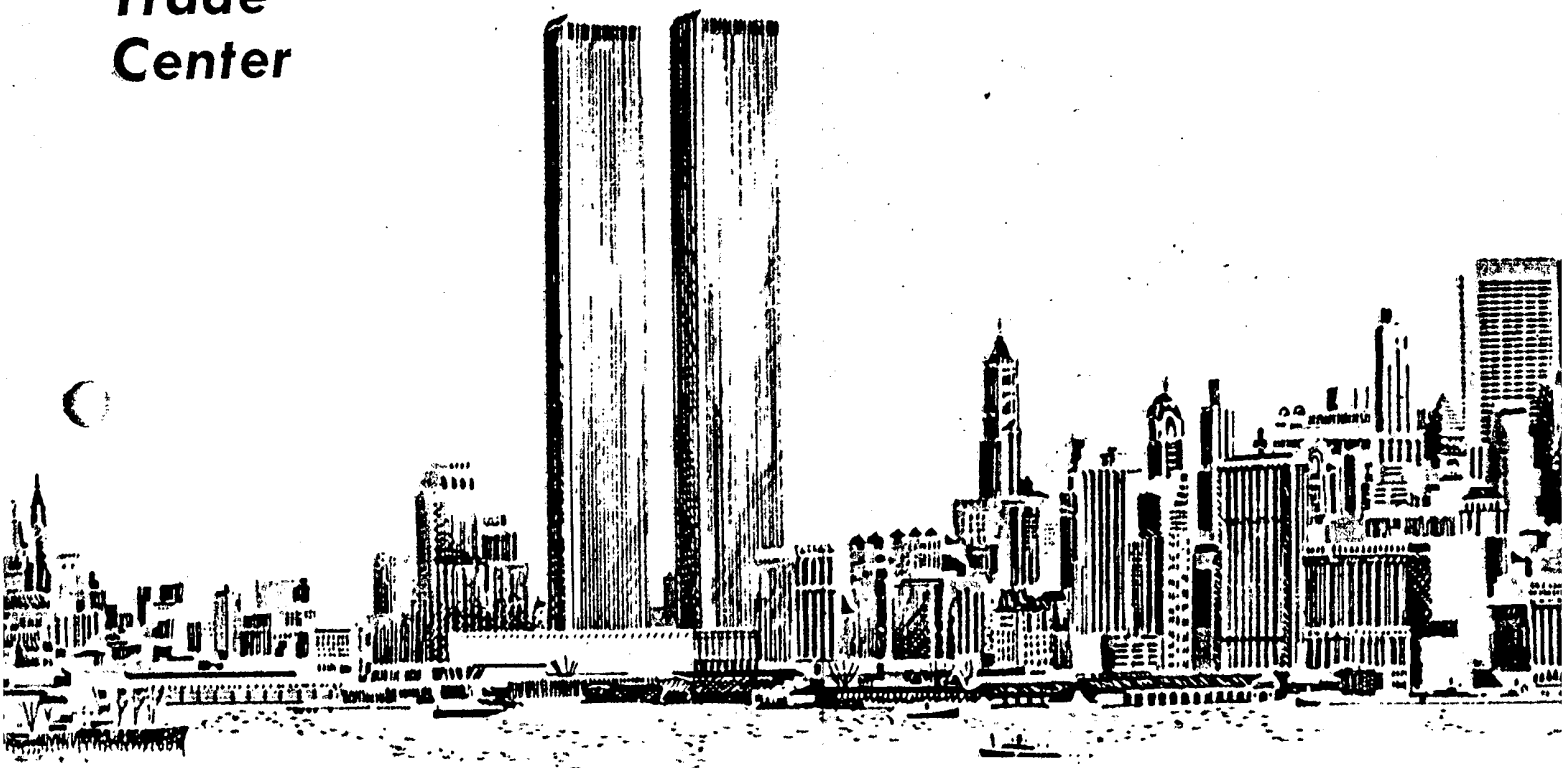
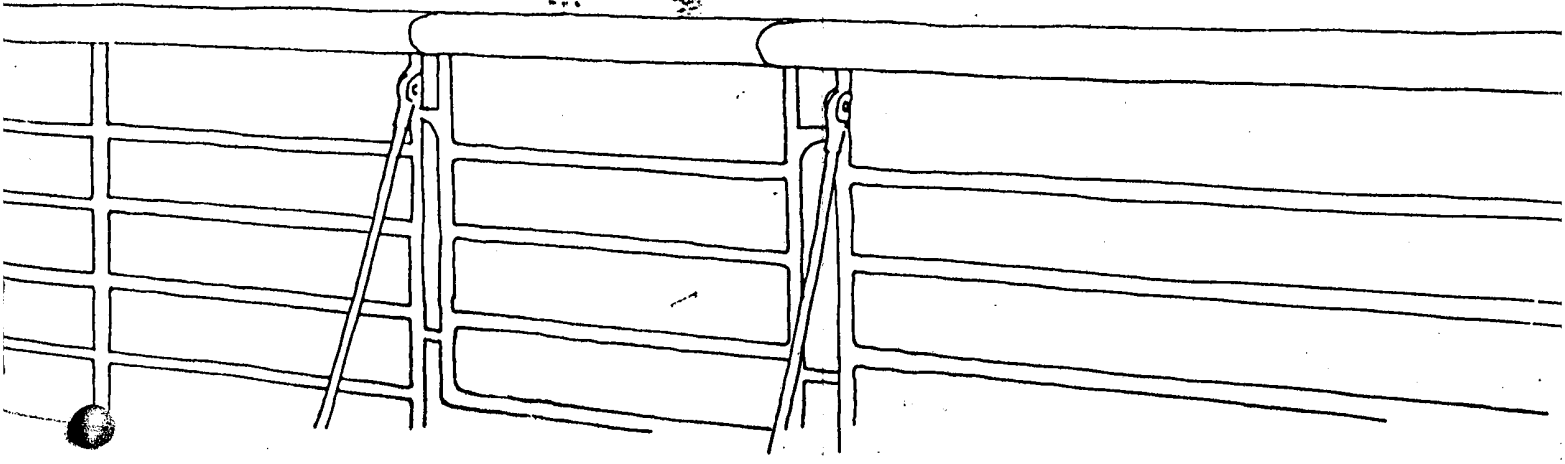
WTC Archives - BM II

Special Issue

VIA PORT OF NEW YORK

The
World
Trade
Center



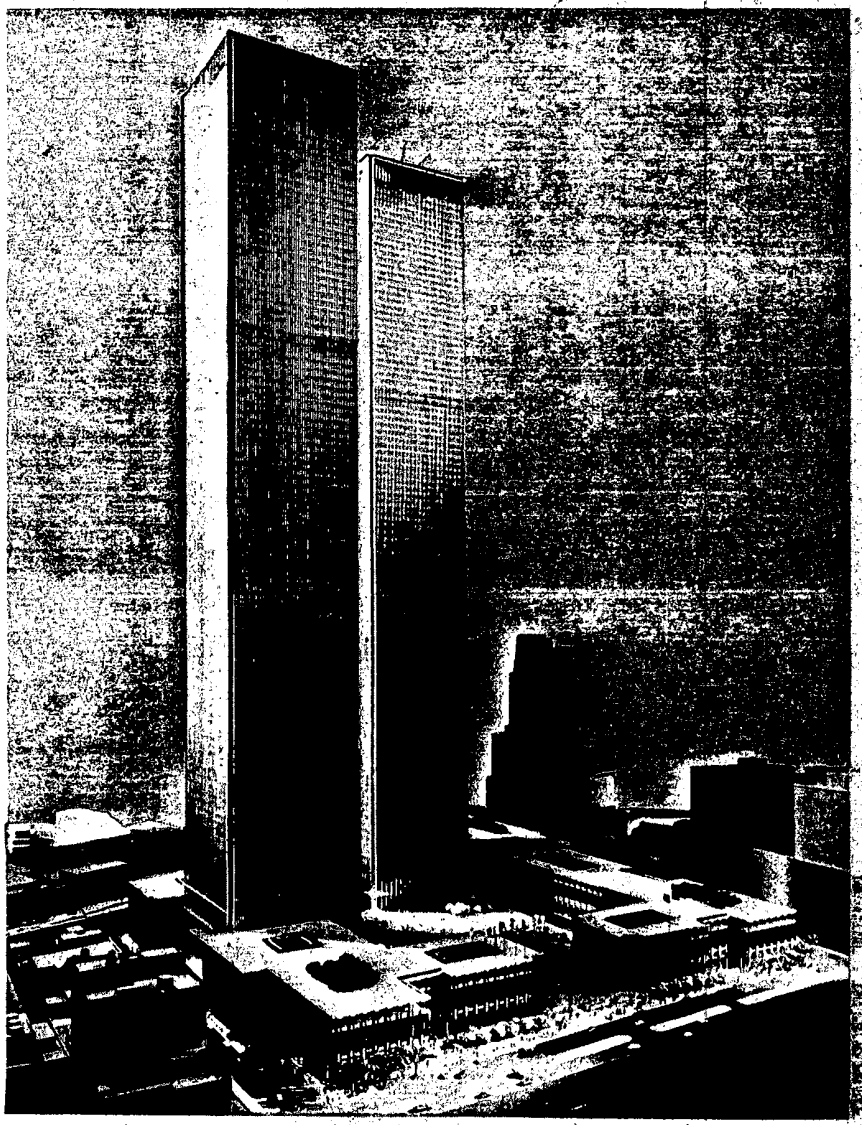


Published by THE PORT OF NEW YORK AUTHORITY

A New Dimension
In International Commerce . . .

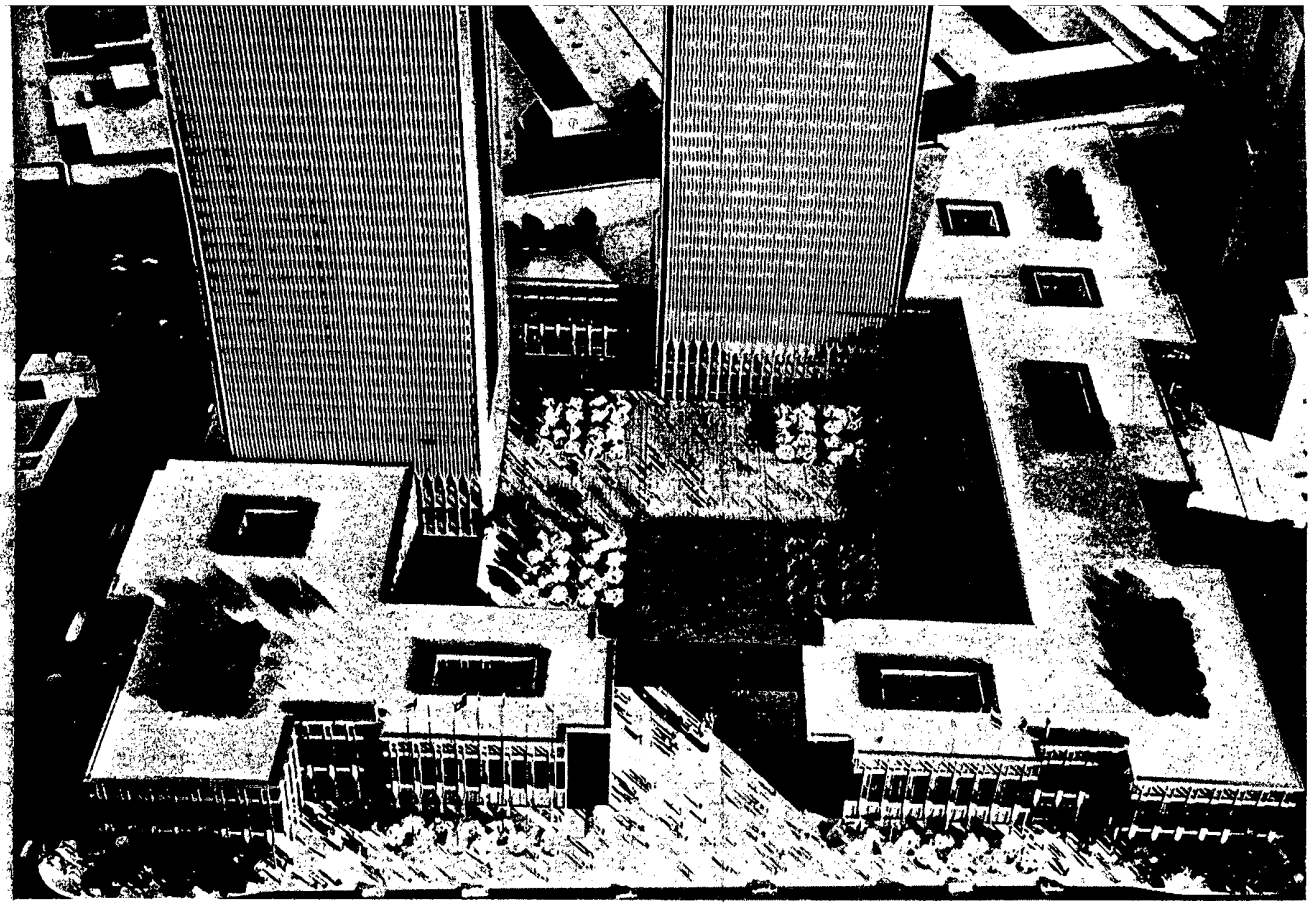
The World Trade Center

In The Port of New York



WALT WHITMAN'S words, "high growth of iron, slender, strong, light, splendidly uprising toward clear skies," were written of his beloved Port of New York* and its "island sixteen miles long, solid-founded" over 100 years ago. In spite of its vintage, this verse captured with succinct eloquence the structural characteristics and spirit of the twin 110-story towers of the new World Trade Center in the Port of New York. The dramatic architectural plan was recently announced by The Port of New York Authority. The Center will feature an attractive open Plaza of almost five acres and multi-level Plaza Buildings that will encircle the site except for one broad opening, the grand entrance to the complex. Construction

* *"City of hurried and sparkling waters!*
City of spires and masts!
City nested in bays!
My city!"
from MANNAHATTA, Walt Whitman



Five-acre open Plaza, bordered by reflecting pools, from which the twin, 110-story World Trade Center towers and multi-level Plaza Buildings rise. The structures occupy most of the 16-acre site in Lower Manhattan. Broad entrance to Plaza will be located near corner of Church and Dey Streets.

cost of the fabulous Center is estimated at $350 million.

