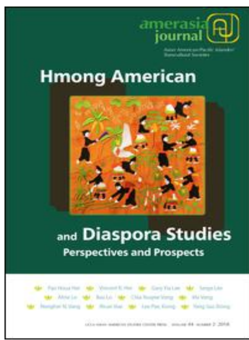

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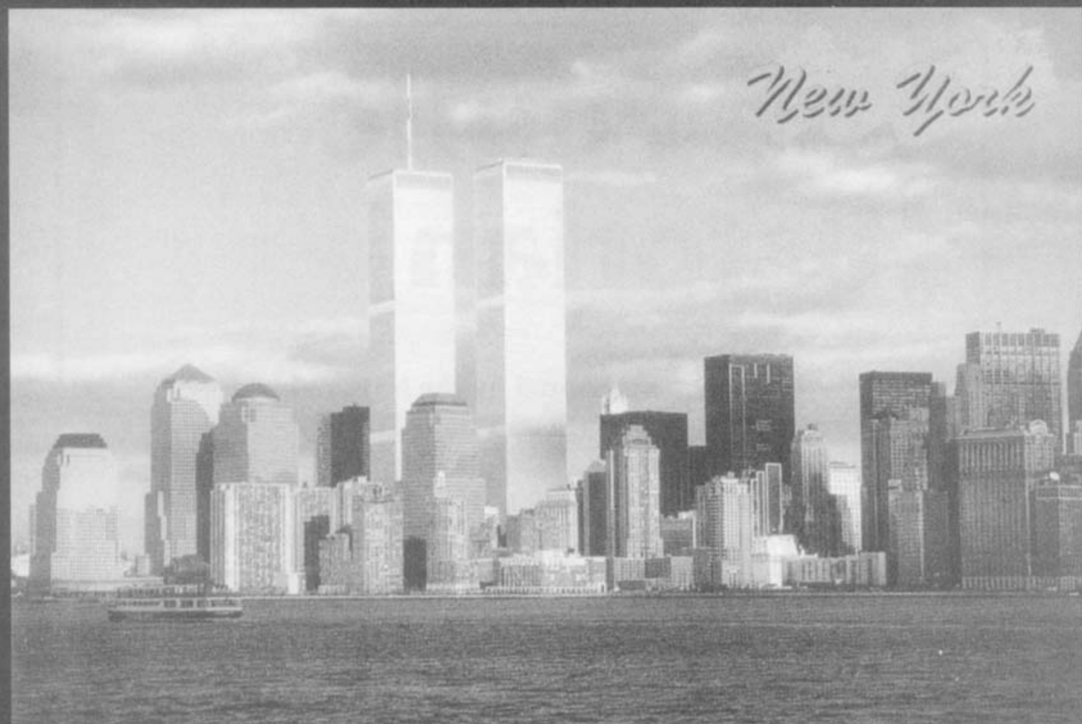

Figure 1. Minoru Yamasaki Associates and Emery Roth and Sons. The World Trade Center (1962-1976) and the Manhattan skyline pictured in a recent post card.
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Minoru Yamasaki:
Contradictions of Scale in the Career of the Nisei Architect of the World's Largest Building

Bert Winther-Tamaki

Whether remembered as the perch of King Kong in a Hollywood movie or as the target of terrorist bombing, the 110-story twin towers of the World Trade Center have indeed become a definitive landmark of New York City (figure 1). As the world's tallest skyscrapers upon reaching their full height in 1974 and still today the tallest in New York City, they have excited much attention.[1] They were anticipated as a "fearful instrument of urbicide" which would "clobber Manhattan's beautiful skyline."[2] Once built, however, their minimal forms were not without admirers, including one who pronounced them "one of the most dramatically beautiful sights in New York."[3] But while the twin towers have been much debated, the fact that they were designed by a Japanese American has received very little attention. Not only was the Seattle-born, Detroit-based Nisei Minoru Yamasaki (1912-1986) the chief architect of the World Trade Center, he was also the first Asian American to achieve a national reputation as an architect in the United States.[4]

It was in 1962 that the powerful bistate agency, the Port Authority of New York and New Jersey, selected Yamasaki to design its World Trade Center, and he devoted much of his energy to various aspects of this prestigious and complex project over the next fourteen years. But Yamasaki's architectural practice and thinking matured in the 1950s prior to his involvement with the World Trade Center. During this period, International Style architecture which had been developed before the war by Europe

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ans such as Mies van der Rohe, Walter Gropius and Le Corbusier was simplified to a formula which rapidly became an "architecture of bureaucracy" in the United States and elsewhere.[5] Yamasaki was a practitioner of this mode in the early 1950s, but by the end of the decade he had developed a unique stance at a critical distance from the International Style and was regarded as a leader in the search for progressive alternatives together with such architects as Philip Johnson, Eero Saarinen and Edward Stone.

Yamasaki's critique of the International Style stood on two related convictions. First, he argued that the overwhelming monumental character which was the aim of many contemporary architects and clients was detrimental to democratic society; and second, early architectural traditions, particularly those of Japan, posed models of human scale of unique significance to contemporary architecture. But Yamasaki's most famous legacy, his World Trade Center design, has most frequently been criticized precisely for its colossal scale. How is it that the architect of a design pronounced already in 1966 as "gargantua by the sea,"[6] had been recognized just five years earlier as "the forerunner. . .of a general movement to reconcile the measure of his art to the measure of man"?[7] And compounding the contradiction, although practically none of the World Trade Center's commentators have speculated on Japanese allusions or influences, however obscure, this architect was honored by the Japanese American Citizens League in 1962 for the role which "his understanding of Japanese art and culture" played in the goal of "elevat[ing] the dignity of man in his environment."[8] This is a study of such contradictory values of architectural scale—the proportions, dimensions and degree of impressiveness of buildings relative to human beings—in the career of a Nisei architect.

Yamasaki's Early Years

Prejudice was a predominant factor in Yamasaki's early years in Seattle: "I know from personal experience how prejudice and bigotry can affect one's total thought process."[9] It was virtually impossible for Japanese Americans to become architects in the prewar United States. The young Minoru was first inspired to study architecture by his uncle who earned a degree in architecture at the University of California. As a first-generation Japanese immigrant, however, the uncle was ineligible for U.S. citizenship and therefore had no hope of ever becoming a licensed architect in the United States and returned to Japan to pursue his career.

Yamasaki put himself through the architectural program at the University of Washington by spending his summers laboring on a Nisei and Filipino workforce in Alaskan canneries. He would later describe "the repugnance" he felt at "the way we employees were exploited."[10]

If the theme of anti-Asian prejudice is the dominant note in Yamasaki's autobiographical account of his early years, a second theme appears with increasing frequency in the narrative. A series of sympathetic and influential European American men are remembered as important role models. To his professor of architecture at the University of Washington, Yamasaki "owe[d]. . .a tremendous debt; the intensity and enthusiasm he evoked in me has been a great influence through much of my architectural life."[11] At length, Yamasaki succeeded in obtaining employment and proceeded to work for several important New York architectural offices between 1935 and 1945. In his autobiography, Yamasaki gives the impression that the tutelage and sympathy of several European American architects and designers in these firms carried him through the war years with relatively little distress.

By the war's end in 1945, Yamasaki obtained the position of chief architectural designer in the Detroit-based office of Smith, Hinchman and Grylls. As a firm of 600 employees, this was an important job, but when Yamasaki attempted to purchase a home for his family, a realtor told him that he could not sell property to Yamasaki in the exclusive Detroit suburbs. Nevertheless, his career prospects continued to advance and by the late 1950s architectural journals were publishing his work under the name of "Minoru Yamasaki & Associates."

Crawling Beneath Mies's Floor

Yamasaki had much experience with the design of large-scale projects early in his career. During the war, he worked on a fifty-million-dollar defense project as an employee of the firm of Shreve, Lamb and Harmon, which had designed the Empire State Building in the 1920s. At the end of the war, he spent a year in the office of Wallace Harrison, famous for his role in the design of Rockefeller Center.

