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“Any detailed account of the architectural history of the World Trade Center must rely on the work of Anthony W. Robins.”

—Angus Gillespie,  
author of *Twin Towers:  
The Life of New York City's  
World Trade Center*

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THE  
WORLD  
TRADE  
CENTER

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CLASSICS  
OF AMERICAN  
ARCHITECTURE

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ANTHONY W.  
ROBINS



*Originally published in 1987 while the Twin Towers still stood* — brash and controversial, a new symbol of the city and the country—this book offered the first serious consideration of the planning and design of the World Trade Center. It benefited from interviews with figures still on the scene, and archival documents still available for study. Many of those interviewed, and many of the documents, are gone. But even if they remained available today, it would be impossible now to write this book from the same perspective. Too much has happened here.

In this, the tenth anniversary year of the disaster, a new World Trade Center is rising on the site. We can finally begin to imagine life returning, with thousands of people streaming into the new buildings to work or conduct business, and thousands more, from all over the world, coming to visit the new memorial. It is only natural, then, that we will find ourselves thinking about what life was like in the original Center. This new edition of the book—expanded to include copies of some of the documents upon which the text was based—is offered as a memory of the World Trade Center as it once was. It is also offered as a reminder of a more innocent time, when the Center stood as a symbol, certainly, of hubris, wealth and power, but also of the conviction that in New York City, Americans could do anything to which they set their minds.



Mark Bennington

**ANTHONY W. ROBINS** is an historian and writer who specializes in the architecture of New York City. He holds a Masters Degree in art history from the Courtauld Institute of Art in London, and was the winner of a 1997 Rome Prize. During a 20-year-long career at the New York City Landmarks Preservation Commission, he served as Deputy Director of Research and Director of Survey. *Subway Style*, his book on the art and architecture of the New York subway written for the New York Transit Museum, was published in 2004. *Classics of American Architecture: The World Trade Center*, originally published in 1987, has been called the first serious book on the subject. A life-long New Yorker, Mr. Robins lives with his wife on the Upper West Side of Manhattan.

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# CONTENTS

FOREWORD ..... 8

INTRODUCTION ..... 10

THE GENESIS ..... 12

BORN-AGAIN TRADE CENTER ..... 22

THE RENEGADE FROM MODERNISM ..... 32

BUILDING THE WORLD’S TALLEST BUILDINGS ..... 46

AND TOMORROW... ..... 62

AFTERWORD ..... 66

INTRODUCTION TO THE APPENDIX ..... 68

APPENDIX ..... 71

ACKNOWLEDGMENTS ..... 167

NOTES ..... 168

INDEX ..... 171

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# FOREWORD TO THE SECOND EDITION

THE DISASTER OF SEPTEMBER 11<sup>TH</sup> 2001 FOREVER CHANGED OUR IMAGE OF THE WORLD TRADE Center. The loss of 3000 lives, the heroism of the first responders, the gaping hole in the skyline, the long-term impact on those who survived—all have permanently altered our perception of the original complex.

Many books have appeared since then, describing the events of that day, or telling the stories of people who lived through it. Some recall the Trade Center and its destruction in photographs, while others discuss the redevelopment of the site, or the future of the city. Several recount the Center's history from its creation up to its destruction, and beyond.

All the books, however, that cover the original planning and architecture of the World Trade Center, rely on this one, originally published in 1987. Written while the Twin Towers still stood—brash and controversial, a new symbol of the city and the country—it offered the first serious consideration of the thinking behind the Center's design. It covered the story of post-World War II downtown redevelopment, the origins of the Trade Center concept, the search for an architect and an architectural identity, the evolution of the plan, the urge to build the world's tallest buildings, the engineering feats required for the towers' construction, the ingenious local-and-express elevator system, and the mixed critical response. The book benefited from interviews with figures still on the scene, and archival documents still available for study. Many of those interviewed, and most of the documents, are gone. But even if they remained available today, it would be impossible now to write this book from the same perspective—too much has happened here.

In this, the tenth anniversary year of the disaster, a new World Trade Center is rising on the site. Once again, this sizable piece of lower Manhattan will house a huge office complex, including the country's tallest building. We can finally begin to imagine life returning, with thousands of people streaming into the new buildings to work or conduct business, and thousands more, from all over the world, coming to visit the new memorial. It's only natural, then, that we will find ourselves wondering what life was like in the original Center—a city-within-a-city that housed 50,000 employees, and welcomed 80,000 to 100,000 visitors every day. And that we

will want to recall the Twin Towers—briefly the tallest structures in the world, and even now, for the moment, the tallest ever erected in New York City, attracting enormous numbers of visitors to the 110<sup>th</sup>-story observatory.