The two spectacular 1,350-foot-high towers and surrounding Plaza Buildings and Plaza will be located on 16 acres on the west side of Lower Manhattan—hub of international trade activities in the bi-state port. On the west, the boundary is West Street, which parallels the adjacent Hudson River; on the east, the line is formed by Church Street. Barclay and Vesey Streets on the north and Liberty Street on the south complete the boundaries. Included in this area are the existing Hudson Terminal Buildings and the outmoded terminal of the Port Authority-Trans-Hudson (PATH) system, the former Hudson and Manhattan Railroad. The Trade Center will include a new and spacious terminal for PATH and provide convenient access to subways (see pages 14-15).

The World Trade Center will consolidate as never before the public organizations, business firms, international corporations and ancilliary services essential to the orderly handling of America's expanding exports and imports. The Center thus will be a convenient clearing house for the development, administration and expansion of United States trade with other nations—import as well as export. Here virtually an entire community of 50,000 people, the Center's daily working population, will be dedicated to streamlining and expanding world trade. These workers will be augmented by 80,000 daily visitors to the Center. Such a concentration of international specialists and the functional characteristics of the buildings will assure that the Center will be recognized throughout the world as a focal point for the convenient and efficient handling of multilateral trade in all of its manifold aspects.

The vast undertaking will be a responsibility of The Port of New York Authority in accordance with legislation enacted by the States of New York and New Jersey. Cooperation between the two states on the project was underscored at the recent public unveiling of an impressive model of the World Trade Center by Governor Nelson A. Rockefeller of New York, Governor Richard J. Hughes of New Jersey, Deputy Mayor Edward F. Cavanagh of New York, who represented Mayor Robert F. Wagner, Mayor Thomas F. Whelan of Jersey City and other officials from state and municipal agencies. Chairman S. Sloan Colt of the Port Authority, in introducing the Governors, said: "What we are about to announce here . . . will, we hope, naturally and probably, be the world's greatest trade center." New Jersey's chief executive responded by lauding the Center as an "elegant fusion of art, commerce and statecraft." Governor Hughes also called the Center, "a magnificent architectural achievement."

The beneficial impact of the Center upon the construction industry [as much as $200 million in wages to labor will be involved] was stressed by Governor Rockefeller, who also congratulated the architectural team (see pages 8-13 for architectural details) for an "achievement which

Left: World Trade Center site in Lower Manhattan is close to the core of the port's traditional international trade activities and is served by all local transportation systems. Modernized Port Authority Trans-Hudson (PATH) terminal will be located below Center's Plaza level. The new PATH terminal will replace existing outmoded facilities.

Below: Minoru Yamasaki and Associates and Emery Roth & Sons were engaged by the Port Authority as architects for the World Trade Center. Mr. Yamasaki is shown below at press conference on Center's unveiling; he called the project "most exciting" as he described unique techniques developed to master architectural challenges of the Center.

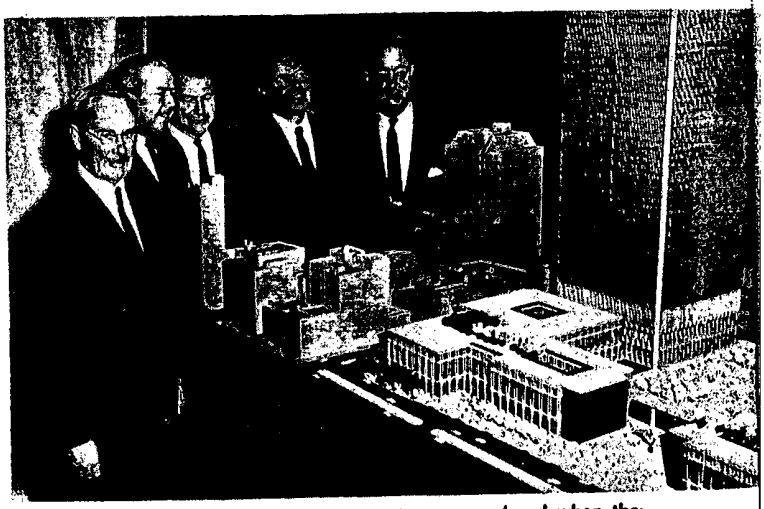
combines artistry with functional practicality." Governor Rockefeller went on to point out that the Center will enable New York State to consolidate many of its office functions now located at 35 different locations in Manhattan, requiring approximately 1,500,000 square feet of rentable space.

Financing and construction of the Center will be accomplished by the Port Authority on a self-supporting basis. Construction is expected to begin in early 1965, with the first stage to be finished in 1968 and the balance in stages during 1969 and 1970.

About 10,000,000 square feet of rentable space will be available upon completion of the Center's structures. Of that amount, about 40 per cent or 4,000,000 square feet will be available to commercial enterprises and administrative offices of industrial firms engaged in international trade. The remaining space is earmarked for use by Federal and State agencies; foreign consuls, trade missions and other entities associated with world trade; building and tenant service areas, parking for 1,600 vehicles, a 250-room hotel, and public accessways and areas for the 200,000 people who are expected to traverse the World Trade Center everyday.

Functions, special features and other advantages of the World Trade Center that will make it a highly desirable international business facility are described on pages 5-7.

The World Trade Center is a definitive step of fabulous proportions; its development gives increased depth and dimension to the meaning of world trade everywhere. World trade is greater today by volume and value than ever before. About $132 billion worth of goods were sold by nations of the free world alone last year and prospects point to continued expansion. The World Trade Center in the Port of New York will be an indispensable tool of the future in meeting the challenges of this multilateral trade expansion.



Officials of state and municipal governments were on hand when the Trade Center model was unveiled. Chairman S. Sloan Colt (left) of the Port Authority, who presided at conference, is shown with (l. to r.) Mayor Thomas J. Whelan of Jersey City, Governor Nelson A. Rockefeller of New York, Governor Richard J. Hughes of New Jersey, and Deputy Mayor Edward F. Cavanagh who represented Mayor Robert F. Wagner of New York.

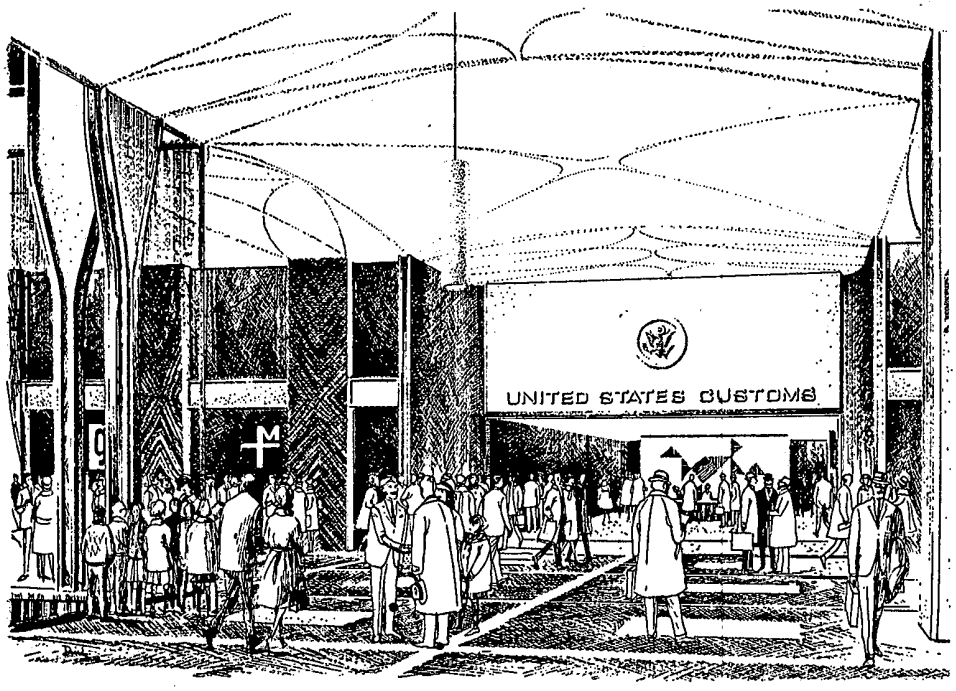
All the World May Be a Stage, but The Best Stage for World Trade Has

THE PERFECT SETTING

THE United States and the world were recently informed of a bold new concept of multilateral trade development—a concept which enables trade between any combination of countries to be arranged at a single location, the incomparable World Trade Center in the Port of New York. Within the soaring twin towers and spacious Plaza Buildings will be found the people, governmental agencies and private firms required to conduct international business, on a large or small scale, with the utmost convenience and efficiency.

The World Trade Center will be the focal point for the marketing and administrative aspects of international commerce, except for the actual handling of cargo. Freight movements, of course, will take place on the piers and at the airports of the New York-New Jersey Port, but there will be space in the Center for the cargo-clearing "machinery" that is now widely and inconveniently dispersed. By relocating and consolidating essential services such as those performed in the U. S. Custom House and Appraisers' Stores, widely separated at present, in the modern, spacious quarters provided by the Center, there will be achieved a centralization and streamlining of great benefit to all concerned.

A unified customs operation within the Center, along with the relocation, under one roof, of forwarders, customs brokers, marine insurance underwriters, commercial offices of consulates, carriers, foreign divisions of banks and export-import shippers—will accomplish this by getting exports on the piers and into ships sooner and imports off the piers faster. To perceive this relationship—the func-



The World Trade Center will provide for the consolidation, within the Center, of all international trade operations of the United States Bureau of Customs in the Port of New York. By concentrating the customs functions relating to the movement of export-import cargoes, custom brokers, freight forwarders, carriers and shippers will be able to increase the efficiency of processing shipping documents.

The Perfect Setting . . .

