont Hotels and Resorts banner.
411 Weisskamp, Hotels: An International Survey, 6
412 A significant factor in this rapid development was due to the Hawaiian Islands’ status as a “Rest and Relaxtion” outpost for U.S. troops fighting in the Pacific. At the conclusion of World War II, many wanted to return to the tropical island with their families for vacation. At the same time, an increase in commercial air service made the islands far more accessible to greater numbers of people on the U.S. mainland.
problematic. Hawaii formally joined the union as a state in 1959 amid an unprecedented hotel building boom that put significant pressure on the local housing market, rendering the cost of living in Honolulu unaffordable to all but the wealthy. Many architects, both local and national, were involved in new building efforts in residential and hospitality sectors. This includes a number of projects, built and unbuilt, by MYA between 1959 and the mid-1980s that further tie the firm to trends in luxury tourism and modernist high-rise housing developments.

“Gardens in the Sky”: The Tropic Isle Hotel and Queen Emma Gardens, 1958-64

MYA’s first project in the Hawaiian Islands was for a renovation and expansion of the Tropic Isle Hotel, located at 275 Beachwalk on the border of Waikiki and downtown Honolulu. This history of the property dates back to 1927, when the modestly-appointed Beachwalk Hotel opened for business and continued to operate under that banner until 1958, when it was renamed the Tropic Isle Hotel.413 By this time, Waikiki’s popularity among tourists had risen greatly and the hotel needed to expand and update in order to remain competitive. MYA was retained to design an addition to the Tropic Isle, with construction of the first phase of the 500-room complex slated to commence in summer 1960. A second phase, which included plans for an additional 250-rooms, was planned to follow a few years later. Ultimately, the proposal included a total of four towers, each 18-stories high, set back 40-45 feet from the Beachwalk, near Kalakaua Avenue. Responding to the tropical climate, “The open air lobby will cover most of the 56,000 square foot site. It will be planted as a garden and will include a swimming pool.”414 The hotel towers themselves were to be “supported on pillars rising above the lobby. The building

413 This should not be confused with the Tropic Isle Hotel in the US Virgin Islands, also dating to the late 1950s and early 1960s.
414 Jane Evinger, “Hotel is First Island Project by Yamasaki,” Honolulu Advertiser, February 7, 1960
will show the Japanese influence in its lightness. Its airy design will express the openness of Polynesian living." Although the project was never completed, MYA retained a foothold in Hawaiian development that played out in future commissions and project proposals in the decades that followed. An emphasis on a relationship between interior and exterior would play an important role in MYA’s designs for housing and hotel developments from the 1960s, both in the Queen Emma Gardens project, discussed below, and in projects back on the U.S. mainland.

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Although Hawaii was popular with tourists throughout the first few decades of the twentieth century, the real boom occurred after World War II. Waikiki Beach, located adjacent to downtown Honolulu, became an important center of resort-hotel development in the islands, and one that involved many architects and developers from the Islands, from the United States, and North Asia. After World War II, Hawaii’s economic base was shifting, and the new postwar stalwarts were related to defense budgets and the burgeoning tourist industry, which was still in the early stages of recovering. But the tourism industry never would have flourished as it did without the addition of commercial air service between Hawaii and the mainland. In his 2004 memoir, Creating Hawaii Tourism, Robert Allen suggests that Hawaii owes a great deal to Pan American World Airways, claiming, “No other entity was more responsible for promoting the islands during the formative tourist period with money, passenger-carrying equipment, and dedicated personnel.” Indeed, the year of Hawaii’s official statehood coincided with the

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415 Evinger, “First Island Project”
417 Robert C. Allen, Creating Hawai’i Tourism (Honolulu: Bess Press, Inc, 2004), 33. Indeed, the airline’s Clipper Ships plied routes between the West Coast of the United States, bringing affluent visitors to the islands who would often stay as long as four to six weeks. In the early days, flights on the Clipper Ships between Honolulu and San Francisco could take as long as twenty hours. Juan Trippe, the founder of Pan Am, had a vision to create a
advent of the Jet Age of air travel, which significantly increased the number seats and the
dependability of service on the Hawaii routes, in addition to reducing flight times by as much as
two-thirds. In the same year, the number of tourists rose to over 300,000, straining the local
infrastructure. Along with this influx of tourists and increased trade came a need for hotels,
shopping centers, and apartment buildings, and developers clamored to be early players in the
area’s rapid expansion. Hotels in Waikiki soon became sought-after commodities and solid
investments for private developers, and attractive assets for the city’s expanding tax base.

The rapid influx of luxury and middle-income hotel high-rise projects in the Hawaiian
Islands also began to strain both the environmental conditions and the local, affordable housing
market. By 1969, Waikiki had become the second largest hotel market in the United States, after
New York City, and at the same time, the Mayor of Honolulu, Frank Fasi, promised “to help find
affordable housing for Waikiki residents displaced by the new high-rises.” In spite of the
significant financial gains that corporations and municipalities faced by responding to the tourist

worldwide airline, and Hawaii became an important part of that vision, growing service to the South Pacific and
North Asia. Other airlines quickly followed suit, and routes flown by Northwest Orient, British Commonwealth
Pacific Airlines and Canadian Pacific Airlines joined Pan Am in serving the islands, followed by Japan Air Lines,
Philippines Air Lines, and United.

418 Allen, Creating Hawai‘i Tourism, 22
419 In 1960, a group of Hawaiian hotels was acquired by Sheraton Hotel Corporation, and resold the following year
in 1961 to a Japanese investment group—signaling the beginning of a return to the previously enjoyed exchange
between Japan and Hawaii. That same year, Hilton Hotels Corporation purchased the Hawaiian Village Hotel, and
by 1962, middle class travelers overtook the wealthy as Waikiki’s largest tourist group. By 1964, Japanese tourists
begin flooding into Waikiki, and in 1966, Waikiki is voted the favorite destination for young Americans. For more
on this, refer to Andrea Feeser’s Waikiki: A History of Forgetting and Remembering, particularly pages 143-44. In
addition, Owing to the sharp increase in flights from the Mainland United States and Japan, further hotel
development took place into the 1970s and 1980s, and Waikiki’s beachfront began to be overcrowded with high-
rises filled with tourists. Some of the new hotels aimed to incorporate Hawaiian elements into their design while
others attempted to design with tropical heating and cooling loads in mind. Two notable projects that are
representative of the larger development trends at the time are Kahala Hilton, designed by Killingsworth, Brady,
Smith and Associates between 1961 and 1964, and the Hyatt Regency Waikiki, completed in 1976 by the Honolulu-
based firm Wimberly, Whisenand, Allison, Tong, and Goo, both in the Waikiki area.

420 Andrea Feeser, Waikiki: A History of Forgetting and Remembering (Honolulu: University of Hawaii Press, 2006),
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market, one of the challenges was to balance the luxury hotel market with large-scale, affordable housing for island residents.

Hotels and high-rise living were not entirely new phenomena in the twentieth century, although their respective roles took on new significance with the advent of mass air travel. In response to the growing worldwide population, in addition to the large-scale modern hotel, two other residential typologies came to the fore: apartment hotel and the apartment tower, both of which shared formal and programmatic commonalities with hotels, but targeted a different audience. If the hotel was aimed at the transient guest, the “apartment hotel” was aimed at a more permanent resident, usually in densely populated urban areas, and was often, although not exclusively, the domain of the wealthy. This living typology offered advantages over owning and running a private home that increasing numbers of urban dwellers found attractive. “Many families of means, not wanting to carry on the responsibilities of maintaining an expensive house in town and finding the servant problem increasingly vexatious, moved into hotel suites.”

While the commercial hotel invested heavily in attractive and capacious public spaces for temporary guests to meet and linger, the apartment hotel focused on a more intimate and private, home-like atmosphere. On the other hand, a third type, the apartment tower or building responded to a growing need for density in the 1930s, and was further fueled by a post-World War II housing boom and shortage.

In many ways, apartment towers shared commonalities with both hotels and apartment hotels, often offering extensive outdoor leisure facilities for their residents. But unlike hotels,

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422 Root, in Talbot Hamlin, ed, *Forms and Functions of Twentieth-Century Architecture*, 120
423 In many cases this model was closely related to Le Corbusier’s “tower in the park” concept, also frequently held as an ideal of the Congrès International d’Architecture Moderne (CIAM).
the emphasis on interior lobby space was minimized as a lobby offered little functionality for permanent residents that could relax and entertain in the comfort and privacy of their own units. The juxtaposition between the privacy of a guest’s room or a resident’s living quarters and the public nature of the lobby or restaurant is a relationship that was explored by architects, developers, and hotel chains throughout the twentieth century and which heavily impacts the design of the interior and exterior spaces. The relative emphasis on the distinction between private and public spaces in residential and hotel lodging projects is readily apparent in the case studies throughout this chapter, and are particularly emphasized in MYA’s approaches to Queen Emma Gardens and the Century Plaza Hotel.