In 1951 Yamasaki and his partners obtained contracts for the design of three very large projects in Saint Louis: the U.S. Military Personnel Records Center, the Saint Louis Airport Terminal, and the Pruitt-Igoe Housing Project. Built for the Department of Defense to house thirty-eight million service records and a staff of

four thousand, the Records Center was one of the world's twenty largest buildings at the time of its completion.[12] It was the Saint Louis Airport Terminal, however, that established the reputation of Yamasaki. Its great vaulted space provided a precedent for Saarinen's famous TWA Terminal at Kennedy Airport and was greatly acclaimed in architectural circles at the time for its expressive invention.[13] Yamasaki was also chief designer for Pruitt-Igoe, a public project for housing 12,000 residents in thirty-three eleven-story buildings which was heralded at the outset as a trend-setting plan that "saves not only people, but money."[14]

Nevertheless, Yamasaki was not entirely at ease in his role as designer of these large projects. He expressed his most serious misgivings about the Pruitt-Igoe housing complex. Regrets over this project would emerge over time, but already in 1952 when construction had just begun, Yamasaki made his apprehensions apparent. In this year he published a defense of the modernist approach to housing design practiced at Pruitt-Igoe, that of "eliminating slums" by erecting high-rise apartment towers separated by generous swaths of open space cordoned off from automobile traffic.[15] But Yamasaki began this essay with an acknowledgment that low buildings would be preferable, for "Man is a ground animal [and it is] quite natural for him to live near the earth." He confessed, "if I had no economic or social limitations, I'd solve all my problems with one-story buildings." If, as John Ruskin claimed, the very practice of architecture tends to instill "a tendency in [architects] to build high. . .in mere exuberance of spirit and power,"[16] Yamasaki's avowed preference for low buildings would seem a rather self-abnegating disposition for an architect. He proceeded to argue for high-rise housing on the basis of need rather than desirability. He maintained that he and his colleagues had argued unsuccessfully to restrict the density to half the fifty-five to sixty families per acre required by the housing authority. In 1956, just one year after its completion, Yamasaki published a self-recriminating disavowal of Pruitt-Igoe: "We have designed a housing project, not a community, which is tragically insensitive to the humanist aspects of security and serenity and have multiplied tragedy because of the great number of buildings and extent of the site."[17] Indeed, in later years it became a notorious case of the failure of modernist principles, particularly after it was given up as hopeless in 1972.[18]

If Yamasaki's 1952 defense of the large scale of the Pruitt-Igoe complex was striking for his apprehensiveness and reservations,

he was much more at ease criticizing large-scale architecture in a talk about factory design later that year.[19] Yamasaki criticized "large industrial architects" (such as the firm from which he had just resigned) for determining design by considerations of economy. He defended "the dignity of the individual worker" and protested huge industrial complexes where "the machine is king; man a minion, to be accommodated as inexpensively as possible." He took his architect colleagues to task for "recklessly build[ing] buildings so vast that they affect the feeling of importance and security in everyone who uses them."

Yamasaki's aversion to large-scale design was unusual in this optimistic age of growth in the United States, but not without precedent in the Anglo-American architectural press. In 1948, the London-based *Architectural Review* published views expressed at a symposium titled "In Search of a New Monumentality." Most felt that modern architecture could benefit from a greater sense of durability, solidity, dignity and largeness of scale. One participant, however, dissented and leveled a critique at monumental architecture that seems implicit in Yamasaki's misgivings: "Imperialistic architecture—whether it is built in an empire or a republic—means an architecture which induces in the subjected people fear, admiration, and a feeling of insignificance through its vast dimensions and the associations connected with its forms."[20]

Yamasaki's 1952 stand against large-scale industrial construction was prefaced by an amusing and self-effacing anecdote which no doubt succeeded in winning the affections of his listeners. He told the story of his personal visit to Mies's recently completed Farnsworth House in Illinois. When he arrived at this minimal glass-walled dwelling raised on an elevated floor, he encountered a group of Mies's students studying their master's work. "A very tall young man came over and asked, 'Are you an architectural student?'" At this time Yamasaki was responsible for such projects as the Saint Louis Air Terminal and the Pruitt-Igoe complex, but he only "hesitatingly" managed to inform the young man that he was indeed an architect. Hearing this, the tall student "drew himself up to his full height and, looking down his nose at me in a very disapproving manner, said, 'When I get to be an architect I shall always consider myself a student.'" Yamasaki's punch-line entails a humorous self-humiliation: "With that I crawled under the Mies's house."

This was not all in jest, however, for even years after Yamasaki began to articulate his departure from Miesian modern-

ism, he still identified Mies as "the best architect in the world."[21] The German American Midwesterner was a towering charismatic figure in American architectural culture of the early postwar years.[22] Mies was one of the most influential leaders in the transformation of the International Style into an architecture of monumentality in the United States. The prewar buildings of this movement, including Mies's own, tended to be small structures which aimed for free-flowing space and a sense of weightlessness. Mies invested the minimal block of steel and glass with the authority of an absolute statement of the *Zeitgeist* of modern times, though it has been observed that the pretensions of universality of his *Zeitgeist* belied its basis in the "industrial West."[23]

Yamasaki's anecdote about the Farnsworth House and the remark in which he yearned for one-story solutions for all architectural problems point to a belittling sort of tension that encumbered Yamasaki's ambitions in the Miesian milieu of American architecture. Such an interpretation would seem confirmed by the narrative related in a 1958 feature on Yamasaki in the architectural press.[24] Shortly after his experience at the Farnsworth House, Yamasaki reportedly suffered a personal and professional crisis. The industrial designer George Nelson, a former partner of Yamasaki, was quoted as saying that Yamasaki had "never lacked professional confidence, but there was a remembered inferiority that had to be purged." This inferiority, the journal claims, "was doubtless the major reason, along with the rapid pace he had been setting himself, for his nearly fatal ulcer attack in 1954." Yamasaki's own comment was quoted too: "I hadn't been able to order my life. 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." Perhaps Yamasaki's anecdote of humiliation beneath Mies betrays an internalized experience of prejudice which shaped his development in the predominantly European American architectural world.

Yamasaki's practice of architecture until this point had been assimilationist; being an architect meant dedicating himself to an overwhelmingly European-American professional community and absorbing its cultural premises. Later he would dismiss his early buildings as "shallow imitations of those of Mies."[25] Most of his major works of the early 1950s did indeed adhere to a steel and glass curtain wall grid of the sort perfected by Mies. Moreover, the interpretive accounts of these buildings in the architectural press presented neither evidence nor speculation that any

aspects of these buildings sustain any relationship to Japan, Japanese culture, or Japanese American identity.

In other words, Yamasaki's architecture did not seem to provide a vehicle for the expression of any relationship to Asia which may have characterized his personal identity. The only exceptions to this were a few private dwellings which Yamasaki designed. In 1951, *Architectural Forum* published a lengthy survey of recent trends in residential architecture, including two Yamasaki houses, and Japanese characteristics were claimed for both of them. One was the 125-year-old house in Birmingham, Michigan (outside the white-only Detroit suburbs) that Yamasaki had purchased and remodeled for himself and family. Its modern living room was said to be "designed with the sensitivity and restraint characteristic of the finest Japanese architecture."[26] Yamasaki's approach to the richly forested Connecticut site of the second house was "the traditional answer of Japanese architecture: Respect nature, and insinuate the architecture with subtlety and grace."[27]

Thus, traditional Japanese qualities were perceived and appreciated in Yamasaki's private residential work, but were regarded as irrelevant to his large modern buildings. This dichotomy may be correlated to a larger schism in American architectural culture in the postwar period. Joan Ockman contrasts a "male" culture of production situated in office towers and factory buildings outfitted in a modern architectural imagery to a "female" culture of consumption in suburban tract housing styled as traditional cottages.[28] The reception of Yamasaki's work in the early 1950s suggests that Japanese allusions were more welcome in the female/residential side of this divide than the male/corporate. Perhaps a stigma of a gendered sort may have been involved when Yamasaki endeavored in the mid-1950s to reduce the dependence of his office on scattered "small projects" such as residences, and focus on the design of the "fine, larger building."[29] Moreover, the disinclination to design homes for wealthier private clients, where there was greater potential relevance for Japanese expressivity, may be related to the fact that such residences tended to be located in racially segregated areas such as the Detroit suburbs which excluded Yamasaki.

