

THE NEW YORK WORLD TRADE CENTER: A PERFORMANCE STUDY

by

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ABSTRACT

This thesis represents a study of the New York World Trade Center. It was written in conjunction with four other papers studying World Trade Centers (WTCs) sites in Taipei, Amsterdam, Curacao and Portland (Oregon). These sites represent a cross-section of the various trade and economic environments that World Trade Centers operate in around the globe. Each of these studies examines the extent to which the owner/developer, the tenants and other regional public and private concerns have benefitted through their involvement with these highly specialized real estate developments.

The New York World Trade Center is unique from all other World Trade Centers in several respects. It was originally developed by the Port Authority of New York to maintain the port's importance to the regional economy. It was completed in the early 1970's and is one of the first World Trade Centers to be built. It also contains over 13 million square feet of rentable space making it the largest WTC project.

Since completion of the New York WTC both the lower Manhattan real estate market and the World Trade Center Association (the private, non-profit organization that establishes guidelines for its WTC members) have evolved. Exponential growth in New York's financial service sector during the 1980's altered the complexion and tenant mix of the WTC causing it to resemble a more traditional office project. Today, the evolution of the WTC concept coupled with these other changes points to a different recommendation by the WTCA, for the program design of the New York WTC.

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Chapter I. Introduction

As we enter into a new era where technological advances in computer science, communications, information systems and transportation continue to make the world a smaller place and the threat of global war appears to be at an all time low, countries are focusing their resources on economic growth. Global markets now exist for stocks, bonds, foreign currencies and other commodities such as petroleum and precious metals. As a consequence of these changes capital, materials and labor can be quickly and efficiently deployed. Many countries are lowering their borders and forming large trading blocks which create standards for everything from currency to factory emissions. The European Economic Community (EEC), whose goal is to achieve a common market of its 12 member states by the end of this year, is one example of this. The United States is also in the process of forming a trading block with Canada and Mexico, the North American Free Trade Agreement (NAFTA). This block would encompass over 360 million people and have total production of over \$6 trillion.

With the Soviet Union no longer in existence and more and more Eastern Block Countries changing over to a market based

economy, international organizations like the United Nations, the World Bank and the International Monetary Fund are finally attaining the true international status envisioned by their founders. Other private, less political, international organizations have also expanded their reach and scope as a result of these recent changes in world affairs. One of these organizations is the World Trade Center Association (WTCA).

Founded in 1968, the WTCA facilitates international trade through the creation of World Trade Centers which it licenses. In addition, the WTCA develops revenue-generating trade related products and services that help to differentiate the World Trade Center (WTC) from other buildings in its market and link it to other WTCs. The basic goals of the WTCA are to: 1) Foster increased participation in world trade; 2) Promote international business relationships; and 3) Encourage mutual assistance and cooperation among members of the WTCA. Today, the WTCA has over 240 members in over 50 countries, illustrating its remarkable growth during the past 24 years.

The World Trade Center concept was built on the idea that if you centralized public and private organizations involved in international trade, natural synergies would occur. As defined by the WTCA, a World Trade Center is comprised of the physical facility, its tenants and the trade services provided by the individual WTC management. The WTCA has a set of bylaws

establishing standards that each WTC must meet and maintain in order to receive a designation. Therefore, a successful WTC is more than just a complex of exhibition halls, trade marts, office space and hotel rooms. A successful WTC must also offer services and programs devoted to enhancing international commerce within the trade environment in which it is located.

The purpose of this paper is to examine the degree to which these projects have benefitted the various participants involved in a WTC development. More specifically, from the perspective of the developer/owner: Are tenants willing to enter into rental agreements on terms more favorable to the landlord because of special characteristics as a WTC? Does the building command a rental premium in the market and does it enjoy a higher occupancy rate than other buildings? If so, what effect does the WTC designation have on the value of the asset? From the tenant's perspective, are there additional benefits associated with being located in the building? Does proximity to other trade-oriented tenants or the availability of trade related services enhance their business? From the perspective of the region in which the WTC is located, does the existence of a WTC act as a stimulus to economic development through world trade?

This paper represents a study of the New York World Trade Center. It is written in conjunction with four other papers

studying World Trade Center sites in Taipei, Amsterdam, Curacao and Portland (Oregon). The WTCA initiated this study and selected these five sites because they represent a variety of different approaches to programming a WTC.

At the core of this analysis is information provided directly by these various interests. Extensive interviews were conducted in New York with representatives of the owner (the Port Authority), including personnel from Leasing, Marketing, Finance, Physical Facilities and Trade Services. Other interviews were also conducted with local brokers and appraisers to obtain information on the real estate market. A tenant questionnaire was also used and focused on the decision to locate at the WTC and tenants' of trade related services. A number of other sources (primarily books and articles) were consulted and used as background information.

This study is organized into four chapters including this introduction. The second chapter provides a history of the highly political and controversial decision to build one of the largest public works projects in the U.S. The facility description section discusses both the physical attributes of the WTC as well as the various tenant services available. There is also a discussion of how the tenant mix has changed over time. The chapter concludes with an examination of how the Port Authority is organized and financed.

The third chapter looks at the performance of the New York World Trade Center from the perspective of the various participants. It includes a discussion of the lower Manhattan commercial office market and the New York WTC's position within that market. This chapter also examines the impact that the WTC has had on the immediate area as well as the greater region. It concludes by addressing the extent to which each of the participants associated with the New York WTC have benefitted.

Chapter four is a comparative analysis between the New York WTC site and the other sites included in the larger study. This chapter identifies several underlying factors that affect each World Trade Center. Comparisons and contrasts among these sites are then presented to arrive at a series of conclusions relevant to programming a successful WTC.

Chapter II. New York World Trade Center - Background

A. History¹

Original plans for a New York World Trade Center date back to 1946 when the New York legislature created the World Trade Corporation. The corporation was created " to establish and develop a world trade center.... for exhibiting and otherwise promoting the purchase and sale of products in international trade" [Robbins 1987]. Under the direction of the corporation, a plan was developed (without identification of a specific site, but presumably in Manhattan) which called for twenty-one buildings containing approximately five million square feet of primarily exhibition space. However, this plan was later dropped when it was determined that it would need to attract a large number of major industrial firms in order to be successful.

During the 1950's, 150 office buildings (containing 50 million square feet of space) were built in New York City, only 20% of which were in lower Manhattan with the remainder in midtown. This trend towards midtown as the City's commercial center had actually begun prior to World War II and was beginning to concern property owners in lower Manhattan. This prompted the

¹ The History Section of this chapter borrows freely from the book The World Trade Center by Anthony Robbins (1987).

creation of the Downtown Lower Manhattan Association (DLMA) formed by David Rockefeller in 1957. Rockefeller, who was already heavily invested in this area and who had recently begun construction on Chase Plaza (also located in lower Manhattan) was committed to revitalizing the Wall Street area.

The DLMA commissioned the architectural firm of Skidmore Owings & Merrill (SOM) to study the area. This study resulted in a large scale proposal encompassing much of lower Manhattan and included a revived world trade center idea. In January 1960, at the request of David Rockefeller and the DLMA, SOM presented a more detailed plan for a world trade center. This plan called for the construction of five to six million square feet of space that could accommodate the various trade activities, to be located on a thirteen and a half acre parcel on the lower east side, south of the Brooklyn Bridge. Key differences in this plan from the 1946 plan were the inclusion of an office tower, a hotel and a shopping arcade as well as a large reduction in the amount of sales and exhibition space. The DLMA's next task was to determine how the project would be financed and ultimately constructed.

In the eyes of the DLMA the Port of New York Authority (PA)

was the ideal candidate to build the project². Not only was its main purpose to promote commerce and economic development in the Port of New York but it also had a lot of experience building large projects and had its own staff of architects and engineers. In addition, the PA as a public entity could raise money by issuing revenue bonds and could condemn land through the power of eminent domain.

The DLMA, partially because of its strong political ties, was successful in getting the PA to study the world trade center concept³. In January 1961, the PA came out with a plan, very similar to that proposed by SOM (i.e. same types of uses and in the same east side location) but which stressed the public purpose of the project with respect to the Port and its importance to the regional economy. In March 1961, the PA proposal was submitted to the mayor and the governors of New York and New Jersey for their approval. However, the New Jersey governor was unwilling to commit funds from the bistate Port Authority for a project which he felt would have little

² The Port of New York Authority was created as the result of Compact between the States of New York and New Jersey (signed April 30, 1921) for the purpose of more efficiently coordinating the terminals, transportation and other facilities of commerce in the Port of New York. The name of the Authority was changed to the Port Authority of New York and New Jersey effective July 1, 1972.

