Joint Development at Downtown Rail Stations in the U.S. and Japan

by

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ABSTRACT

Joint development is beneficial both to transportation agencies and to others such as municipalities and private developers, because it generates increased ridership, revenue from rents, increased property values, and increased property tax revenues. It also increases public activity around stations and can positively improve public interaction and civic pride. On the other hand, due to the complicated relationships among agencies involved, it is generally difficult to organize joint development projects.

This thesis focuses on joint development immediately connected to rail stations. Case study projects are drawn from six downtown stations, three from the U.S., South Station in Boston, Union Station in Washington, D.C., and 30th Street Station in Philadelphia, and three from Japan, Ikebukuro Station, Oimachi Station, and Yotsuya Station, in Tokyo. All these stations were used as transportation centers in their respective cities for a certain period of time, and were then renovated or reconstructed into complex centers which included vital commercial facilities. The objectives of this thesis are: to research individual projects and draw lessons from them; to make clear the similarities and differences among projects and their reasons; and to consider applicability to other situations.

Analyses are presented according to the following three criteria: development process and financial structure, physical planning, and marketing and management. Below are the main findings for each criterion. First, the process of joint development and financial structure of U.S. projects were more publicly-led and flexible than Japanese projects, although a certain way of allocating the initial cost was found in Japan. Second, it was important to make the most of the existing historic building and to create additional floor spaces so as to be consistent with the existing floors where needed, to provide joint development with public spaces by utilizing historic concourses or by creating new floors, and to properly connect the projects with the neighborhood. Third, while U.S. projects differentiated their malls from suburban malls by a unique tenant-mix and Japanese projects intended to take a more general approach, both promoted sales by means of special events rather than by advertising. Following this, the international applicability is analyzed.

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1.1 Introduction

Joint development is beneficial to both transportation agencies and other agencies such as municipalities and private developers, because it brings them increased ridership, property values and property tax revenues. It also increases public activity around stations and can positively improve public interaction and civic pride. On the other hand, because several different agencies are intricately involved in a single project, it is difficult to organize such a project and properly allocate costs and profits to each agency. Thus, in this thesis, I will research joint development at rail stations focusing on development process, financial structure, physical planning, and management, make clear similarities and differences, and consider applicability. A review of definitions and past studies on joint development will be presented, followed by the objectives of this thesis, in this chapter.

1.2 Definition of joint development

There are several definitions of joint development given by organizations and individual researchers. In 1979, the Research Division of the Urban Land Institute, a non-profit organization of practitioners in city planning and real estate businesses defined joint development as follows:

> Joint development is real estate development that is closely linked to public transportation services and station facilities and relies to a considerable extent on the market and locational advantages provided by the transit facility. The real estate projects may include entrances to transit stations or involve a less direct form of pedestrian access such as an underground passageway, surface route, or skyway. Regardless of the physical structural relationship of the public and private components, joint development requires close cooperation and sometimes contractual agreements among the

> private entities developing the real estate, public transit authorities, and other public agencies.[1]

Ten years late, after a number of joint development projects in the 1980s, the ULI's definition of joint development was altered slightly different way by the National Council for Urban Economic Development (NCUED) with the assistance of the Urban Mass Transit Administration (UMTA):

> Joint development has emerged as one product of the transportation-economic development relationship. Strictly defined, it is the relationship between transit and real estate whereby each contributes significantly to the other's value. ... Loosely defined, joint development is any private sector contribution towards public transportation which either decreases the costs of operating or constructing public transit systems, stations or improvements, or somehow contributes to the increased ridership of the system.[2]

While the ULI thought that joint development would be private development with contributions from transportation facilities, the NCUED perceived it as a private sector contribution to public transportation facilities in their loose definition. Following that, Cervero defined it as follows for the purposes of his study, *Transit Joint Development in the United States*, published in 1992:

> Any formal agreement or arrangement between a public transit agency and a private individual or organization that involves either private-sector payments to the public entity, or private-sector sharing of capital costs in mutual recognition of the enhanced real estate development or market potential created by the siting of a public transit facility.[3]

In this statement, he does not pay attention to which sector benefits from which sector; according to him, all that is a relationship between two sectors. Generally speaking, according to the above three definitions, joint development requires three common components: a physical connection between real estate development and transportation facilities; a relationship between transportation agencies and other private or public entities; and, any contributions made by one

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1 ULI Reserch Division, *Joint Development: Making the reaal Estate--Transit Connection*, 1979, p. 1.

2 The National Council for Urban Economic Development, *Moving Towards Joint Development: The Economic Development - Transit Partnership*, 1989, p. 3.

3 Robert Cervero. *Transit Joint Developoment in the United States*, University of California at Berkeley, 1992, p. 4.

sector to another. Because physical connections vary from a single passageway between a commercial property and a station to a large building combining station facilities with commercial floors, there are many varieties of joint development. Physical connections almost involuntarily create relationships among entities which own, lease, or manage property. A mutual contribution, however, has to be made intentionally. Cervero pointed out that mutual contribution can be divided into two types, i.e., revenue-sharing arrangements and cost-sharing arrangements.[4]

1.3 Past studies on joint development

Past studies are divided into two groups according to their themes: research focused mainly on individual joint development projects and research focused on the policies of transportation agencies. With respect to case study classification, more multiple-case studies have been found than single-case studies. As for studies involving individual projects, there is Chu's examination the feasibility of plans for air-rights at Boston's South Station, in which he determines that private investment would be indispensable.[5] Thomas has looked at the manner in which cities and developers might identify the key problems and opportunities in the Kansas City Union Station project. He examined three alternative development options: privately-led development, publicly-led development, and public/private joint-development. He, too, concluded that a substantial subsidy would be required to meet the developers' financial return goals in any of the three options.[6] Unlike these two single-case studies, the ULI Research Division minutely studied seven joint development projects in five cities in the U.S. and Canada. According to their study, joint development implementation efforts are comprised of two distinct but related activities in planning and development: policy-making and deal-making.

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4 Ibid.

5 Michael Chu, *Development plan for the air rights at South Station transportation center*, 1985.

6 James E. Thomas, *The interaction of public/private development constraints: opportunities for the reuse of Kansas City's historic Union Station*, 1986.