Many architects were involved in Hawaiian housing development over time, but MYA designed one of earliest examples of postwar urban housing in the islands. Intended as luxury urban housing, Yamasaki’s Queen Emma Gardens apartment complex, located on the northern edge of Downtown Honolulu, began to address the growing concern that tourism would displace critical urban housing units due to higher financial returns for developers by replacing low-density housing with compact urban living at the city’s core. The project was also the first Yamasaki design to be built in Hawaii, although it would not be the last. In the decades following Queen Emma, the firm designed another condominium tower, 1350 Ala Moana, as well as the Citi Bank Financial Center in downtown Honolulu, completed after Yamasaki’s death. In addition to these projects, the firm issued proposals and sketches for a number of resort properties and shopping developments in Hawaii, none of which were ever built, but which begin to illustrate the larger context in which the firm was working.

Funded by the Honolulu Redevelopment Agency in order to re-imagine an area of urban blight, Queen Emma Gardens was an urban renewal project in downtown Honolulu, initially
designed as a luxury high-rise apartment complex that opened in 1964. It remains standing today as privately owned condominiums located on an 8.3-acre parcel adjacent to downtown and near Foster Gardens. The architects’ design of the grounds takes cues from the neighboring botanical gardens, bringing more of the natural landscape into the urban fabric of the city. The project was part of the larger Federal redevelopment program, began in 1949 as a way to offer financial assistance to “help local governments clean up slums, to convert them into attractive and profitable urban areas.” This was seen as an important step to ameliorate problems in Honolulu’s deteriorating downtown area and increase both the density and amount of housing offered in the city. On March 18, 1960, Honolulu city commissioners put out a bid for the new housing project that would replace the slums adjacent to the central business district, suggesting,

The redeveloper whose proposal is selected will have an unusual opportunity not only for an attractive business investment but also for the challenge of setting the pattern for the rebuilding of central Honolulu. Since the apartment site will be the first project property to be developed, other than that for public or semipublic use, imaginative exterior design suited to the climate of Hawaii, as well as the amenities of interior arrangement will be given consideration in the selection of the developer.

City officials hoped the project would be transformative, although at the outset, there were differing opinions as to who the target audience for the housing would be. According to an editorial in The Honolulu Advertiser, “The purpose of this project is to convert a slum area into one of Honolulu’s best neighborhoods—a fashionable residential section comparable to San Francisco’s Nob Hill district.” On the other hand, and outside consultant John Hulten suggested that the most economic sense would be for the project to target “middle-income individuals and

424 “Six New Projects by Yamasaki,” Architectural Record (July 1961)
425 “Meeting the Challenge?” Honolulu Advertiser, January 19, 1961, B1:1
426 “Meeting the Challenge?” Honolulu Advertiser
couples who do not have children or whose children are grown.” This set the stage for a battle between civic leaders, architects and planners, and the public over the regional appropriateness of modernist high-rise housing in a tropical context. This had a significant impact on the project’s final design and in the ultimate selection of MYA after a failed first attempt.

In order to better manage the selection, the HRA brought in two architects from California, Mario Ciampi and John L. Reid, as consultants who would aid in the decision-making process and provide outside advice to navigate the local political environment surrounding the project. The six final proposals were again considered based on three main criteria: the focus on the social life of residents, the effectiveness at providing housing in the area, and the economic feasibility of the design. Consultants discussed the various merits of each proposal based on factors such as comfort, design, siting, and “whether the ‘traditions’ of Honolulu had been fulfilled.” One project was praised for its “informality, gaiety and change of pace,” but heavily criticized for its lack of lanais—balconies or patios that are central to Hawaiian life and a prominent feature in all of the MYA-designed buildings in this chapter. As part of the reconsideration process the consultants also reviewed Queen Emma Associates’ previously

427 “Meeting the Challenge?” Honolulu Advertiser
428 After initially reviewing the six proposals, the Honolulu Redevelopment Agency awarded the commission to a group of architects and developers working under the assumed name, Queen Emma Associates. Public outrage ensued. Newspaper editors, journalists, and architects alike called the process “unfair and unethical” and “a mockery of the whole submittal [process].” Due to public pressure and the suggestion of a secretive and rigged process, the agency decided to re-review proposals in order to save face. As recorded in the Honolulu Advertiser on January 26, 1961, the commissioners had initially awarded the $10.5 million project “without any recommendation from their professional staff…and without the advice of a large enough panel of nationally-recognized experts, such as they originally intended to employ.” Echoing some of the consultants’ previous advice, architect George Whisenand suggested, “The extreme formality of the plan…may prove too uninviting and cold for relaxed living,” and further suggested its design would result in “a gusty uncomfortable place for anyone to be in even for a short time.” Considering the residential nature of the project, and the HRA’s desire for attractive outdoor spaces for residents’ use, the hasty decision to select this project was overturned and the process restarted. Refer to “New Queen Emma Action Called ‘Unfair and Unethical,’” Honolulu Star-Bulletin, Wednesday February 1, 1961
429 Paul Fullerton, the HRA’s economic consultant considered all of the proposals potentially economically feasible, he suggested that some were more realistic than others. Refer to Robert Monahan, “Two Consultants Heap Praise on One Queen Emma Layout,” Honolulu Advertiser, February 24, 1961
selected entry, ultimately deeming the proposal “completely inappropriate to the area” due to its employment of symmetry “typical of governmental buildings” that they thought did not lend itself to residential neighborhoods. The consultants came to a vastly different conclusion than the HRA had previously, agreeing that one proposal stood out from the rest. The MYA-designed Queen Emma Gardens proposal was lauded for its design and relatability to the local context, with the consultants calling it “symphony” and “a most excellent solution to all parts of the problem.” The proposal was put forth in collaboration with E. E. Black, Ltd, Castle & Cooke, Harland Bartholomew & Associates, and the engineering firm of Alfred Yee & Associates.

The project’s site was located at a potentially uninviting area adjacent to a major highway, and as a result, the design team oriented the buildings inwards onto the landscaped gardens and worked to account for wind and light conditions (Figure 172). According to a 1961 Architectural Record article, entitled “Six New Projects by Yamasaki,” “all buildings are oriented for protection from the prevailing trade winds; all apartments will receive some desirable sun, but will be shaded from the heat and glare of the afternoon sun by overhangs.” The overall site plan was straightforward (Figure 173), anchored by a pair of identical 23-story buildings—called the “King” and “Queen” Towers—each with 176 one- and two-bedroom apartments (Figure 174). In addition, there is a small “Prince Tower” rising to a height of twelve stories, which offered residents studio, one- and two-bedroom units (Figure 175). The setting included a lushly landscaped garden with extensive recreation and leisure facilities: a swimming pool and sundeck, a separate shallow wading pool, two teahouses with gardens and carp pond, and playgrounds designed for three different age groups (Figures 177-179). In addition, a path meanders along the north end of the site offers residents semi-private barbecue facilities each with a picnic table.

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430 Monahan, “Two Consultants,” Honolulu Advertiser
The large emphasis on trees throughout the property helped to shade the recreation area as well as provide respite from wind and traffic noise.

The interior configuration of the buildings is more or less identical in each of the three towers. A central bank of elevators takes residents to each floor of interior, double-loaded corridors. Each unit has a private lanai, in this case an outdoor “balconied room” that is also mostly set within the building frame (Figure 180), offering a greater sense of security for those occupying the space when compared to a traditional overhanging balcony and more common lanai design. Emphasizing their importance for the project, these private outdoor leisure spaces were termed “lanais in the sky” by the developer and “gardens in the sky” by the architect, and provided residents direct access to natural ventilation. Yamasaki considered the configuration of the lanai essential to the overall design, and hoped that they would have more utility for residents due to “their large area and sense of security and privacy.”