³ The DLMA and David Rockefeller submitted SOM's more detailed proposal to "the Honorable Robert F. Wagner, Mayor of New York City, the Honorable Robert B. Meyner, Governor of New Jersey and the Honorable Nelson D. Rockefeller, Governor of New York and David Rockefeller's brother." [Robbins, 1987]

benefit to people living in New Jersey.

The project lay dormant for several months until the Port Authority proposed a plan which linked the World Trade Center (WTC) with a takeover of the Hudson and Manhattan (H&M) Railroad⁴. The PA had been resisting pressure to take over the ailing railroad line for several years but viewed this as a way it could win approval of the WTC project. As this idea was studied further, it was discovered that the owners of the H&M Railroad were also interested in selling the deteriorating Hudson Terminal Buildings (two large office buildings built in 1908, located on the west side and whose underground concourse served as the train station for the H&M Railroad) and some adjacent land. Two important things would be accomplished by moving the project from the east side to the west side. First, by physically linking the two projects it would make the WTC more accessible to people living in New Jersey. And second, it would automatically make more land available thereby lowering the estimated cost of the project from \$350 million to \$280 million.

The PA created a new proposal moving the project from the east to the west side which received support from the mayor as well

⁴This underground railroad provides commuter service from New Jersey (Hoboken, Jersey City, Harrison and Newark) to lower Manhattan. It is referred to as PATH (Port Authority Trans-Hudson) today.

as the legislatures of New York and New Jersey. By March 1962, both states had enacted legislation authorizing development of the World Trade Center and acquisition of the H&M Railroad by the Port Authority. Before construction could start several challenges to the project had to be overcome including one by local merchants as well as an ongoing battle with New York City real estate interests⁵. However, outside of these groups, support for the project remained strong. In August 1966, construction on the project began with the first tenants moving into the north and south towers in December 1970 and January 1972, respectively.

B. Description of WTC Facility

Since their completion some twenty years ago, Minoru Yamasaki's twin 110-story office towers at the WTC have become among the most well known and distinctive buildings in the

⁵ A group of over 300 local merchants formed the Downtown West Businessman's Association (DWBA) which challenged, in court, the PA's condemnation and taking of this site on the basis that it did not represent public purpose. The New York State Supreme Court originally ruled in favor of the DWBA but the decision was overturned by a higher court later in 1963. In 1964, after unveiling a plan which included two 110 story office towers and over 10 million square feet of space, a number of Manhattan real estate investors formed the "Committee for a Reasonable Trade Center" which unsuccessfully brought suit against the PA in an attempt to have the project scaled down. In a public hearing in May 1966, this same constituency assailed the project on the basis that because it was financed through tax-exempt bonds and because it did not pay real estate taxes, it represented an unfair advantage to existing office buildings.

world. When originally completed, the towers surpassed the Empire State Building in height, becoming the world's tallest buildings. While the Sear's Tower in Chicago now holds this title, the twin towers still attract an estimated 1.8 million people who visit the WTC's observation deck each year⁶. In addition to being the tallest buildings in New York, they have also come to define the lower Manhattan skyline. Anthony Robbins describes the towers' impact on the skyline and their relation to each other in the following manner:

The twin towers from afar provide just as potent a symbol as the Empire State Building, but the aesthetic is different. The twin metal towers, reflecting the sunlight and reflected themselves in the Hudson, produce the striking sculptural effect that Yamasaki designed so carefully, and they certainly stand out as the dominant landmark of lower Manhattan. Especially to observers in motion, either driving towards the towers, or on a ship or ferryboat entering the port, the effect of the two towers playing off against each other is one of the most dramatically beautiful sights in New York.

In addition to the two towers (One and Two World Trade Center), the WTC has five other buildings including a 47-story office building (Seven World Trade Center), two nine-story office buildings (Four & Five World Trade Center), the eight-story U.S. Customs House (Six World Trade Center) and the twenty-two story, 825-room, Vista Hotel (Three World Trade Center). As Exhibit 2.1 indicates, the WTC project contains approximately 13.6 million square feet of rentable space.

⁶Source: World Trade Center Fact Sheet, February 1992

Breakdown of Uses at WTC by Rentable Square Feet

Exhibit 2.1

<u>Type of Space</u>	<u>Rentable Feet</u>	<u>% of total</u>
Office Space:		92.2%
One World Trade Center	4,300,000	
Two World Trade Center	4,300,000	
Four World Trade Center	580,000	
Five World Trade Center	730,000	
Six World Trade Center	760,000	
Seven World Trade Center	1,900,000	
Vista Hotel (Three World Trade Center)	580,000	4.3%
Consumer Service Areas *	470,000	3.4%
Exhibition Space (Mezzanine One WTC)	<u>10,000</u>	<u>0.1%</u>
Total Rentable Square Feet	13,630,000	100.0%

* Consumer service areas include all retail and restaurant space other than that of the Vista Hotel.

Source: Gary Wenger, World Trade Center Rentals (1992).

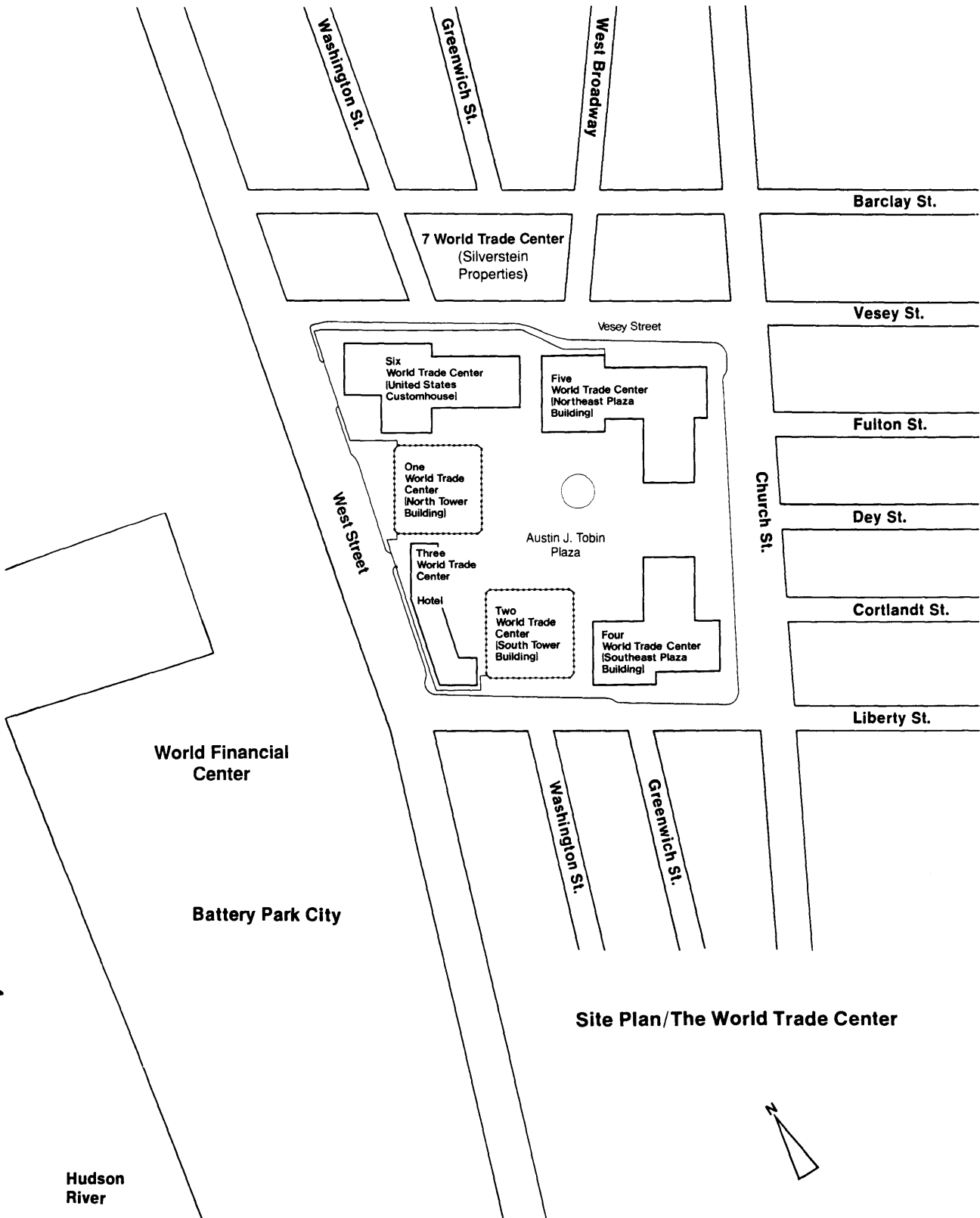
Office use is by far the largest component of the WTC, accounting for over 92% of all the rentable space.