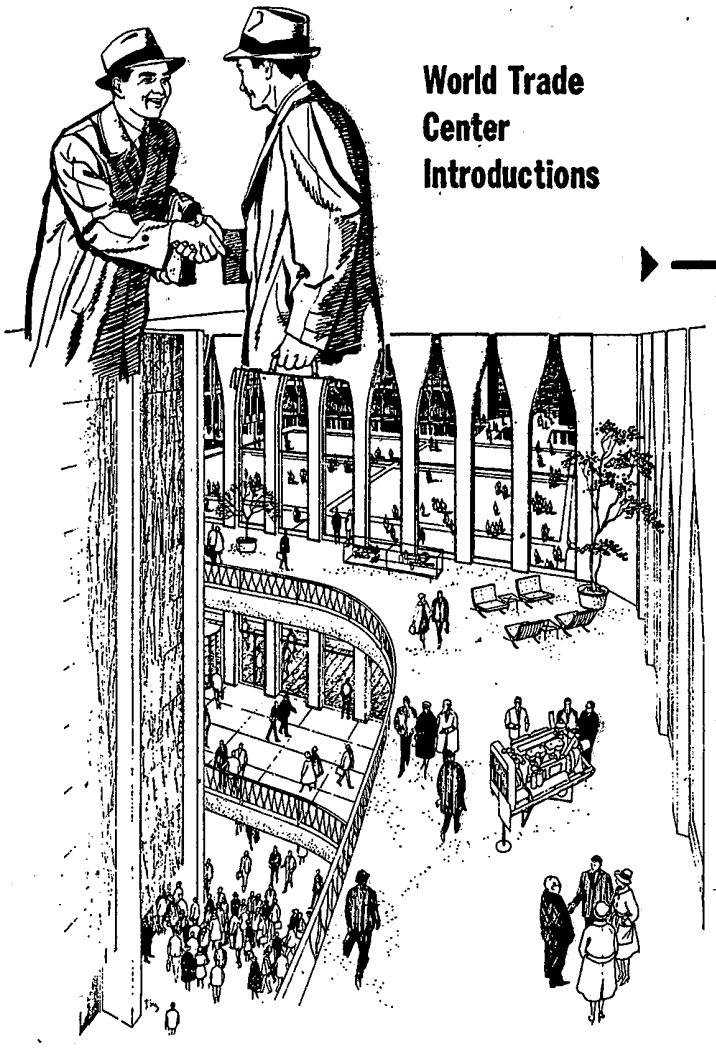
tional efficiency of the World Trade Center to a swifter flow of freight on the waterfront—is to realize the value of the spectacular project. Active export-import shippers can best appreciate this relationship. They know the myriad papers they must prepare every month, and they know delays which arise as a result of documents misplaced, misdirected or otherwise mishandled as they are shuffled about the port to piers, banks, forwarders, un derwriters and consulates widely separated from each other. Such inconvenience will be obviated by way of the unified international trade community of the World Trade Center.

Clearly, with whole new horizons of overseas business looming, the Center will play a key role in international commerce. In 1960 the National Research Academy predicted that U.S.-foreign waterborne trade would increase by 100,000,000 tons by 1970, when The World Trade Center is completed and planes will cross the Atlantic in 2½ hours. With business of such magnitude, it is indispensable that documentation and other "mechanics" of international trade procedures be relieved of their traditionally cumbersome patterns and be processed in accordance with the accelerated era of the 70's. The World Trade Center will do just that for the trade of the Port of New York and the United States.

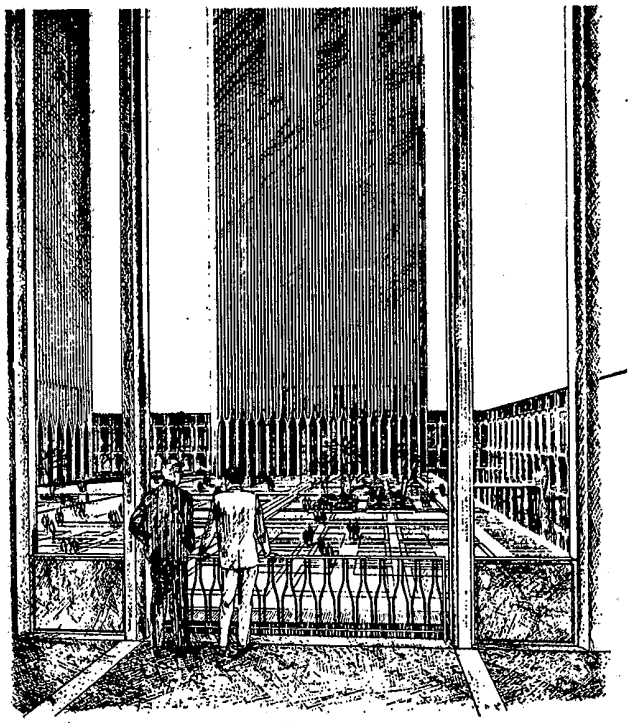
Important as it is, the basic cargo-clearing function of the Center is only one of many ways the Center will serve the people of the New York-New Jersey Port and expand international trade in general. Other services will include a World Trade Information Service, a World Trade Institute and extensive exhibit and display facilities. Products from many lands will be on view, not only those of American firms, so that the display areas of the Center will comprise a vast international market place. Buying and selling will not be relegated solely to catalogs or require costly travel.

Unique opportunities will be offered by the Center's Information Service to aid national units, firms or individuals to stimulate business with their counterparts. For example, the World Trade Information Service will be operated in co-operation with existing government and private organizations and proffer trade leads originating in all

World Trade Center Introductions



Many an introduction will be made in the Tower Lobbies, the topmost level of which will feature exhibits of firms located in Center. PATH passengers enter tower elevator at Concourse Level (lower left).



Businessmen will have settings like this one for discussing international trade. This view of the five-acre Plaza, reflecting pools and magnificent arches of the twin towers is from one of the Plaza Buildings.

corners of the globe; describe prevailing and anticipated market conditions in the various nations; give marketing advice on what to sell where, when and how; dispense information on world trade procedures and regulations; and arrange introductions of buyers to sellers and vice versa.

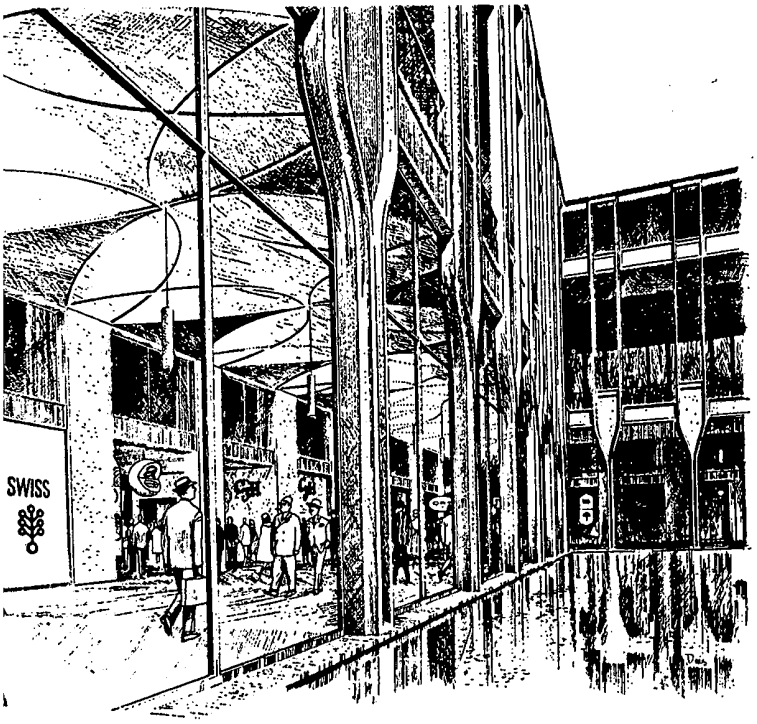
Studies are underway of employing ultramodern methods of information retention and analysis, such as microfilms and computers and other advanced electronic devices, which will be used to provide fast, accurate answers.

Hand-in-hand with this function, the World Trade Institute will provide invaluable assistance to businessmen through its promotional, educational and research activities. Businessmen, who desire to broaden their understanding of world marketing techniques, for example, will be able to attend special trade classes. A continuing program of research into ways of improving world trade methodology will be another feature of the Institute. Through the Institute's seminar and conference facilities members of the international trade community will be able to meet, discuss and solve marketing problems.

Exhibition areas, about 300,000 square feet in all, for products of firms in the United States and abroad, will be an outstanding feature of the World Trade Center. Backdrops for such displays will be most impressive and aesthetically appealing. General exhibit pavilions, located in the Plaza Buildings, will offer a platform for the launching of corporate, industrial or national promotion and advertising. The availability of year-round exhibit facilities in the World Trade Center will assist American businessmen who wish to expand their foreign market operations. It also will encourage those businessmen who do not now participate in international trade but wish to enter the field. Conversely, foreign businessmen will be provided with a unique opportunity to display their goods for the American market and to view American products which they may be interested in purchasing. Administrative and information offices will be conveniently near the showrooms to accommodate buyers and other interested persons who would like to discuss sales terms and conditions on exhibited products.

Among the supplemental aids to trade development within the Center will be auditoriums of varying size. Some of these areas will be equipped with instantaneous multilingual translation and motion picture facilities. Language will not be a barrier to sales and other discussions at the World Trade Center. Interpreters will be available to converse in most major tongues. Multilingual stenographers will be on hand to fulfill secretarial needs of visitors from around the globe. Temporary offices for visiting executives are planned. And, for added convenience, a 250-room hotel will be located in the Plaza Buildings. Restaurants with cuisines catering to native tastes of overseas visitors as well as American palates will be in the Center, as will fine shops and consumer services.

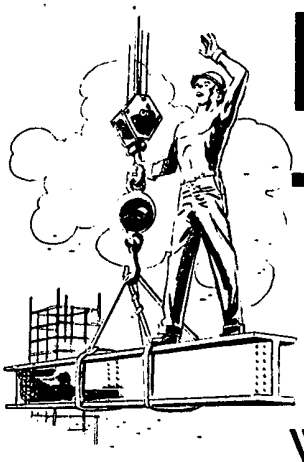
This concentration of specialized commercial functions, services and facilities, housed in beautiful surroundings, not only will help generate additional commerce for the Port of New York but will symbolize the ultimate significance of world trade to world peace and prosperity.



Plaza Galleria will feature products from many lands. All will be attractively displayed in fine shops, while sales offices will be nearby to facilitate buying activity.

Mean More World Trade

Concluding business transactions at the World Trade Center will be convenient for visitors to the port, since all of their market analysis, buying, financing and shipping arrangements can be concluded within the Center—the one-stop international trade mart of the future.



FROM TOP TO BOTTOM

World's Highest Buildings Required Engineering Ingenuity from Foundation to Roof

TWIN towers sparkling in the sun . . . this sight will greet the bridge watch on many a vessel approaching the Port of New York in future years. Soaring 110 stories and 1,350 feet into the air, the two buildings, planned as the principal structures of the World Trade Center, will be the tallest in existence. As might be expected from a project of such dynamic concept and purpose, height is not the Center's only unique architectural feature. The giant buildings will boast a unique structural framing system and an ingenious elevator arrangement.

Conventional skyscrapers are supported by internal steel skeletons; the conventional, however, would not suffice for the great twin towers. In the structural framing system proposed for the lofty World Trade Center buildings, the exterior wall of the towers will carry the vertical loads, resist lateral wind loads and provide a dividend in the form of column-free interiors to permit complete flexibility in space layout. The design also offers maximum efficiency in structural resistance to wind load.

Each of the great columns will form the exterior wall and support the structures at 3¼-foot intervals. The columns will serve as dramatic frames for the floor-to-ceiling windows in each tower. The outer ribs, only 22 inches apart, will provide for relatively narrow glass windows. The effect will be a glistening steel skin unbroken by the usual horizontal window lines.

Principal architects are the world-famed Minoru Yamasaki and Associates of Birmingham, Michigan, and Emory Roth & Sons of New York City. Mr. Yamasaki said he believed: "The basic problem beyond solving the functional relationships of space is to find a beautiful solution of form and silhouette which fits well into lower Manhattan."

Mr. Yamasaki has been four times winner of the first honor award of the American Institute of Architects, New York Chapter. He has designed, among others, the St. Louis Airport Terminal, the U. S. Consulate General building in Japan, the U. S. Science Pavilion at the Seattle World's Fair, the IBM Building in Seattle, the Woodrow Wilson School of Public and International Affairs at Princeton, and the Pahlavi University in Iran.

Emery Roth & Sons also are recipients of many honors including the Henry Hering Medal of the National Sculpture Society. Buildings designed by the Roth brothers include the Sperry Rand Building, the Pfizer Building, the Diamond Match Building, and the Pan Am Building, all in Manhattan.

Both firms have been assisted throughout by the Port Authority's World Trade Center Planning Division and Engineering Department. Also assisting them have been the consulting engineering firms of Jaros, Baum and Bolles; and Joseph R. Loring and Associates, both of New York City; and Worthington, Skilling, Helle and Jackson of Seattle.

The architects have combined beauty with utility in the design of the Center's magnificent Plaza. Surrounded by reflecting pools and covering almost five acres, it will rank in size and beauty with the historic plazas of the Old World. From the Plaza will be seen the delicate tracery of the Plaza Buildings and the soaring arches of the entrances to the twin towers. The graceful design of the Plaza Buildings provides a broad opening on Church Street to serve as the grand entrance to the entire development. It is anticipated that the Plaza will provide an appropriate setting for important public events.

The foundations to support this great complex of buildings are in themselves imposing. There are 1,250,000 tons of buildings to support and 1,000,000 cubic yards of material to remove to depths as great as 75 feet below the existing ground surface.

All of the new structures will be supported on the underlying Manhattan Schist rock which is about 70 feet below the surface of the ground. The high towers and the

other structures having deep basements will be supported on concrete piers founded on bedrock. Other low rise structures will be supported on piles or caissons installed down to rock.