The planning process establishes the basic policies that guide the design and construction of a joint development; the deal-making process manages the legal, physical, financial, and social constraints faced by transportation agencies, developers, and public entities, etc.[7]

The research on transit agencies' perspectives was done mostly in the late 1980s and '90s, following the introduction of new transit lines that involved joint development. Greenberg researched seven transit agencies and drew lessons regarding methods and techniques for transit agencies to cooperate with private entities to create stations which could become urban nodes. He then made recommendations for the Tren Urbano project in Puerto Rico.[8] Sriver constructed a typology of station area characteristics based on neighborhood attributes both before and after station construction, and then presented some effective strategies for accomplishing the station area according to the typology from the point of system-wide analyses.[9]

1.4 Goals of this thesis

Throughout this thesis, I will focus on joint development that is immediately connected to rail stations, although, in general, joint development is a term used more broadly, as I described in Section 1.2. Such joint development can occur both in downtown areas and in suburbs. While most suburban joint development projects have been undertaken in connection with the construction or extension of commuter rail systems, like the Ballston Metro created by the Washington Metropolitan Area Transportation Authority (WMATA) or the Southern Bell Tower created by the Metropolitan Atlanta Regional Transit Authority (MARTA), downtown joint development projects have revitalized existing deteriorated stations. Due to my own interest and time constraints, I have concentrated on downtown stations in the U.S. and Japan. For case study projects, I have chosen three stations from each country. Downtown stations are

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7 ULI Research Division, *Joint development: Making the real estate - transit connection*, 1979.

8 Paul Greenberg, *Delivery of Tren Urbano Stations as Strategic Urban Nodes*, 1996.

9 Jeffrey J. Sriver, *Factors Influencing Land Development Around Rail Trasit Stations*, 1995.

characterized not only by their location but also by their periods of dedication, because they were typically created in the early stages of rail transportation. The projects studied in this thesis were completed between the late 1980s and early 1990s. These stations were all originally used as transportation center in their respective cities and were later renovated or reconstructed into stations with vital commercial facilities.

The objective of this thesis is to find answers to the following questions:

...in terms of each project,

- Why and how was the project planned?
- What agencies were involved in the project, and how did they participate in it?
- How was the project planned physically and financially?
- How has the project performed? and
- Did the project have an impact on the neighborhood?

...in comparison with domestic projects,

- What similarities and differences were found among projects; were there any patterns?
- What were the reasons for the similarities and/or differences?

...in comparison with international projects,

- What were the similarities and differences between the patterns of U.S. projects and those of Japanese projects?
- Why were they similar or different?
- Is there any applicability here for other countries?

To find answers to these questions, I will first look at individual projects and draw lessons from them. I will then make clear the similarities and differences among the projects and examine what reasons there are for them. Finally, I will consider the applicability of these lessons to other situations. Chapter 2 presents descriptions of U.S. projects and lessons and implications drawn from them. Chapter 3 presents descriptions and implications of Japanese projects. Chapter 4 makes international comparisons and applications of the previous analyses.

Chapter 2: Case Studies of U.S. Projects

2.1 Introduction

This chapter presents three case studies of joint development projects in the northeastern United States: South Station in Boston; Union Station in Washington, D.C.; and 30th Street Station in Philadelphia. These projects were based on downtown stations which offered commuter trains and intercity trains as well. The stations were housed in beautiful buildings, and were crowded with many passengers in their early years. These prosperous stations, however, experienced deterioration for several decades with the decline of the railroads. Finally, however, efforts were made to transform these obsolete stations into vital transportation nodes that would also be centers for citizens and tourists activity with lively dining and shopping areas and office spaces. The basic strategy for these projects was to restore the existing buildings, their interiors and their exterior design, and to add additional structures inside or next to the existing buildings. All redevelopment was completed by the late 1980s or early '90s, and all of the projects have proven to be quite successful. An overview of these three projects is provided in Table 2.1.

Table 2.1 Overview of U.S. Case Study Projects

Project	South Station		Union Station	30th Street Station
	Main Terminal	Bus Terminal		
Year of dedication	1898	N.A.	1907	1934
Year of Redevelopment	1988	1995	1988	1991
Transportation Mode	Intercity trains (Amtrak) Commuter lines and subway (MBTA)	Bus lines (several private companies)	Intercity trains (Amtrak) Commuter lines (MARC) Subway (WMATA)	Intercity trains (Amtrak) Commuter lines and subway (SEPTA)
Location of facilities other than transportation facilities	Within the station	Within the terminal	Within the station	Within the station
Building Size	five stories above ground and one below	two stories above ground	two stories above ground and one below	five stories above ground
Gross Building Area	260,000 sq.ft.	312,000 sq.ft.	600,000 sq.ft.	550,000 sq.ft.
Usage and Space Allotment	Retail (including food service): 25,000 sq.ft. Office: 125,000 sq.ft.	Retail: 6,000 sq.ft.	Retail: 136,000 sq.ft. Food service: 73,000 sq.ft. Office: 100,000 sq.ft.	Retail (including food service): 57,000 sq.ft. Office: 265,000 sq.ft.
Total Cost	$67 million (in 1988 dollar)	$81 million (in 1995 dollar)	$155 million (in 1988 dollar)	$75 million (in 1991 dollar)

2.2 South Station, Boston

2.2.1 Background

South Station is located at the fringe of Boston's downtown area (See Figure 2.1). It is at the corner of Atlantic Avenue and Summer Street, on intersection that has been called Dewey Square and seemed to be one of the most active places in Boston. At the same time, South Station is adjacent to districts which serve specific needs. The Financial District, which is the center of the commercial and financial activities of New England, is across Atlantic Avenue from South Station. The Museum Area, which is comprised of the Boston Tea Party, the Children's Museum, and the Computer Museum, all located within or across Fort Point Channel. These museums attract many tourists and Boston residents as well. The station currently sits on a five-acre site, surrounded by these interesting areas.

South Station is now a multimodal station with intercity trains operated by National Railroad Passenger Corporation (Amtrak), commuter trains, and one subway line, the Red Line, part of the Massachusetts Bay Transportation Authority (MBTA) system; there are also intercity and commuter bus lines run by several bus companies. Amtrak is a company whose stock is entirely owned by the Federal Government and was founded in 1971, to provide intercity train service previously offered by several private companies. In the Boston area, Amtrak also provides commuter rail services on 11 routes according to a management contract with the MBTA. The MBTA was formed in 1964, to implement a new concept in mass transportation and to take over the role of its predecessor, the Metropolitan Transit Authority.