The interior detailing of the units included an attempt to match light quality appropriate to each room based on its program. For example, the design of the living rooms incorporated floor-to-ceiling fenestration, presented to future residents as a space which was “light and airy with panoramic windows which bring the scenic splendor Nuuanu Valley, the Koolau Mountains, Diamond Head and the blue Pacific to your living room” in glossy brochures and newspaper advertisements. What otherwise would have been a considerable heat load was mitigated by strategically located precast concrete shading devices. Bedrooms were located adjacent to precast concrete closets, helping reduce the reliance on air conditioning (Figure 181). Kitchens were relatively compact but outfitted with the latest home innovations and incorporated elements

431 Yamasaki, A Life in Architecture, 76
432 Yamasaki, A Life in Architecture, 76
of Japanese design, including sliding panel doors akin to shoji screens (Figure 182). Flexibility of function was a key selling point of the apartments. Depending on the client’s wishes or financial situation, furnishings could be leased or purchased, and the leasing agency provided new residents with interior decorators to aid in the design process. Indeed, if the many brochures were to be believed, Queen Emma Gardens offered a new type of living condition in urban Honolulu: one that was modern, convenient, spacious, and relatively affordable (Figure 183). In addition, the project was located just under eight minutes from the downtown core, and provided ample covered parking for both tenants and their guests—a luxury in urban high-rise living.433

Partly as a response to the tropical climate of the Hawaiian Islands, as well as a cost-saving measure, the project’s lead structural engineer, Alfred A. Yee, developed a precast concrete structural system (Figure 184). Yee was both an outsider and a local, with offices located in Honolulu and Singapore. As a result of the Queen Emma Gardens project, Yee developed a long working relationship with Minoru Yamasaki Associates, collaborating on projects in the United States and Saudi Arabia.434 As Yamasaki has written in *A Life in Architecture*, “the complex was constructed rapidly and economically due to both the ingenious precast-concrete structural design…and the erection system”435 (Figure 185). In fact, at only $11 dollars per square foot, the overall unit cost of construction was “several dollars below that of other apartment projects built in Hawaii at that time.”436 This cost savings was due to the emphasis on pre-cast and pre-stressed concrete throughout the project, and included the

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433 According to newspaper advertisements, when the project opened, the rates began at $110 a month for a studio and rose to $160 for a two-bedroom plan, which included utilities and all of the appliances.
434 Yee Precast Design Group worked with Yamasaki on the Saudi Arabian Monetary Agency and the Saudi Arabian Monetary Agency Office Buildings, both in Riyadh, as well as on the Northwestern Mutual Life Building (also known as 100 Washington Square) in Minneapolis. In addition, Yee’s firm worked on a number of projects in Hawaii, including the Kahala Hilton and Vladimir Ossipoff’s IBM Building in Honolulu.
435 Yamasaki, *A Life in Architecture*, 76
436 Yamasaki, *A Life in Architecture*, 76
stairways, sun-shading canopies, closets and wall panels (Figures 186 and 187). The concrete floor plates were framed on site. As a result of this multi-pronged approach, the construction was quick: every three days a full floor was completed (Figure 188).437

During the construction phase of the project, Yamasaki offered Pat Millard of the Honolulu Advertiser his insight on urban design and renewal, a topic that was a salient discussion in many metropolitan areas around the United States, and particularly in Detroit. According to the architect, “In urban renewal projects, the buildings must be planned practically and built sensitively. Our architecture must arise from a deep belief in ourselves and our time. We cannot, with validity, build things from the past.”438 In spite of Yamasaki’s interest in borrowing and abstracting architectural elements from the past, in Queen Emma Gardens, one sees his focus on designing for the contemporary era largely devoid of historical references. In Hawaii, perhaps emboldened by his Asian-American heritage—and the Asian influences that were readily apparent throughout the Hawaiian Islands—Yamasaki felt he was presented with a unique opportunity to design a building that was “truly American, truly Hawaiian and truly contemporary.”439 Although both projects had very different purposes, Queen Emma Gardens may be most formally similar to Hellmuth, Yamasaki and Leinweber’s Pruitt-Igoe Public Housing project in St. Louis, which closely adhered to the tenets of architectural modernism but which ultimately failed to deliver on its promises dues to a lack of infrastructural investment by federal and local governmental agencies which had nothing to do with the architect. But in Queen Emma there was a significant revision to the design: the housing blocks were arrayed

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around a central green space and offset from one another, one major issue Yamasaki had identified in Pruitt-Igoe shortly after construction was completed.  

When Queen Emma Gardens opened, city officials with ties to historic preservation in Honolulu were initially displeased with what the project represented—an erasure of the extant urban fabric in favor of new, modern design (Figure 189). But the project also signified a more efficient use of core urban space, raising the density over the previous one-story habitations, and responding to the rapidly growing need for urban housing due to the mounting pressures of tourism and global migration. This sort of pressure was not unique to the Queen Emma Gardens project, nor to MYA, but rather, a recurring issue faced by architects, urban planners, and city government across the United States in the postwar era as urban areas faced new housing challenges and increasing issues of gentrification and income stratification. The intent was to create a visually appealing housing complex that helped create a modern, livable urban core, in part to stem outward migration into the suburbs. One unintended consequence of this effort, however, was the rapid displacement of the urban poor, which was particularly evident in Mies Van der Rohe’s Lafayette Park in Detroit (1955-63). As historian Caroline Constant has suggested, the project both indicated the potential and the limitation of an open landscape approach to modern city planning: “Although widely regarded as one of the most successful examples of urban renewal in the United States, it remains an island of relative affluence amid the sea of empty lots and abandoned buildings that has come to characterize metropolitan Detroit.”

The situation in Honolulu was not exactly the same as in Detroit, but the two projects

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440 Yamasaki discussed his perceived shortcomings of Pruitt-Igoe with respect to SOM’s Lake Meadows Apartments in a letter exchange with Jane Jacobs in 1955. See the next section of this chapter, “Domesticity in Decay” for a more sustained discussion on the topic.

441 Caroline Constant, *The Modern Architectural Landscape* (Minneapolis: University of Minnesota Press, 2012), 169. For a more sustained treatment of this material, refer to Constant, “Hilbersheimer and Caldwell: Intersecting
share similarities: clean sweep urban renewal policies of the 1960s and 1970 privileged replacing extant communities with modernist housing designed by known architects over an attempt to rehabilitate neighborhoods by more targeted means.442

In Queen Emma’s case, major criticism came from locals who thought the project did not appear to be “Hawaiian enough.”443 The issue was largely due to the buildings’ high rise form; local traditions had favored lower buildings with open-air courtyards. Honolulu’s growth after World War II, however, necessitated upward expansion as it densified. Queen Emma Gardens clearly deferred to this trend, with Yamasaki calling the solution “necessary,” and suggesting that one “can be as sentimental as you want about keeping buildings low, but if you do, the traffic and other problems are tremendous, so you try to provide a really wonderful kind of living in a high-rise building.” For the architect, Queen Emma Gardens effectively responded to the local context and to the needs of the housing market in light of current spatial and economic conditions: “we have to face reality. Let’s face it, but let’s do it beautifully.”444

One particularly vocal opponent who did not share Yamasaki’s view was Nancy Bannick, Hawaii editor of *Sunset Magazine* and an active member of the Honolulu Chamber of Commerce City Beautification Committee. In a six-part series published in 1963 in the *Honolulu Advertiser*, Yamasaki frequently defended his work and this project was no different: “I think any architect who is trying has to get critical comment, some of it good and some bad. Some of it is worth listening to and some is not, but you can’t change your whole way of life because some people don’t like what you do. And I don’t mean that to sound harsh.” Refer to Jane Evinger, “Architect Defends Queen Emma,” *Honolulu Advertiser*, January 31, 1964

442 With Detroit as Yamasaki’s home for most of his career, he was well versed in local planning and development issues and had developed his own views on the importance of urban beautification which he shared widely in lectures around the United States. Although Yamasaki was passionate about the subject, his assertions were more naïve than useful. On more than one occasion, he suggested “Our cities should be much more delightful to be in—we shouldn’t want to get away from them.” Significantly, Yamasaki called on city dwellers to help create vibrant urban areas, suggesting that good design needs input from constituents other than architects and planners: “You could have the ablest planner in the world in any city, but there are too many outside interests. The desire for a beautiful city must come from the people.” See Minoru Yamasaki, as quoted in Pat Millard, “Minoru Yamasaki: Save Buildings Only For Their Artistic Value,” *Honolulu Advertiser*, Thursday May 30, 1963, 1

443 Yamasaki, as quoted in Millard, “Save Buildings,” 1
Bannick shared her views on the new project, most of which were not positive, launching a call to arms to fight the obliteration of “historic and colorful parts of the City of Honolulu” as a result of “unwise local operation of urban renewal and replacement projects.” While everyone acknowledged the Queen Emma Gardens project was a fait accompli, Bannick suggested the housing development offered the city a lesson for the future:

But with Queen Emma we should have learned some things we could apply to the next projects. We moved out a good many people who used to walk to town to work and shop. The result: Even less business in our already declining central business district, and the starving out of small shops and services on its outskirts.