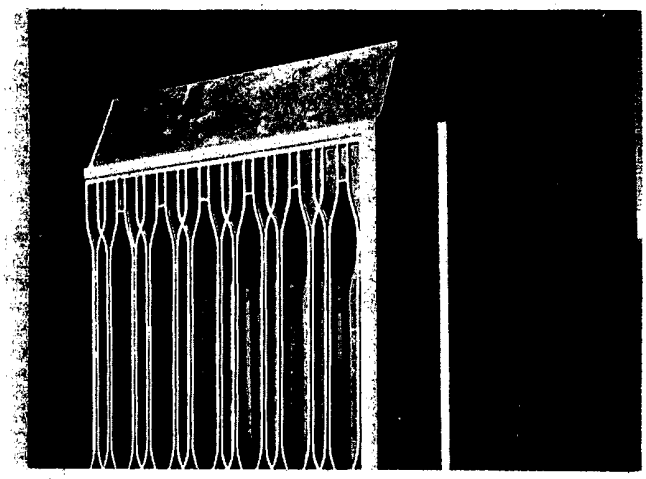
Maps prior to 1783 indicate that the original Hudson River shoreline in this area ran approximately along Greenwich Street. Westward of that shoreline were wharves, rock-filled timber cribs, piers and other structures required for shipping purposes. As time went on and more land areas were needed, these structures were filled over and new land made. At present the bulkhead line is approximately 700 feet west of the shoreline as it existed in 1783. Recent excavations have uncovered the hulks of old ships in and among the other objects buried within the recovered land. In addition, a large portion of the project site is underlayed with a thick layer of soft, compressible river silt saturated with sea water.

Because of the anticipated difficulty of building conventional foundations within this area, the Engineering Department of the Port Authority is considering the use of a technique originally developed for subways in Milan and subsequently used for building foundations in Canada and utility structures elsewhere.

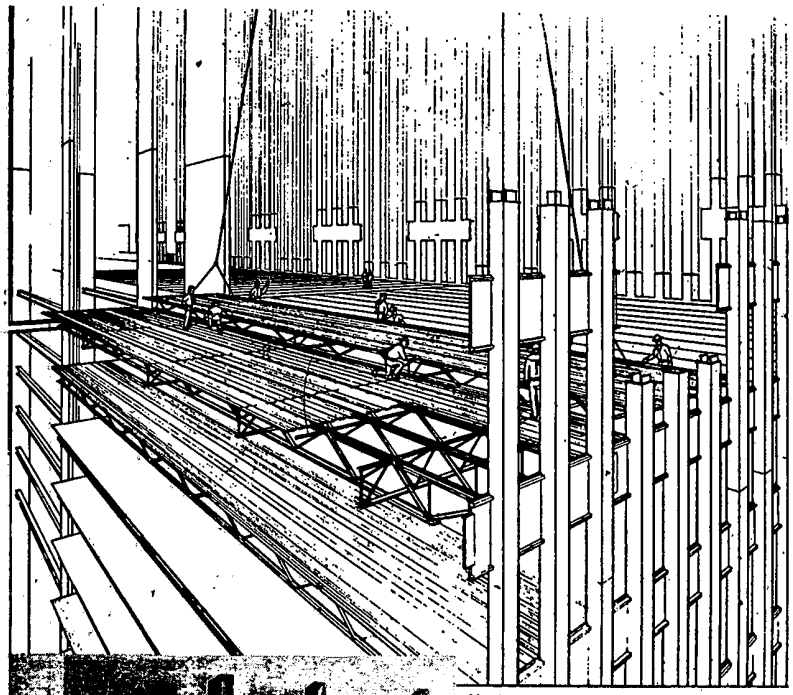
This "Slurry-Trench Method" requires the digging of a trench, in short segments, around the perimeter of the project. A drilling rig on a track churns up and sucks out material from a 36-inch-wide trench. As the material is removed it is replaced by a slurry of Bentonite and water. Bentonite is dense clay with a higher specific gravity than the saturated material it replaces, thereby overcoming the thrust on the sides of the trench. The drilling and removal process is continued down and into sound rock. A cage of reinforcing steel is then lowered into the slurry along with one or more pipes. Concrete is then pumped in through the pipes which extend to the bottom of the trench. As the concrete fills the trench, it is keyed into the Manhattan Schist rock while the slurry is forced up and skimmed off the top.

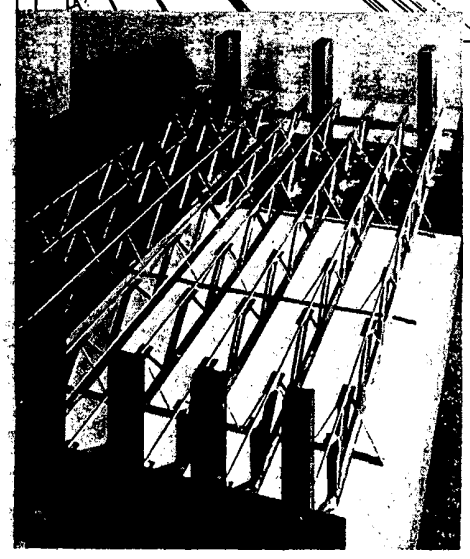
This cut-off wall prevents intrusion of water and soft ground into the excavation. As segments of the wall are exposed, diagonal holes are drilled through the wall and down into the rock outside the perimeter. Pre-stressing wires are then inserted into the holes and anchored into the rock. The next step sees the wires stressed and anchored to the inside of the wall so as to form external tension braces. The combination of the 36-inch-thick, watertight wall and its braces obviate the need for shoring, freeing the entire basement area for construction.

The theme to be conveyed in the building's design is perhaps best summed up by Mr. Yamasaki who sees the Center "reflecting the qualities of life which man so passionately seeks of truth and serenity, of hope and joy for all men, qualities integral to the kind of democracy for which he aspires. The World Trade Center should be imbued with the feeling of man's belief in both his greatness and his humanity."



Delicate series of Gothic-like pointed arches just below the structure's gently beveled roof line has been attributed to architect Yamasaki, who frequently includes a Gothic touch on his buildings.





Unique structural framing system proposed for Center's exterior walls will carry vertical loads, resist lateral wind loads and provide column-free interiors. Design permits complete flexibility in space layout.

Floor system will be preassembled into panels 60 or 35 feet long. Prefabricated floor framing will then be lowered into place. When all units have been placed and auxiliary reinforcing located, concrete slab will be poured to provide finished floor.

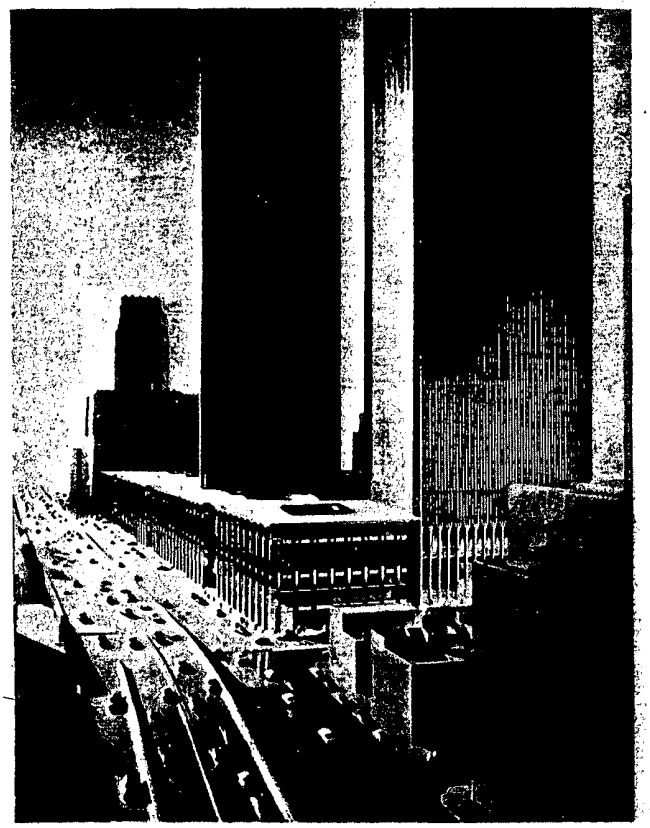
Majestic image of the World Trade Center's twin towers, soaring 1,350 feet above Manhattan, is reflected in the waters of the North River.

THIS great project, to be built in lower Manhattan, for bringing together the presently scattered elements o the most important port in the world, has architectural p have rarely existed in a project in our times.

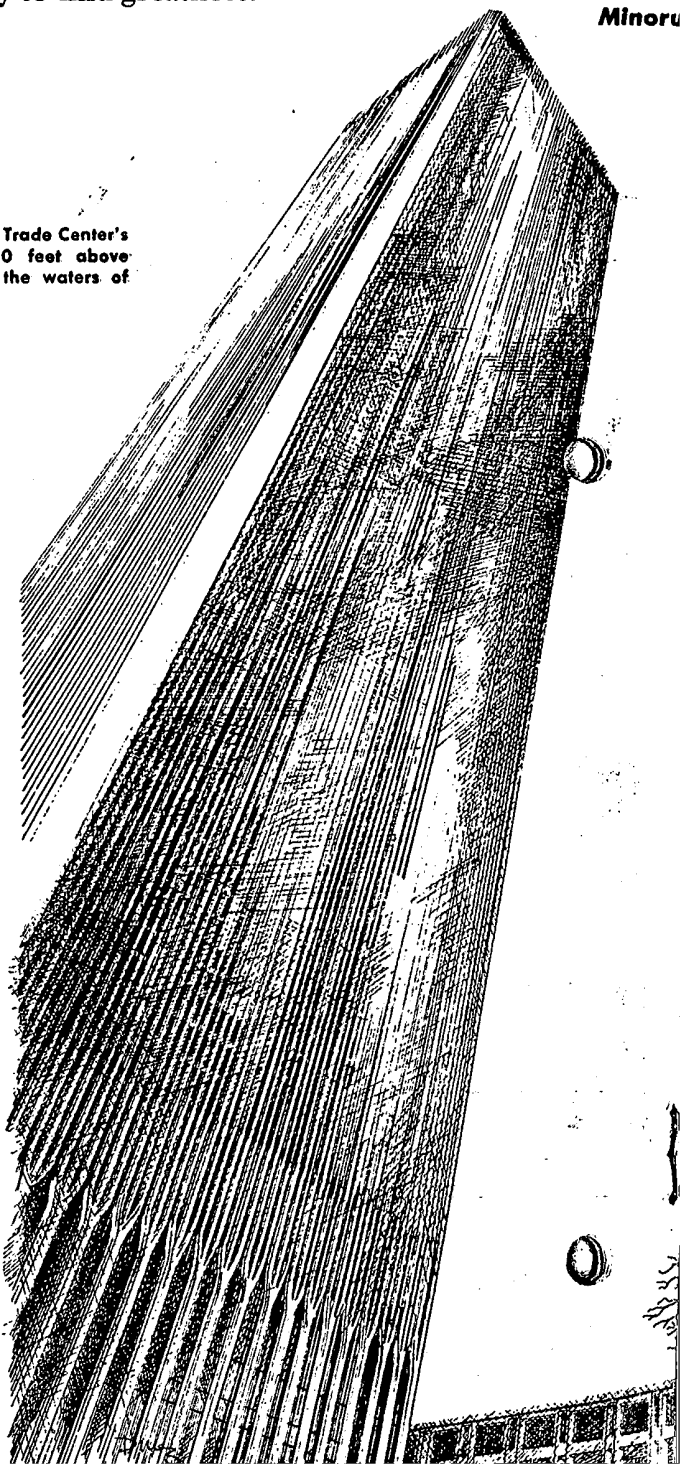
Paramount in importance is the relation of wo trad since the communication and understanding between na trade is basic to peace. Man today identifies himself wit cated to world peace as he has been to the great causes o the architectural opportunity exists in this project to mak buildings a living symbol of man's dedication to world p

Beyond the compelling need to make this a monumen the World Trade Center should, because of its importance representation of man's belief in humanity, his need fo nity, his beliefs in the cooperation of men, and through his ability to find greatness.

Minoru



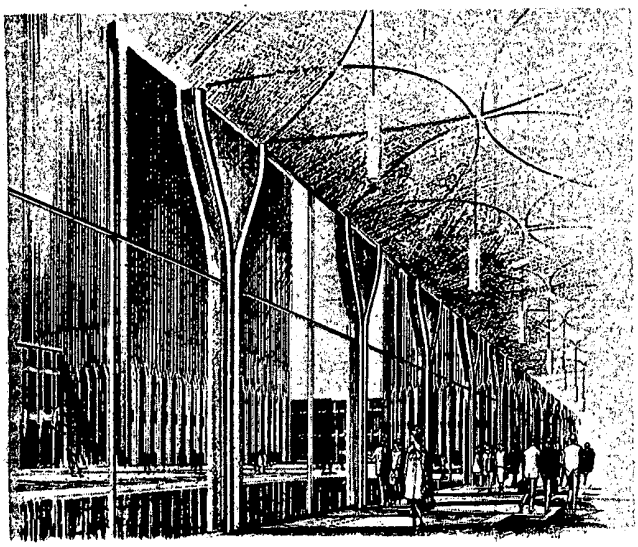
West side Manhattan's elevated express highway is seen at left in this view of the westerly side of the World Trade Center. Adjacent to gracefully styled Plaza Buildings is West Street, main access to spacious below street-level parking facilities for 1,600 automobiles.