Thus, Yamasaki's practice of architecture in the United States in the early 1950s admitted precious little opportunity for him to express the Japanese American identity which differentiated him from the overwhelming majority of people in his working environment. Consequently, the resolution to the "crisis" of 1953-54

took the form of an unexpected opportunity to design an important building in Japan later in 1954. As *Architectural Forum* put it, "By one of fate's happy tricks, the U.S. State Department intervened at this point, asking Yamasaki if he would be interested in trying a design for the American Consulate General's office and staff quarters at Kobe, Japan."[30]

The Serenity and Scale of Japanese Architecture

Although the U.S. military occupation of Japan following World War II ended in 1952, Japan remained firmly within the dictates of American foreign policy and military strategy. Yamasaki's Kobe Consulate was part of the infrastructure of this American presence in Japan as well as the larger postwar program of what has been described as the "architecture of imperialism"—the embassies, consulates, and cultural centers constructed by the State Department all over world.[31] But this did not necessarily mean that structures of imposing monumentality were regarded as the most effective architectural tools of American diplomacy. The objectives of this building program were described as "represent[ing] American architecture abroad" and "adapt[ing] it to local conditions and cultures so deftly that it is welcomed, not criticized, by its hosts."[32] Concern for criticism was well-placed, for many of these overseas American buildings would indeed become symbolic targets for anti-American protests.[33]

Thus, the selection of Yamasaki for the building in Kobe was sensible diplomatic strategy from the perspective of the State Department. The use of a Japanese American artist by the United States government to mount an appeal to Japanese people was not unprecedented. For example, during the war, the accomplished Issei painter Yasuo Kuniyoshi created poster illustrations of the Japanese enemy for the U.S. Office of War Information and gave speeches broadcast by American propagandists to the public in Japan.[34] Of course, coming nine years after World War II when Japan was an ally of the United States in the Cold War, Yamasaki's work for the State Department had quite a different character from that of Kuniyoshi. Nevertheless, as the following commentary in the architectural press suggests, the diplomatic value of his Consulate was similarly inscribed in his Japanese American identity:

> The Japanese have been tendered a gracious double compliment. The State Department. . .selected as architect Minoru Yamasaki, a native-born American of direct Japanese descent. Yamasaki then gladly acknowledged—and indeed the building makes clear—

the strong influence traditional Japanese ethos and architecture have played in both his philosophy and design for the project.[35]

The agenda of U.S. diplomacy, however, was not necessarily incompatible with Yamasaki's personal and professional goals. Since the prewar period, the journey to Japan had been fraught with great consequence for Japanese Americans with careers in the arts. For example, the sculptor and designer Isamu Noguchi, whose father was Japanese and mother was European and Native American, travelled to his father's country in 1931 in order to "fulfill my heritage" as an "interpreter of the East to the West."[36] Later he remembered the experience of working with clay in Japan at this time as entering a "close embrace of the earth, as a seeking after identity with some primal matter beyond personalities and possessions."[37]

In Yamasaki's case, the fateful encounter with Japan came at the moment in his career when, as we have seen, illness brought him to a realization that he had a "complex" about being Japanese. Supervising construction in Kobe gave him his first major opportunity to develop an affirmative image of Japanese identity through the medium of architecture. Yamasaki found himself drawn to Japanese architecture of the past such as the modest seventeenth-century wooden pavilions of Katsura Detached Palace. In his design for the Consulate he explored the relevance of such models to contemporary architecture (figure 2). The Consulate was a walled compound containing three structures distributed around a central garden: an office block, staff apartments, and servants quarters. Yamasaki explained that a central objective was the provision of "a Japanese look" for his design.[38] Thus, as *Architectural Forum* readers learned, he elevated the floor line "in the manner of fine old Japanese temples," set his buildings "in a lovely native garden," and designed the front facade of "delicate bands of glass-fiber plastic in a bronze gridwork [which] adapt[ed] traditional *shoji* screens to new outdoor use."[39] Moreover, the garden pond was provided with a wooden deck on posts set in unfinished piling stones in the manner of the famous moon-viewing platform at Katsura.

The widespread enthusiasm for Japanese culture among Americans during the postwar years provided an important context for Yamasaki's turn toward Japanese traditional architecture at this time. In terms of architecture, the most remarkable expression of this fashion came in the very same year Yamasaki was experimenting with Japanese traditional architecture in Japan. 1954 was

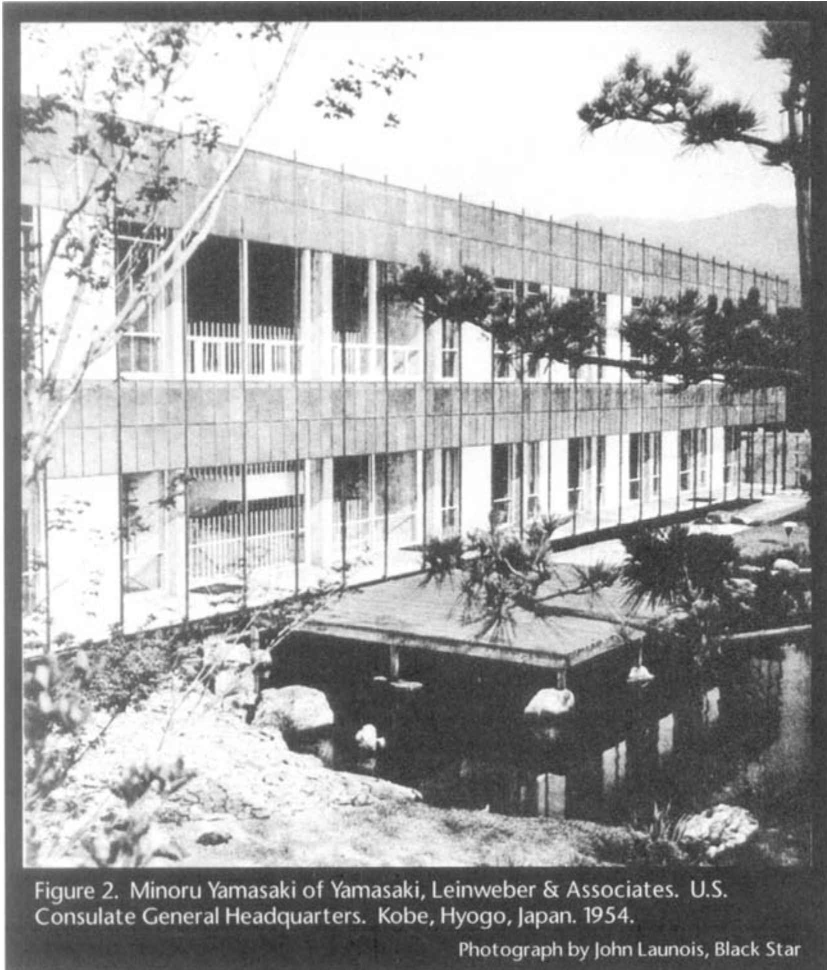

Figure 2. Minoru Yamasaki of Yamasaki, Leinweber & Associates. U.S. Consulate General Headquarters. Kobe, Hyogo, Japan. 1954.
Photograph by John Launois, Black Star

the year that a seventeenth-century-style Japanese house was constructed in the garden of the Museum of Modern Art in New York. Features such as post and lintel skeleton construction, flexibility of plan, interpenetrating indoor and outdoor space, and the decorative use of structural elements were seen as possessing "unique relevance to modern Western architecture."[40] Even Mies seemed to feel that Japanese architectural tradition posed a universalizing legitimization of the goals of modern architecture.[41]

Nevertheless, Yamasaki's experience of Japanese and other architectural traditions would carry him away from Miesian modernism. Later Yamasaki would claim that his stay in Japan in 1954

and subsequent visits to historical sites in India and Italy "changed my life—maybe saved it."[42] Proof of new resolve came quickly in the form of a bold critique of modernist architecture published in the American architectural press in 1955.[43] In this essay, Yamasaki claimed that the previous twenty years of architecture were dominated by Mies's "structural integrity" and Corbu-sier's demonstration of "plastic possibilities," but asserted that the time had come to move beyond their stifling influence. The cost of an excessive reliance on functionalism was an eclipse of the "emotional quality" of architecture and the prioritization of economic means served as a "crutch for unimaginative design." On the other hand, "originality" for its own sake led to "many excesses" such as the elimination of traditional materials and the abjuration of the architect's social responsibility.