This new edition of the book is offered, therefore, not as an updated revision, but rather as a memory of the World Trade Center as it once was. It is also offered as a reminder of a more innocent time, when the Center stood as a symbol, certainly, of hubris, wealth and power, but also of the conviction that in New York City, Americans could do anything to which they set their minds.

The only changes to the book are minor corrections to the text and several new images. What this edition does add, however, is an appendix bringing together reproductions of some of the materials gathered during the initial project research—an early proposal, promotional brochures, and several documents relating to the design of the Trade Center. Most of the originals, stored in a Trade Center sub-basement at the time of the attack, no longer exist. They are presented here, with the Authority’s express permission, as a kind of time capsule taking readers back to that more innocent, more optimistic moment in our history.



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# INTRODUCTION: NEW YORK CITY, 1986



Port Authority of New York and New Jersey

**T**HE WORLD TRADE CENTER IS AMONG THE MOST FAMOUS BUILDING COMPLEXES IN THE WORLD. More than almost any other architectural development, it has reshaped the physical image of New York. The glistening, metallic twin towers have become an icon in the panoramic skyline of lower Manhattan, even as they have altered its character.

An active city-within-a-city, the Trade Center houses a working population of 50,000, and accommodates some 80,000 visitors daily passing through one of New York's most complex transit hubs. The twin towers, which robbed the Empire State Building of its 30-year-old title of World's Tallest Building, have now themselves been surpassed in height by Chicago's Sears Tower, but they have taken their place with the Empire State as the other major element defining New York's skyline.

Controversial when originally proposed, embroiled in lawsuits even while under construction, the Trade Center was caught in a critical whirlwind during most of the late 1960's and early 1970's. The controversy has died down only recently, but the Center has ceased being a *cause célèbre* and become part of the city's history.

The design of the World Trade Center is the product of the powerful forces of politics, real estate, government, and public relations. Unlike most of New York's great 20th-century building projects, it was not simply conceived by a developer who hired an architect. Rather it was the result of a longstanding proposal that evolved from grandiose urban renewal schemes for lower Manhattan; it was carried out by the enormously powerful, quasi-governmental Port Authority; and much of what finally was built had been considered and conceived several years before the architect had been hired.

The requirements of such an enormous project, given the current ideas of the times, generated much of its form. Four separate proposals for the Center, including what was ultimately built, involved a plaza, a concourse, and very tall buildings. The final design, however, was in some ways a departure from contemporary architectural trends, and was the result of an unexpected change of heart on the part of the Port Authority. Instead of hiring an architectural team of the country's preeminent modernists—Wallace K. Harrison, Gordon Bunshaft, and Edward Durrell Stone—the Authority turned to an iconoclastic outsider, Minoru Yamasaki, hoping to bring to New York something new and innovative. Instead of what might have become the final monument of the steel-and-glass slab International Style movement that dominated the city skyline in the 1950's and 1960's, the Port Authority built something unique.

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## THE GENESIS

**T**HE FIRST GLIMMERINGS OF A “WORLD TRADE CENTER” IN NEW YORK APPEARED IN 1946, WHEN Governor Thomas E. Dewey’s administration set up a World Trade Corporation “to establish and develop a world trade center ... for exhibiting and otherwise promoting the purchase and sale of products in international trade.”\* World War II was over, and the world economy was being rebuilt. New York’s post-war future was just beginning, but the city was already thought of as a center of world trade. The project, although without a specific site, got as far as preliminary architects’ drawings and cost estimates before being shelved. The general plan called for 21 buildings spread over ten blocks somewhere in New York City. The center was to occupy an area of a million square feet, but provide rentable area of only five times that, so apparently the buildings were not conceived of as being more than several stories tall. The intention was to create not office space but exhibition and sales space; the cost was put at a minimum of \$140 million. When it became clear that to be a success the center would have to attract 5,000 of the estimated 5,900 large industrial firms then existing in the country, the project was abandoned. What survived of the plan were its huge scale and the concept of demolishing and rebuilding a sizeable chunk of Manhattan as a single project. What was discarded was the concept of limiting the use of the center to exhibition space, and housing that space in almost two dozen low-rise buildings.