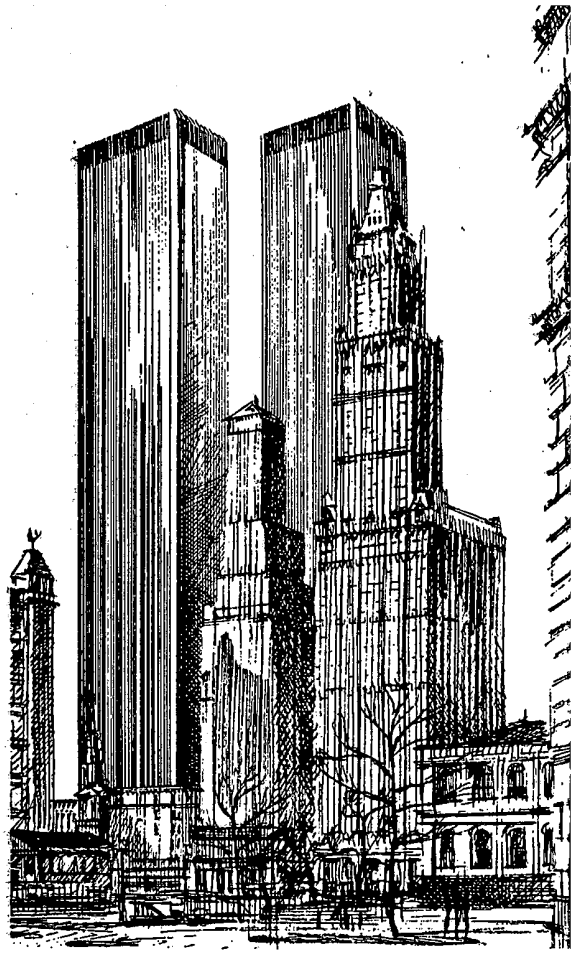
the purpose of
world trade in
ssibilities which

to rld peace,
ions implicit in
and is as dedi-
the past. Thus,
this complex of
ace.
to world peace,
become a living
individual dig-
his cooperation

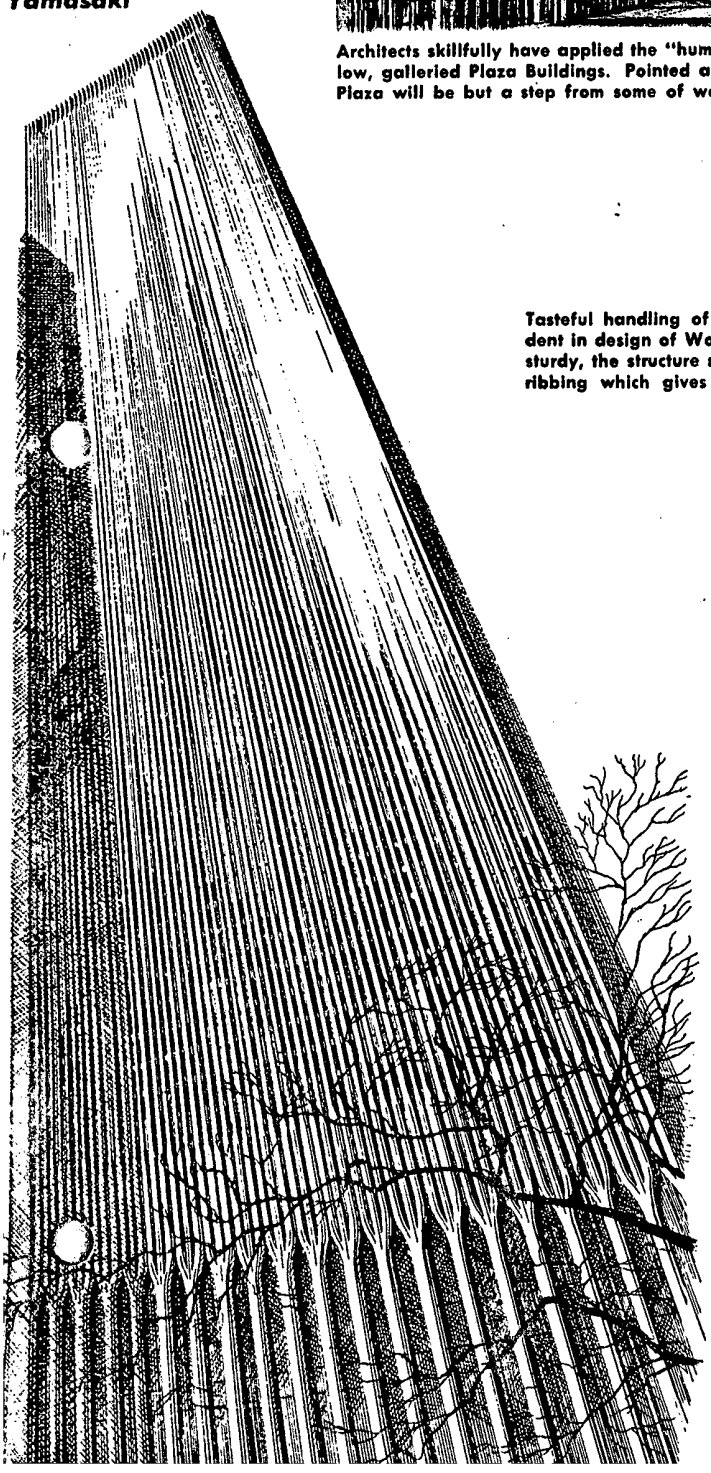
Yamasaki

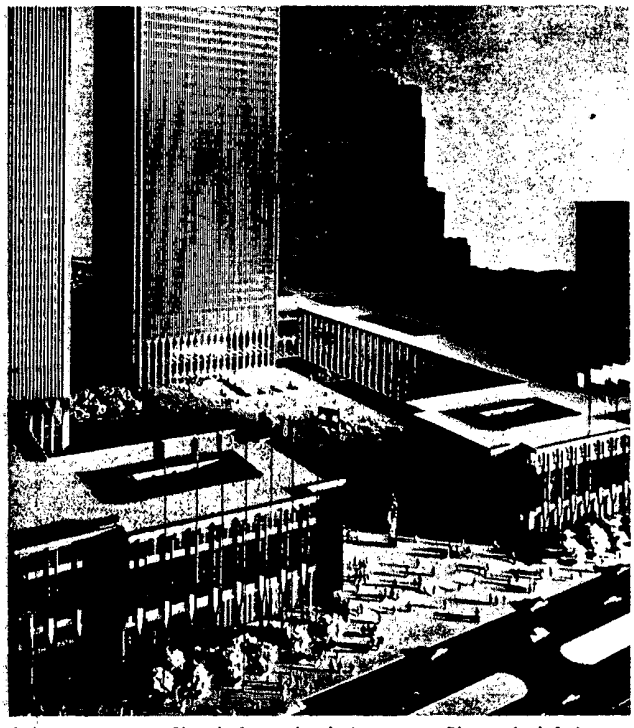


Architects skillfully have applied the "human scale" to Center through low, galleried Plaza Buildings. Pointed arches suggest Gothic theme. Plaza will be but a step from some of world's busiest thoroughfares.



Tasteful handling of cityscape and scale is evident in design of World Trade Center. Extremely sturdy, the structure nevertheless features slender ribbing which gives it delicate, aesthetic look.

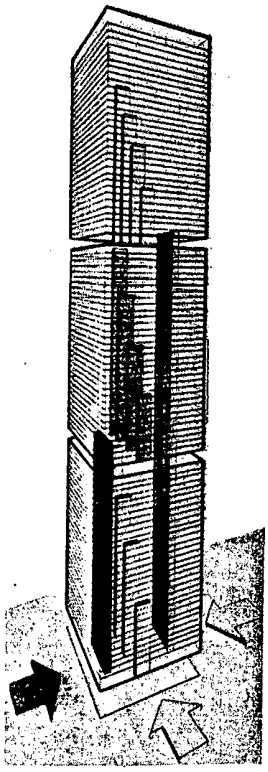




Main entrance on Church Street leads into great Plaza. At left is one of Center's two entrances to Port Authority Trans-Hudson (PATH) Terminal. PATH is a vital rapid transit link between the States of New York and New Jersey.

SUPER SHUTTLE TO THE SKY

World Trade Center Architects Set Their Sights High in Creating New Skylobby Concept



Skylobby concept calls for dividing structure into three zones. People entering the building (arrows) and bound for upper two zones are moved by express elevators to skylobby at either 43rd or 77th floor. Here they transfer to local elevators which serve all floors within the zone.

TO the average layman, the prospect of a new skyscraper invariably conjures up images of daring workmen walking tightrope fashion atop wind-blown girders, and cranes stretching their long booms higher and higher as each new floor takes form. Seldom considered are the months and often years of planning that precede the physical effort. Perhaps less glamorous than actual construction, this battle of the drawing board and its outcome can mean the success or failure of any building venture. It is a struggle where creative ability and fact combine to defeat mediocrity and poor judgment. Nowhere is this more evident than in the design for the elevator system at the World Trade Center.

Historically, the chief drawback in any skyscraper design has been the large floor areas required by elevator shaftways of conventional layout. After an extensive period of concentrated research during which various approaches were studied, the Center's architects have developed a concept that draws upon a basic principle of horizontal mass transit where efficiency is increased by separating long from short runs, fast from slow movements and express from local traffic. Appropriately named the "skylobby" system, it calls for dividing each of the Center's tower buildings into three zones; each zone with its own lobby. With elevator shafts in the center of each floor, the design affords 75 per cent of usable space instead of the usual 62 per cent.

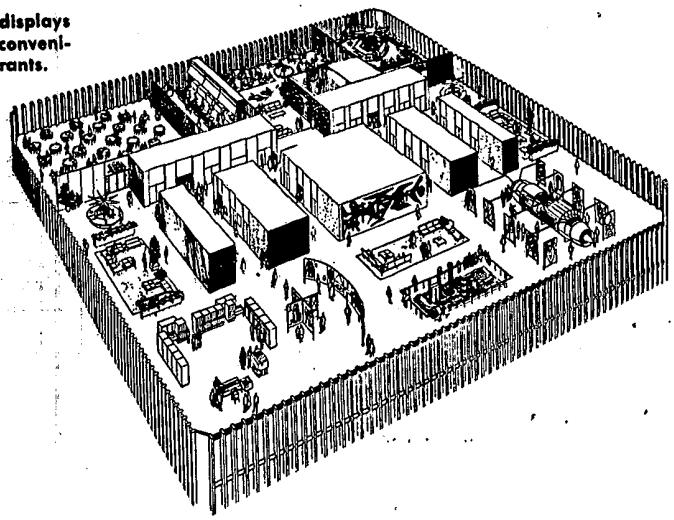
Efficiency of the skylobby concept lies in the reduction of elevator shaft requirements by limiting local runs to one-third of the building, thus gaining the effect of having three local elevators running at different levels within a single shaft.

A spacious main lobby will be located on the ground floor of each structure in addition to the skylobbies at the lowest level of the two upper zones. The first zone will extend from the main lobby to the 42nd floor; the second from the 43rd to 76th; and the third from the 77th to the 110th floor. Attractively appointed skylobbies will be located at the 43rd and 77th floors, both of which will be linked to the ground floor by large, high-speed express elevators. At the skylobbies, passengers will transfer to local elevators serving all floors within the zone. The skylobby on the 43rd floor will be served by eleven high-speed cars traveling nonstop from the ground floor while the topmost skylobby will be served by twelve. Plans call for 98 elevators in each tower. Altogether, 240 passenger elevators are planned for the huge development.

Transportation time to any point in a building, including transfer at the skylobby, will not exceed two minutes. The wait for an elevator, even during rush hours, will never be more than 30 seconds.

In addition to a simplified architectural plan, a whole system of audio-visual guides will direct the pedestrian to his proper elevator. Particularly valuable in easing the flow of traffic will be the inclusion of pre-recorded messages in each elevator for broadcast over "annunciators."

Attractively appointed skylobbies may be used for interesting displays and exhibits pertinent to world trade. They also will provide convenient areas for consumer services such as cafeterias and restaurants.