To remedy these ills, Yamasaki counseled greater attention to architecture of past centuries, and photographs of sites he visited in his travels to Japan, India and Italy illustrated the article. Such historical models led Yamasaki to conclude that modern architecture was deficient in such qualities as a sense of surprise, richness of detail and adornment, and forms which give pleasure and drama. In this 1955 essay, Yamasaki also revisited the issue of disturbingly large-scale buildings, noting that, "The question of the emotional or spiritual quality of architecture in relation to scale had troubled me for some time." He acknowledged that before his trip, the only buildings that had moved him with a "feeling of uplift" were physically large buildings such as Mies's twenty-six-story Lakeshore Apartment towers in Chicago. In Japan, however, he discovered this quality in small buildings. "If the feeling was different, it was only that mixed in it was a little less awe and a little more peace." On the other hand, though the structural qualities of Gothic cathedrals were "marvelous almost beyond belief," they offered little value as models for the contemporary architect in search of "uplift or spiritual quality." The Gothic cathedral, Yamasaki claimed, was "a monument to God with no relation to a daily environment for people." He further identified "monumental qualities" with "the roars of trucks or hot rodders" in American cities in contrast to the enjoyable "narrow streets and open squares" of Florence and Venice. The architect's social obligation was not served by creating environments of monumentality, but "relaxed, friendly and enjoyable places."

In subsequent years, Yamasaki repeated and expanded these thoughts in a series of addresses, interviews, and essays.[44] The

task of architecture in a democracy was not served by monumental structures, he claimed, but by the design of "tranquility in environment as respite from the turmoil of mechanization."[45] At times this critique of monumentality suggested a more pointed reference to contemporary architectural practice: "A monument to the ego of a particular owner or architect is contradictory to the principle that each man who uses the building should be able, through his environment, to have the sense of dignity. . ."[46] Foreshadowing something of the spirit of recent feminist architectural criticism,[47] he charged "some very influential architects" among his American contemporaries for believing that "all buildings must be 'strong'" in the sense that "each building should be a monument to the virility of our society."[48]

But Yamasaki was much more sensitive to the architectural consequences of cultural biases in his social environment than gender biases. He attributed the undemocratic monumentality of contemporary architecture in the United States to its traditional blindness to non-Western architecture and exclusive focus on Western architectural history which, he claimed, was primarily a history of monumental architecture.[49] Yamasaki named the architectural history of Banister Fletcher, the canonical text in American architectural schools, as an influential instrument of this traditional bias.[50] The 1945 edition of this respected volume introduced a very brief appendix of non-Western architecture with the disclaimer, "These non-historical styles can scarcely be as interesting from an architect's point of view as those of Europe, which have progressed by the successive solution of constructive problems, resolutely met and overcome."[51] Yamasaki claimed to the contrary that study of non-Western architectural history was sorely needed. "In the understanding of serenity and scale," he asserted, "I believe we must turn to Japanese architecture."[52]

Yamasaki's position regarding the relevance of Japanese traditional architecture did not go unnoticed. As mentioned at the outset, the Japanese American Citizens League (JACL) honored Yamasaki as "Nisei of the Biennium" in 1962, citing his commitment to "elevating the dignity of man in his environment" by "artfully blending his understanding of Japanese art and culture with that of Western architecture."[53] The JACL apparently saw Yamasaki's accomplishment as a gratifying resolution of what Ronald Takaki suggests was one of the central dilemmas of the Nisei experience, namely a "bifurcat[ion] between the land of their parents and the land of their birth."[54] Yamasaki's commitment to Japanese tradi-

tional architecture was also acknowledged in the largely European American environment of his professional career. "As typically American as the big Chrysler he drives," noted the previously mentioned feature in *Architectural Forum*, "Detroit's Minoru Yamasaki nevertheless draws artistic inspiration from another heritage."[55] While the Japanese reference is lauded as "inspiration," it is also disciplined by the automobile simile to assuage any doubt about Yamasaki's American identity. But finessing this balance of identities required some tact on Yamasaki's part. On one occasion, he patiently corrected those who were unable to distinguish between involuntary racial identity and artistic inclination:

> Though I jokingly protest that those who contend that my buildings have a distinctly Oriental flavor must have seen my face or name before seeing my work, I am fully aware that my admiration of certain intrinsic qualities in Japanese architecture has had a positive effect on the underlying philosophy on which I try to base my designs.[56]

Japanese Serenity vs. Gothic Verticality

How, then, did Yamasaki's admiration for aspects of Japanese architecture affect his architectural practice in the United States? The intense nationalism of these Cold War years circumscribed the degree to which Japanese culture could be seen as relevant to American architecture. "The lessons that can be learned from the house in Japan," cautioned Yamasaki's friend the designer George Nelson, "have nothing to do with copying its superficial aspects. . . . Any effort to reproduce the Japanese house, or its parts, would merely result in a freak, because the Japanese way of life is not ours." [57] Experimenting with features of traditional Japanese architecture on a building in Japan was one thing, but could they be imported to the United States?

One of Yamasaki's most admired buildings in the late 1950s was a two-story conference center for Wayne State University in Detroit (figure 3). This design was among a group of projects which earned Yamasaki the reputation of a leading proponent in reversing the austerity common in modern architecture with a new decorative sense of pleasure.[58] The glass pyramids topping the central lounge and the triangular ends of V-shaped ceiling beams established a decorative motif repeated with variations throughout the structure. The building reminded contemporaries of European prototypes; the skylight seemed to "recall Renaissance palazzos" while the building's mass seemed "coolly classic."[59] But the reference of

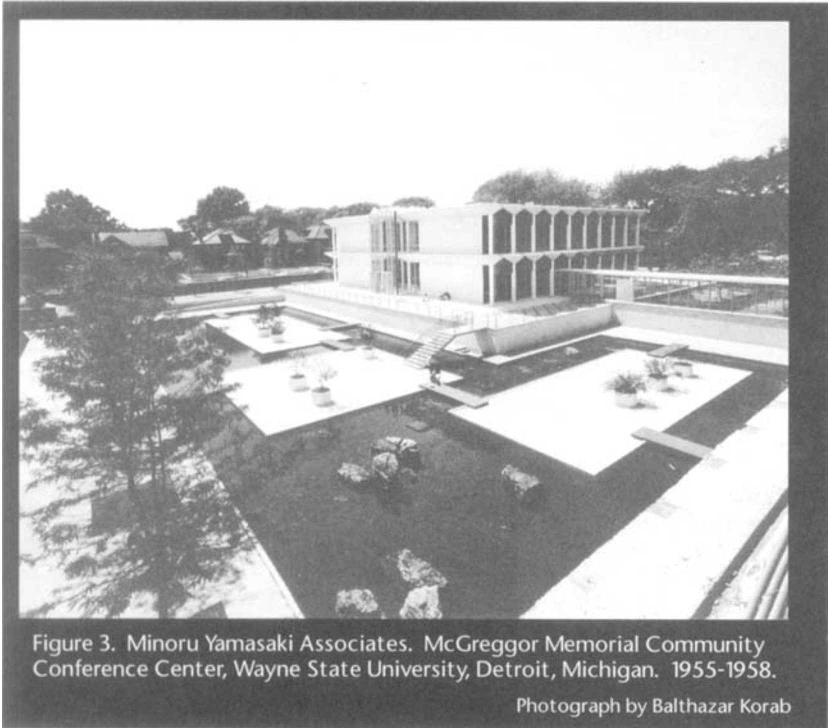

Figure 3. Minoru Yamasaki Associates. McGreggor Memorial Community Conference Center, Wayne State University, Detroit, Michigan. 1955-1958.
Photograph by Balthazar Korab