The site itself is a sixteen acre parcel on the west side of lower Manhattan. It is bounded by West Street to the west, Church Street to the east, Liberty Street to the south and Barclay and Vessey Streets to the North (see Exhibit 2.2).

With the exception of Seven World Trade Center, the buildings are arranged around the five acre Austin J. Tobin Plaza which features Fritz Koenig's 25-foot-high untitled bronze spherical sculpture and fountain as its centerpiece. The plaza also has several other sculptures, including a highly polished granite creation by Masayuki Nagare and a stainless steel sculpture by James Rosati, and is further decorated by a number of planter boxes and seating around the fountain.

Both of the plaza buildings (Four and Five WTC) and the mezzanine of the north tower building (One WTC) have high windowed first floors that look out onto the plaza. These floors were originally intended as exhibition space by companies wishing to display their products. Demand for this exhibition space has never materialized because most companies prefer a display environment with a more targeted audience like those found at trade shows. Later this year, the Republic of Russia is planning to open a 74,000 square Trade and

Exhibit 2.2



Cultural Center in Five World Trade Center. The Center is planned to include approximately 30,000 square feet of exhibition space. It will be interesting to see how this space is used and whether it will meet the same fate as the other exhibition space on the plaza.

The WTC was designed to function as a fully self-contained economic center. Below the plaza is the concourse, which connects the lobbies of each of the WTC's office buildings and serves as a station for a number of major subway lines (1,9,C,E,N,R) and the Port Authority Trans-Hudson (PATH) system. The concourse also contains Manhattan's largest enclosed shopping mall with over 60 tenants (providing a variety of fast-food restaurants, bank branches, newsstands and clothing stores) and 200,000 square feet of rentable space. The WTC also boasts New York City's largest off-street loading dock to provide for the efficient flow of supplies and deliveries to and from the complex. This loading dock can accommodate over 600 trucks daily. People can commute to this "city within a city", work, have lunch, go shopping, and commute home, never stepping foot outside the complex.

However, aside from being a collection of office buildings with some supporting uses attached, the WTC offers a number of special services and facilities which make the complex unique to the region. Located on the 55th floor of One WTC is the

World Trade Institute (WTI). The Institute offers over 600 courses and seminars annually on topics ranging from language study to special topics in international business (i.e. tax, finance and law). The WTI also offers translation services, a trade library, video-conferencing facilities and eleven different conference rooms. Other conference and meeting areas are located in the Vista Hotel and the Oval room at One World Trade Center.

The Port Authority also organizes outgoing trade missions and assists incoming trade missions for manufacturers interested in introducing their products into new markets. Additionally, the PA's trading company, XPORT, acts as the exclusive marketing representative for some seventy regional manufacturers. Another service, available to tenants as well as affiliate members, is the WTC NETWORK system which electronically connects users at other participating WTC locations. This system features electronic mail, a bulletin board (an electronic classified listing service) and a database of information on potential trading partners.

C. Tenant Mix

Office

The concept of a WTC was built from its earliest beginnings on

the idea that there was a need to centralize private enterprise and government agencies involved in international trade. This idea was embraced by the Port Authority and came to be seen as vital to the success of the port and a public purpose. As envisioned in 1966, the WTC would have approximately 40% of its office space dedicated to trade services (customs brokers, freight forwarders, steamship lines, etc.) and import/export tenants. The remainder of the space would be occupied by various governmental agencies (i.e. the U.S. Customs Bureau, the Port Authority, the State of New York, etc.). [Birnbaum, 1989].

By 1980, the WTC was approaching full occupancy for the first time. As expected, the State of New York occupied approximately 20% of the space, the Port Authority about 10% and the U.S. Customs Bureau another 8%. However, total trade service and import/export tenants occupied only 16% of the space - less than half that originally projected. Another surprise was the large amount of space leased by financial and business service tenants. These tenants accounted for 24% of the space in 1980, a trend that would continue through the 1980's.

In 1983 the States of New York and New Jersey and the Port Authority entered into a tripartite agreement which created

the Fund for Regional Development⁷. This fund provided revenues to the states through the subleasing of space which was being vacated by New York State. The states would receive revenues for infrastructure and other improvements by capturing the differential between the market rate of approximately \$40.00 per square foot and the State's rate of \$5.00 per square foot [Birnbaum, 1988]. With the majority of this space leased to financial service tenants, this segment was quickly emerging as the largest tenant group.

During the 1980's an increase in the amount of space leased by business and financial service tenants corresponded with a decrease in the amount leased by trade service and import/export tenants. This decrease was due to several factors. First, technological breakthroughs in electronic information transfers made proximity to the Customs House less important for these tenants. Second, while the financial service industry was rapidly expanding, the export market was contracting due to a strong dollar in the currency markets⁸. Many of these tenants either went out of business or moved their operations to less expensive locations. Today, business and financial service tenants account for more than 50% of the

⁷ Port Authority Annual Report, 1989.

⁸ The financial services sector accounted for one-fifth of the 1.4 million jobs generated in the region, during the period 1976 to 1989 (PA Consolidated Bond Offering, 79th Series - pg.II-34)

space while trade service and import/export tenants account for only 5% of the space. Exhibit 2.3 gives a breakdown of the various categories of tenants and demonstrates the changing tenant profile from 1980 to 1992.

The WTC began as a substantially supported public project developed largely to maintain the Port of New York's importance as an economic engine for the region. However, the 1980's boom in the financial service sector along with technological changes affecting the trade service industry dramatically changed the character of the WTC. What was envisioned as a central place for many of the region's businesses and governmental agencies concerned with the mechanics of international trade had evolved into a more traditional office project. In many respects, the original vision for the WTC had become a casualty of its own success.

Retail

When the retail shopping mall in the concourse of the WTC was originally developed, leasing agents for the project tried unsuccessfully to attract high-end retailers to the center. Instead, the mall was leased to a number of lower-end clothiers, variety stores and restaurants. This strategy has worked well for the mall and the WTC which has been able to charge rents ranging from \$70 to \$100 per square foot and has historically enjoyed an occupancy level of 100% [Wenger, 1992].

WTC Tenant Mix (as % of leased space)

Exhibit 2.3

Tenant Category	1980	1984	1988	1992
Trade Services/Promotion	15.9	11.4	6.6	4.7
Financial Services	17.5	24.3	38.5	40.2
Office Services	4.1	5.1	4.6	6.1
Business Services	6.5	6.9	12.5	10.8
Building Services	4.0	9.2	9.7	8.0
Construction & Engineer.	10.6	11.4	6.1	5.1
New York State	21.9	16.1	3.7	1.3
Port Authority	9.6	7.5	9.7	13.4
U.S. Government Trade Related	8.3	7.3	7.6	9.2
U.S. Government Other	0.9	0.5	0.2	0.8
Other Government	0.6	0.2	0.7	0.3
Miscellaneous	0.1	0.1	0.1	0.1
	100.0	100.0	100.0	100.0

Tenant Categories Include the Following Businesses:

- 1) Trade Services/Promotion: Import/Export, Freight Forwarders, Customs Brokers, Steamship Lines and Services, Trade-related Transport, International Sales of U.S. & Foreign Manufacturers, Foreign Government Offices and Trade Promotion Organizations.
- 2) U.S. Government Trade Related: Customs House, Futures Board, Foreign Credit Insurance.
- 3) Financial Services: Currency & Metal Sales, Foreign & Domestic Banks, Bond, Stock and Other Other Securities Brokers, Commodity Brokers.
- 4) Office Services: Office Equipment, Messengers, Translation, Telephone, Telex and Wire Service.
- 5) Business Services: Economic, Financial & Management Consultants, Computer Systems and Software, Data Processing, Insurance, Law & Accounting.
- 6) Construction & Engineering: Construction, Engineering & Architectural.
- 7) Building Services: Food, Retail and Newstands; Personal & Medical Services; Hotel.