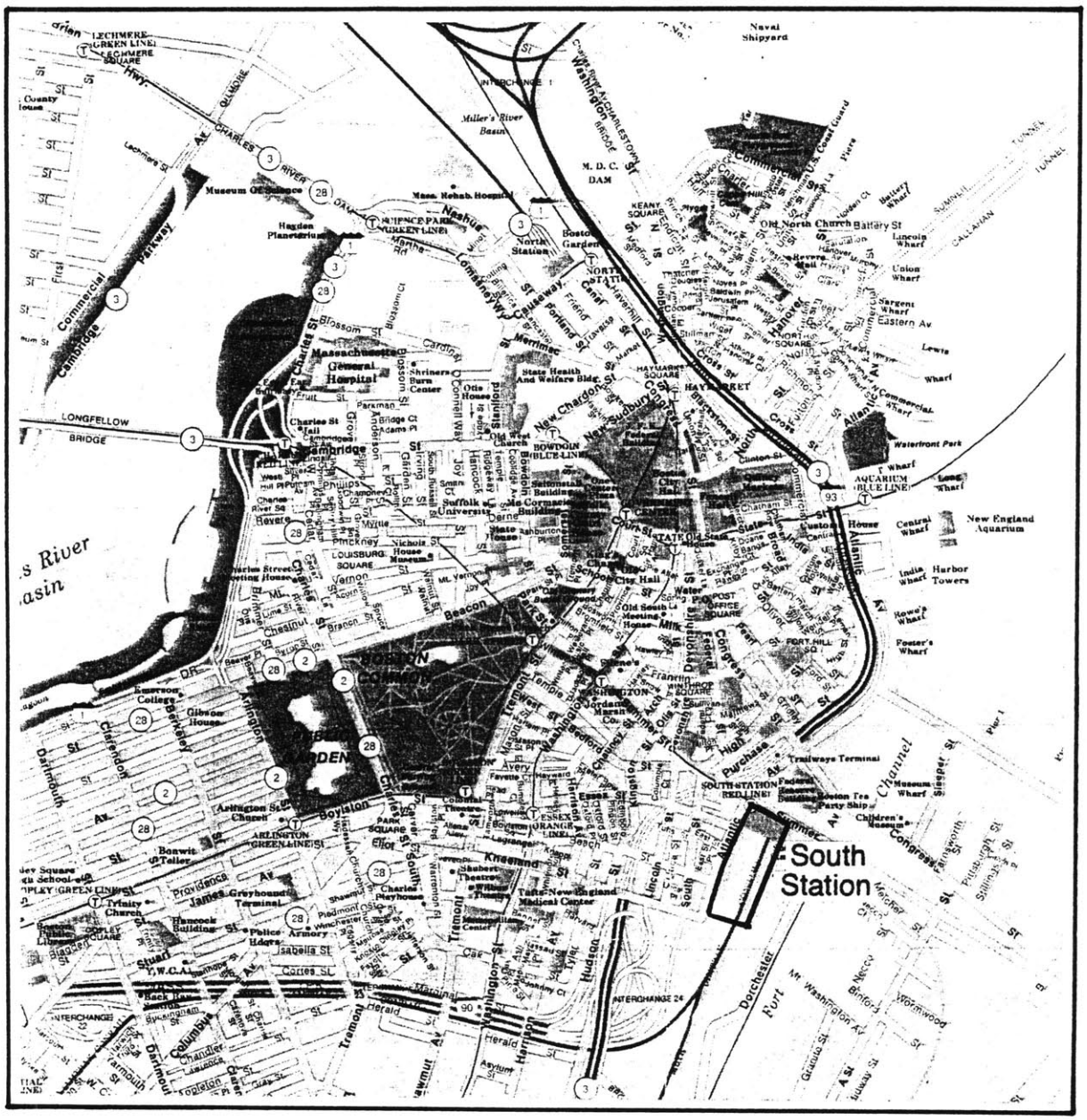

Figure 2.1 Vicinity of South Station

2.2.2 From dedication to deterioration

South Station was dedicated in 1898 as one of many terminal stations on a network which connected major cities in the United States. It was welcomed by the citizens of Boston and the Mayor's speech clearly demonstrated their enthusiasm and expectations for the new station. Mayor Quincy celebrated the dedication with the following speech:

> Ladies and Gentleman, we meet here today at the formal opening and dedication of a great building, unique in many respects... this building, although under corporate ownership, is essentially of a public character and dedicated to the service of the people.[1]

It was created to serve intercity trains operated by the Boston and Albany Railroad Company and the New York, New Heaven, and Hartford Railroad Company at that time. The station was originally owned and managed by the Boston Terminal Company (BTC) and was intended to replace four smaller stations.

As shown in Figure 2.2, the station occupied the entire width of the block between Dorchester Avenue and Atlantic Avenue, and the tracks and platforms were covered by a huge arched shed. There were underground looped tracks for electrified commuter trains, although they were never used due to the incompletion of the electrification. Its main concourse was designed by Shepley, Rutan, and Coolidge, and it was the first in a series of grand neoclassical structures. Grand Central Station and Pennsylvania Station in New York, Union Station in Washington, D.C. and Union Station in Chicago, and many others followed South Station's model. Passenger facilities were relegated to the main building, a five-story headhouse. The sixteen Ionic columns and a large granite eagle over the center clock made the outside of the station look very impressive. (See Figure 2.3) Off the central lobby, on the right, were parcel room, entrance to elevator, and stairway hall. On the left, there were rest rooms, telegraph, telephone, ticket offices, and information counters, each with separate doorways to the waiting room. Continuing along the streetside of the lobby were a station master's office, barbershop,

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[1] Alan Leventhal, "Boston's 'New' South Station," *Urban Land* October 1993, pp. 99-100.

shoe polishing room, public lavatory, smoking room, and carriage transfer office. In the center there were four large booths for the sale of newspapers, fruit, tobacco, and beverages, and a fifth for the use of baggage porters. The basement floor was originally used for baggage storage, for immigrants, and for restaurant supplies. The second floor was occupied by the administration offices of the terminal company, and the third floor was used as the main office of the Boston and Albany Railroad Company; on the fourth and fifth floors were the offices of the New York, New Heaven, and Hartford Railroad Company. [2]

Since its dedication, it enjoyed prosperity with many travelers for about three decades. It was the biggest rail station in the country; 45 million travelers passed through South Station in 1920, nearly twice as many as went through Grand Central in New York. Its heyday came in the 1930s. Between its dedication and the 1930s, it was a focal point of downtown activity in Boston where as many as 20 concessionaires found business there to be a most profitable venture. The South Station Theater featured newsreels, short subjects, and cartoons for those who wanted to kill time before catching a train, and there was Our Lady of the Railways, a chapel where Masses were said daily.[3]

Then the modal shift from railroad to airplanes and expressways hit South Station as it did other stations. The New Haven Rail Line went bankrupt. By the 1960s, the station was in a state of disrepair and general neglect. The high ceiling, instead of being repaired, was hidden behind a poor covering of acoustic tiles, and the rotting floor was patched up with plywood.[4] Pigeons were even roosting in the station's neglected interior. In the 1970s, station facilities were shrunk: the Railways Chapel was closed, the five-story West Wing and a half of East Wing were demolished, and a half of track ways was sold to the U.S. Post Office and the South Station Postal Annex was created. This demolition was the result of public recognition that the station was underused and larger than necessary.

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[2] George B. Francis, "The South Terminal Station, Boston, Massachusetts," *Proceedings of the American Society of Civil Engineers*, December 1899.

[3] *Boston Glove*, December 27, 1983.

[4] *Boston Globe*, May 22, 1990.