the adjacent sunken garden, with three hovering planes of raked gravel in a pool of water, was Japanese. It was observed that "Japanese-style rocks" were installed in the pool which "serve[d] the same reflective purpose as water in Japanese temples."[60] Here then was an apparently successful attempt to smooth the rough edges of modern architecture and create an environment of serenity informed by Japanese tradition.

Yamasaki's first and only skyscraper design before the World Trade Center was his thirty-two-story headquarters for Michigan Consolidated Gas company in Detroit, commissioned in 1958 and completed in 1963 (figure 4). Perhaps we can see some continuity in the treatment of the front entry to the tall glass lobby of this building with Yamasaki's prior interest in Japanese prototypes for flat planes hovering over sheets of water (the deck at the Kobe Consulate and the rectangles of raked gravel at Wayne State University). But any associations with Japan here are very obscure indeed.

The most striking feature of this building is the design of its windows in the form of vertically attenuated hexagons, each sheet of

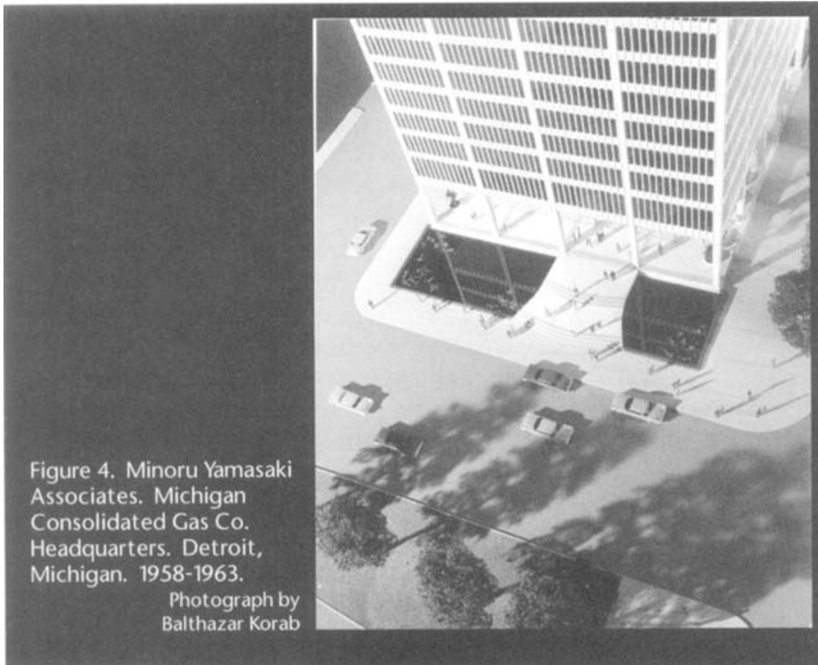

Figure 4. Minoru Yamasaki Associates. Michigan Consolidated Gas Co. Headquarters. Detroit, Michigan. 1958-1963.
Photograph by Balthazar Korab

glass pointed at its top and bottom and framed in units of sparkling white quartz aggregate. These were promptly dubbed "lancet windows" and contributed to the frequent association of Yamasaki with Gothic imagery in the late 1950s and 1960s.[61] This picturesque quality was a dramatic departure from the perpendicular reticulation of the typical steel and glass curtain wall of the 1950s. One reviewer enthusiastically likened the building to an "Arabian Nights fantasy" and an "Eastern temple."[62]

Yamasaki, however, explained that two aims—one pertaining to the interior and the other to the exterior—motivated these narrow vertical window designs. On the one hand, by placing the mullions on twenty-inch centers, he hoped to avert the acrophobia which he confessed he experienced when standing near the windows in the upper floors of tall buildings.[63] This goal is certainly consistent with the various statements we have attributed to Yamasaki thus far on behalf of an architecture of intimacy. But for the exterior, he professed a very different aim. He wanted the building to express "an aspiring sense of verticality which seems necessary for a building of this height."[64] Thus, Yamasaki's earlier wish for one-story solutions to all architectural problems, his reservations about Gothic monumentality, and belief in the con-

temporary relevance of Japanese traditional architecture all seem to have been abandoned in his new embrace of the lofty height of the skyscraper.

Before charging Yamasaki with a lack of integrity, however, the previously mentioned disconnect between the topics of skyscraper design and Japanese tradition in the discourse of modern architecture deserves reiteration. Rarely did the appeal of Japanese architecture seem to hold any relevance to the urban office tower. The biography of Wallace Harrison, Yamasaki's one-time boss, provides a provocative illustration of the divorce between the skyscraper and Japanese architectural imagery. Harrison is known for his many Manhattan skyscrapers including Rockefeller Center, the United Nations Secretariat, and the Time and Life building. Less well known is the fact that he spent holidays in a small country house which he designed for himself on the coast of Maine, a cottage that was "Japanese in feeling" and complete with his very own effort at a "Japanese rock garden."[65] The image of Harrison rejuvenating himself from his metropolitan world of soaring steel and glass towers in a rustic "Japanese" retreat suggests a cultural environment where "Japan" signified a desirable antithesis to the modern skyscraper.

Despite Yamasaki's reference to the Japanese garden tradition at the Conference Center at Wayne State University, it would not be accurate to say that he wished to introduce a Japanese imagery to American architecture. His proposition was rather that the Japanese architectural tradition bore a special relevance to the reform of modern architecture due to its exemplary illustration of qualities such as "inner security and pleasure to man." In 1959, Yamasaki's articulation of this message in an address to a gathering of architects received "a thunder of applause."[66] In effect, Yamasaki's colleagues were endorsing the desirability of a transfer of certain humanistic qualities from Harrison's Japanese retreat to his urban skyscrapers.

The Monumentality of the World Trade Center

Yamasaki would remember that when Port Authority officials first contacted him to solicit a proposal for the design of the World Trade Center in 1962, he thought they were mistaken. When apprised otherwise, his first response was that it would be "too much for us to tackle."[67] But Yamasaki overcame his misgivings about the enormous size of the construction because, in his words, it "represented a once-in-a-lifetime, no, once-in-two-lifetimes situa-

tion."[68] Philip Johnson was probably right when he said, "I don't care what the hell they say. All architects essentially want to be monumental."[69] Rising to the occasion, Yamasaki convinced himself that enormous dimensions were justified for the design of the World Trade Center: "World trade means world peace. . .I felt that it had a bigger purpose than just to provide room for tenants."[70]

Nevertheless, the long streak of ambivalence regarding monumental architecture we have traced through Yamasaki's career manifested itself in his work on the World Trade Center as a posture of reluctance surprising for one who was, after all, its chief designer. "It was a terrifying program from the standpoint of size," he confessed in 1965, "You just run scared before you get adjusted."[71] The statistics were fantastic indeed. The two towers and the four low buildings around the plaza at their base would break world records not only for height but also floor space, tripling that of the previous record-holder.[72] The Port Authority of New York and New Jersey wanted a facility to expedite and increase the movement of international commerce through the Port of New York by centralizing the government and other functions, services and activities vital to the marketing and processing of trade. To do so, they desired nothing short of a city-within-a-city housing a working population of fifty thousand and facilitating another eighty thousand visitors daily. Skyscraper height in particular was symbolic; in search of a publicity stunt, the Port Authority executives instructed their architect, "Let's go higher than the Empire State."[73]