Source: 1980-1988 Figures (Birnbaum, 1989); 1992 Figures, Port Authority Rent Roll as of 6/26/92

When one considers that the majority of the 400,000 people that pass through the WTC concourse daily are from low and moderate income groups, the decision by high-end retailers not to locate in the mall appears to be sound⁹. This is further supported by the fact that FAO Schwartz, the only high-end retailer to attempt to locate in the mall, had to vacate due to poor sales [Rossi, 1992]. In addition, high-end retailers in the World Financial Center, connected to the concourse by a skywalk across West Street, are struggling to survive.

D. Ownership

The Port Authority of New York and New Jersey was established in 1921 to promote and protect the commerce of the bistate port. This interstate agency was created under a provision in the U.S. Constitution allowing compacts between states with Congressional approval. The PA is governed by a board of twelve Commissioners appointed evenly by the Governors of both states.

In addition to the WTC, the Port Authority also controls and operates over \$8 billion in assets. These include two tunnels and four bridges between the states of New York and New Jersey; the Hudson Tubes facility; a bus terminal; the Trans-

⁹ Source: Hazel, Debra. Early Bird Special In NYC. Chain Store Age Executive. June 1991.

Hudson ferry service; the Port Authority Bus Programs; four airports; two heliports; the Newark Legal and Communications Center; nine marine terminals and the New York Passenger Ship Terminal; a railroad freight facility; a truck terminal; five industrial development facilities and a resource recovery facility; and certain regional development facilities in the Port District. Capital investment to date for the WTC is approximately \$1.3 billion exceeded only by the PA's investment in LaGuardia Airport (\$1.6 billion).

The Port Authority's revenues come primarily from fees, tolls or leasing activities generated by its operation of these various facilities. These revenues, as well as funds raised by bond issues, are used to improve existing facilities or to construct or acquire new facilities. The PA does not have the ability to levy taxes or assessments but instead raises money through the issuance of consolidated bonds. These bonds are general obligations of the Port Authority and are pledged by the revenues of all existing facilities. They are not obligations of either state.

E. Conclusions

The New York World Trade Center is different from every other WTC. The immense scale of the project, the original motivations behind its development and its tenant mix are just

a few of the things that make the New York WTC unique. Due to changes in technology and growth in the financial service sector during the past two decades, the Trade Center has evolved into a more traditional office project. The WTC concept has also evolved and grown since the New York WTC was completed. Given these changes, it is likely that the WTCA would recommend a somewhat different program for the New York WTC today.

Chapter III. Performance of the New York World Trade Center

A. Introduction

Having discussed the background of the New York WTC we now consider the actual performance of the facility. This chapter will examine how the WTC has performed from the perspective of the tenants, the developer/owner as well as various government and private sector interests concerned with regional economic development. Specific questions that will be addressed are:

1) To what extent has the project outperformed the real estate market in which it operates? Does the building command a rental premium and enjoy a higher level of occupancy than other competing office buildings in lower Manhattan? Are tenants willing to enter into rental agreements more favorable to the landlord because of the building's status as a WTC?

2) To what extent has the New York WTC and other associated PA operations provided economic benefit to local businesses, property owners and the greater community?

3) To what extent have tenants benefitted by choosing to locate at the WTC? Has proximity to other trade oriented

tenants or the availability of trade related services enhanced their business?

Information for this section came from several sources, including on-site interviews with members of various departments of the Port Authority, local brokers and appraisers. Additionally, a tenant questionnaire focusing on trade related services was used to collect information and a recent (May, 1992) tenant satisfaction study prepared for the Port Authority was also consulted.

B. Owner/Developer

The PA was the original developer of the WTC and continues to own and operate the project currently. Because the PA is also a public agency, it plays two different roles: one as the owner/developer, concerned with occupancy and return on investment, and another as a representative of the public interest, concerned with broader economic issues of the region. This section will consider the project from the standpoint of the PA as owner/developer.

When the WTC was first built in the early 1970's, it was the only office space of its kind in the world. With its large column-free floor plates and state-of-the-art communication facilities, it was well-received despite a sluggish economy.

However, lease-up was slow and by 1975 the WTC was only 75% occupied at an average rental rate of \$6.00 per square foot [Girardo, 1989]. By 1980 the economy had improved and the WTC reached full occupancy for the first time. Throughout most of the 1980's the WTC enjoyed a high occupancy rate and by 1985 rents were averaging more than \$30.00 per square foot. However, the stock market crash of 1987 marked the end of the strong bull market of the 1980's and companies began to consolidate their operations. Many moved their support functions to less expensive space in the outlying boroughs and New Jersey. The WTC has also been affected by this weakened economy and its occupancy rates have declined to their current level just below 90%.

With the large abundance of space currently available throughout the region, there has been a "flight to quality" by many tenants seeking to upgrade the quality of their offices at extremely competitive rates. To prevent further declines in the occupancy rate at the WTC without having to lower rental rates, the current renovation program must be successful at repositioning the Center to become more competitive with these newer buildings¹⁰.

The downtown Manhattan office market can be divided into three

¹⁰The Port Authority recently began a \$500 to \$800 million, 10 year renovation of the WTC [Preschle, 1992].

sub-markets: The Financial District with 91 buildings and 55.7 million square feet of space; The World Trade Center/World Financial District with 10 buildings and 20 million square feet of space; and the City Hall/Insurance District with 37 buildings and 15.4 million square feet of space. As Exhibit 3.0 illustrates, the WTC/WFC District had the lowest amount of available space (14%) and the highest average asking rents (\$35.80/sf), of these three markets. Availability and average asking rents for the Financial District were 27.3% and \$28.30/sf and 14.4% and \$23.60/sf for the City Hall/Insurance District¹¹.

While it appears that the WTC/WFC District enjoys a distinct advantage over the other two sub-markets, many of the buildings in the other submarkets are older and functionally obsolete. Therefore, they do not compete with the WTC for tenants. In addition, the inclusion of the newer WFC buildings with their low vacancy rates skews these figures for the district. Buildings that do compete with the WTC for financial service tenants have several of the following characteristics:

- 1) Technologically advanced (i.e. state-of-the-art communication facilities and high capacity utilities for

¹¹Information for this section came from the Gordon Office Market Report (June 30, 1992). The report covers all buildings that meet the following criteria: 150,000 sf or larger, conventionally modernized with air conditioning and not owned and occupied by a government entity.

Exhibit 3.0

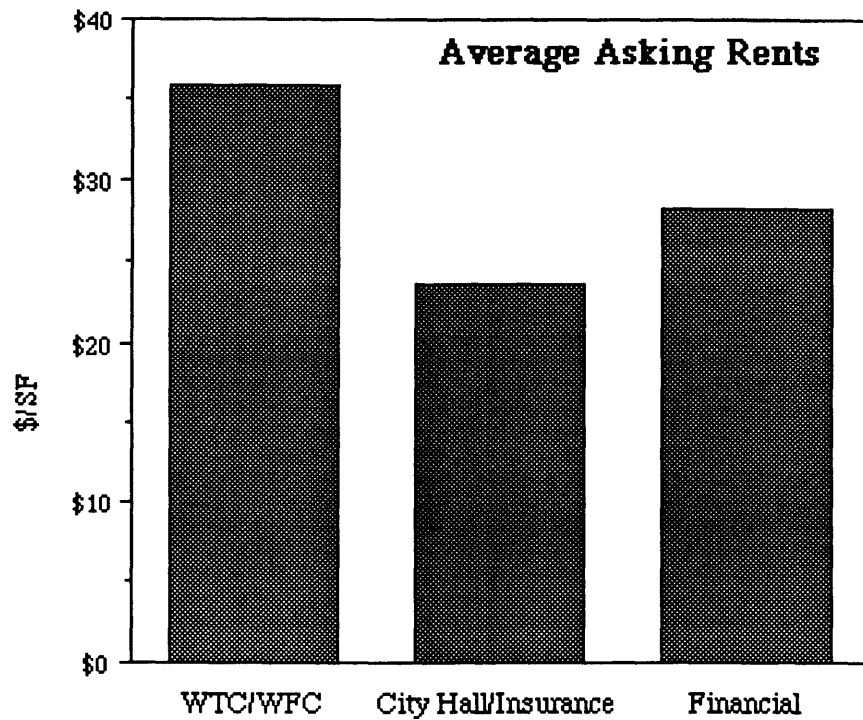
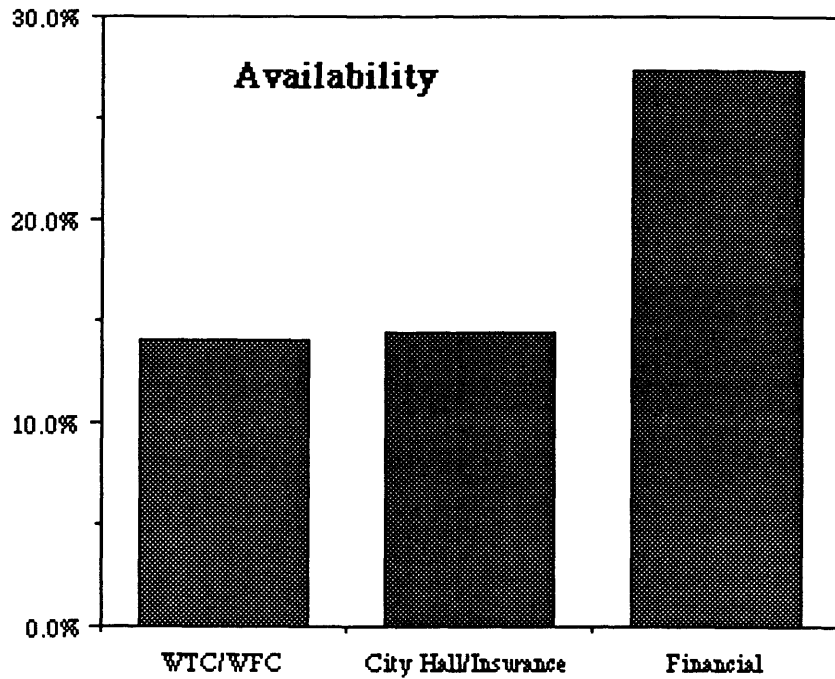