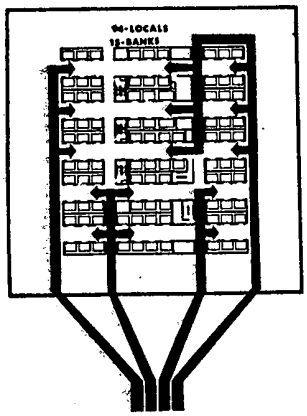
The size and operation of the express cars from the ground lobby to the skylobbies will be unique. Current plans call for cars with a 10,000-pound capacity and a climbing speed of 1,700 feet per minute. Capable of transporting 55 people at one time, the car's design allows passengers to enter one side and leave through the other. This arrangement of the exit door encourages the pedestrian to move to the rear of the car, filling it quickly. During the climb to the skylobby, the car's annunciator will instruct passengers regarding elevators waiting at the skylobby to take them to specific floors. To assure maximum service to tenants, each tower will accommodate 23 express elevators, 72 local cars and 3 freight elevators.

Since passengers do not feel speed but rather change, acceleration of the cars has been engineered so that the rider will not notice sensations greater than that experienced in a normal elevator. Because of the Towers' great height, acceleration will be mathematically controlled to assure smooth rides.

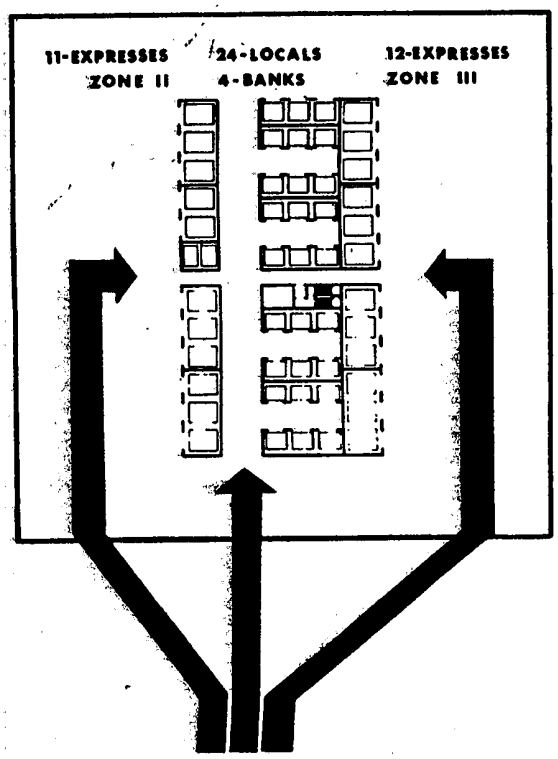
In contrast to the large elevators from ground level to the skylobbies, local elevators from the skylobbies to floors above would be similar to those used in other office buildings, these have a 4,000-pound capacity. The running time would be from 800 to 1,200 feet per minute—the only noticeable difference from conventional elevators would be the automatic annunciators of the Center's local elevators.

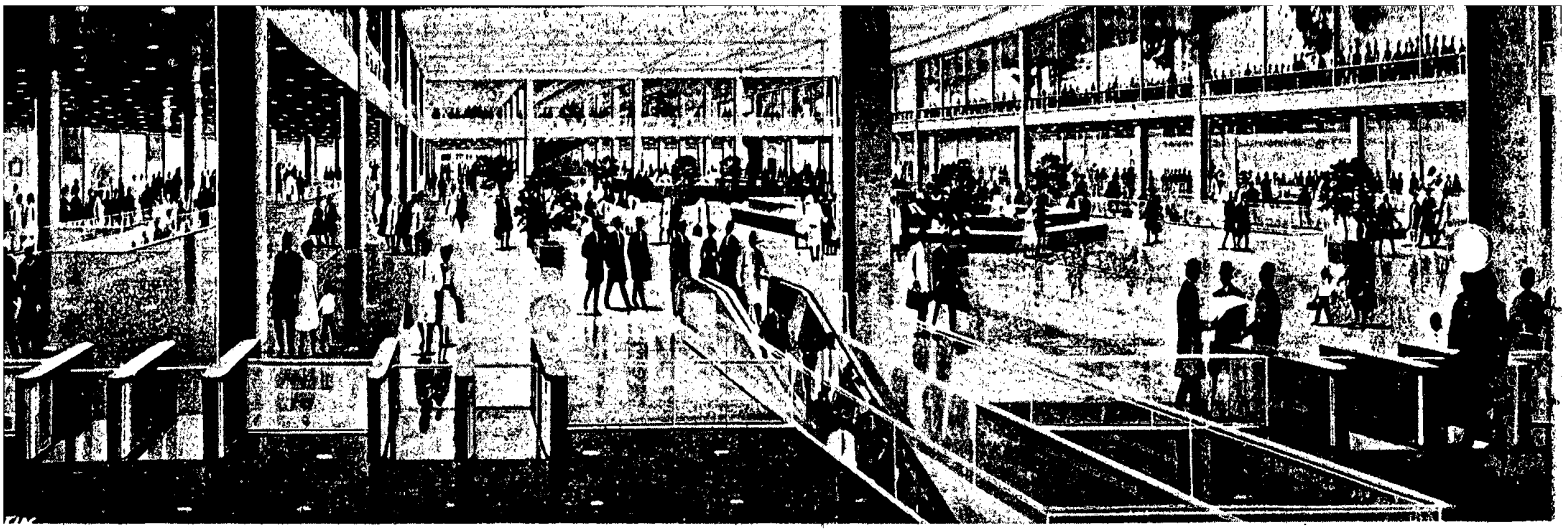
The skylobbies will provide ideal areas for consumer services such as shops, cafeterias and restaurants. Thus, each zone or third of a tower can be a self-contained unit with its own services. Such an arrangement presents added convenience to tenants and will eliminate a great part of lunch-hour and non-peak traffic that normally would be required to go to the ground floor for such services. The skylobbies also may be used for trade displays, exhibits and observation areas overlooking the magnificent Hudson, Upper New York Bay and the neighboring Port District communities. On clear days the view from the top of the towers will encompass a breathtaking panorama of 45 miles in every direction, enabling almost everyone working in or visiting the Center to see most of the landmarks in the Port District. Looking south, the visitor will be able to see the famed New Jersey seashore resort area as far as ten miles beyond Asbury Park. His view northwest will include New York's Bear Mountain State Park, while to westward, he will be able to observe the splendor of the Kittatinny Mountains almost as far as the Delaware Water Gap.

Imagination and practical application, such as that expressed in the skylobby system, seem especially appropriate in connection with the World Trade Center, for nothing less than the extraordinary could be expected in a project that will bring so many benefits to so many people.



Figures at right and below illustrate amount of space occupied by skylobby arrangement as opposed to conventional scheme for building of same size. Labyrinth of corridors and elevator banks in conventional plan (right) affords only 62 per cent of usable space. Skylobby design (below) allows 75 per cent and also lends itself to faster, more direct service. With Center's unique system, transportation time to any point in building will not exceed two minutes. Waiting time will never be more than 30 seconds.





Artist's concept of new PATH rapid-transit terminal to be located within Center site. PATH system carries 28,000,000 passengers a year.

CENTER OF ATTRACTION

Variety of Transportation Facilities Offers Quick, Easy Access to World Trade Center

NEARLY 200,000 persons a day will work, visit or move through the World Trade Center every day. Located on the west side of Lower Manhattan immediately adjacent to the bi-state port's historic core of international trade activity, the Center will be efficiently served directly by transportation services and facilities—subways, bus lines, vehicular express highways and city streets.

In addition, the Trade Center will include a new and spacious Manhattan Terminal for the Port Authority Trans-Hudson (PATH) system, formerly known as the Hudson and Manhattan Railroad. Slated to replace outmoded facilities presently located in the Hudson Terminal Buildings on Church Street, the new terminal will provide the most modern and convenient rapid transit facilities available anywhere.

Of great signficance in the overall pattern of trans-Hudson commutation between New Jersey and New York, the PATH system carries 28 million passengers a year and provides direct connections to Jersey City and Newark and to major New Jersey commuter railroads. A recent survey indicates that some 22,000 workers travel daily via PATH to their jobs in Lower Manhattan, south of Chambers Street.

Today, the six-car PATH trains are handled at 300-foot-long and 20-foot-wide platforms. Studies under way for the new PATH Terminal in the Trade Center envisage 500-foot-long and 30-foot-wide platforms to handle longer trains. This will allow improved train schedules and faster turnarounds. It is expected that 162 new rapid transit cars will be in service by mid-1965. To be designed and manufactured by St. Louis Car, a division of General Steel Industries Inc., the cars will cost $16,850,210. Constructed of strong lightweight aluminum, they will form the first fully air-conditioned rapid transit fleet in the United States. In keeping with their advanced design, the cars will feature a new seating arrangement combining cross-car and longitudinal seats, and a dual system of mechanical springs and air suspension to provide a smoother ride. Center-parting, double-leaf doors operated by all-electric door engines will assure dependable door operation.

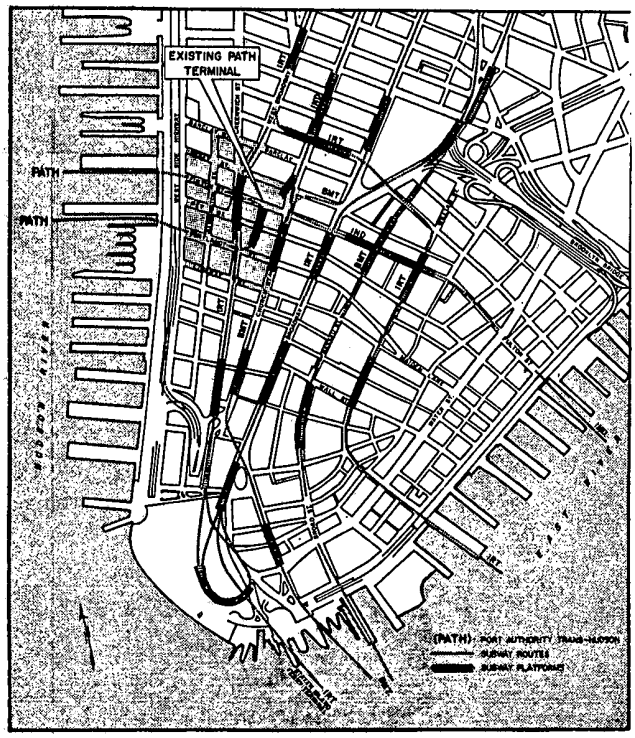
The main entrance to the new terminal will be from Church Street, near the main entrance to the Plaza of the World Trade Center, with convenient access to all local New York transportation systems. High-speed motor stairs will move between the air-conditioned concourse of the new PATH Terminal and street level, and wide corridors will facilitate the movement of passengers. There will be modern lighting and ventilation throughout the platform areas, efficient public address and communication systems, modern rest rooms and other passenger conveniences. There also will be a great variety of consumer services.