Honolulu was not alone in dealing with the issue of a declining urban central business district, largely due to shifts in population and the introduction of an infrastructure centered on the automobile. Bannick’s primary concern was borne out of a genuine interest in the preservation of an Old Honolulu—that which showed the city’s Chinese heritage. In A Close Call: Saving Honolulu’s Chinatown (2005), Bannick and co-authors Scott and David Cheever, examined the harsh realities of the urban renewal policies of the 1960s and their effect on Honolulu: “The redevelopment bureaucrats were clearing slums, but they also were wiping traditional and necessary mixed-use zones…they were paying very little heed to the history and culture and lifestyles of many people.” The concern was the replacement of an historic neighborhood of “old style plantation-like wooden houses,” which the Honolulu Redevelopment Authority considered to be substandard living conditions, but which had historic value to the Chinese

446 Bannick, “City Offered a Lesson”
447 Nancy Bannick, Scott Cheever and David Cheever, A Close Call: Saving Honolulu’s Chinatown (Honolulu: Little Percent Press, 2005), 13
community. The end result of the urban renewal policies was largely “a district of big-scale superblocks, rigidly zoned for separate functions: churches and temples, large stores, mortuaries, houses and apartments.” Among the new housing that replaced Old Honolulu, however, Queen Emma Gardens was considered as the project that most effectively captured the regional context, although this was quite limited. However central the lanais, tropical gardens, and orientation to the prevailing trade winds might have been to the project’s Hawaiian nature, Queen Emma did little to respect the initial siting, scale, or material composition of the area’s housing units. In short, Queen Emma was a modernist, tower-in-the-park complex that foregrounded financial gain for the developers—and a replacement of perceived blight for city officials—over any real preservation of the neighborhood’s Chinese heritage.

Although Queen Emma Gardens is arguably the most significant project the firm undertook in Hawaii, the firm continued to pursue projects in the area through the 1970s and 1980s. In Yamasaki’s later years, the firm became involved in an office tower in Downtown Honolulu at the intersection of Merchant and Alakea Streets, in the oldest area of the city. The

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448 Bannick, et al, *A Close Call*, 13. As the authors note, these living quarters made for a diverse and lively neighborhood with “gardens, their little shops, shrines, temples and ethnic societies.”


450 Bannick ultimately admitted that “Only the Queen Emma Gardens complex by well-known architect Minoru Yamasaki had some architectural quality.”

451 Local officials, and the architect, saw this project quite differently, suggesting it was a successful “rehabilitation of a blighted area, but to foster a spirit that will be felt beyond the project to help in revitalizing the heart of a city.” For a better understanding of the differing viewpoints on the project, refer to, “Six New Projects by Yamasaki,” *Architectural Record* (July 1961): 133. Although city officials were happy with the result, not all residents displaced by the new project were content with their new living quarters. On June 5, 1964, an article published in the *Honolulu Advertiser* suggested that the majority of residents were happy with the move, noting that a full “eighty-two per cent of the 1,307 families—more than 5,000 men, women, and children—relocated because of the Queen Emma and Kukui slum clearance projects prefer their new homes.” The figure comes from a survey undertaken by the Honolulu Redevelopment Agency, which interviewed one in ten families about their new living conditions, finding further that “seventy-one per cent said they are enjoying increased family happiness.” Of course, some still preferred their old location, particularly for its proximity to shopping and the business district where they were employed. But the HRA outwardly dismissed this concern as merely one of adjustment. “It takes them time to adjust to new and better habits of living,” suggests agency spokesman Lee Maice, “They had grown used to the conditions of slum living.”
project, which came to be known as the C B Financial Center, was a large banking and office
tower for Citi Bank encompassing 197,000 square feet of office space with enclosed parking for
up to 350 cars. It marked a significant investment in downtown Honolulu, and was one of
Yamasaki’s last projects before his death in 1986. The project was seen to completion by the
Yamasaki’s successor, William Ku, President and Director of Design for Minoru Yamasaki and
Associates in the late 1980s. The impetus for the project was CitiBank’s desire to relocate its
headquarters to a new downtown location, and with this came a large real estate investment that
was hoped would be a significant contribution to the future vitality of Honolulu, bringing to the
area an indoor arcade, outdoor plaza, and landscaping meant to provide inviting leisure spaces in
an otherwise dense neighborhood. Between downtown Honolulu and Waikiki, the firm also
designed and constructed a more traditional residential condominium project, 1350 Ala Moana
(Figure 190). Although this project was a single tower set in an even denser setting than Queen
Emma Gardens, formal similarities exist between the two projects, including the prevalence of
lanais and an outdoor pool area.

In addition to Queen Emma Gardens, MYA was also involved in a number of unbuilt
proposals and early schematic design work for projects in the Hawaiian Islands. The most
significant of the unbuilt proposals, the Aloha Plaza (Figure 191), was commissioned by
developer William Mau, a Hawaiian native of Chinese heritage who became a prominent figure
in the banking and tourist industries. Mau was best known for developing the Waikiki Business
Plaza (1965), a complex complete with a popular revolving restaurant and the Hawaii Visitors
Bureau headquarters designed by Edwin Bauer.\textsuperscript{452} The designs for the Aloha Plaza depicted a
combined condominium and retail project that proposed two 35-story towers of up to six hundred

\textsuperscript{452} Robert C. Allen, \textit{Creating Hawaii Tourism: A Memoir} (Honolulu: Bess Press, Inc.: 2004), 144-46
condo units, along with 418,000 square feet of shopping and a large, above-ground parking structure to support the development.\textsuperscript{453} The overall formal composition of the towers was reminiscent of the design for Queen Emma Gardens, but in lieu of large leisure spaces for residents, the towers were adjacent to the shopping plaza which featured a stepped, pre-cast concrete façade that incorporated planters to help soften the project’s image and mitigate the harshness of concrete in a hot climate. According to project files and correspondence in the archives, the Aloha Plaza project costs were estimated at $80 million, using the preliminary drawings prepared by MYA between 1979 and 1981.\textsuperscript{454} The abundance of correspondence between architect, engineer, and developer suggests that MYA did extensive work on the project even though it was never completed.\textsuperscript{455} MYA stood to gain considerably from the project with a design fee of $4.4 million, an amount that became a point of contention between Yamasaki and Yee. In a letter to Yamasaki on May 9, 1980, Yee explains that since their conversation the night before, he had reconsidered Yamasaki’s insistence that MYA’s portion of AAYA’s fees would be reduced from $880,000 to $733,000 based on the architect’s 1/6\textsuperscript{th} rule of thumb.\textsuperscript{456} This prompted a tense written exchange between the two men, with Yee submitting a detailed report on the losses his firm took, stemming in large part, Yee argues, from Yamasaki’s rigid fee scale. The engineer concludes by asserting that if the higher amount is not satisfactory to Yamasaki, he will withdraw from the Aloha Plaza project and the Toledo State Office Building altogether.

\textsuperscript{453} “Aloha Plaza,” Project Files, “Minoru Yamasaki Collections,” Box 14, Archives of Michigan
\textsuperscript{454} Letter from Alfred Yee to Minoru Yamasaki, May 8, 1980. Based on a project estimate of $80 milion, AAYA contracted with MYA for an engineering fee of $880,000. Mau, the developer, would contribute an additional $120,000 for AAYA’s services. “Minoru Yamasaki Papers” Box 27, Folder 13, Archives of Labor and Urban Affairs, Wayne State University
\textsuperscript{455} Letter from Akana K. W. Ma to Minoru Yamasaki, April 30, 1981. Furthermore, it should be noted that according to the architect’s project files, the study for the Aloha Plaza was completed in 1982, and the design was completed in 1987. “Minoru Yamasaki Collections,” Box 14, Archives of Michigan.
\textsuperscript{456} Letter from Alfred Yee to Minoru Yamasaki, May 9, 1980. “Minoru Yamasaki Papers” Box 27, Folder 13, Archives of Labor and Urban Affairs, Wayne State University
citing undue financial hardship at that hands of MYA, “You may ask how we survived with such huge losses on your projects over the past five years and the only answer is that we were forced to sell our hotel at a $1.2 million profit in 1979 in order to cover these losses and remain in business.”457 A draft of Yamasaki’s reply indicates the architect agreed to raise AAYA’s fee to $800,000, but would not take blame for the nearly $1.7 million in losses claimed by Yee over the years since the two first started collaborating.458 Although Yamasaki saw himself, and his firm, as the “genius,” his work was entirely reliant on an engineer’s expertise to make his designs for large-scale buildings possible, although unlike in the case of Arup, discussed in the previous chapter, both architect and engineer were small, boutique practices rather than large-scale, assembly-line offices.459