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\*References may be found in the Notes section beginning page 168.



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## BORN-AGAIN TRADE CENTER

**W**HILE THE WORLD TRADE CENTER PROJECT SLEPT, FROM SPRING TO FALL OF 1961, THE PORT Authority was developing another project that would ultimately help revive it: a proposed takeover of the Hudson and Manhattan Tubes, known today as PATH (Port Authority Trans-Hudson).

The Hudson Tubes provided an underground commuter train service from lower Manhattan to Hoboken, Jersey City, and Newark, New Jersey. The Tubes opened in 1908, but began deteriorating financially and otherwise in the 1930's. By the 1950's, pressure was mounting on the Port Authority to take over the Tubes service to avert a possible closing, but the Authority strenuously resisted the burden of acquiring and operating a near bankrupt system. In 1961, the Authority changed its mind and began studying a Tube takeover. The proposal was linked with the World Trade Center in one piece of legislation in such a way that either both or none would be accepted by the two states, suggesting that the Tubes takeover was a bargaining chip to help win New Jersey's approval of an east side World Trade Center. When the World Trade Center idea died, so did the Tubes proposal.

In the meantime, the owners of the Tubes had begun looking into ways to raise cash and considered selling off their major New York City real estate holdings. These consisted of the

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## THE RENEGADE FROM MODERNISM

**M**INORU YAMASAKI WAS AN UNUSUAL FIGURE IN THE ARCHITECTURAL WORLD OF 1962. ONCE AN enthusiastic follower of Mies van der Rohe and the International Style, he had had a revelation while traveling in Europe and Japan in 1954, discovering their historic architecture, and subsequently turned to a more decorative or ornamental approach to design. Working in Detroit, outside the modernist American mainstream cities of New York and Chicago, he was free to follow his new muse. In discussions of architectural trends he was sometimes lumped together with Edward Durell Stone, who had similarly abandoned the orthodox “modern” movement and turned to ornament, under the influence of his interior-decorator wife.

Born in 1912 in Seattle, Washington, Yamasaki was the son of Japanese immigrants and grew up in poverty. In later life he referred with bitterness to the discrimination he suffered on the West Coast as a boy, and also during the war years while working in New York. (In 1964, with his design for the World Trade Center announced, his successful rise from poverty won him an “Horatio Alger Award.”) While a high-school sophomore, Yamasaki met an uncle who had taken an architectural degree at the University of California, and hoped to find work in Chicago. Chicago wasn’t hiring Japanese-Americans at the time, and the uncle eventually moved to Tokyo, but his brief visit inspired Yamasaki to become an architect too.

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## BUILDING THE WORLD'S TALLEST BUILDINGS

**W**HILE IT TOOK FROM 1960 TO 1966 TO ARRIVE AT A FINAL DESIGN FOR THE WORLD TRADE CENTER, it took many more years before the twin towers were completed. The size and complexity of the project required vast amounts of materials and a number of unusual structural innovations to make it possible.

Once the Trade Center was announced in 1964, as reported in the *Wall Street Journal*, “New York’s Skyscraper Project Sets Off Potential Suppliers’ Scramble for Orders.” The contracts to be let were until then unheard of: over 200 elevators; over 43,000 windows totaling some 600,000 square feet of glass; 200,000 tons of structural steel (more, it was said, than in the Verrazano Narrows Bridge); 20 miles of zinc ribbon to line the foundation walls; six acres of marble; 40,000 doorknobs; five million square feet of painted surface; 1,520 miles of wire; 200,000 lighting fixtures; seven million square feet of acoustical tile ceilings; soap dispensers for 1,200 rest rooms. The sheer size of the orders, and the promotional benefits of landing a World Trade Center contract, had contractors lining up with bids. Yamasaki explained that with the quantities involved, any item, even if specially designed for the Trade Center, would automatically be produced in great volume; the Port Authority could therefore “get suppliers to outdo themselves in development work for the center.”



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## INTRODUCTION TO THE APPENDIX: HOW THIS BOOK CAME TO BE

**W**HEN THE FIRST EDITION OF THIS BOOK WAS PUBLISHED, THE WORLD TRADE CENTER HAD BARELY reached its 14th birthday. The governors of New York and New Jersey had formally dedicated the towers and plaza only in 1973, and World Trade Center Seven was still under construction. New as it was, however, the complex had already become an icon—redefining the city’s skyline for what all assumed would be generations to come.