All subway systems in Lower Manhattan will connect

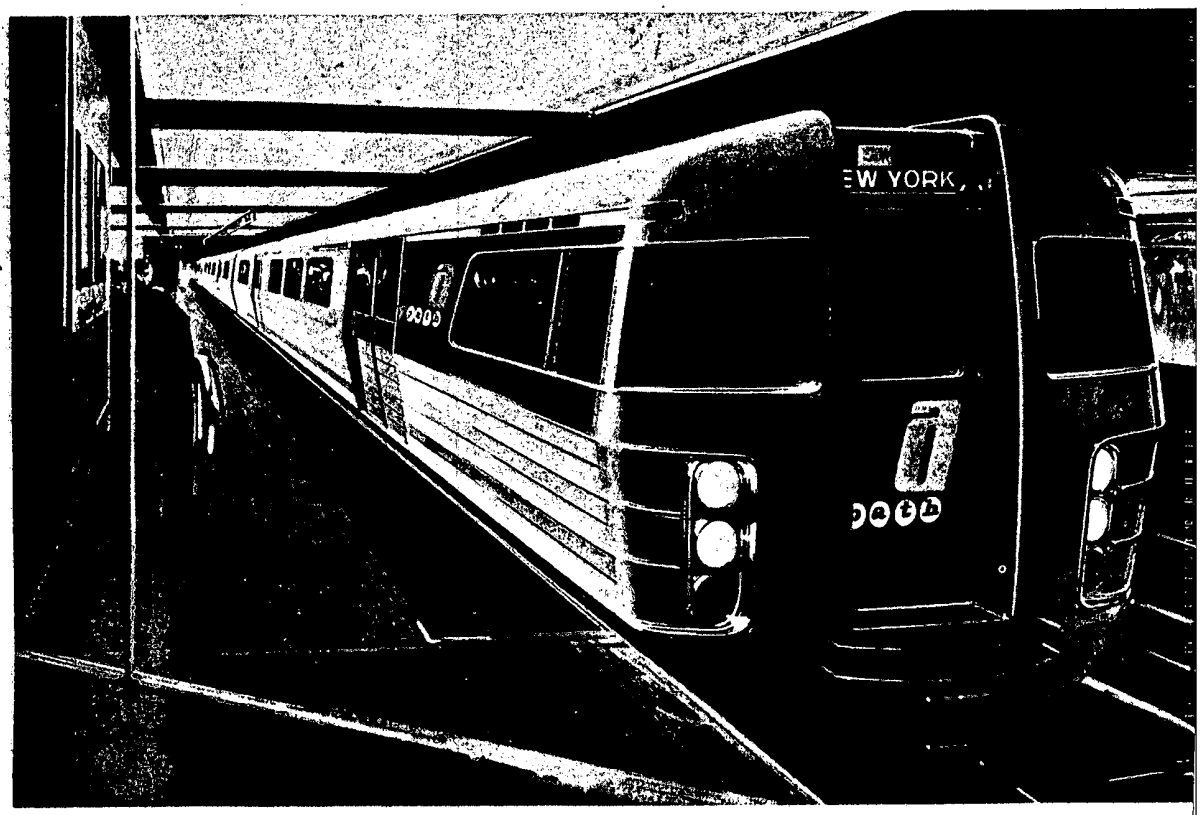
directly with the concourse beneath the Trade Center Plaza by underground passageways. Those lines and stations directly accessible on the site of the Center will be: the 7th Avenue-IRT—Cortlandt Street Station; the 8th Avenue-IND—Hudson Terminal Station; and the Cortlandt Street Station of the Broadway-BMT. Located within a few minutes walk of the Center will be: the Lexington Avenue-IRT—Fulton Street Station; the 8th Avenue-IND—Broadway-Nassau Station; and the Nassau Street-BMT—Fulton Street Station.

Vehicular access to the World Trade Center has been engineered to insure maximum safety and efficiency. Plans calls for complete separation of motor and pedestrian traffic. Large areas below street level including building services, parking and United States Customs examination areas will be served by vehicular tunnels from West, Greenwich and Vesey Streets with West Street serving as the main vehicular entrance and exit area. All trucks serving the project will be handled in off-street loading berths to avoid congestion. The widening of peripheral streets, namely Church, Vesey and Liberty Streets, will facilitate the movement of traffic in the area. As an added convenience to the businessman or commuter, and to further alleviate traffic in city streets, the Center will house five spacious parking levels capable of handling 1,600 automobiles at one time.

Whether going by PATH, subway, automobile or bus, the thousands of people who will work in or visit the World Trade Center daily will have convenient transportation to what surely will be a center of attraction.



New PATH Terminal in World Trade Center will replace existing outmoded facilities in the Hudson Terminal Buildings at 30-50 Church Street to provide the most modern rapid transit facilities available anywhere. Main entrance to the new Terminal at Church Street will afford convenient access to all local New York transportation systems. Every subway system in Manhattan (IRT, IND and BMT) will connect directly with the concourse beneath the Trade Center Plaza by passageways.



PATH commuters soon will be riding to and from Manhattan in ultra-modern air-conditioned rapid transit cars such as this streamlined beauty. Of all-aluminum construction, the new cars have been designed with emphasis on a smooth ride, comfortable seating, improved heating and ventilation systems and more effective lighting and soundproofing. Scheduled to replace the antiquated "black cars" acquired from the Hudson and Manhattan Railroad, 162 of the gleaming new cars will be serving PATH by mid-1965.

They'll Raise Trade on Acres in the Sky

More Business for Basic Port Industry Aim of Center

TEXAS has its cotton, Iowa its corn, Kansas its wheat and the States of New York and New Jersey have the international trade of the bi-state Port of New York. Each of these basic "crops" requires constant "cultivation" if it is to flourish. This is particularly true at the Port of New York where international trade provides a livelihood for one out of every four people in the 14,000,000 population of the New York-New Jersey Port. Responsibility to promote the growth of trade at the bi-state port was assigned to The Port of New York Authority nearly 43 years ago when the agency was created by Compact between the States of New York and New Jersey.

Now, under legislation of the two states, the Port Authority is proceeding with a bold, incisive program to raise trade in the favorable climate of Lower Manhattan. This program will be undertaken in the twin 110-story towers and multi-level Plaza Buildings of the World Trade Center.

One of the greatest of public service projects, the World Trade Center is motivated by the need to expand world trade on which the port's economic health depends. A World Trade Department was established two years ago to administer the planning, analysis and development required by the project. Guy F. Tozzoli is director of the new department and his deputy is Richard C. Sullivan, who also serves as director of the World Trade Center. Under the general responsibility of Executive Director Austin J. Tobin, many other departments—Engineering, Law, Real Estate, Port Development, Operations Services and Public Relations, to name several—will have a hand in forging the concept of the Center into a vast working enterprise servicing the activities of the tenants and the 50,000 people who will work there daily.

One of the most important phases of the World Trade Center, aside from the engineering and architectural challenges mentioned elsewhere, is that of development and rentals. Tenants are by definition crucial to the success of any building. To the World Trade Center, however, the type of tenant is even more important if the project's basic

Director of the World Trade Center, Richard C. Sullivan, has been active in discussing the World Trade Center concept with numerous groups during the past two years in addition to organizing and coordinating plans and staff for the vast project.

L. Edward Scriven (left) was recently named by the Port Authority as general manager, Development and Rentals, World Trade Center. He is shown at a recent export meeting in New York with Kenneth M. Spang, chairman, New York Regional Export Expansion Council.

objectives—an expansion in world trade and improved handling of the Port of New York's commerce—are to be achieved. Some 4,000,000 of the 10,000,000 square feet of rentable space will be available for private firms engaged in or directly serving companies in exporting or importing. About 2,000 firms in all are expected to be tenants. Many of these will not have had offices in the port before and still others will be branches of existing enterprises in the metropolitan area.

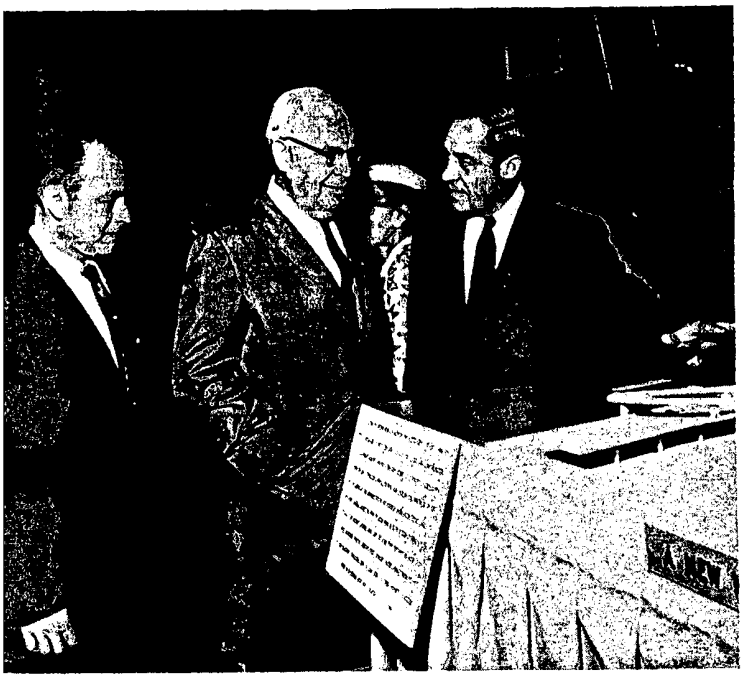
L. Edward Scriven, who recently joined the bi-state agency, is general manager of Development and Rentals of the World Trade Center. Mr. Scriven came to his new post from the United States Department of Commerce where he was serving as acting coordinator of the National Export Expansion Program. He is assisted by Sidney A. Schachter and Carl J. Barfoed, managers of domestic and foreign rentals, respectively.

Mr. Scriven, who has had more than 25 years of experience in international management, marketing and world trade, lost no time in making the public aware of trade expansion possibilities of the Center. His enthusiasm is reflected by the tenor of a recent speech in San Francisco. Among the many advantages of the Center Mr. Scriven cited on this occasion were those of advanced communications: "One of the most exciting aspects of the new World Trade Center is the tremendous opportunity for placing new communications media at the disposal of the Center's participants. In this field, the type of equipment available today runs the gamut from closed circuit television and methods of transmitting documents instantaneously, particularly insofar as internal World Trade Center operations are concerned, to the possible use of Telstar for communications between the World Trade Center and business offices in all other parts of the world."

Installation of these ultramodern techniques and others of an equally advanced nature within the Center is an indication of the scope of services and facilities which will be made available to World Trade Center tenants to enable them to expand their business and raise trade volumes of their respective nations. Rental rates, which will average $6.50 per square foot, will be comparable to those presently charged for other new buildings in the vicinity of the World Trade Center. Of course, the specific rate will depend on location and size of individual office requirements. Leases are not yet being consummated but it is recommended that prospective tenants submit a Letter of Intent indicating interest in participating in the Center and anticipated space requirements.

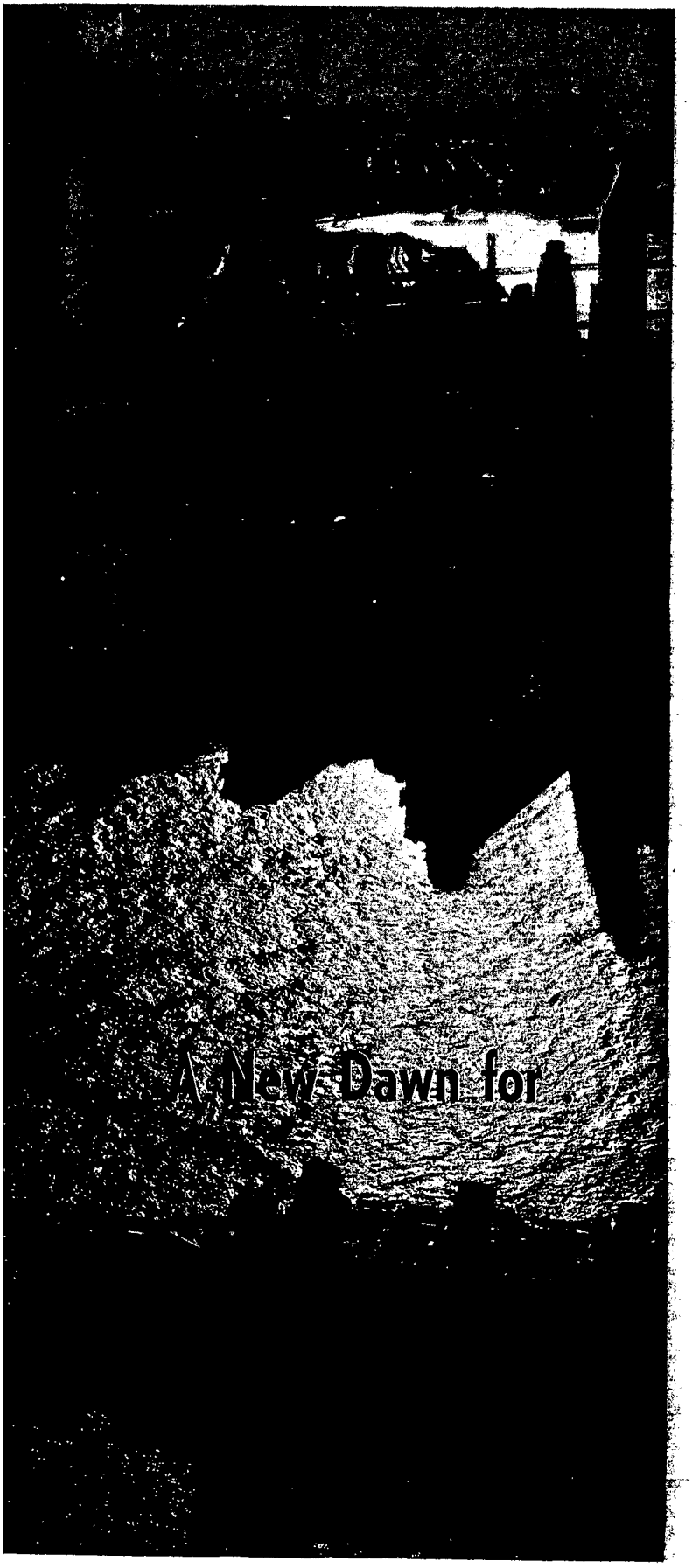
The export-import trade generated by the World Trade Center's acres in the sky will be largely derived from new business enjoyed by tenants of the Center. For those who wish to be a part of the world's greatest marketplace, the way is now wide open at the Port of New York.