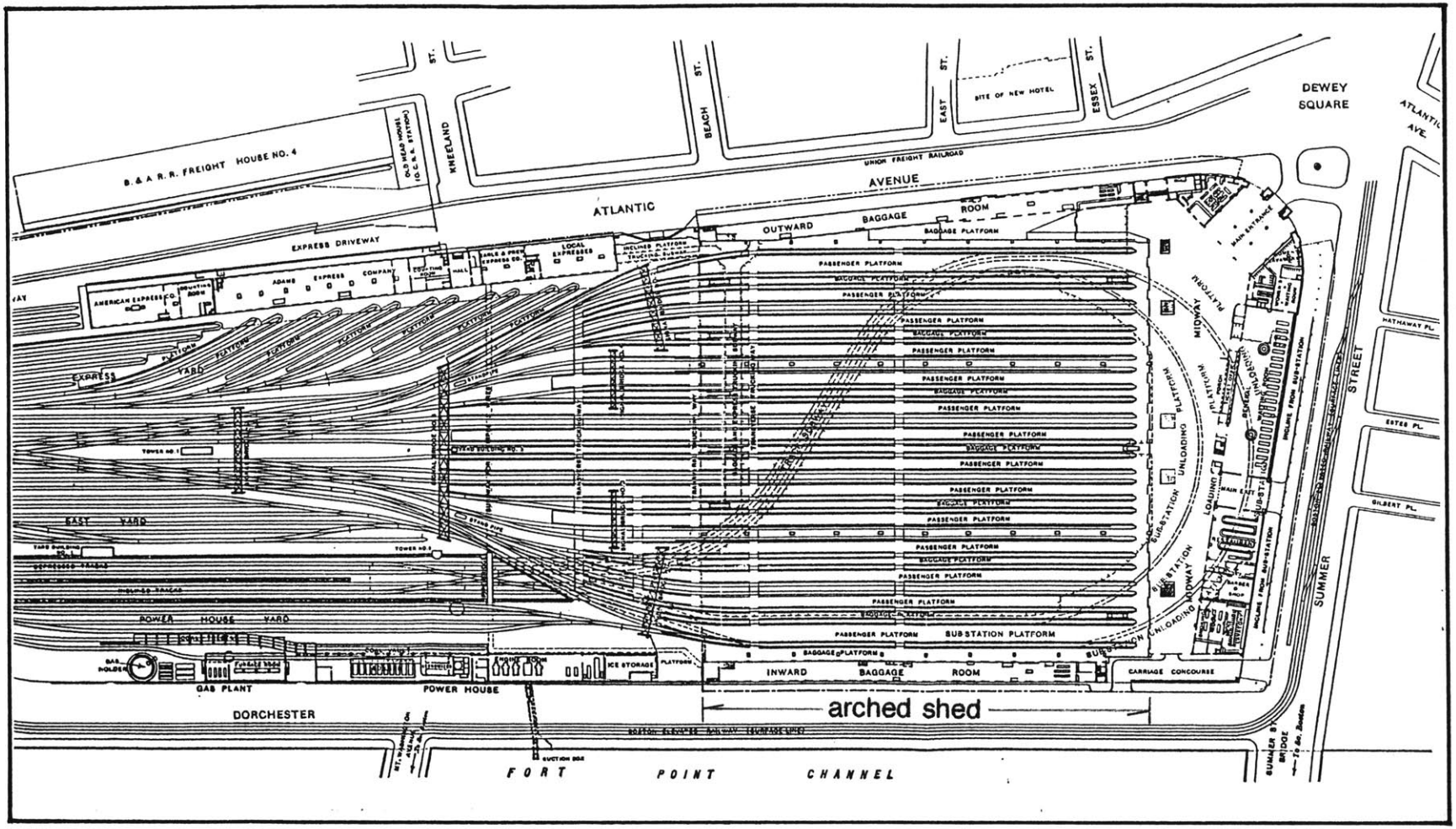

Figure 2.2 Original plan of South Station

Source: Richard C. Barrett, *Boston's Depots and Terminals,* 1996, p. 156.

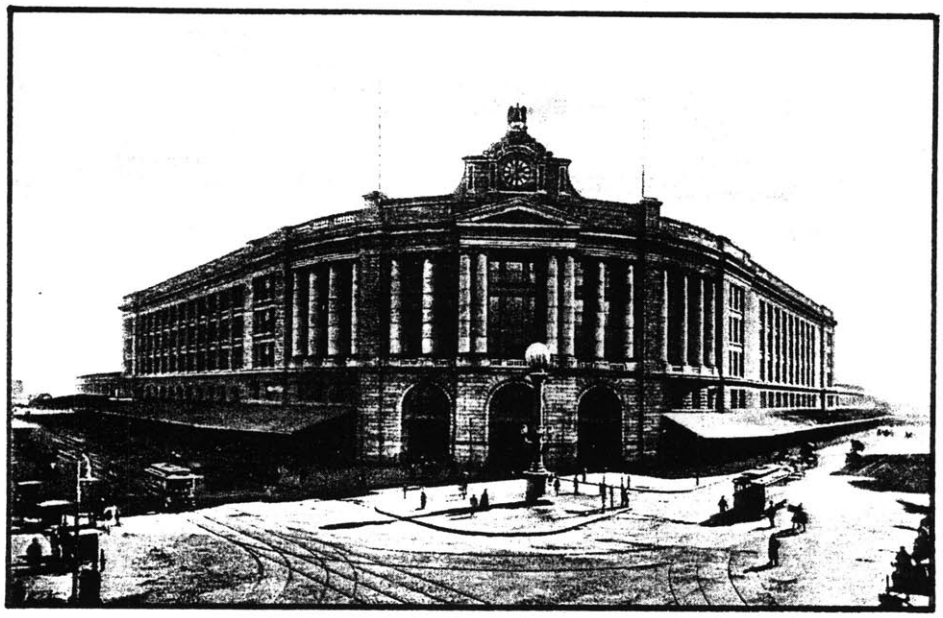

Figure 2.3 View of South Station in 1901
Source: Janet G. Potter, Great *American Railroad Stations*, 1996, p. 85.

2.2.3 Redevelopment process

After such devastation, the first plan to revitalize South Station and its vicinity, the Central Business District Urban Renewal Plan, was created by the Boston Redevelopment Authority (BRA) in 1964. This 1964 plan was consistent with an Urban Renewal Program offered from the late 1940s through the 1960s by the Federal Government to revitalize deteriorated downtown areas. During this period, Boston had dozens of urban renewal projects and the plan for South Station was one of them. As with other projects, the BRA purchased South Station in order to attract private investment and make the station available for new development. According to this plan, South Station was to be converted into a commercial and transportation complex with a hotel and large parking garages.[5] This plan was the first of many subsequent plans for South Station created by the BRA.