In those early years, out-of-towners flocked to the Twin Towers, considering them a must-see symbol of the city. New Yorkers, by contrast, saw the towers as an unwelcome intrusion, an upstart interloper blatantly disrespectful of the iconic Empire State Building. Given the emotion attaching to the site today, it’s hard to remember that, once upon a time, many New Yorkers devoutly wished the Twin Towers would somehow magically disappear from Downtown.

As a good New Yorker, I shared the original prejudices about the Trade Center. My involvement with this book came about accidentally. A book packager working with a large publisher invited me to write the text for a short book about the Chrysler Building—New York City’s best-known Art Deco skyscraper—to be the first in a series entitled “Classics of American Architecture.” At a meeting to discuss the project, however, the book packager explained that the publisher wanted to begin the series with the World Trade Center, and did I mind doing that instead? I agreed, on the understanding that future assignments would include the Chrysler Building. In the end, The World Trade Center became the first and last entry in the “Classics” series. But the project also turned out to be much more interesting than I’d imagined.



Though the Center still seemed very new, enough time had passed to render a historical consideration possible. Moreover, many of the players responsible for the Center's creation were still on the scene and available for interviews, and the Port Authority library held an enormous amount of related material.

I interviewed a dozen people who had been active in various aspects of the Center's design. One of the figures involved in the pre-Yamasaki period—architect Richard Adler—seemed pleasantly surprised to have his contribution acknowledged. It was Adler who described the advisory panel of three big-name architects—Edward Stone, Wallace Harrison and Gordon Bunshaft—as his “genius committee,” a phrase that has since been picked up and repeated elsewhere as though it were the official name of a working group. In Birmingham, Michigan—a suburb of Detroit—Minoru Yamasaki kindly showed me around his office, allowing me to copy some documents, and then took me to lunch at his country club.

Most of my time, however, was spent at the Trade Center, conducting interviews and working in the Port Authority library, on the 55th floor of Tower One—reached by taking the express elevator to the 44th floor sky lobby and then transferring to the local. The library was a lovely space, well lit, comfortable, with spectacular views. Its only discomfiting aspect was the creaking of the walls, perhaps caused by the tower's swaying in the wind. The librarians—all lovely people and extremely helpful—made available all kinds of material, from promotional brochures to press releases to telegrams to internal discussion documents to endless newspaper and periodical clippings, most stored in a set of lateral file cabinets in the center of the room.

I interviewed many of the figures at the Port Authority in their Trade Center offices. One executive sat in his office chatting with me, while a shoe-shine man, apparently known to all the staff, came in and buffed his shoes. Two long-time employees met with me in a small office, and indicated their agreement with certain assessments of the Center's history with knowing looks and nods only—those looks and nods to be kept off the record. Towards the end of the project, Guy Tozzoli—who had earlier

been unavailable—suggested some corrections to the text, and then took me to lunch at Windows on the World. By then I felt like part of the whole enterprise—not of the Port Authority, but of the tens of thousands of employees who called the Twin Towers home.

Twenty-five years later, looking back at the text, I'm struck by a number of descriptions of the project's potential that turned out to be correct. Ada Louise Huxtable, in an early article, forecast that the towers could “turn out to be New York's dominating landmark”—as indeed they did. Yamasaki's thoughts about the “relation of world trade to world peace, since the communication and understanding between nations implicit in trade is basic to peace,” seem remarkably poignant—the destruction of the Trade Center pushed nations apart and led to war.