Surely this mammoth undertaking was an unlikely task for an architect known for his delicately scaled buildings and opposition to monumentality. It may be, however, that this reputation was an asset from the perspective of the Port Authority. According to Anthony Robins, the Port Authority selected Yamasaki for this project over such contenders as Wallace Harrison, Gordon Bunshaft, Edward Stone and Walter Gropius because he was regarded as an "iconoclastic outsider" more likely to realize an innovative alternative to the steel-and-glass International Style.[74] Of course, one of the striking ways Yamasaki differed from them was his pronounced critique of architecture that threatened human scale. In his proposal statement, Yamasaki acknowledged the "excitement and glory" desired for the World Trade Center, but he also promised to find a way "to scale it to the human being so that, rather than be an overpowering group of buildings, it will be inviting, friendly, and humane."[75]

In 1962 Manhattan was in the midst of a major spree of skyscraper construction which was not without its critics. One of the most articulate critics of overdevelopment was Lewis Mumford who railed against "the growing invasion of office buildings" which he condemned as "human filing cases." For Mumford, a "creeping paralysis" of the city was the result of the "'swaggering in specious dimensions' that Oswald Spengler called a sign of decadent civilization."[76] As builders of airports and highways, the Port Authority officials knew that their plan to demolish a densely built district of seventeen acres in downtown Manhattan would incur the wrath of the likes of Mumford. They clearly desired colossal scale for the World Trade Center to symbolically thrust the New York port to the forefront of international commerce, but no doubt they also wished to defuse the arguments of vociferous critics who feared the brutal neighborhood-destroying gigantism of their project. Perhaps it was hoped that by entrusting Yamasaki with the design of their project, they could mollify the gigantism of a skyscraper of unprecedented dimensions with the qualities of scale and refinement for which he was such an elegant spokesman.

But Yamasaki may have caught himself in cross purposes: was it really possible to design a building for clients who demanded a structure that was the world's *largest in size* at a *human scale?* Yamasaki approached this problem by postulating a fundamental disjunction between distant and proximate scale. "I realized that what really matters is the scale at or near the ground—it doesn't really matter, in Manhattan, how high up you go."[77] In effect, he freed himself to design the reach of the building into the sky in terms of the larger panoramic perspective of the city at great distances, while the perspective of individuals approaching the buildings could be facilitated by adroit handling at ground level. To compose distant scale, Yamasaki built scale models of the whole Lower Manhattan cityscape and then tried various configurations of boxes in the spot of the World Trade Center to devise a composition for the volume required. Thus, the building was conceived in relation to the macrocosm of the topography of the whole city and harbor. From this vantage, Yamasaki developed the concept of two identical towers set in an open plaza on a diagonal axis to one another.

This composition suggests Mies's pairing of identical towers at the Lake Shore Apartments, though the latter were oblong in plan while Yamasaki's were square. Mies's arrangement juxtaposed the short wall of one building to the long wall of its counterpart, how-

ever, creating a pinwheel effect. Being square in plan, Yamasaki's towers read as an identical pair. Moreover, due to the thinness of their proportions and their sheer vertical profile unimpaired by any setback, they look more like two square columns. The appearance of pure solids is further enhanced by the avoidance of deep relief or patterning of the facades which might seem to figure the blocks from afar. Indeed, they have been admired for possessing a "unitarian will" exceeding even the "monolithic nature" of Mies.[78] Or, in the view of a critic who deplored them, the towers suggested the stonelike monolith of Stanley Kubrick's *2001: A Space Odyssey* cloned into two.[79] It is the looming of this pair of shiny silver columns high above the motley aggregate of spires, turrets and dwarfed skyscrapers of Lower Manhattan that gives Yamasaki's World Trade Center its enduring and distinctive monumental quality.

From the distant perspective, Yamasaki's monumentality succeeds in creating an indelible landmark image. But according to his own logic, it was proximate scale that counted when it came to making the building "inviting, friendly, and humane." On a project of this enormity, however, even "proximate" scale concerns much more than fine detailing. Yamasaki created a vast five-acre plaza at the bases of the towers. This was closed off from automobile traffic and bracketed by four lower buildings intended to "maintain human scale in the face of the towering office blocks."[80] This huge outdoor space, however, has been much derided, for example, as a "sterile plaza. . .alienating man from his environment."[81]

Yamasaki handled the immediate zone of contact between the skyscrapers and pedestrians by altering his fenestration pattern at the ground level approach. Each of the four facades of both towers is designed as a series of massive equidistant vertical piers clad in silver aluminum (figure 5). Yamasaki provided an arcade-like interface between the building and plaza level by funneling each set of three columns into a thicker trunk. This is realized with a system of sinuous curves that create the effect of a row of pointed arches, though each arch sweeps the eye upward into an unbroken vertical ribbon of glass rather than actually terminating in a point. Like Yamasaki's Detroit tower, the effect here too was frequently described as "Gothic."

The arcade was intended to provide human scale for the buildings from ground perspective. But to be relevant on such enormous structures the arcades had to be large, and in fact they do reach high above the heads of those who pass through them. Still,

so dwarfed are the arcades by the massive shafts of the skyscrapers looming so heavily above them that they strain in their task of creating a meaningful threshold for the lilliputians of the towers. Writing in the 1950s, one architectural historian addressed the principle of scale operative here as follows: "the large building which belittles itself by using forms satisfactory only for a tiny structure produces an unpleasant sense of the puny, the toylike, even the unreal."[82] Yamasaki's design was criticized repeatedly on these grounds:

> He has developed a curiously unsettling style, which involves decorative traceries of exotic extraction applied over structure or worked into it. His choice of delicate detail on massive construction as a means of reconciling modern structural scale to the human scale of the viewer is often more disturbing than reassuring. It makes many competent architects go to pieces. Here we have the world's daintiest architecture for the world's biggest buildings.[83]

Perhaps this derisive reproach is the parody of the vestige of Yamasaki's Japanese-inspired anti-monumentalism. His principled opposition to what he had regarded as the oppressive expression of virility by Western architectural monumentality was overwhelmed by the scale inherent in the project which he undertook. Sadly, Yamasaki's earnest dedication to the World Trade Center was incompatible with the particular vision of Asian expressivity with which he identified. "In today's world," he wrote in 1979, three years after the completion of his World Trade Center plaza, "traditional Japanese architecture in its pure form is impossible, except in the most special of circumstances." Continuing in a quixotic note, he added, "But I think it important to use both its delicacy and the warmth of feeling. . .One is never overwhelmed in a traditional Japanese structure, and the same should be true of today's buildings, no matter how large and imposing they may be."[84] The world's largest building simply stretched this conviction too far.