[5] Boston Redevelopment Authority, *Central Business District Urban Renewal Plan*, 1968.

Almost at the same time, restoration movement occurred. Its main building, headhouse was listed in the National Register of Historic Places in 1975, and was assured some part in any future development of the site. This means that some people were interested in the restoration of the historic station building as cultural fortune but not in the redevelopment of the building as a lively transportation node. Thus there seemed to be a contradiction among public opinion at that time.

The next wave of plans, and one which actually led to redevelopment was initiated in 1978. The BRA entered into a purchase and sale agreement to sell South Station to the MBTA for $4.4 million but retained the air-rights above the station and tracks. The $4.4 million almost equaled the loan amount from the Federal Department of Housing and Urban Development at the time of the BRA's purchase of South Station.[6] The reason for this sale was that the BRA could no longer get federal funds at the end of Urban Renewal Program, but the MBTA could get federal funding through the Federal Railway Administration's Northeast Corridor Project.[7] This agreement shows that the BRA, which originally intended to redevelop South Station as a transportation center and commercial complex, delivered over the role of developer of a transportation center to the MBTA by selling South Station building but kept its interests in a commercial center by holding on to the air-rights. At the time, the MBTA agreed with the BRA to make the following improvements on the site:

- a commuter and intercity rail facility;
- a new concourse providing ticketing facilities and access for passengers between the headhouse, the rail platforms and any future bus terminal, providing all necessary support functions to accommodate future intercity and commuter bus programs;
- a parking deck for approximately 550 vehicles including a high capacity ramp system;
- an intercity and commuter bus terminal;

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6 Interview with Owen Donnely, Boston Redevelopment Authority, March 13, 1997.
7 *Boston Globe*, November 4, 1989.

- the footing and structural systems necessary to support at least three additional parking levels for a total garage capacity of approximately 2,000 spaces, a four- to five-hundred-room hotel, and a 400,000 to 500,000 square-foot office building; and
- improvements in the structure of the headhouse to permit operational use of the ground floor and offices on the upper floors consistent with other major rehabilitations in the area.[8]

After this agreement, another public sector recognized the importance of South Station. The Massachusetts Aeronautics Commission (MAC) wished to create a heliport pad on the roof of the station in 1980. The reasons were the following: the station was becoming an inter modal transportation complex; it was a short walk from the city's financial district; and it was only one minute away from to Logan Airport by helicopter.[9] South Station had begun to be perceived as a relevant transportation center again.

The redevelopment plans moved ahead in 1982, with the acquisition of a federal grant.[10] Construction started in 1984 and completed in 1989 for $67 million public funds including the following improvements:

- renovation and rehabilitation of the existing headhouse and east wing and construction of a new west wing;
- construction of a new concourse and eleven new tracks and elevated platforms to make the trains accessible to physically disabled riders;
- construction and subsequent removal of interim facilities for MBTA and Amtrak operations.[11]

This construction started in 1984 and finished in 1988 with a $37 million UMTA grant, a $20 million Federal Railway Agency (FRA) fund, $10 million from the MBTA,[12] and BRA's contribution of $4 million to strengthen the foundations for future air-rights development.[13] (See Figure 2.4)

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8 Michael Chu, *Development plan for the air rights at South Station transportation center,* 1985, pp. 3-4.
9 *Boston Globe*, January 5, 1980.
10 *Boston Globe,* August 12, 1982.
11 "South Station Revitalization Begins," *City Record*, June 25, 1984.
12 Telephone Interview with Peter Butler, Massachusetts Bay Transportation Authority, April 28, 1997.
13 Interview with Owen Donnely, Boston Redevelopment Authority, March 13, 1997.

Immediately after the completion of the construction in 1988, a significant public and private partnership was formed. This partnership was established between the MBTA and the Beacon South Station Associates (BSSA), a limited partnership of the Beacon Companies (76 percent), Robert M. Weinberg (19 percent), and HII Corporation (5 percent).[14] The Beacon Companies was a Boston-based investment builder, owner, and manager of commercial, hotel, and residential properties nationwide. By that time, it had already developed many buildings in downtown Boston, including Rowes Wharf, a mixed-use complex on Atlantic Avenue, and Center Plaza in Government Center. Robert M. Weinberg, former chairman of the Massachusetts Port Authority, was at that time a developer and real estate consultant. HII Corporation was a minority real estate development firm headed by Denis Blackett, a longtime Boston housing developer who is now doing large-scale urban development in New York City and in New Orleans. The MBTA entered into a 65-year lease, which is composed of a 35-year master lease and two 15-year extension options, with the BSSA for the development of the office, concession and retail areas of the building.[15] Then the BSSA took part in finishing interior of retail and office space for $25 million by 1989. The Beacon Management Company has been in charge of management and leasing of South Station and has paid the MBTA a base rent of $550,000 and evenly splits profits with the MBTA.[16]

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14 *Boston Globe*, November 4, 1989.
15 Alan Leventhal, "Boston's 'New' South Station," *Urban Land*, October 1993, pp. 99-100.
16 *Boston Globe*, February 7, 1988.