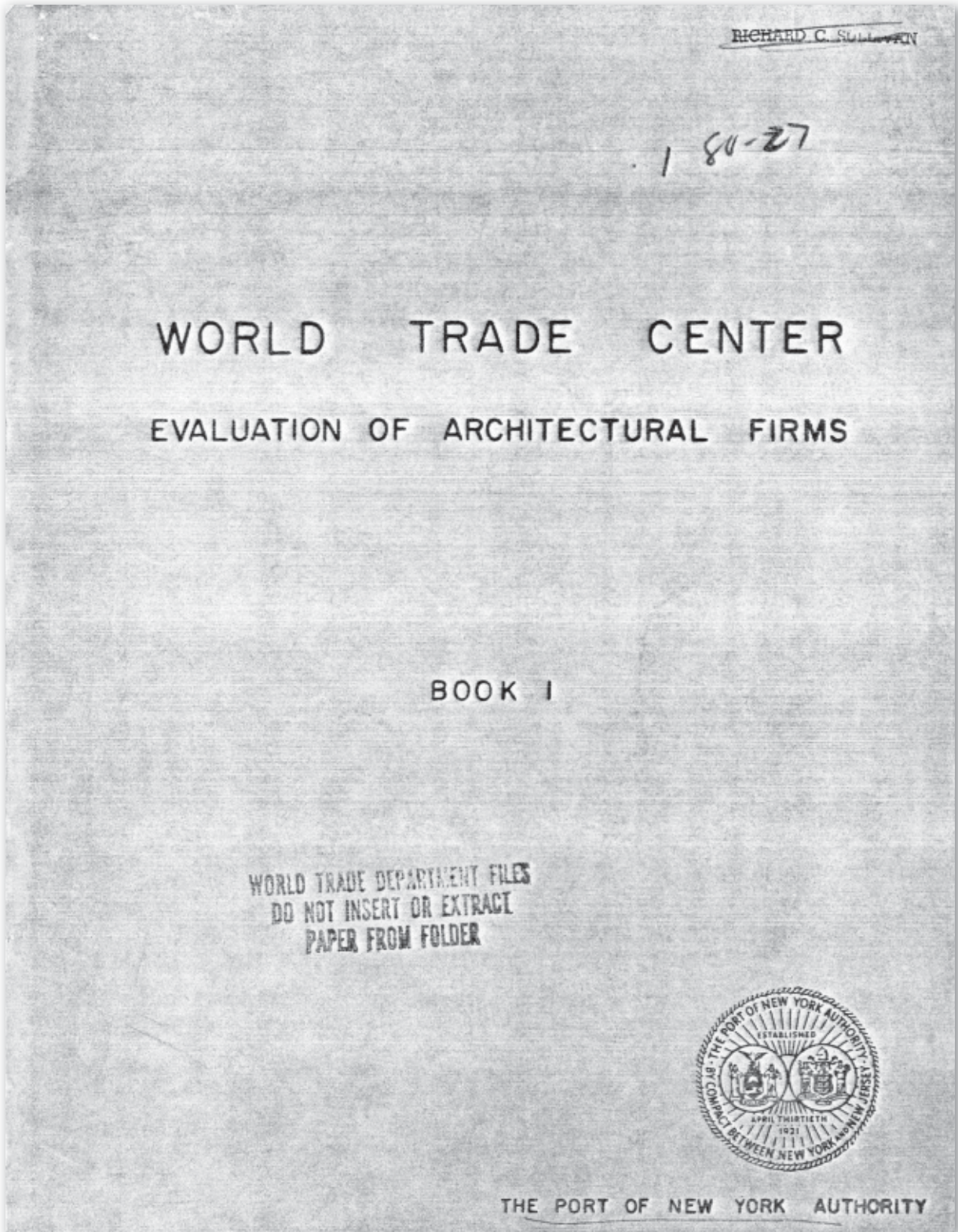
Yamasaki's remarks can be found in the “Statement by Minoru Yamasaki of Minoru Yamasaki and Associates” included in the Appendix—one of many documents formerly held in the destroyed archive of the Port Authority Library. Copies of materials may exist in other places, but the collection as a whole has disappeared. From the copies in my files, I have drawn a selection of brochures and other material that still capture the Trade Center's late-20th-century flavor.

The city continues to grow and change. The World Trade Center of the 1980s and 1990s was part of my personal experience of New York—I worked across the street from the complex for more than a decade—much as Radio Row, demolished to make way for the complex, had been part of my father's city—I still remember accompanying him there as a boy, while he looked for tubes and spare parts. The new complex rising on the site will be part of my children's city. And so New York City continues.