457 Letter from Alfred Yee to Minoru Yamasaki, May 9, 1980. “Minoru Yamasaki Papers” Box 27, Folder 13, Archives of Labor and Urban Affairs, Wayne State University
458 Draft of a letter from Minoru Yamasaki to Alfred Yee, undated, presumably after May 9, 1980, Letter from Alfred Yee to Minoru Yamasaki, May 9, 1980. “Minoru Yamasaki Papers” Box 27, Folder 13, Archives of Labor and Urban Affairs, Wayne State University
459 Exactly how this exchange affected Yamasaki and Yee’s personal and working relationships is unclear, although the Toledo project was eventually completed by MYA and AAYA, and remains in use today as One Government Center.
CONCLUSION
Forward, Without Forgetting

Midway through Minoru Yamasaki’s career, on May 21, 1961, the New York Times ran an article highlighting the “favorite buildings” of six leading architects. Four architects responded with revered Roman and Italian masterpieces. Philip Johnson and Yamasaki, on the other hand, were a little more creative. For Johnson, the answer was not even a building, but rather the celebrated rock garden at Ryoan-ji in Kyoto, suggesting it was a place where architecture was “un-understandable in western terms, but can be felt.” For Yamasaki, the answer was even further off the beaten path: the Shah’s Mosque in Isfahan. According to the architect, “Its delicacy and beautiful proportions are very thrilling. It is my belief that buildings should not be overpowering in their grandeur; here there is no sense of feeling overpowered or overwhelmed. One feels in touch with it and uplifted by it.” Yamasaki’s own design ethos had been formulated around a desire to soften what he perceived as the hard lines of modernism, and to respond to the chaos and instability of the postwar era: “The chaos brought on by political turmoil, mobility, the population explosion, and by the tremendous impact of the machine, demands that man—if he is to retain his sanity—must have a serene environment. But with
serenity we must have delight…”460 Yamasaki’s early trips to Japan and around the world underpin the design ambition of Minoru Yamasaki and Associates, yet the architect’s expressed categories are somewhat difficult to untangle. Even before the advent of the airplane, architects were itinerant in nature, and as a result, travel was a frequent contributor to the development of architectural styles through the ages, predicated on the desire to see and experience the built environment firsthand.

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In spite of the legacy of the Grand Tour often undertaken by nineteenth- and twentieth-century students of architecture, and the frequency with which architects such as Yamasaki boarded planes to meet clients in the far reaches of the globe, itinerancy also accrues negative aspects. Increasingly widespread in the postwar era, affluent itinerant travelers took luxurious trips and year-round vacations as escapes from the realities of the everyday. Similarly escapist sentiments were reflected in architecture, as in the shimmering pools and florid lobbies of Morris Lapidus’ Miami hotels, the highly-articulated screen-like façades of Edward Durell Stone, and in the golden concrete domes in MYA’s New Delhi pavilion, among others. But this aspect of mobility is a distinctly privileged one, reflecting choices of those with the means to choose. Another direct result of itinerancy—as in the Hawaii projects discussed in Chapter IV—is displacement, not as a result of a personal choice, but rather, as the result of external forces that require denizens of one locale to relocate against their will or better judgment. We might go so

far as to claim that to be itinerant is to have agency, and to be displaced is to lack it. Although there are countless examples in the history of twentieth-century architecture, perhaps the most salient example of displacement can be found at the Pruitt-Igoe Public Housing project.

MYA was busy designing projects in California and Hawaii from 1960 to 1970, as a result of the postwar housing boom and westward migration. At the same time, thousands of miles to the east a completely different scenario was unfolding in St. Louis. at the sprawling and racially-segregated Wendell O. Pruitt Homes and the William L. Igoe Apartments (1954) (Figure 192; see also Figure 1). The latter project was named in honor of a decorated African American World War II fighter pilot who had been killed in a training accident in 1945; the former honored a white United States Congressman who died in 1953. Both men originally hailed from St. Louis.

A once-touted solution to affordable public housing, Pruitt-Igoe quickly decayed after its 1956 completion, due to a lack of funding from the federal Housing and Urban Development (HUD) office and its failure to deliver on promised ideals—dimly echoing architectural modernism and CIAM planning principles that never figured prominently in the logistical planning of US public housing at this time. A combination of disrepair and an increase in gang-related violence rendered the projects increasingly difficult to control. This resulted in a rapidly deteriorating situation, both physically and socially, such that the buildings were demolished in 1972. Only then did they become well known within the chronicles of architectural history and theory, when Charles Jencks associated their demise with the end of architectural modernism:

Happily we can date the death of modern architecture to a precise moment in time. Unlike the legal death of a person...modern architecture went out with a bang. That many people didn’t notice, and no one was seen to mourn, does not make the sudden extinction any less of a fact... Modern Architecture died in St Louis, Missouri on July 15, 1972 at 3:32 p.m. (or thereabouts) when the infamous Pruitt-Igoe scheme, or, rather several of its slab blocks were given the final coup de grâce by dynamite. Previously
it had been vandalized, mutilated and defaced...and although millions of dollars were pumped back, trying to keep it alive...it was finally put out of its misery. Boom, boom, boom.\textsuperscript{461}

Recent research has revealed the complexity of Pruitt-Igoe’s planning history, eclipsing Jencks’ reductive assertions in the opening lines of his 1977 \textit{The Language of Postmodern Architecture} (see Figure 3).\textsuperscript{462} As sociologist William Yancey suggested in 1971, one of the major problems facing the housing project was a lack of focus on community, in spite of large greenspaces: “Unlike normal slums, with their cluttered streets and alleys, Pruitt-Igoe provides no semi-private space and facilities around which neighboring relationships might develop.”\textsuperscript{463} This was the logical consequence of a project focused on spatial efficiency; the result was a project with precious little space to gather outside of the home that was not directly in the public eye. Ironically, an early review of the project had even praised Yamasaki for the lack of “wasted” space between units—an efficiency that in part aided in the project’s swift decline.

As a result of Pruitt-Igoe’s demolition, the press critiqued both the considerable sums of money spent on the housing project ($36 million), and its failure to survive longer than two decades. In the story of one Pruitt-Igoe family, author Lee Rainwater argues that although the project perfectly embraced the “original logic of federal housing that by removing people from the slums and providing them with decent housing, their other difficulties would begin to disappear and they would be able to take advantage of opportunities to improve themselves,” the

\textsuperscript{461} Charles Jencks, \textit{The Language of Postmodern Architecture} (New York: Rizzoli, 1977), 9
\textsuperscript{462} For a longer treatment of this issue, refer to Robert Fishman and \textit{The Pruitt Igoe Myth} (2011). As explored in the documentary, the real problem with Pruitt-Igoe was the low occupancy rate to which the maintenance budget was pinned. This also reflected the simultaneous introduction of the FHA mortgage program that drew a growing middle class families out of the city and into the suburbs.
reality was not so simple. The design of the buildings also proved to be problematic: “Spacious breezeways provided a haven for muggers. There are no through streets so police were not able to pursue thieves, who virtually nested in its nooks and niches. The crime rate was high; the tenants were like ducks in a shooting range.” By the early 1970s, the project was far removed from its origins as a verdant park-like setting amid a decaying urban fabric: “...there is no grass at Pruitt-Igoe, only graffiti-stained pavement, untamed weeds and the ubiquitous broken glass. Litter swirls with the fallen leaves on a breezy fall afternoon.”

Long before it was demolished, Yamasaki was well aware of the project’s shortcomings. In a letter to Jane Jacobs of October 5, 1955, Yamasaki recognized corresponding problems in a similar project by Skidmore, Owings, and Merrill, which he had recently visited, suggesting, Lake Meadows probably is a very well planned and executed project... I notice that they have made the same mistake that we made on our St. Louis Apartments by using slab buildings opposite each other. I find in our St. Louis Public Housing that though we have 180 to 200 feet between our slab buildings, from the middle floors, the view is almost 100% brick and glass—no sky. This unfortunately is what happens with this type of grouping slab buildings, though it looks so nice in site planning. The importance of seeing sky cannot be minimized, I believe.