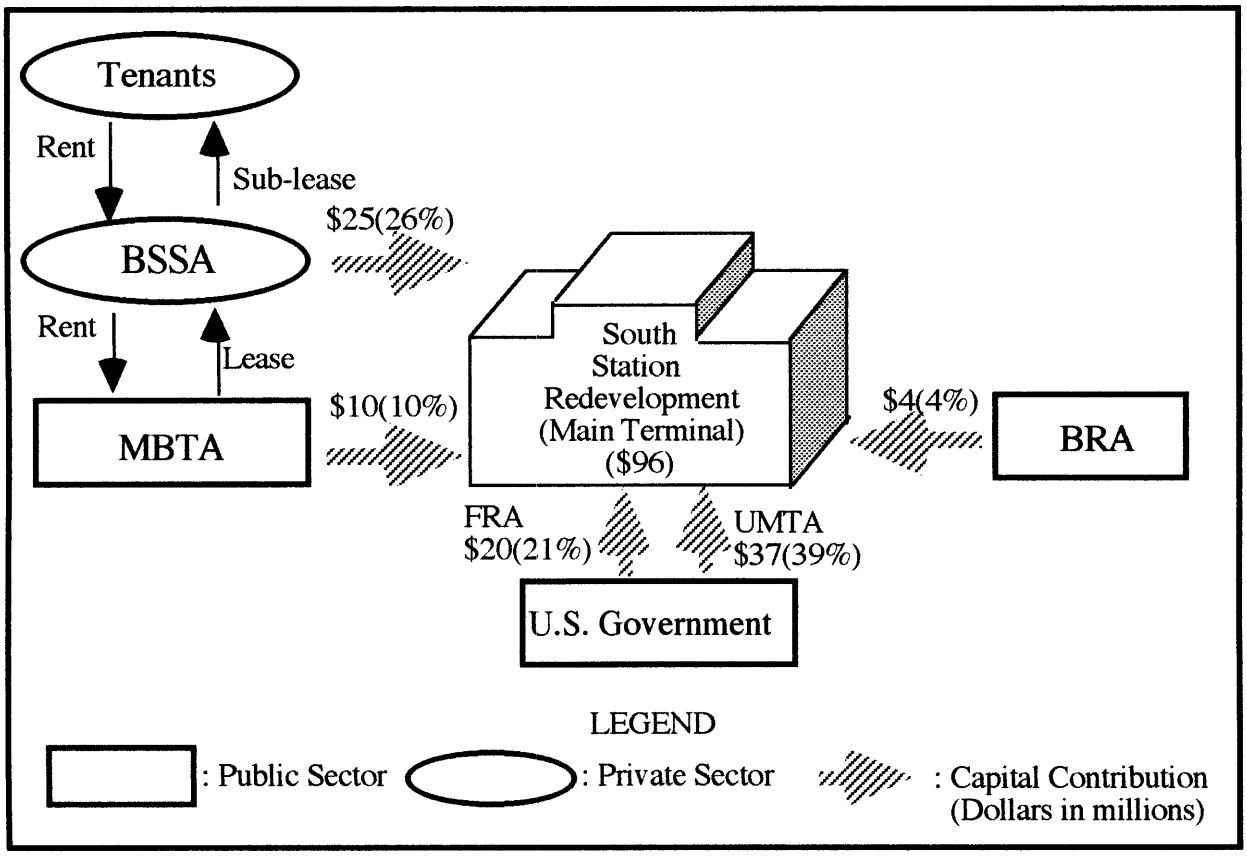

Figure 2.4: Financial Structure of South Station (Main Terminal) Project

There was another development, called South Station Bus Terminal, after the redevelopment of the main terminal which I described above. The MBTA gave the final approval to the design for the bus terminal over South Station in 1990. This bus terminal was designed so as to be located below the height of the air-rights held by the BRA. It was to consolidate the operations of the Greyhound/Trailways Terminal in Park Square, the Peter Pan Terminal in Dewey Square and the Plymouth and Brockton Terminal on Atlantic Avenue, and to include parking garage which would be expected to serve van-pool commuters who would share rides into the city and then walk or take subways to their offices. The original plan was such that the bus terminal would stand all over tracks of South Station. However, the MBTA had to reduce the size of the bus terminal because of financial problems. These were related to ventilation problems which has to be cleared up for possible air-rights development over tracks

running diesel engines. The MBTA estimated a 25 million dollar installment cost and 2 million in operating costs annually for ventilation alone, if they covered all the tracks.[17] Finally, the bus terminal construction was begun in 1992, and completed in 1995, at a cost of $81 million. The financial structure is presented in Figure 2.5. Also in the Bus Terminal project, the MBTA could obtain federal funds, Federal Transportation Administration funds (FTA, formerly called UMTA) and Congestion Mitigation and Air Quality (CMAQ, a fund available from ISTEA).[18] The bus terminal includes 29 berths on the first floor and a central ticket and baggage-handling area with some retail spaces (See Figures 2.6 and 2.7), and a 223-car parking garage on the top. This terminal has been also managed by the Beacon Management Company.

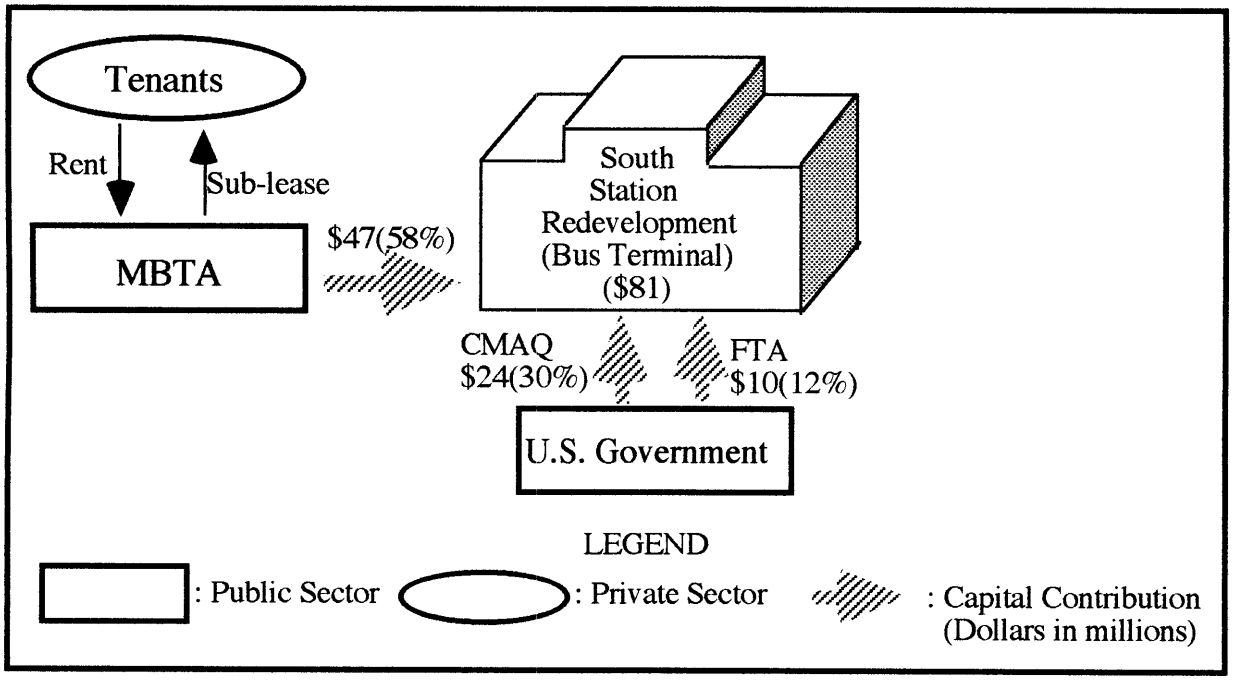

Figure 2.5: Financial Structure of South Station (Bus Terminal) Project

[17] Interview with Owen Donnely, Boston Redevelopment Authority, March 13, 1997.
[18] Telephone interview with Peter S. Butler, Massachusetts Bay Transportation Authority, April 4, 1997.