Exhibit 3.0 illustrates that, as of June 30, 1992, WTC/WFC district has the highest asking rents and lowest availability out of any of the three sub-markets in downtown.

office equipment and cooling systems); 2) Large, easily divisible floor plates; 3) Excellent locations (i.e. easily accessible by employees, proximity to airports, etc.); and 4) Located in new and/or well known buildings.

A partial list of downtown buildings that compete with the WTC for financial service tenants was compiled based on information received from interviews with leasing representatives at the Port Authority, local brokers and appraisers¹². Many of these buildings are post 1980 and several of the older buildings, including the WTC, are either planning or in the process of major renovation programs¹³. As Exhibits 3.1 and 3.2 indicate, overall availability for this group was 16.05% with average asking rents ranging from \$23.00-\$42.50 per square foot. This compared with an availability rate of 16.33% and average asking rents at \$35.00 per square foot at the WTC. This put the project very close to the average for this group. At the beginning of the 1980's the

¹²While some financial service tenants have moved to midtown, the downtown still continues to function as the financial center of New York. The majority of Manhattan's investment banks, securities firms and U.S. commercial bank headquarters still prefer locations downtown. In addition there still exists a significant rent differential (\$2-\$3/sf) between midtown and downtown locations. Source: Tenant Satisfaction Study performed for Port Authority, May 1992.

¹³As mentioned previously, the PA is planning a \$500-\$800 million, 10 year renovation of the WTC. Chase Manhattan Bank is also planning a \$30 million renovation of One Chase Plaza as well as a renovation of One New York Plaza [Martin, 1992].

Partial List of World Trade Center Competitors (as of 4/6/92)

Exhibit 3.1

Building	# of SF (thousands)	# of SF Avail (1)	% Available	Rent per SF (2)	Date Complete	Size Floorplates
World Financial Center	7,500	275	3.66%	\$36.00	1986-87	18-62,000
World Trade Center	12,570	2,053	16.33%	\$35.00	1970-88	40,000
40 Broad Street	280	57	20.36%	\$30.00	1982	11-13,000
60 Broad Street	975	765	78.48%	\$34.00	1961	12-46,500
One Liberty Plaza	2,100	104	4.96%	\$38.00	1973	40-43,000
One Financial Square	1,000	640	64.00%	\$38.00	1989	22-34,500
55 Water Street	3,678	510	13.86%	\$35.00	1973	58-128,400
One Broadway	180	15	8.19%	\$23.00	1982	13,000
One State Street	770	344	44.71%	\$29.00	1969	10-24,000
One Chase Manhattan Plaza	2,239	368	16.42%	\$35.00	1963	28-31,580
One New York Plaza	2,543	63	2.48%	\$36.00	1970	38-50,800
Three New York Plaza	140	15	10.36%	\$27.50	1987	N/A
17 State Street	526	332	63.05%	\$42.50	1987	N/A
Total/Average	34,501	5,539	16.05%	\$33.77		

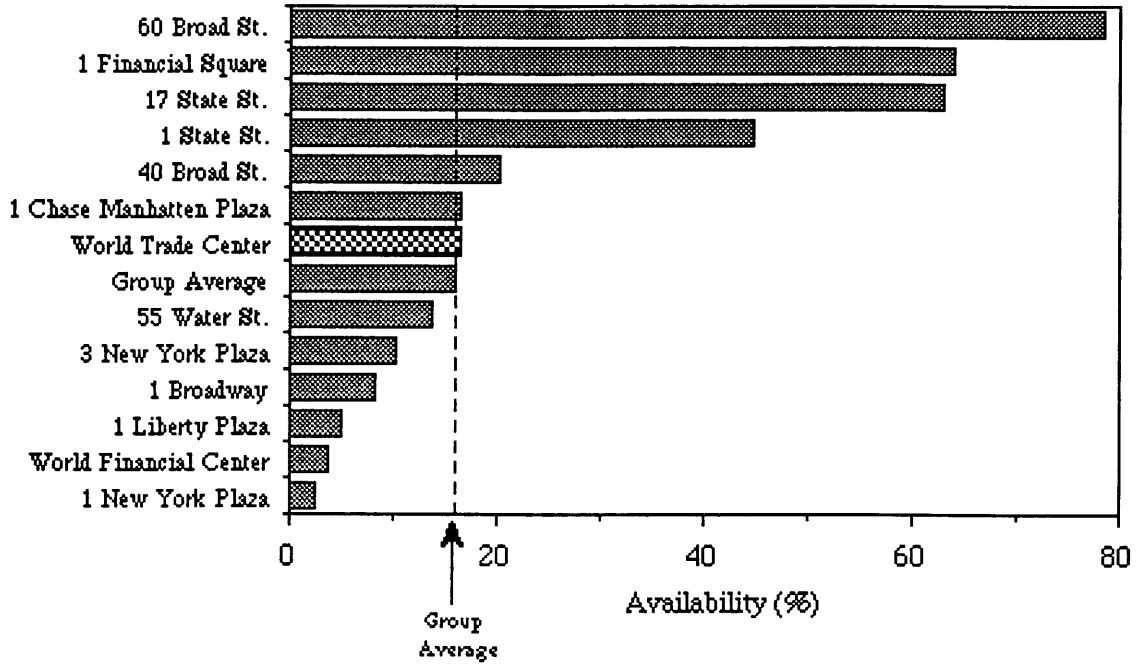
• Notes:

(1) Available space includes all space available either directly or by sublease. Information obtained from appraisal database as of 4/6/92. Verified with phone calls to owner/leasing agent where possible. Figures are in thousands of square feet.

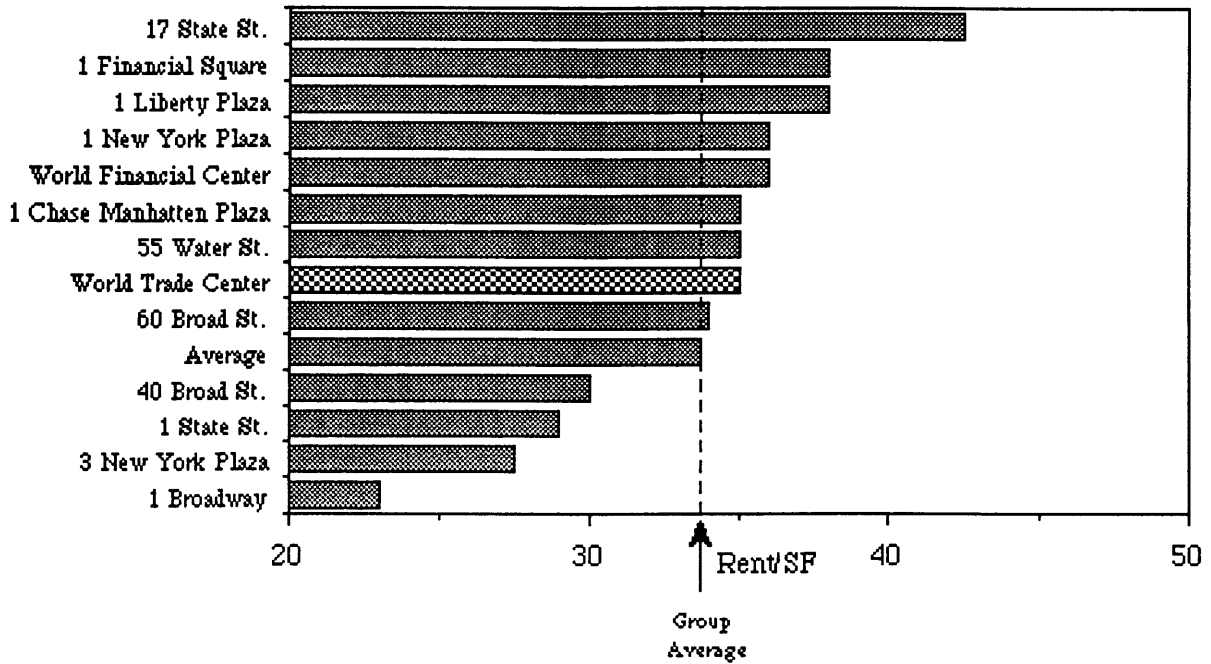
(2) Represents average asking rents for available space.