Pruitt-Igoe’s woes were chiefly structural, and would not have been solved by a more direct relationship between interior apartments and the sky. But the project did cause the trio of architects who designed it to reconsider this kind of approach to affordable housing. Reflecting on Pruitt-Igoe in 1972, George Kassabaum attributed the project’s failure to a misunderstanding between those who designed it and those who would ultimately occupy it, “You had middle class whites like myself designing for an entirely different group...I think it was an experiment that

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464 Lee Rainwater, as quoted in, Architecture Plus, “The Experiment that Failed,” (October 1972): 18
465 Rainwater, “The Experiment that Failed,” 18
467 Minoru Yamasaki, letter to Jane Jacobs, October 5, 1955. “Minoru Yamasaki Papers” Box 3, Folder 9, Archives of Labor and Urban Affairs, Wayne State University
failed.” This realization on the part of the architect might be read as a critique of large-scale public housing projects that proliferated across the United States between the 1950s and the 1970s, many of which met similar ends, as in the case of Chicago’s Cabrini-Green and Robert Taylor Homes projects. Although many architects continued to produce high-rise housing at the behest of the federal government’s housing program, the super block version of the tower-in-the-park ideology was not a typology that any of the firms led by Yamasaki repeated in the decades that followed, even in later attempts at mass housing.

The United States was, of course, was not alone in its experimentation with postwar high-rise living, and neither were architects the sole designers of this housing phenomenon, what many think of as a large-scale social and architectural experiment that played out in the decades following World War II. Examining the French context, Kenny Cupers has argued,

> Modern architecture did not belong to an avant-garde of architects alone; it was shared and shaped by government officials, construction companies, residents’ associations, developers, and social scientists alike…Never before was modern architecture built on such a massive scale and at such a frantic pace, shaping the urban landscape at large. And never before was an entire generation so aware of how much better off they were than their parents—measured first of all in the social and material realm of everyday life. As the older agendas of social reform gave way to rationalization under the aegis of the state, architecture participated in the spatial organization of welfare and progress. 

The massive housing developments in France, however, point to a larger global trend, which took place between 1945 and 1975 across Western and Eastern Europe, and throughout the United States. Pruitt-Igoe was not alone in its inability to be successfully maintained. As Cupers points out, a few decades after their construction, major housing projects such as Sarcelles

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468 George Kassabaum, as quoted in, “The Experiment that Failed,” *Architecture Plus* (October 1972): 18
(Northern France), Bijlmermeer (Netherlands), and Aylesbury (United Kingdom) led to a perception that this kind of large-scale, publicly-funded housing development was unsuccessful and often the fault of the architect and planner. But as Cupers’ detailed examination makes clear, these projects, while often formally similar, were developed over many decades in disparate social, economic, and political conditions. In other words, they are not the product of “a single utopian blueprint gone awry,” and should not be understood this way. This sentiment can be read as having broader implications in postwar architectural experimentation, fueled in part by the opening up of new global markets and transnational exchange, as has been the focus of the last four chapters. Some of the projects put forth in the 1960s and 1970s made a significant impact on the built environment and in architectural praxis that remain today. Others were more of a transient “flash in the pan” that challenged the status quo by reimagining architectural formal possibilities, and yet through their obsolescence, also made a mark on history.

* * *

The years following World War II were marked by widespread public consciousness of the dangers as well as the new possibilities of atomic energy, the excitement of air travel and increasing technological advances in all fields, as well as unprecedented economic prosperity in the United States, Western Europe, and beyond. As each chapter in this dissertation has illustrated, the challenges and the prospects facing architects led to unrivaled experimentation, in temporary pavilions, embassies and consulates, airport terminals and office towers, high-rise

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470 Cupers, *The Social Project*, xiii
471 Cupers, *The Social Project*, xv

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housing, as well as new developments in prefabrication for large-scale projects and single-family homes. Indeed, the postwar decades reflect a time during which many embraced architectural experimentation. In some cases, such as in MYA’s St. Louis Air Terminal and Eero Saarinen’s Trans World Flight Center, exciting formal and spatial possibilities were created by harnessing new forms of construction and experimentation in material properties. At Pruitt-Igoe, the importation of a modernist tower-in-the-park ideology into the dense urban fabric of a poor, Midwestern city, presented insurmountable problems to residents and planners alike. Pruitt-Igoe is a symbol of a double displacement, reified in architectural form. Residents were first displaced from earlier low-rise neighborhoods with the promise of better living conditions in gleaming white superblocks, only to be displaced again by eroding buildings and eventual demolition.

A similar narrative of displacement provides a productive way to understand MYA’s contributions to the discipline. In spite of the support of his corporate clients, critics frequently lambasted the architect’s work as that of an unwanted outlier, neither pure modernism nor true postmodernism, displaced from the core of architectural praxis. In the shadow of Jenck’s damning assertion, the legacy of the firm was displaced a second time. For years, the firm was discussed solely on the basis of its architectural misdeeds, if at all. Similarly, Yamasaki was neither Japanese nor American, but was rather a Japanese-American whose identity required some fabrication. In an ironic twist of fate, through his own interest in fitting in to the status quo, coupled with the media’s consistent portrayal of the architect’s Japanese-ness as his defining feature, Yamasaki’s outsider status was cemented in printed words and images. And yet, the architect’s determination and drive could be slowed by few things—not even a serious bout with a stomach ulcer could stop him from moving forward. In both his personal and professional lives, Yamasaki not only embraced itinerancy, he practiced it, and in the process, fell victim to the
most pernicious kind of displacement history can render: to be forgotten. Boom, boom, boom, indeed.
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Walter P. Reuther Library, Archives of Labor and Urban Affairs. Wayne State University, Detroit, Michigan.
FIGURES
Figure 1. Hellmuth, Yamasaki, and Leinweber. Aerial view of Pruitt Igoe Public Housing Project, St. Louis, MO, 1956-73, demolished. Image Credit: University of California, San Diego via ArtStor.
PART ONE
The Death of Modern Architecture

Happily, we can date the death of modern architecture to a precise moment in time. Unlike the legal death of a person, which is becoming a complex affair of brain waves versus heartbeats, modern architecture went out with a bang. That many people didn’t notice, and no one was seen to mourn, does not make the sudden extinction any less of a fact, and that many designers are still trying to administer the kiss of life does not mean that it has been miraculously resurrected. No, it expired finally and completely in 1972, after having been flogged to death remorselessly for ten years by critics such as Jane Jacobs, and the fact that many so-called modern architects still go around practising a trade as if it were alive can be taken as one of the great curiosities of our age (like the British Monarchy giving life-prolonging drugs to ‘The Royal Company of Archers’ or ‘The Extra Woman of the Bedchamber’).

Modern Architecture died in St Louis, Missouri on July 15, 1972 at 3.32 p.m. (or thereabouts) when the infamous Pruitt-Igoe scheme, or rather several of its slab blocks, were given the final coup de grâce by dynamite. Previously it had been vandalised, mutilated and defaced by its black inhabitants, and although millions of dollars were pumped back, trying to keep it alive (fixing the broken elevators, repairing smashed windows, repainting), it was finally put out of its misery. Boom. Boom. Boom. Without doubt, the ruins should be kept, the remains should have a preservation order slapped on them, so that we keep a live memory of this failure in planning and architecture. Like the folly or artificial ruin – constructed on the estate of an eighteenth-century English eccentric to provide him with instructive reminders of former vanities and glories – we should learn to value and protect our former disasters. As Oscar Wilde said, ‘experience is the name we give to our mistakes’, and there is a certain health in leaving them judiciously scattered around the landscape as continual lessons.

Pruitt-Igoe was constructed according to the most progressive ideals of CIAM (the Congress of International Modern Architects) and it won an award from the American Institute of Architects when it was designed in 1951. It consisted of elegant slab blocks fourteen storeys high with rational ‘streets in the air’ (which were safe from cars, but as it turned out, not safe from crime), ‘sun, space and greenery’, which Le Corbusier called the ‘three essential joys of urbanism’ (instead of conventional streets, gardens and semi-private space, which he banished). It had a separation of pedestrian and vehicular traffic, the provision of play space, and local amenities such as laundries, crèches and gossip centres – all rational substitutes for traditional patterns. Moreover, its Purist style, its clean, palatial hospital metaphor, was meant to instil, by good example, corresponding virtues in the inhabitants.

Good form was to lead to good content, or at least good conduct; the intelligent planning of abstract space was to promote healthy behaviour.