Figure 2.6 View of South Station Bus Terminal

Figure 2.7 Inside of South Station Bus Terminal

2.2.4 Results and impacts

These South Station projects have been successful in several ways. First of all, it fashioned the station's common areas into a marketplace, featuring restaurants, a travel agency, locksmith, flower shop, newsstand and other vendors. The food court attracts employees from the Financial District and the Leather District which is a small commercial district located north of the station, residents of Chinatown, commuters, and tourists. The office space of 125,000 square feet is fully leased by the Bechtel/Parsons Brinckerhoff, the architect for the state's Central Artery project, and by Amtrak. The restored concourse has hosted such community events as "Connection Culture," a multicultural festival, "Express yourself," an Arts Celebration, and several jazz festivals.[19] These events has been actively promoted by the private developer to increase the potential patronage. In addition, the developer has sponsored a local radio station for the same reason. With respect to ridership, 36,000 travelers get on and off 207 commuter trains and 25 Amtrak trains everyday.[20] Compared with 68,000 passengers through Logan Airport, it may be said that renovated South Station has done quite a good job.

The BRA, which still has about 252,000 square feet of air-rights continues to consider development of these over the station and tracks. They received development proposals from three private developers in 1990, and designated the Tufts University Development Corporation (TUDC) for the task. The TUDC proposed a 30-story office building for use mostly as a pharmaceutical research center, a 675-room hotel, and conference center above the bus terminal and parking garage.[21] This plan, however, was suspended on account of the shrinking Boston office market and the national economic recession of early 1990s.

2.2.5 Lessons and implications

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19 Interview with John M. Karoff, Beacon Management Company, March 18, 1997.
20 Alan Leventhal, "Boston's 'New' South Station," *Urban Land*, October 1993, pp. 99-100.
21 Tufts University Development Corporation, *Tufts International Research Center Newswire*, May 1990.

We can learn about partnerships among agencies and policies made by agencies from the South Station project. First, as described above, South Station redevelopment involved two levels of partnerships. The upper level of partnership was formed between two public agencies, i.e., the city's redevelopment authority, the BRA; and the state's transit authority, the MBTA. Initially, the BRA acquired the property of South Station with the intention of redeveloping the station as a multi-function center which would include transportation facilities and commercial facilities. Because of a decrease in federal funding for urban renewal programs, the BRA involved the MBTA to whom other federal funds were available. This flexibility of the BRA in accordance with financial feasibility is a good lesson in the survival of projects. In addition, the allocation of roles between these two entities has worked well. The allocation was made in such a way that the MBTA was in charge of the property and the BRA had the air-rights over it. Thanks to this allocation, after the agreement between the BRA and the MBTA was reached, the BRA left redevelopment of the headhouse and concourse to the MBTA. The BRA only monitored the MBTA's plans to see that they were consistent with the agreement and was, therefore, able to concentrate on the development of air-rights.

A lower level of partnership was created by the MBTA with private developers. This was a new kind of partnership at that time, and it enabled the MBTA to take advantage not only of private funds but also of an absence of maintenance troubles and costs. With regard to this kind of public/private partnership, Timothy F, Gens, the MBTA director of development and public affairs, said, "Essentially, what will happen is that the T not only will have the rental income, but we won't have to worry about cleaning, maintenance, security and utilities."[22]

Next, a series of South Station redevelopment plans has been combined with efforts of transit and transportation companies to attract riders. With respect to the MBTA, the restoration of South Station was one of several of its projects; these included expanded parking lots and garages at its suburban stations, the addition of a few new lines, and the opening of the South Shore Commuter Rail. This was formerly called the Old Colony Railroad, and it was

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22. Boston *Globe*, March 18, 1987.

demolished in 1959. Completion of the new project is now projected for 1997. Amtrak, on the other hand, has proceeded, as part of its Northeast Corridor project, to connect New York to Boston in three hours with electrified trains. When the whole project is completed, Northeast Corridor trains will compete with airplanes and attract many more travelers. This will substantially increase ridership at South Station and accelerate the final phase of the redevelopment as planned by the BRA.

Combination of the Main Terminal project and the Bus Terminal project changed South Station's function. The former project revitalized the deteriorated station building by renovating transportation facilities such as the platforms and the headhouse with additional commercial spaces, now mostly occupied by food service establishments. This, however, did not change existing transportation modes, i.e., existing services of intercity lines, commuter lines, and subways. On the other hand, the Bus Terminal project added the function of modes other than rail transportation to the station and expanded the station's capabilities. It made it much easier for passengers to transfer from trains to buses or automobiles. The Main Terminal added a commercial function and the Bus Terminal added other transportation functions. Thus, the lesson here is that if there is not enough space to expand transportation functions in the existing station, the use of air-rights over the tracks can be a good solution.

2.3 Union Station, Washington, D.C.

2.3.1 Background

Union Station sits on 12.5 acres on the northeastern edge of downtown Washington, D.C. The area around the station is called Capitol Hill which includes many federal and city government office buildings such as the U.S. Capitol, Supreme Court, and Library of Congress within walking distance of one another (see Figure 2.8). Originally, Union Station was created in 1907, and it was rededicated in 1988, after several decades of deterioration. Thereafter, it has provided not only transportation facilities but also shopping and movie facilities and has become a destinations for tourists and Washington residents alike.

As a transportation center, Union Station has been used for intercity trains currently operated by Amtrak, commuter trains operated by the Mass Transit Administration (MTA) of the Maryland Department of Transportation, known as the Maryland Rail Commuter service (MARC), and subways operated by the Washington Metropolitan Area Transit Authority (WMATA), whose lines are nicknamed Metro. MARC is an integral component of Maryland's transportation system whose 187-mile system serves as a major means of transportation between Washington, D.C. and Baltimore and Perryville, Maryland as well as Washington, D.C. and Martinsburg, West Virginia. MARC trains are operated by Amtrak (Penn Line) and CSX Transportation (Camden and Brunswick Lines) under contract to the MTA. The WMATA was founded in 1966, to operate subway and bus systems in the District of Columbia, Maryland, and Virginia.