Exhibit 3.2

Availability Rates



Rent per Square Foot (\$/SF)



WTC was well positioned to take advantage of the large growth in the financial service sector. For much of the 1980's, the WTC enjoyed high levels of occupancy and its rental rates were among the highest in downtown. As the economy has weakened and more newer space has become available, occupancy rates at the WTC have also declined.

C. Tenants

In determining the extent to which tenants have benefitted by locating their businesses at the WTC, a questionnaire was circulated with eight tenants responding. The first part of the questionnaire asked tenants to rank which characteristics and amenities were most important in their decision to locate at the WTC. The second part focused on how frequently the tenants used the trade related services. Tenants responding to the questionnaire were part of a list provided by the PA. The tenants on the list represented a cross-section of industries including financial services, business services, trade services and construction. Tenants ranged in size from 600 square feet to 136,000 square feet and had been at the WTC between 2.5 years and 21 years. Other observations came from a recent Tenant Satisfaction Study prepared in May 1992 for the PA's Office of Business Development. This study focused on why tenants chose to locate at the WTC, the physical facility and the building services offered.

According to the tenants surveyed (see Exhibit 3.3), the most important factors in their decision to locate at the WTC were the prestige of the address, its proximity to mass transportation, the economic package offered, building services offered, technological capabilities of the building, floor plate size and trade related services offered. All of the tenants felt that the prestige of the WTC address, its proximity to mass transportation and the economic package offered were either important or very important in this decision to locate at the WTC. 87.5% of the tenants felt that the building services offered and the technological capabilities (with respect to utilities and communications) of the WTC were either important or very important in their decision. 75% of the tenants felt that the large/easily divisible floor plates and the trade related services offered at the WTC were an important consideration in their decision. This is interesting since relatively few of these tenants actually reported using these services. It may be that tenants attach some value to having these services available despite their infrequent use.

International tenants (especially banks) emphasized the worldwide recognition and prestige of the address as well as the ability to conduct business with other tenants located at the WTC. This was further confirmed by some of the leasing representatives who stated that locating in the same building

Important Factors in Choice of WTC Location

Exhibit 3.3

Characteristic/Amenity	Not Important	Important	Very Important
1) Prestigious Location	0.0%	37.5%	62.5%
2) Technologically Advanced Bldg (i.e. communications & utilities)	12.5%	62.5%	25.0%
3) Economic Considerations (i.e. rent & expenses)	0.0%	37.5%	62.5%
4) Large Floorplates	25.0%	37.5%	37.5%
5) Proximity to Mass Transportation	0.0%	0.0%	100.0%
6) Tenant Services (Bldg.)	12.5%	62.5%	25.0%
7) Tenant Services (Trade Related)	25.0%	50.0%	25.0%
8) Proximity to U.S. Customs House	75.0%	0.0%	25.0%
9) Proximity to Commodities Exchange	50.0%	0.0%	50.0%
10) Proximity to Other WTC Tenants	50.0%	25.0%	25.0%

Frequency of Use (Trade Related Services)

Trade Related Service	Never	Occasionally	Often
World Trade Institute Services:			
1) Seminars, Courses, Conferences	62.5%	37.5%	0.0%
2) Language Center	75.0%	25.0%	0.0%
3) Translation Services	100.0%	0.0%	0.0%
4) Conference Facilities	75.0%	0.0%	25.0%
5) Video Conferencing	87.5%	12.5%	0.0%
6) Trade Library	62.5%	0.0%	37.5%
Other World Trade Center Services:			
1) NETWORK System	87.5%	12.5%	0.0%
2) World Trade Center Club	25.0%	37.5%	37.5%
3) Xport (Trading Co.)	100.0%	0.0%	0.0%
4) Trade Missions	87.5%	12.5%	0.0%
5) Exhibition Facilities	87.5%	12.5%	0.0%
6) Temporary Offices	100.0%	0.0%	0.0%
7) Temporaries Secretaries	100.0%	0.0%	0.0%
8) Vista Hotel	12.5%	50.0%	37.5%

as competitors was an important consideration especially for Asian companies. Several of these tenants acknowledged that they did not consider other locations, reinforcing the importance of the WTC address to many tenants. Proximity to the Commodities Exchange (located in Four World Trade Center) is a major consideration to those involved in commodities trading and related businesses.

The Tenant Satisfaction Study highlights many of these same factors and goes on to point out that because the majority of the tenants are in the financial services business, being located downtown in New York's financial district is also an important consideration.

Regarding trade related services, approximately 37.5% of the tenants in our survey said they used the WTC Club, the Vista Hotel and the Trade Library often. Another 50% said they used the Vista Hotel occasionally and 37.5% said they used the Club and took courses from the World Trade Institute occasionally.

Generally, those tenants in commodities trading found the trade related services unimportant while those tenants in international banking, law and investment found them very important. Trade related services were not mentioned at all in the Tenant Satisfaction Study which points to a lack of

communication between the WTCA and the Port Authority. This is also the case in some of the leasing brochures and information which do not mention the trade related services offered on any sort of consistent basis.

When tenants were surveyed about the overall package offered at the WTC and what needed improvement, tenants had the following comments: " They need to upgrade interior of buildings to bring it into 1990's. Specifically, the hallways and bathrooms need to be re-done and traffic flow from mass transit and observation deck should be segregated from business traffic"; "PA is a very unaccommodating landlord. There is general lack of good stores and restaurants in the concourse"; and "General cleaning and maintenance could stand to be improved."

According to the Tenant Satisfaction Study, the most important services provided by the landlord are security, cleaning and maintenance. Although the PA has its own police force which it uses at the WTC, the consensus among tenants seems to be that security is virtually non-existent during the day. Many tenants concede that due to the size of the complex and the number of people passing through it each day, providing complete security is next to impossible. However, tenants do expect the premises to be carefully guarded during late night and early morning hours. The Tenant Satisfaction Study also

highlights the need for improvement with respect to cleaning service.

The Tenant Satisfaction Study also mentions that many tenants feel that the concourse does not present the image that they believe is appropriate for the World Trade Center. Tenants have also suggested rerouting part of the traffic to cut down on the congestion and adding more lighting.

The Tenant Satisfaction Study also reported that tenants have mixed feelings with respect to PA management. These feelings were largely influenced by their relationship with their tenant representative. Some tenants felt that the representative was quite attentive and responsive while others were frustrated by their lack of accessibility and insufficient authority. Several brokers have also commented that the PA's responsiveness to lease offers is slower than with private parties. A recent article in Crains New York Business captures one former tenant's frustration with the response time at the Port Authority: "...we also wanted to get away from the Port Authority bureaucracy. It's very difficult to get a response from them".

D. Regional Economic Interests

We will now consider the effect that the WTC has had on the

greater economic region. At the micro level, it appears that the Downtown Lower Manhattan Association's original goals to encourage development and increase property values have been achieved. Since the Vista Hotel officially opened in 1981, over 25 million square feet of office space has been built in lower Manhattan [Birnbaum, 1989]. The World Financial Center, representing 7.5 million square feet of this space, was actually built on landfill excavated from the WTC site and dumped into the Hudson River. This landfill area represented a 23.5 acre site, given to City of New York as part of an agreement to allow construction of the WTC to begin¹⁴.