3. MINORU YAMASAKI. Pruitt-Igoe Housing, St Louis, 1956-59. Several slab blocks of this scheme were blown up in 1972 after they were continuously vandalised. The crime rate was higher than other developments, and Oscar Newman attributed this, in his book Unfamiliar Space, to the long corridors, anonymity and lack of controlled semi-private space. Another factor was it was designed in a present language at variance with the architectural code of the inhabitants.

4. Pruitt-Igoe as ruin. Like the Berlin Wall and the collapse of the high-rise block, Ronan Point, in England, 1968, this ruin has become a great architectural symbol. It should be preserved as a warning. Actually, after continued hostilities and disagreements, some blocks have managed to form a community in parts of the remaining habitable blocks – another symbol, in its way, that events and ideology, as well as architecture, determine the success of the environment.

Figure 3. Excerpt from Charles Jencks, The Language of Postmodern Architecture (New York: Rizzoli, 1977) depicting the demolition of Pruitt-Igoe.
Figure 5. Minoru Yamasaki, featured on the cover of *TIME*, January 18, 1963. Image Credit: Author’s collection.
Figure 8. Yamasaki and Leinweber, Façade detail, Reynolds Metals Regional Sales Office, Southfield, MI, 1959. Image Credit: George Evrard Kidder via ArtStor.
Figure 9. Yamasaki and Leinweber, Federal Reserve Bank of Chicago with new addition, Detroit, MI, 1951. Image Credit: Joss Kiely, 2018.
Figure 11. KLM Advertisement featuring the World Trade Center, "Discover America with KLM," 1988. Image Credit: https://www.pinterest.co.uk/pin/169870217179143587/
Figure 12. “Consulat des États-Unis à Kobe,” *L'Architecture d'Aujourd'hui*, 30, no. 84 (June 1959). Spread on U.S. Consulate in Kobe, Japan with photos and drawings.
Figure 13. Leinweber and Yamasaki, Architect’s model, U.S. Consulate in Kobe, Japan, 1953. Image Credit: Archives of Michigan.
Office building interiors are characterized by meticulous attention to detail. Patterned beige terrazzo floors; gray-beige Japanese marble walls, stair treads and risers; teakwood; stair baluster of steel painted white with wood handrail; plaster soffits.

The typical cross section, above, shows the double basement floor, necessitated by sandy soil and a hydrostatic head. Water collected in the shallow sub-basement is pumped to the street sewer above.

Figure 15. “A Compliment to Traditional Japanese Architecture,” Architectural Record 123, no. 2 (February 1958). Lateral section and interior views showing finished materials.
Figure 16. “A Compliment to Traditional Japanese Architecture,” *Architectural Record* 123, no. 2 (February 1958). Front façade depicting shoji-like screens and perimeter wall.
Figure 17. Minoru Yamasaki and Associates, Garden at the U.S. Consulate in Kobe, Japan, 1953. Image Credit: Archives of Michigan.
Figure 19. Marcel Breuer, U. S. Embassy, The Hague, Netherlands, 1959. Image Credit: Flickr, photograph taken by user ekenitr on October 1, 2010, uploaded under Creative Commons Licensing.
Figure 21. Minoru Yamasaki and Associates, Oberlin College Conservatory of Music, Oberlin, OH, 1963. Image Credit: Courtesy of Bluffton University.
Figure 22. Edward Durell Stone, American Pavilion at Expo ‘58 in Brussels, Belgium, 1958. Image Credit:
Figure 23. General view and entry sequence of the American National Exhibition, Moscow, USSR, 1959. Image Credit: University of California San Diego via ArtStor.
Figure 24. Interior of American National Exhibition, Moscow, USSR, 1959. Image Credit: University of California San Diego via ArtStor.
The problem, as stated by Nathaniel Knowles, director of the U.S. pavilion: "The agricultural picture in India is terribly gloomy. Since farm methods are so very primitive, without significant improvement, India will be unable to feed her exploding population within a few years. Thus, a world agricultural fair is vitally important for India now, both in dramatizing her agricultural problems to the world, and in disseminating information about more advanced techniques to her own farmers."

Figure 28. “Handsome U.S. Hit in India,” *LIFE* 48, no. 3 (January 25, 1960): 40. Space age-themed rides at the U.S. Pavilion (above) and the Madras State Pavilion (below), World Agricultural Fair, New Delhi.
Figure 29. View of the Taj Mahal depicting domed *chaatri*, Agra, Uttar Pradesh, 1625-1675. Built by Shah Jahan for Mumtaz Mahal. Image Credit: Bonnie MacDougal, via ArtStor.
Figure 30. Minoru Yamasaki and Associates, Plan of the Federal Science Pavilion showing the themed exhibition and rest areas, Seattle World’s Fair, Century 21, Seattle, WA, 1962. Image Credit: University of California San Diego via ArtStor.
Figure 34. Minoru Yamasaki and Associates, Reflecting pools and lighted towers at night, Federal Science Pavilion at the Seattle World’s Fair, Century 21, Seattle, WA, 1962. Image Credit: Walter Straley Collection of Century 21 Photographs (1965.3598) Box 1, Museum of History and Industry, Seattle, WA.
Figure 41. Tippets-Abbett-McCarthy-Stratton (TAMS), Aerial view of the Pan Am Worldport at John F. Kennedy Airport, Queens, NY, 1957. Image Credit: The Pan Am Historical Foundation, https://www.panam.org/people-places/175-the-worldport-and-the-jet-age
Figure 45. I.M. Pei, Interior lobby of the National Airlines Sundrome, John F. Kennedy Airport, Queens, NY, 1962-70, demolished 2011. Image Credit: George Cserna via the Avery Architectural and Fine Arts Library, Columbia University as it appeared in the *New York Times*, October 06, 2011.
This is the Whisperjet.

It's new. It gets off the ground quicker—back on the ground softer—is quieter—and has had a more elaborate test program than any other kind of jet airliner. It belongs to Eastern.

We have quietly put twelve of our new 727 Whisperjets into service, serving twenty-two cities. We have twenty-eight more Whisperjets on the way for you.

SPREAD THE WORD: And the word is Whisperjet! We're the quietest airline going and the only with a fleet of 12 of these quiet 727 Whisperjets now serving 22 cities. And soon, we're going to have twenty-eight more 727 Whisperjets in the air. Let's talk it up about our 727 Whisperjet—tell everyone to fly the Eastern Whisperjet way.

Figure 46. Eastern Airlines advertisement depicting the 727's dimensions. Image Credit: Box 3, Folder 1 Eastern Airlines: The Falcon 1965, Eastern Air Lines Collection (Acc. 1991-0070). Archives Department, National Air and Space Museum, Smithsonian Institution.
Figure 47. Eastern Airlines advertisement depicting the L-1011 as though it were a building, complete with plan, section and detail drawings. Image Credit: Box 3, Folder 1 Eastern Airlines: *The Falcon* 1965, Eastern Air Lines Collection (Acc. 1991-0070). Archives Department, National Air and Space Museum, Smithsonian Institution.
Figure 48. “Willow Run Air Terminal Modernized,” *Ann Arbor News*, Friday December 13, 1957
Figure 49. Giacomo Balla (1871-1958), *Caproni Aeroplane Forces*, 1915. Image Credit: Allan T. Kohl, Minneapolis College of Art and Design via ArtStor, © 2008 Artists Rights Society (ARS), New York / SIAE, Rome
Figure 50. Yamasaki and Leinweber, with Manfredi Nicoletti, project architect, Interior views of the Willow Run hangar-terminal renovation, 1955. Image Credit: Archives of Michigan.
La volta sospesa dell'aeroporto di Willow Run, Michigan