Urbanists may well regret the failure of Yamasaki's Japanese inspired anti-monumentalism to temper the World Trade Center design. What remains to be said is that Yamasaki's identification of serenity and intimacy of scale as primary characteristics of Japanese architecture was by no means definitive of Japanese architecture in any inclusive sense. From the powerful vertical profiles of feudal castles to the colossal megastructures envisioned by Yamasaki's contemporaries in the Tokyo architectural group known

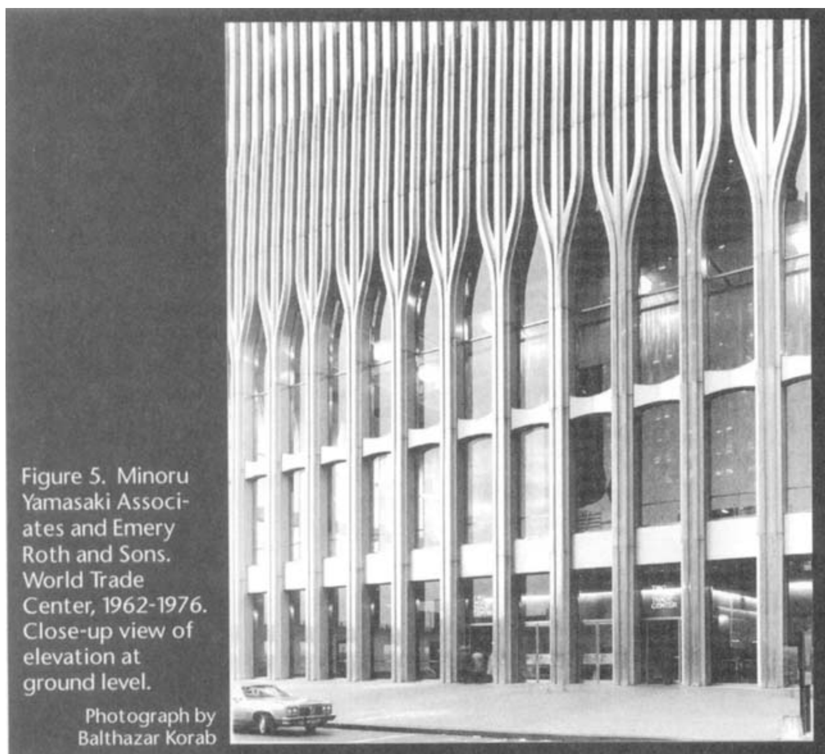

Figure 5. Minoru Yamasaki Associates and Emery Roth and Sons. World Trade Center, 1962-1976. Close-up view of elevation at ground level.

Photograph by Balthazar Korab

as the Metabolists, large scale was very much a part of Japanese architectural vocabulary.[85] Yamasaki's omission of such references from his image of Japanese architecture corresponded neatly to an enduring modern American tradition of appreciating Japanese culture in terms of an aesthetic of smallness. Since the late nineteenth century, Americans had been admiring "tiny doll-like geisha" and the intricate workmanship of miniature crafts.[86] This theme was resuscitated in the early postwar period as part of a transformation of the popular American image of Japan from that of the violent enemy of World War II to a peaceful and acquiescent ally in the Cold War. While Yamasaki encountered this regard for diminutive Japanese aesthetics in the American architectural world, it was also a topic in popular writings about Japan, for example, by James Michener.[87] Though his success may be debated, it should be acknowledged that the Nisei architect of the World Trade Center aimed to redirect that Japanese stereotype to resist a European American propensity for oppressive architectural monumentality.

Notes

1. At 1,350 feet, the World Trade Center was 100 feet taller than the Empire State Building of 1931, the previous record holder. But soon after the twin towers were erected to their fullest height in 1974, the Sears Tower of Chicago rose to a height of 1,450 feet.
2. Wolf Von Eckardt, "New York's Trade Center; World's Tallest Fiasco," *Harper's Magazine* 232:1392 (May 1966), 94.
3. Anthony Robins, *The World Trade Center* (Englewood, Florida: Pineapple Press, 1987), 52.
4. Yamasaki's autobiography is the only retrospective monograph on the architect. Yamasaki, *A Life In Architecture* (New York: Weatherhill, 1979). The following bibliographies were helpful in locating articles: Lamia Doumato, "Minoru Yamasaki" (Monticello, Illinois: Vance Bibliographies, 1986); Anthony G. White, "Minoru Yamasaki: A Selected Bibliography" (Monticello, Illinois: Vance Bibliographies, 1990).
5. The term is that of Manfredo Tafuri and Francesco Dal Co, *Modern Architecture* (New York: Harry N. Abrams, 1979), 366.
6. "Gargantua By the Sea: World Trade Center" *Architectural Forum* 124:3 (April 1966), 81.
7. "Yamasaki Receives Honorary Degree at Michigan University," *Architectural Record* 129:4 (April 1961), 44.
8. "Minoru Yamasaki Humbly Accepts 1961-62 'Nisei of Biennium' Honors," *Pacific Citizen* 55:5 (August 3, 1962), 1.
9. Yamasaki, *A Life in Architecture*, 11.
10. *Ibid.*, 17.
11. *Ibid.*, 13.
12. See "Programming and Design of the U.S. Military Personnel Records Center," *Architectural Record* 120:2 (August 1956), 140-46.
13. See, for example, Buford Pickens, "Proud Architecture and the Spirit of St. Louis," *Architectural Record* 119:4 (April 1956), 197.
14. "Slum Surgery in St. Louis," *Architectural Forum* 94:4 (April 1951), 129.
15. Minoru Yamasaki, "High-rise or Low-rise in Public Housing?" *Journal of The A.I.A.* 18:2 (August 1952), 74-80. The following quotations are also from these pages.
16. John Ruskin, *Lectures on Architecture and Painting* (1853), in E.T. Cook and A. Wedderburn, eds., *The Works of John Ruskin*, vol. XII (London: George Allen, 1904), 37.
17. Yamasaki, "Morality of Modern Architecture" *Architectural Forum* 104:5 (May 1956), 92.
18. In Charles Jencks' account, "Modern Architecture died in St Louis, Missouri on July 15, 1972. . .when the infamous Pruitt-Igoe scheme, or rather several of its slab blocks, were given the final *coup de grâce* by dynamite." Jencks, *The Language of Post-Modern Architecture*, 4th ed. (New York: Rizzoli, 1984), 9.

19. Minoru Yamasaki, "The Challenge of Industrial Architecture" delivered at a conference on "The Design of Industrial Plants" at the University of Michigan, November 1952. *Journal of The A.I.A.* 19:4 (April 1953), 160-166. The following quotations are also from these pages.
20. This is the view of the Swedish art historian Greggor Paulsson. The other participants were Henry-Russell Hitchcock, William Holford, Sigfried Giedion, Walter Gropius, Lucio Costa, and Alfred Roth. "In Search of a New Monumentality," *The Architectural Review* 104:621 (September 1948), 117-128. This quote is on 123.
21. Yamasaki, *A Life in Architecture,* 24.
22. For a critical discussion of Mies's mythic stature, see Beatrice Colomina, "Mies Not," in Detlef Mertins, ed., *The Presence of Mies* (Princeton: Princeton Architectural Press, 1994), 193-221.
23. James Ingo Freed interviewed by Franz Schulze, "Mies in America," in Schulze, *Mies van der Rohe, Critical Essays* (New York: The Museum of Modern Art, 1989), 194.
24. Russell Bourne, "American Architect Yamasaki," *Architectural Forum* 109:2 (August 1958), 84-85, 166, 168.
25. Yamasaki, *A Life in Architecture,* 24.
26. "How to Rejuvenate a 125-year Old House," *Architectural Forum* 95:6 (December 1951), 112.
27. "A House Hidden in the Woods," *Architectural Forum* 95:6 (December 1951), 101, 113.
28. Joan Ockman, "Mirror Images: Technology, Consumption, and the Representation of Gender in American Architecture since World War II," in D.Agrest, P. Conway, and L. Weisman, eds. *The Sex of Architecture* (New York: Harry N. Abrams, 1996), 191-210.
29. Yamasaki, *A Life in Architecture,* 25.
30. Bourne, "American architect Yamasaki," 85.
31. Ron Robin, *Enclaves of America* (Princeton: Princeton University Press, 1992), 141.
32. "Architecture to Represent America Abroad," *Architectural Record* 117:5 (May 1955), 187. See also, "USA Abroad," *Architectural Forum* 107:6 (December 1957), 114-123.
33. Robin, *Enclaves of America,* 137.
34. Alexandra Munroe, "The War Years and Their Aftermath: 1940-1953," *Yasuo Kuniyoshi* (The National Museum of Modern Art, Kyoto, 1989), 44.
35. "A Compliment to Traditional Japanese Architecture," *Architectural Record* 123:2 (February 1958), 157.
36. Isamu Noguchi, "Guggenheim Proposal" (1927) in Diane Apostolos-Cappadona and Bruce Altshuler, eds. *Isamu Noguchi, Essays and Conversations* (New York: Harry N. Abrams, 1994), 17.