The mandate of the PA is, "to promote and protect the commerce of the bistate port and to undertake improvements not likely to be financed by private enterprise nor to be attempted by either state alone". Clearly, one of the objectives of the PA is to promote the economic well-being of the region. One example of how this works in practice is the Port Authority's agreement to operate the unprofitable PATH system, which it took over at the same time it began the WTC project. While the WTC project has been able to cover all of its expenses (including its share of PA overhead and interest expense) and show positive net income since the mid 1980's, the PATH system has always operated at a deficit [Karvasarsky, 1992]. However,

¹⁴Source: The World Trade Center: a building project like no other. The Port Authority. February 1990.

efficient access by businesses in Manhattan to the labor force in New Jersey and the reduction in traffic has made the PATH system vital to the economic well-being of the region.

The strong financial performance of the WTC has allowed the PA to operate facilities such as PATH and the Marine Terminals that continue to incur net losses. Exhibit 3.4 shows that the WTC has consistently accounted for approximately 20% of total PA revenues since 1980. During this same period, the gross operating income percentage was between 30% to 40%. However, since 1987, this percentage has been declining, largely due to increased operating expenses at the WTC. In 1991, the PA had combined net income (after interest expense) of approximately \$60 million. This was comprised of a net loss of \$47 million on its Interstate Transportation Network (includes PATH), a \$112 million profit on its Air Terminals, a \$52 million loss on its Marine Terminals and a \$48 million profit on its WTC facilities.

In addition, PA bonds are secured "equally and ratably" with all of its other consolidated bonds, which are pledged by the revenues of all existing PA facilities. Because the WTC is a stabilized income producing asset, this means that the PA can raise more capital to take on more of these types of projects, at lower financing costs.

WTC Revenue Contribution to Port Authority Portfolio (millions \$)
1976-1991

Exhibit 3.4

Gross Operating Revenues				Gross Operating Income *			
Year	Port Authority	World Trade Center	Percent of Total	Port Authority	World Trade Center	Percent of Total	
1976	496.4	61.2	12.3%	185.7	21.6	11.6%	
1977	524.3	66.9	12.8%	145.3	11.6	8.0%	
1978	543.8	71.7	13.2%	133.3	16.0	12.0%	
1979	588.1	82.8	14.1%	148.4	18.9	12.7%	
1980	647.6	110.0	17.0%	166.1	31.2	18.8%	
1981	699.1	130.7	18.7%	169.2	48.9	28.9%	
1982	779.7	153.5	19.7%	185.2	71.4	38.6%	
1983	848.6	173.4	20.4%	195.1	86.0	44.1%	
1984	1000.1	196.4	19.6%	250.8	92.8	37.0%	
1985	1100.8	242.9	22.1%	210.5	89.7	42.6%	
1986	1169.6	232.7	19.9%	225.5	110.8	49.1%	
1987	1331.4	247.8	18.6%	323.5	105.9	32.7%	
1988	1436.9	277.6	19.3%	307.0	105.0	34.2%	
1989	1526.8	290.5	19.0%	351.4	118.4	33.7%	
1990	1690.7	372.4	22.0%	359.5	128.4	35.7%	
1991	1856.9	427.4	23.0%	405.8	116.7	28.8%	

* Gross Operating Income excludes interdepartmental revenues, general & administrative expenses and interest expense.

Source: Port Authority Annual Reports (1976-1991)

The WTC's export trading company (XPORT) has also been successful at helping small and medium sized regional companies to enter the export market by promoting their products overseas. Xport has helped over 70 of these companies to realize additional sales of \$20 million in 1989, \$23 million in 1990 and \$25 million in 1991.

E. Conclusions

At the beginning of the 1980's the WTC was well positioned to benefit from the growth in the financial service sector. During this period the WTC enjoyed occupancy rates close to 100%. However, due to increased construction of new space along with a contracting financial service sector, the WTC's economic position has eroded. Today it appears that the WTC is performing on average with other competitive office building projects. With an availability rate of 16.33%, the WTC is slightly higher than the competitor group's rate of 16.05%. In terms of average asking rental rates, at \$35.00 per square foot the WTC is slightly above the group average of \$33.77 per square foot. This slight rent differential may be attributable to the fact that the WTC is still considered to be a very prestigious address which is recognized worldwide. However, to avoid further erosion of its position and status as a first class office building, the WTC's capital improvement program must successfully be able to reposition the project to compete

with the newer space available in the market. The current office market in New York City is extremely competitive and it is truly a "buyers" market. No evidence could be found to support the idea that tenants at the WTC or any other building were willing to enter into rental agreements more favorable to the landlord (i.e. rental premiums, longer lease terms, fewer concessions, etc.).

There is clear evidence that the World Trade Center has had a significant impact on the economic growth of the region. At the local level it has served to increase property values and encourage additional development and investment in lower Manhattan. In fact the WTC was so successful at stimulating further development in lower Manhattan that it is currently faced with competition from many of these same buildings. On a macro level, the revenues from the WTC have allowed the PA to subsidize unprofitable facilities which have greatly benefitted businesses located in the region. Examples of these include PATH and the Marine Terminals which have facilitated the efficient transportation of labor and resources. Other benefits stem from the creation of the Port Authority's World Trade and Economic Development Department, created as a result of the WTC project and responsible for a number of programs that promote regional businesses directly. Examples of these include Xport and the Reverse Investment program.

The New York WTC has all the attributes that make it a first class office building. When it was first built, it was the most prestigious and technologically advanced office building in the world. For these reasons tenants wanted to locate their businesses there. Today, there are a number of newer first class office buildings which compete directly with the WTC for tenants. While these buildings can offer newer space than the WTC, none of these possess the worldwide reputation of the WTC. This prestige is perceived by tenants to be one of the greatest benefits associated with their tenancy at the WTC. Of the tenants contacted for this study, all of those under 25,000 square feet felt that the prestige of the address was very important in their decision to locate at the WTC. Overall, 75% of these tenants said that trade related services were either important or very important in their decision, only 40% of these indicated that they used these services often. Other reasons such as the ability to transact business with neighboring tenants were mentioned but are simply not considered a tremendous advantage.

Chapter IV. Comparative Analysis

A. Introduction

Compared to the other four WTCs in the larger study, The New York WTC is unique in a number of respects. The project is by far the largest, containing over 13 million square feet of rentable space. It was also one of the first WTCs to be built with construction commencing in 1966. Started prior to the creation of the WTCA, there was no working model that could be used as a guide. The trade service component of the WTCA was also in the process of being developed at this time. In addition, all of the other WTCs in the study have been able to use operating WTCs as a reference for programming their facilities. Because of these differences it makes a meaningful comparison to the other four sites studied a difficult task.

Yet, in spite of its uniqueness, the New York WTC still shares some common traits with other WTCs. The New York WTC, which also houses the WTCA headquarters, offers the complete range of trade related services and programs. In this respect it has become a model for other WTCs around the world. Some of these services include the Network system, the World Trade Institute, the Trade Library, Translation Services, Temporary Offices, Trade Missions, Video Conferencing and the WTC Club. However, given the grand scale of the project these services

do not appear to have as prominent a role in the operation of the WTC as they do in smaller locations such as Amsterdam. In Amsterdam, service revenues generate a significant portion of the of total gross revenues, while in New York they contribute relatively little to the financial success of the project.

The scale of the New York WTC alone almost ensures that trade related tenants will account for a smaller percentage of the occupants than in a smaller project. Leasing up almost 12 million square feet of office space with trade related tenants would be almost impossible. Moreover, unlike WTCs in less well developed markets, the New York WTC must compete with many other first class buildings for major tenants. There is also a tendency for businesses within the same industry to locate near each other, creating further competition for the WTC. Examples of these are the garment or jewelry districts in New York. Strictly from a leasing perspective, the PA has had to adjust to changes in the market. As the downtown market matured and the financial service industry grew, this meant moving away from smaller trade related tenants and towards higher paying financial service tenants.

Further contributing to the movement away from trade is the design program of the center. More so than any of the WTCs in this study, the New York WTC is basically a large office complex. Excluding the Hotel, less than 2% of the rentable

space was designed as exhibition space with even less than this amount actually being used for this purpose. The New York WTC is an office building complex and its tenant composition reflects the changing profile of the lower Manhattan office market. Part of the explanation for this may be that New York has many alternatives for conventions and trade shows such as the Madison Square Garden and the Jacob Javits Center.

By contrast, Taipei, the only WTC in this study which approaches the New York facility in scale, devotes 20% of its space to exhibition purposes. The Taipei WTC has truly been designed to service trade and has a far greater trade orientation.