La volta sospesa dell'aeroporto di Willow Run, Michigan

Figure 51. Yamasaki and Leinweber, with Manfredi Nicoletti, project architect, Modular ceiling details of the Willow Run hangar-terminal renovation, 1957-8. Image Credit: Spread from “La volta sospesa dell'aeroporto di Willow Run, Michigan,” Cronache e Storie 4 (January 1958): 351.
Figure 53. Minoru Yamasaki and Associates, Arrival roadway and terminal, Eastern Airlines Terminal A at Boston Logan, Boston, MA, 1969. Image Credit: Yamasaki, Inc.
Figure 56. Plan and section drawings, with photographs of the check in lobby (top), baggage claim (middle), and circular parking ramps (bottom). Spread appeared in *Architectural Record* (August 1970): 125.
Figure 59. Eastern Airlines advertisement as it appeared in the Boston Globe, Thursday, November 6, 1969. Image Credit: Minoru Yamasaki Papers, Box 2, Walter P. Reuther Library of Labor and Urban Affairs, Wayne State University.
Figure 61. Aerial view of the old St. Louis Airport and Terminal, 1932. Image Credit: Photograph taken by Russel Froelich, Russel Froelich Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
Figure 62. Various passenger traffic studies, Hellmuth, Yamasaki and Leinweber with Landrum and Brown, *Lambert St. Louis Municipal Airport Economic Studies, Terminal Building, and Area Design for the City of St. Louis*. Pamphlet prepared in 1952. Image Credit: Hathi Trust Public Domain and Google.
Figure 63. General site plan, Hellmuth, Yamasaki and Leinweber with Landrum and Brown, *Lambert St. Louis Municipal Airport Economic Studies, Terminal Building, and Area Design for the City of St. Louis*. Pamphlet prepared in 1952. Image Credit: Hathi Trust Public Domain and Google.
Figure 64. Initial stage site plan, Hellmuth, Yamasaki and Leinweber with Landrum and Brown, *Lambert St. Louis Municipal Airport Economic Studies, Terminal Building, and Area Design for the City of St. Louis*. Pamphlet prepared in 1952. Image Credit: Hathi Trust Public Domain and Google.
Figure 65. Hellmuth, Yamasaki and Leinweber, Pier from central terminal under construction, Lambert St. Louis Airport Terminal, St. Louis, MO, 1955. Image Credit: Photograph taken by Henry T. Mizuki, June 22, 1955, Mac Mizuki Photography Studio Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
Figure 66. Hellmuth, Yamasaki and Leinweber, Entrance canopy, Lambert St. Louis Airport Terminal, St. Louis, MO. Image Credit: Joss Kiely, 2014.
Figure 67. Hellmuth, Yamasaki and Leinweber, Exterior of Lambert St. Louis Airport Terminal, St. Louis, MO. Image Credit: Joss Kiely, 2014.
Figure 68. Hellmuth, Yamasaki and Leinweber, Interior of Lambert St. Louis Airport Terminal, St. Louis, MO, 1956. Image Credit: Photograph taken by Henry T. Mizuki, February 16, 1956, Mac Mizuki Photography Studio Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
Figure 69. Hellmuth, Yamasaki and Leinweber, Interior of Lambert St. Louis Airport Terminal, 1957. Image Credit: George Evrard Kidder, MIT, © Rotch Visual Collections; Kidder Smith Collection via ArtStor.
Figure 70. Passenger level plan, Hellmuth, Yamasaki and Leinweber with Landrum and Brown, *Lambert St. Louis Municipal Airport Economic Studies, Terminal Building, and Area Design for the City of St. Louis*. Pamphlet prepared in 1952. Image Credit: Hathi Trust Public Domain and Google.
Figure 71. Hellmuth, Yamasaki and Leinweber, Interior of dining area, Lambert St. Louis Air Terminal, St. Louis, MO. Image Credit: Ezra Stoller Archive/Esto via ArtStor
Figure 72. Hellmuth, Yamasaki and Leinweber, Interior of Lambert St. Louis Airport Terminal with Harry Bertoia screen in the background, St. Louis, MO, 1954. Image Credit: Photograph taken by Henry T. Mizuki, February 16, 1956, Mac Mizuki Photography Studio Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
Figure 73. Hellmuth, Yamasaki and Leinweber, Exterior view from tarmac, Lambert St. Louis Air Terminal, St. Louis, MO. Image Credit: Ezra Stoller Archive/Esto via ArtStor.
Figure 74. Section through terminal building, Hellmuth, Yamasaki and Leinweber with Landrum and Brown, *Lambert St. Louis Municipal Airport Economic Studies, Terminal Building, and Area Design for the City of St. Louis*. Pamphlet prepared in 1952. Image Credit: Hathi Trust Public Domain and Google.
Figure 75. Hellmuth, Yamasaki and Leinweber, Interior view of the construction of Lambert St. Louis Airport Terminal, St. Louis, MO, 1954. Image Credit: Photograph taken by Henry T. Mizuki, November 29, 1954, Mac Mizuki Photography Studio Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
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Figure 77. Hellmuth, Yamasaki and Leinweber, Roof detail of Lambert St. Louis Airport Terminal, St. Louis, MO. Image Credit: Joss Kiely, 2014.
Figure 78. Hellmuth, Yamasaki and Leinweber, Concrete pouring for roof shells, Lambert St. Louis Airport Terminal, St. Louis, MO, 1954. Image Credit: Photograph taken by Henry T. Mizuki, June 17, 1954, Mac Mizuki Photography Studio Collection, Courtesy of the Missouri Historical Society, St. Louis, MO.
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Figure 80. Eugène Freyssinet (1879-1962), Hangar de dirigeable en béton armé, à Orly, Paris Orly Airport, Paris, France, 1925. Image Credit: New York School of Interior Design, via ArtStor.
Figure 82. Félix Candela, Exterior view, bottling plant for Bacardi of Mexico Headquarters, Mexico City, DF, Mexico, 1960. Image Credit: Avery Architectural and Fine Arts Library, GSAPP Architectural Plans and Sections, Columbia University, New York, NY.
Figure 83. Félix Candela, Interior view, bottling plant for Bacardi of Mexico Headquarters, Mexico City, DF, Mexico, 1960. Image Credit: Avery Architectural and Fine Arts Library, GSAPP Architectural Plans and Sections, Columbia University, New York, NY.
Figure 84. Félix Candela, Drawings, bottling plant for Bacardi of Mexico Headquarters, Mexico City, DF, Mexico, 1960. Image Credit: Avery Architectural and Fine Arts Library, GSAPP Architectural Plans and Sections, Columbia University, New York, NY.
Figure 85. Eero Saarinen and Associates, with Kevin Roche, Cesar Pelli, Edward Saad, and Norman Pettula, architects, Exterior view of Trans World Airlines Flight Center Terminal, John F. Kennedy International Airport, Queens, NY. Image Credit: Photograph by Ezra Stoller, Ezra Stoller Archive/ Esto, via ArtStor.
Figure 86. Eero Saarinen and Associates, with Kevin Roche, Cesar Pelli, Edward Saad, and Norman Pettula, architects, Interior view of Trans World Airlines Flight Center Terminal, John F. Kennedy International Airport, Queens, NY. Image Credit: George Evrard Kidder, MIT, © Rotch Visual Collections; Kidder Smith Collection via ArtStor.
Figure 87. Minoru Yamasaki and Associates, Architect's model, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Photographed by Balthazar Korab, Archives of Michigan.
Figure 88. Minoru Yamasaki and Associates, Central courtyard between the domestic and international terminals, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Photographed by Rondal Partridge, Archives of Michigan.
Figure 89. Minoru Yamasaki and Associates, Site plan, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Archives of Michigan.
Figure 90. Minoru Yamasaki and Associates, Arrival roadway and terminal façade, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Photographed by Rondal Partridge, Archives of Michigan.
Figure 91. Minoru Yamasaki and Associates, Main floor plan, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Archives of Michigan.
Figure 92. Minoru Yamasaki and Associates, Second floor plan, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Archives of Michigan.
Figure 93. Minoru Yamasaki and Associates, Corner view of terminal from air side, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Photographed for the Ralph M. Parsons Group, Archives of Michigan.
Figure 94. Minoru Yamasaki and Associates, Interior lobby are with formal similarities to the muqarnas found in Islamic mosques (compare to next figure), Dhahran Civil Air Terminal,

Figure 95. Shah’s Mosque, Main entrance *iwan* with detail of *muquarnas*, Esfahan, Iran, Safavid Dynasty, 1611-38. Image Credit: Walter D. Benny, Islamic Art and Architecture Collection, 1977.
Figure 96. Mihrab and Inscription Frieze from a Mosque, ceramic mosaic, ca. 1500. The Cleveland Museum of Art, Cleveland, OH, Gift of Katharine Holden Thayer, 1962. Image Credit: The Cleveland Museum of Art Collection/AMICO Library, via ArtStor.
Figure 97. Minoru Yamasaki and Associates, Façade detail with similarity to the *mihrab* of Islamic mosques (see precious figure), Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Photographed by Rondal Partridge, Archives of Michigan.
Figure 98. Minoru Yamasaki and Associates, Elevation and section of a single bay, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Archives of Michigan.
Figure 99. Minoru Yamasaki and Associates, East and west elevations, Dhahran Civil Air Terminal, Dhahran, Saudi Arabia, 1958. Image Credit: Archives of Michigan.
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