RENTAL INQUIRIES and other requests for World Trade Center information may be mailed to: General Manager, Development and Rentals Division, Room 1568, The Port of New York Authority, New York, N. Y. 10011 or any of the trade development offices listed on the back cover.



Deputy Executive Director Matthias E. Lukens (right) and Director Guy F. Tozzoli (left), World Trade Department, acquainted U. S. Secretary of Commerce Luther Hodges and other government officials with World Trade Center concept.

Port Authority Executive Director Austin J. Tobin told members of the press at World Trade Center unveiling of increased efficiencies in cargo handling procedure that will be made possible by consolidating into the Center those firms and agencies processing shipping documents.



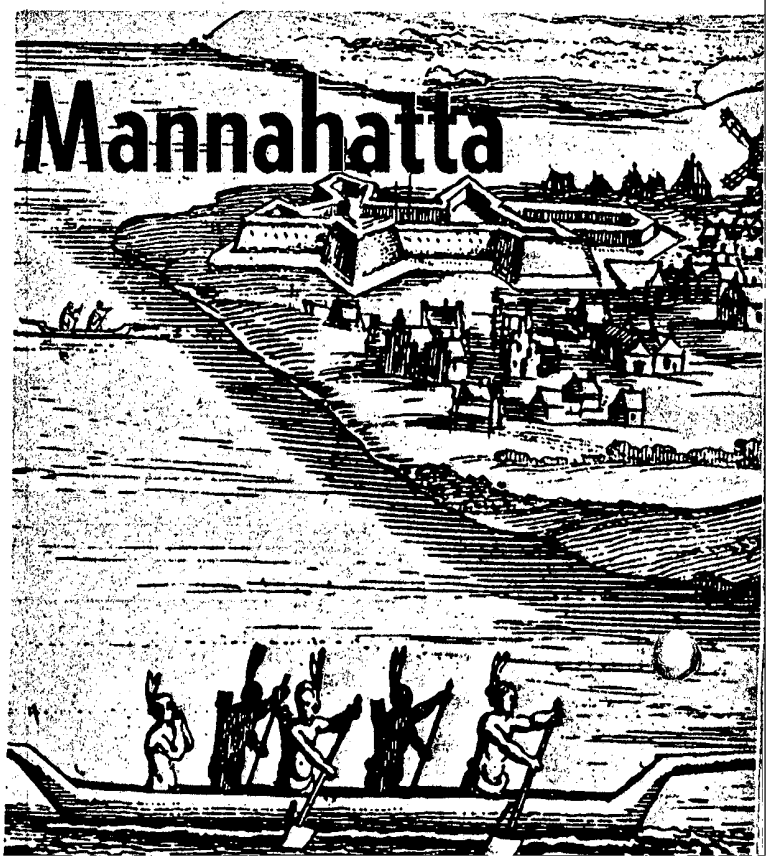
Mannahatta

FEW localities in North America have had the continuous association with international trade as the few square miles in the center of the New York-New Jersey Port known as Lower Manhattan. Members of the Dutch West Indies Company commenced regular trading there in 1623 when they exchanged goods for pelts from the aboriginal Manhates. The tribal name was applied to the island in various forms. Mannahatta, for example, easily became Manhattan over the years.

The name "Mannahatta" today is but a poetic reference but does seem to recall immediately over 340 years of trade on the island that might well be termed the capital of international commerce, a title which is sure to be buttressed by construction of the World Trade Center on the historic west side of Lower Manhattan.

A new era of commerce will dawn on old Mannahatta when the Trade Center rises. The island and its people, however, are accustomed to new eras, changes which are invariably tied to new developments in international trade, innovations in construction and new modes in transportation—all of which are interwoven in the current project that will transform 16 acres of Manhattan into a modern world market place.

West side Manhattan is not unaccustomed to the role of market place. It has been the site of a market, in the traditional sense of a produce market, for centuries. This came to pass for practical reasons. Larger ocean-going ships of the 17th century preferred the East River for berthage since the Hudson had stronger ice flows during winter and greater exposure to storms in the warmer months. On the other hand, sloops and market boats traversing the Hudson on a more flexible schedule could tie up on the



Hudson River waterfront at the discretion of their skippers, depending on the weather conditions.

Deep-water berths on the East River, such as the Great Dock, a basin-like arrangement built in 1676 that remained in service well into the next century, were developed. Finger-type piers for ocean-going ships supplanted the Great Dock on the East River and replacements from one generation to the next continued as active docks until this century. Meanwhile, on the west side, piers for passenger ferries and produce boats thrived.

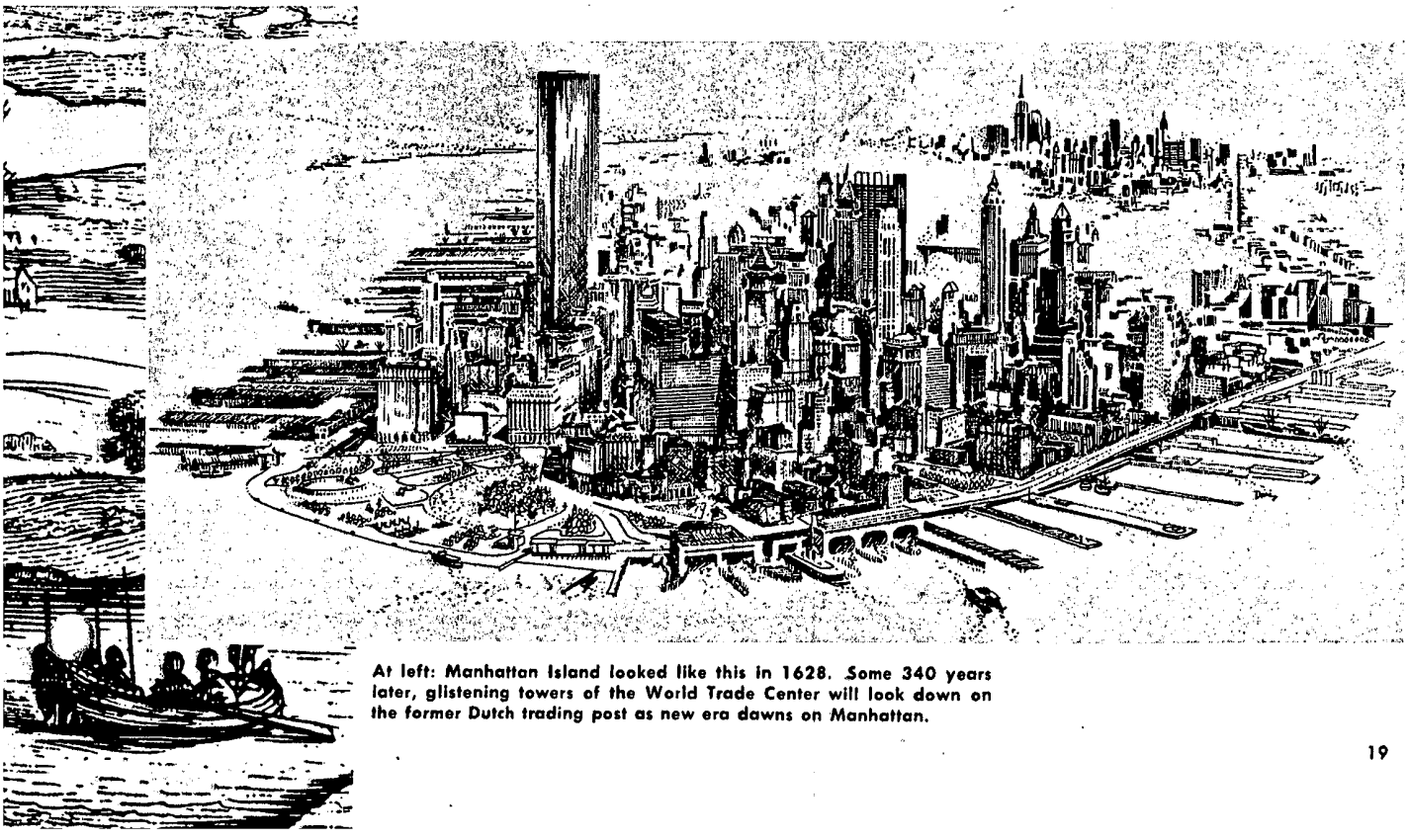
Mesier's Dock at the foot of Cortlandt Street was opened in the 1770's as a ferry terminus. Later it was to serve as the casting-off point for Robert Fulton and his *Claremont*. For the most part, however, Mesier's Dock and others to its north and south accommodated small craft laden with produce and meat.

It was no accident then that in the 1800's the largest wholesale produce market in the United States had its center between Fulton and Vesey Streets, part of the site on which the World Trade Center will rise. The marketing area of a century ago extended in a northerly direction and today vast quantities of food are distributed from what is loosely termed the "Washington Market," a community of warehouses beginning at a point less than a half mile north of Fulton Street.

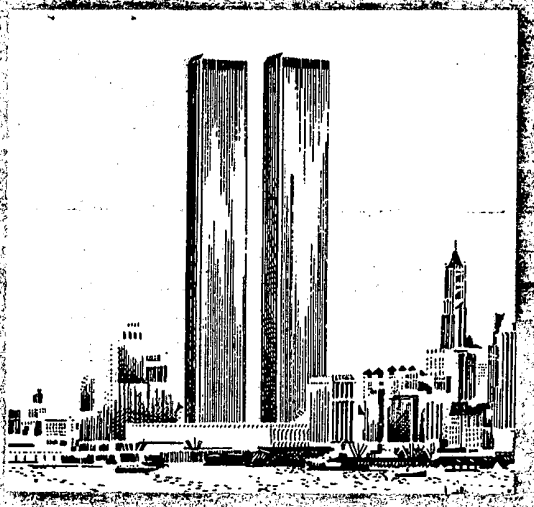
In 1957 the last vestige of the original produce center disappeared when a contemporary building called the Washington Market was removed from the Vesey and Fulton Street location and a parking lot left in its stead. There are thousands of business men and women in Lower Manhattan who can still remember the pungent odors of ordinary and exotic vegetables, sea food and meat that were displayed so temptingly along its aisles. It is possible that many of the same people will be viewing equally intriguing products from other lands as they pass through the shop-filled Galleria of the World Trade Center.

The architectural innovations of the World Trade Center will usher in a new era, too. Already the Center's structures have been described as the first buildings of the 21st century. But the new and different are normal to Lower Manhattan. From the huts of the first settlers, the Dutch, English and other early inhabitants built fine homes of brick. What fire did not destroy of these, time did. Commercial establishments have long since filled the area, and in their building notable architectural "firsts" were achieved in much the same manner as the towers of the World Trade Center will use novel design features. The developments of the late 19th century occurred in buildings erected along Broadway, relatively close to the new focal point of international commerce.

In 1870 the Equitable Life Assurance Society installed elevators in a building at 120 Broadway, the first time that mode of vertical transportation was used in an office building. About 18 years later, a steel skeleton was used for the construction of the Tower Building at 50 Broadway, replacing brick walls and cast iron facades for the first time. These advancements enabled the 612-foot-high Singer Building to be erected in 1907 and the Woolworth Building to rise 792 feet in 1913. Since then, of course, many other skyscrapers have taken their place on nearby streets. When the twin towers of the World Trade Center are constructed, they will fit admirably into the Lower Manhattan skyline, performing their mission in a traditional marketing hub and birthplace of the skyscraper.



At left: Manhattan Island looked like this in 1628. Some 340 years later, glistening towers of the World Trade Center will look down on the former Dutch trading post as new era dawns on Manhattan.



FRONT COVER: Twin towers of the World Trade Center in the Port of New York will rise 110 stories or 1,350 feet above the waters of the nearby Hudson River. The future Lower Manhattan landmark will appear like this from the vantage point of a passenger liner. This colorful rendering and most of the other sketches in this issue were done by Carlos Diniz.

PHOTO CREDITS: Page 10, top and bottom, page 11, bottom, Balthazar Korab, Birmingham, Michigan; all other photographs taken by Port Authority photographers Peter Eckel, Fred McRee, Ted Ross, Timothy Sheehan and John Wittenborg.

VIA PORT OF NEW YORK

Vol. 16 January, 1964 No. 1

Published Monthly by

THE PORT OF NEW YORK AUTHORITY

Telephone 620-7582

PRESIDENT'S "E-FOR-EXPORT" AWARD FOR AID TO TRADE EXPANSION

THE PORT OF NEW YORK AUTHORITY
111 EIGHTH AVENUE
NEW YORK, N.Y. 10011

RETURN REQUESTED

READERS: When you have a change of address, please submit your old address with the new one, promptly, to insure receipt of next issue.