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# APPENDIX

- Page 72 “LOWER MANHATTAN: MAJOR IMPROVEMENTS”  
Excerpt from a study by the Downtown-Lower Manhattan Association recommending construction of a World Trade Center on the west side. *“The Trade Center will be a comprehensive and modern complex, providing import and export facilities for the world’s greatest port.”*
- Page 80 “WORLD TRADE CENTER: EVALUATION OF ARCHITECTURAL FIRMS”  
Excerpt from Minoru Yamasaki’s initial proposal of 1962 and the Port Authority’s evaluation of his work. *“For consideration as the World Trade Center architect: Recommended: Minoru Yamasaki.”*
- Page 92 “STATEMENT BY MINORU YAMASAKI OF MINORU YAMASAKI AND ASSOCIATES”  
Statement by Yamasaki of his intentions for the project. *“Paramount in importance is the relation of world trade to world peace.”*
- Page 94 “THE WORLD TRADE CENTER TODAY...  
KEY TO WORLD TRADE CENTER CONSTRUCTION ACTIVITY”  
Brochure. *“The entire World Trade Center will be completed late in 1973, but the doors of the Center will be opened to international businessmen in December 1970.”*
- Page 98 WTC IS NOW!  
Brochure published while the project was still in construction, but after some tenants had already moved in. *“By the end of 1974, when the project will be completed, hundreds more will make it their international business home.”*
- Page 128 “THE WORLD TRADE CENTER: A BUILDING PROJECT LIKE NO OTHER”  
Retrospective brochure explaining *“stage by stage, this engineering accomplishment.”*
- Page 148 THE TOP IS JUST THE TIP  
Brochure. *“Shopping. Dining. Sightseeing. Views. Events. The World Trade Center.”*
- Page 156 THE CLOSEST SOME OF US WILL EVER GET TO HEAVEN  
Guide to the views from the World Trade Center observation deck, and other WTC attractions. *“And in the evening, please don’t touch the stars.”*
- Page 164 IT’S HARD TO BE DOWN WHEN YOU’RE UP  
Observation deck brochure. *“It’s the up-est place anywhere.”*





EXCERPT FROM "WORLD TRADE CENTER: EVALUATION OF ARCHITECTURAL FIRMS"

OSAMU YAMASAKI AND ASSOCIATES

ARCHITECTS & ENGINEERS

1025 EAST MAPLE ROAD BIRMINGHAM, MICHIGAN

MIDWEST 6-8400

June 29, 1962

Mr. Richard C. Sullivan  
Director  
World Trade Center  
The Port of New York Authority  
111 Eighth Avenue at 15th Street  
New York 11, New York

Dear Mr. Sullivan:

Thank you very much for your consideration of our firm for architectural services for your great project. I enjoyed meeting with you and Mr. Levy, and am thrilled by the possibilities inherent in the project because of your wonderful aspirations for it, the symbolic challenge, and its great scope.

You asked me for a list of items. I am including with this letter a brochure of photographs similar to the one which I showed you in your office. I am also attaching a pamphlet which lists our key personnel, including personal histories of these people, honors, exhibits, bibliography, references, and a list of projects both in planning and under construction and, also, a philosophical article which I wrote recently which may help give you a better insight as to our beliefs.

As I told you in our meeting, we would be unable to handle the total architectural work including working drawings, engineering and supervision, since we do not have the staff for a project of this scope. However, we are confident that, with our staff, we are able to handle all the architectural design and design detailing. We would be pleased to associate with a large New York or other office acceptable to you, though we would request that the structural engineering be done by Worthington, Skilling, Helle and Jackson, whose chief partner, John Skilling, has collaborated with us on all of our projects in the last few years. He has shown great imagination in being able to solve our design considerations with sound structure and sound economics. He has made analyses of several systems on every job so that we could have

# WTC IS NOW!

Hundreds of firms and organizations—all involved in international trade—are already transacting their business in The World Trade Center. By the end of 1974, when the project will be completed, hundreds more will make it their international business home.

Right now tenants and visitors to the Center have access to the greatest international marketplace ever assembled in one place . . . plus such advantages as an integrated communications system, innovative courses and workshops tailored to the needs of international businessmen, and centralized world trade information.

Soon the Trade Center tenants will have more facilities and services: a World Trade luncheon club, an international hotel, an on-the-spot concentration of convenience shops, and an unparalleled range of quality dining facilities—the list goes on and on.

Add to these the superior physical features of the project—column-free space, computerized climate control, on-site parking and many, many more. All these advantages of doing business in The World Trade Center are available only to eligible American and overseas business firms in world trade and to other world trade oriented organizations. It is obvious why so many world trade firms have decided that The World Trade Center is the place to be.



## WTC IS NOW!

### **Unique Address For World Traders**

Soaring skyward to their full 1,350 foot height, the tower buildings of The World Trade Center symbolize the importance of international trade and the opportunities this trade offers to American and overseas business firms.

When completed in 1974, the 16-acre six building complex will include the twin tower buildings and four low-rise plaza buildings, all surrounding a five-acre landscaped plaza.