37. Isamu Noguchi, *A Sculptor's World* (New York: Harper & Row, 1968), 21.
38. Quoted in "A Compliment to Traditional Japanese Architecture," 159.
39. "A Handsome Outpost in Japan," *Architectural Forum* 108:2 (February 1958), 71.
40. Arthur Drexler, *The Architecture of Japan* (New York: Arno Press, 1966, 1955), 262.
41. Asked in 1959 if he had been influenced by Japanese architecture, Mies responded, "I have never seen any Japanese architecture. I was never in Japan. We do it by reason. Maybe the Japanese do it that way too." *Journal of the Architectural Association* 75:834 (July-August 1959), 38.
42. Bourne, "American Architect Yamasaki," 42.
43. Minoru Yamasaki, "Toward an Architecture for Enjoyment," *Architectural Record* 118:2 (August 1955), 142-149. Quotes in the following two paragraphs are from these pages.
44. See the following by Yamasaki: "Morality of Modern Architecture," *Architectural Forum* 104:5 (May 1956), 74, 82, 92; "Notes in Passing," *Arts in Architecture* 76:7 (July 1959), 7, 9; "A Conversation with Yamasaki," *Architectural Forum* 111:1 (July 1959), 110-118; "A Humanist Architecture for America and Its Relation to the Traditional Architecture of Japan," *Zodiac* 8 (1961), 141-145 and in *RIBA Journal* 68:3 (January 1961), 94-99;
45. Yamasaki, "Morality of Modern Architecture," 92.
46. Yamasaki quoted in Ada Louise Huxtable, "Minoru Yamasaki's Recent Buildings," *Art in America* 50:4 (Winter 1962), 49.
47. See, for example, Leslie Kanes Weisman, *Discrimination by Design, A Feminist Critique of the Man-Made Environment* (Chicago: University of Illinois Press, 1992), 37-42.
48. Yamasaki quoted in Huxtable, "Minoru Yamasaki's Recent Buildings," 49.
49. "The basis for their belief [contemporary architects aim of monumentality] is that our culture is derived primarily from Europe, and most of the important traditional examples of European architecture are monumental ones. Western architectural education has been slanted heavily toward Europe in architectural history, almost completely ignoring the very important periods of architecture of other parts of the world, such as Saracenic, Japanese, Chinese, or Indian. European historical architecture, for the most part, has been based on the quality of monumentality." Yamasaki quoted in *ibid.*, 49.
50. Yamasaki, "A Humanist Architecture for America & Its Relation to the Traditional Architecture of Japan," 142.
51. Banister Fletcher, *A History of Architecture on the Comparative Method, For Students, Craftsmen, & Amateurs,* Twelfth edition, (London: B.T. Batsford Ltd., 1945), 888.

52. Yamasaki, "Six New Projects by Yamasaki," *Architectural Record* 130:1 (July 1961), 133.
53. "Minoru Yamasaki humbly accepts 1961-62 'Nisei of Biennium' honors," 1.
54. Ronald Takaki, *Strangers from a Different Shore* (New York: Penguin, 1989), 214. For a discussion of the "immigrant schizophrenic," see Sheng-mei Ma, *Immigrant Subjectivities in Asian American and Asian Diasporic Literatures* (Albany: State University of New York Press, 1998), 40-55.
55. Bourne, "American Architect Yamasaki," 84.
56. Yamasaki quoted in Huxtable, "Minoru Yamasaki's Recent Buildings," 49.
57. George Nelson, *Problems of Design* (New York: Whitney Publication, 1965, first edition 1957), 131.
58. Douglas Haskell, "Architecture and Popular Taste," *Architectural Forum* 109:2 (August 1958), 106.
59. "Yamasaki's Serene Campus Center," *Architectural Forum* 109:2 (August 1958), 79.
60. *Ibid.*, 79.
61. "Yama's Lancet Windows: Fabrication and Installation," *Progressive Architecture* 43:3 (March 1962), 186-187. At a conference with architect Philip Johnson in 1959, Yamasaki said, "Philip has promised to roast me for this 'perpendicular Gothic' tendency that I seemed to be involved in recently." "Individual Theories of Design," *AIA Journal* 32:2 (August 1959), 52.
62. "Yamasaki's First Tower" *Architectural Forum* 118:5 (May 1963), 100.
63. *Ibid.*, 100.
64. Yamasaki quoted in "Yamasaki's New Expression of 'Aspiring Verticality'," *Architectural Record* 129:2 (August 1960), 142.
65. Victoria Newhouse, *Wallace K. Harrison, Architect* (New York: Rizzoli, 1989), 174.
66. The report on the Sixth Annual Progressive Architecture Design Awards Banquet and the text of Yamasaki's address, "I Am for Delight in Architecture," *Progressive Architecture* 40:3 (March 1959), 152-155.
67. Yamasaki, *A Life in Architecture*, 114.
68. Yamasaki quoted in "Onward & Upward," *Time* 83:4 (January 24, 1964), 46.
69. Philip Johnson in John Cook and Heinrich Klotz, eds. *Conversations with Architects* (New York: Praeger Publishers, 1973),16.
70. Yamasaki quoted by Leonard Ruchelman, *The World Trade Center: Politics and Policies of Skyscraper Development* (Syracuse, N.Y.: Syracuse University Press, 1977), 48.

71. "Towers Rise—Records Fall," *Newsweek* 63:5 (February 3, 1964), 59.
72. In addition to sources on the World Trade Center cited, see Robert A.M.Stern, Thomas Mellins, and David Fishman, *New York 1960* (New York: Monacelli Press, 1995), 198-206.
73. Robins, *The World Trade Center,* 41.
74. *Ibid.,* 7, 22-27.
75. See excerpts from Yamasaki's proposal in *ibid.,* 26-27.
76. Mumford's columns from *The New Yorker,* are collected in Mumford, *From the Ground Up* (New York: Harcourt, Brace & World, 1956), these quotations from 97, 95, 209, 157.
77. Yamasaki quoted in "World's Biggest Skyscrapers Have New York Up in the Air," *Architectural Forum* 120:3 (March 1964), 119. This was later elaborated in Yamasaki, *A Life in Architecture,* 113-114.
78. Alessandro Anselmi, *Vertical Architecture: The World Trade Center* (New York: American Institute of Architects, 1987), n.p.
79. Thomas Meehan, "The World Trade Center: Does Mega-architecture Work?" *Horizon* 18:4 (Autumn 1976), 10.
80. "Yama Designs 110-Story World Trade Center," *Architectural Record* 135:2 (February 1964), 14.
81. Douglas Davis, "Towers of Mammon," *Newsweek* 82:1 (July 2, 1973), 56.
82. Talbot Hamlin, "Scale" in Hamlin, ed., *Forms and Functions of Twentieth-Century Architecture,* v.II (New York: Columbia University Press, 1952), 100.
83. Ada Louise Huxtable, "World Trade Center" (1966) and in Huxtable, *Will They Ever Finish Bruckner Boulevard?* (New York: Macmillan, 1970), 32.
84. Yamasaki, *A Life in Architecture,* 30.
85. According to David Stewart, Yamasaki attended the World Design Conference in Tokyo in 1960 where Metabolism was first publicly formulated. Stewart, *The Making of a Modern Japanese Architecture* (Tokyo: Kodansha International, 1987), 178-179.
86. See, for example, Ian Littlewood, *The Idea of Japan: Western Images, Western Myths* (Chicago: Ivan R. Dee, 1996), 92-95.
87. See, for example, James Michener, "Japan," *Holiday* 12:2 (August 1952): 26-41, 76-78. See discussion by Sheila Johnson, *The Japanese through American Eyes* (Stanford, California: Stanford University Press, 1988).

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