There are other important similarities and differences that emerge when comparing the New York WTC with those in Taipei, Amsterdam, Portland and Curacao. By identifying some of these considerations, this study arrives at several conclusions relevant to programming a successful WTC. These are described in the following and include the trade environment, the level of government support for the project and market or real estate issues.

B. Trade Environment and Operating Strategies

A WTC's trade environment is defined by the cultural and

economic characteristics of a particular region and that region's position in the overall global economy. This trade environment will largely determine the operating strategy adopted by a particular WTC as well as the degree of success it will experience with respect to promoting international trade. These ideas are best illustrated through a comparison of the various trade environments found at the different sites.

There are typically several WTCs in large markets like the United States or the European Economic Community (EEC). Each of these WTCs (and their underlying trade environment) holds a share of the larger trade market. Because there are several WTCs, no individual WTC will have that great an influence on trade policy. In New York and Portland, trade policy is determined by the U.S. government. Similarly, in Amsterdam trade policy is largely determined by the EEC. Therefore, the primary operating strategy adopted by these WTCs is one of gaining additional market share relative to other WTC cities.

In smaller markets like Taipei and Curacao, WTCs have a much greater potential to influence trade policy. In these smaller markets there is typically only one WTC, often located in that country's capital city. For example in Taipei, the manager of the WTC, China External Trade (CETRA) has been able to influence national trade policy partially because of its

proximity to policy makers. The business environment in Taipei is largely based on trade. It has a strong economy with a large manufacturing base which produces enough goods to make it a net exporter nation. The Taipei WTC has had a significant impact on trade because Taipei's economy is so heavily oriented towards international commerce and because the Taipei WTC has truly centralized that country's trade related activities. Foreign importers on business trips can meet with manufacturers, trade service organizations and governmental agencies involved with trade, all in one place. On the other hand, Curacao does not have as strong an economy nor as many firms engaged in international trade. While the Curacao WTC acts as a focal point for trade activity and has been able to shape trade policy, the volume of trade is much lower than in Taipei. One of the primary objectives of the Curacao WTC is to develop the island's economy by attracting more trade related businesses. While there are large differences between the economies of Taipei and Curacao, the operating strategies of both these WTCs are similar because they promote their countries' trade potential.

For WTCs in larger markets, the emphasis will be on competing and capturing a greater share of their country's international trade. These WTCs will also have less influence on trade policy since there will typically be several WTCs in these markets. Moreover, all but one of these will be located

outside the capital further limiting influence. Conversely, in smaller markets where the WTC acts as a focal point for trade activity, the potential to influence national trade policy will be high. In addition, centralizing trade activity in these smaller countries will have a more immediate effect in economies with an existing trade business base.

C. Governmental Support

Each of the WTCs studied received some form of governmental support. An important distinction has to do with the level at which such support takes place (i.e. local, regional, national). This is important because the national government determines a country's trade policy and the role that a particular WTC will play in a country's overall trading plan.

It is safe to say that the New York WTC, as it exists today, would not have been built had it been left to the private sector. As discussed in the second chapter of this thesis, a public agency (i.e. the Port Authority) was really the only entity that could exercise powers of eminent domain to acquire the necessary land; invest an enormous amount of money in a largely speculative project; and deliver several key tenants (including itself and the State of New York) to the project. One of the few ways that the project could receive local and state governmental support was to designate the project a WTC.

This would serve to tie it to the port and the greater economic development of the region, thereby keeping it consistent with the goals and mission of the Port Authority.

While the Amsterdam WTC was developed through private investment, it is similar since government support was dependent on the project being a WTC. In this case, rezoning for the WTC site was given by local officials on the condition that the facility obtain the official WTC designation¹⁵.

In the case of Taipei, the national government is very involved in all aspects of the WTC. It owns a large portion of the project (including all the land) and its quasi-governmental organization, CETRA, operates the facility. The government views the concentration of trade activity in one central place as important to the national interest. Because this is the case, no other WTCs will be created in Taiwan until such time that the government decides that another one is necessary. Obviously, governmental constraints on supply such as this will have a big impact on the success of the

¹⁵ This also has interesting implications with respect to obtaining financing for future WTC developments. In both these cases (New York and Amsterdam), the WTC designation was what allowed the development to go forward. The implication being, that these sites would not be available for other types of commercial development, giving WTC developers a competitive advantage in some markets.

project.

The situation in Curacao is somewhat similar in that the national government owns a large share of the project. However, in the case of Curacao, the government is really investing money in an attempt to attract trade related businesses and stimulate economic development. In Curacao, further market demand for WTC facilities do not currently exist.

Other support for WTCs comes from agreements by many of these governmental agencies to lease large blocks of space. In the current development environment, having this commitment can be the difference between commencing construction and abandoning a project. As mentioned earlier, one of the key reasons that the Port Authority could develop the New York WTC project was that they could guarantee themselves and the State of New York as tenants. This was also true in Taipei where the governmental agency, CETRA leases four floors of office space to house its 700 employees.

D. Market Issues

Critical to the success of any WTC project is an understanding of the underlying real estate market. Trade related services alone are not enough to induce tenants to lease space at a

WTC. A WTC must carefully consider the market and program its facility accordingly. The original 1950's proposal for a New York WTC called for building over five million square feet of exhibition space. Fortunately, the decision makers of that time had the good sense to realize the market would not support such an idea. The WTC project ultimately built in New York demonstrates an excellent understanding of that market. The developers realized that the project had to be largely office in a market that is one of the world's leading financial centers and headquarters to many corporate institutions. The WTC developers had keen foresight into the future of this market. By building large column-free space with high capacity utilities service and state-of-the-art communications facilities, the New York WTC continues to be considered "Class A" office space in this highly competitive market. In order stay competitive in this market the Port Authority has recently began a \$800 million, 10 year capital improvement plan at the WTC. A large part of this will go towards systems improvements within the building such as increasing cooling and electrical capacity and communication services. Included in the 10 year budget are \$80 million for electrical capacity upgrade, \$100 million for cooling capacity upgrade and \$75 million for security and operations control (includes communications)¹⁶.

¹⁶Source: Gus Preschle, Facilities and Operations (1992)

The majority of the other sites studied also demonstrated a solid understanding of their respective real estate markets and customer preferences. In Amsterdam, the WTC offers small first class "incubator" office suites which are difficult to find in the market. In addition, it offers 24-hour security, underground parking and retail services. This combination of facilities and services has proved to be extremely successful as demonstrated by the project's occupancy rate of 98%. The International Trade Mart in Taipei provides small showroom/office space, which has proven to be quite popular among its 1000 small tenants. By including the lavishly furnished Club, it is also clear that the developers of the Taipei WTC understood the importance that restaurants play in conducting business in this market. The Curacao WTC initially missed its market by creating a large amount of showroom space for which there was no demand. This required a reassessment of the market which highlighted the need for space by international finance and business service tenants. Today the Curacao WTC is considered the premier office location in the market and is 93% leased.

E. Conclusions

In larger countries, WTC's often find that they are competing with WTC's in other cities , for a share of that country's international trade. In this case, the role of the WTC becomes

one of trying to increase that city's market share through the centralization of trade activities. In smaller countries, WTCs are more likely to become the focal point of trade related activities. However, the nature of the country's economy will largely determine the role it plays. In the case of Curacao, this could mean stimulating international through extensive promotion of the region. Using the Taipei example, the WTC role may be more concentrated on organizing exhibitions and incoming trade missions that promote the products of the country.

Because WTCs compete with other traditional real estate projects in the market, it is important for a WTC developer to determine early what type of tenants are being targeted and what their needs are. This will then allow the developer to make decisions about the types and quantities of space to include in the project. Creating a design that allows some flexibility is also a good idea. Performing extensive up-front market research on the preferences of these tenants is critical due to the complicated nature of these projects which typically include office, hotel, retail, conference and exhibition space. Miscalculating the size of the market or omitting a particular use can severely impact the WTC's success.

Each of the five WTC sites studied realized various levels of

governmental involvement. This participation came from various levels and in a number of different forms including assistance with permitting, lease commitments for space and in some instances outright ownership. In many cases a strictly private development may not be possible. Some countries like Taiwan may restrict the ownership of much the project to the national government. In other cases like New York, there are large economic barriers preventing private ownership. Whatever the case may be, prospective WTC developers should carefully weigh the advantages and disadvantages of government involvement. In many cases a public/private ownership may be the most efficient. Generally, the private sector is skilled in the construction and operations side of a WTC while the public sector can make a valuable contribution by assembling land, gaining the necessary approvals and obtaining below market rate financing.

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