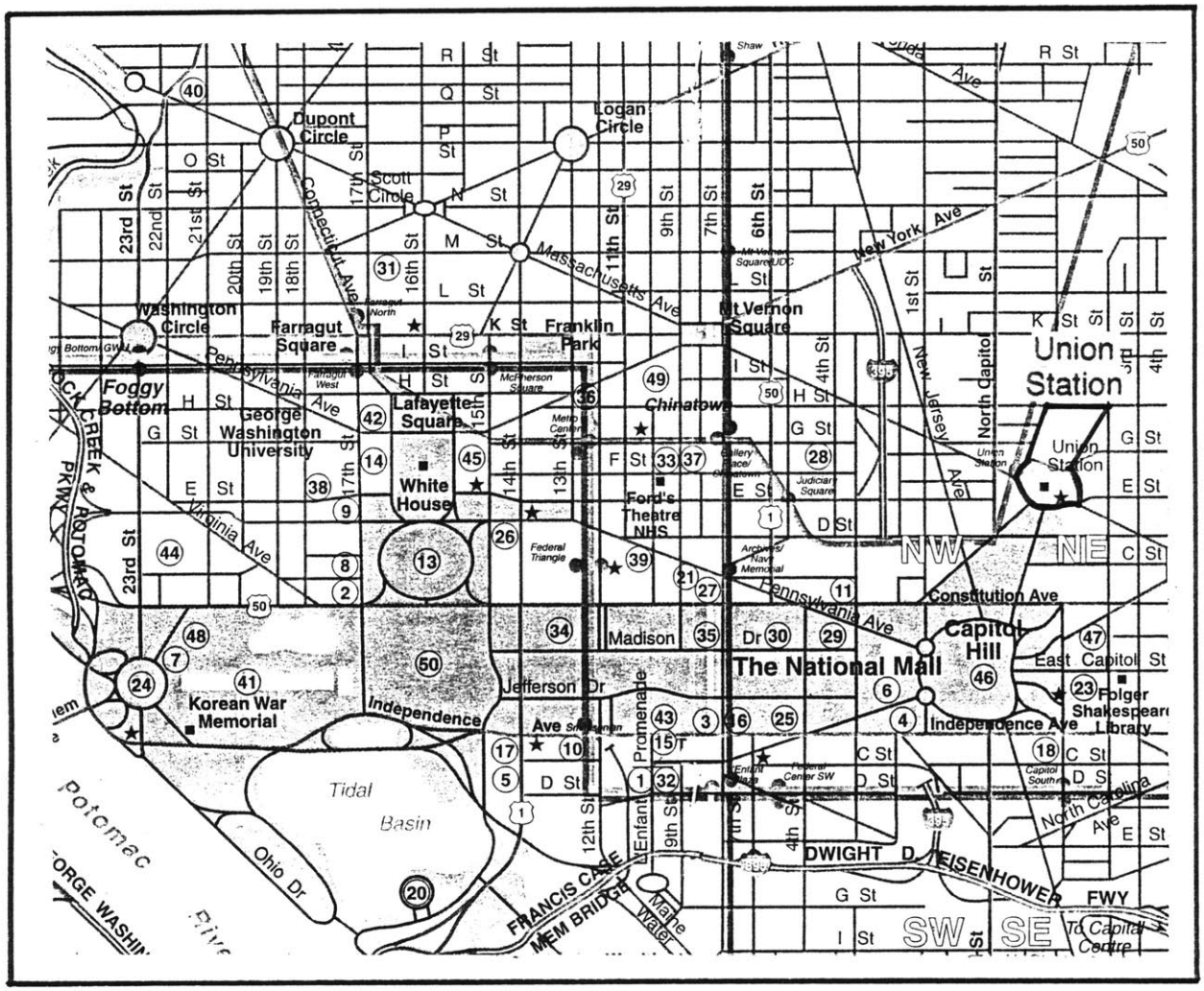

Figure 2.8 Vicinity of Union Station

2.3.2 From dedication to deterioration

The present Union Station was created to remove two other noisy and sooty stations and a confusion of tracks that cluttered the prestigious vistas of the Washington Mall; this was a part of the City Beautiful Movement of the 1890s. The scheme was devised by architect Charles F. McKim, sculptor Augustus Saint-Gaudens, landscape architect Frederick Law Olmsted, and city planner Daniel H. Burnham, who was a director of the 1893 World's Columbian Exposition in Chicago. Thereafter, this station was designed by Burnham and completed in 1907, after four years of construction efforts. Burnham borrowed heavily from the Bath of Diocletian in Rome, achieving the massive, barrel-vaulted form with a masonry-covered steel frame clad in white Vermont marble. It was considered one of the finest examples of the Beaux Arts style of architecture, a temple to the power and prestige of America's railroads at the turn of the century.[23] At that time, it was called the perfect example of a city gate designed in perfect harmony with the architecture of the community to which it served as an entrance. (See Figure 2.9) Alexander described its interior space in the following way:

> The building is 663 feet long and 211 feet wide, of white marble and granite. Its waiting room is 220 feet long and 130 feet wide, with a Roman barrel-vaulted room 93 feet high in the center. The Concourse, said to be the largest room used for any purpose in the world, is 760 feet long and 130 feet wide. There are thirty-three tracks: twenty stub tracks at street of concourse level, and thirteen through tracks for trains to and from the south.[24]

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[23] Stephanie Stubbs and Douglas Gordon, "The Triumph of Union Station," *Inland Architect,* September/October 1990, p. 44.

[24] Edwin P. Alexander, *Down at the Depot; American railroad stations from 1831 to 1920,* 1970, p. 295.

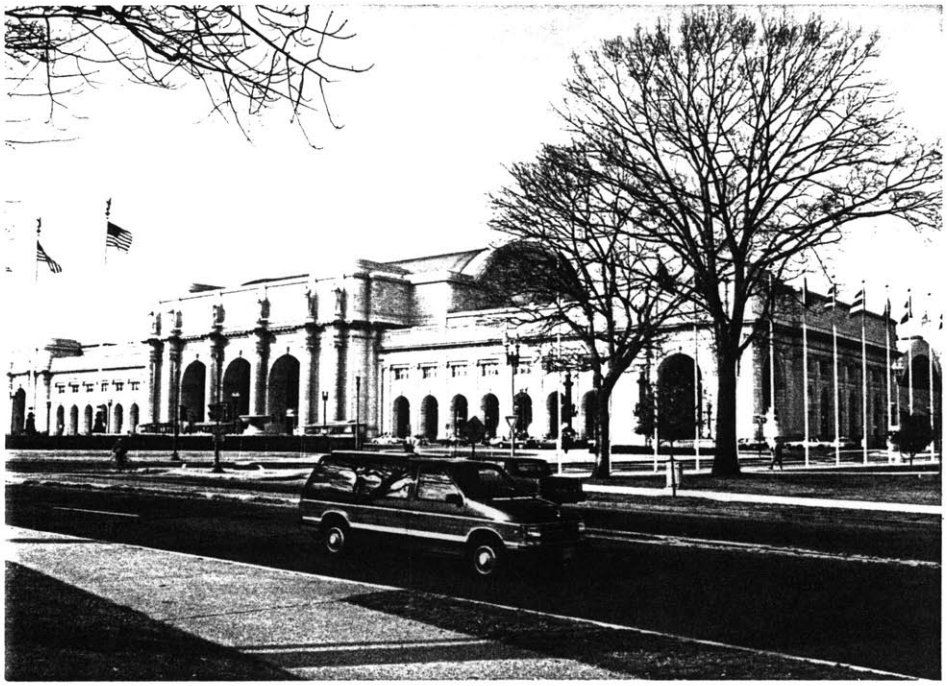

Figure 2.9 View of Union Station

In its prime, the station housed, in addition to its transportation functions, a hospital, mortuary, butcher shop, bakery, police station, swimming pool, bowling alley, and basketball court.[25] With respect to its transportation functions, Union Station was used for terminals of the Pennsylvania Railroad and the Baltimore & Ohio Railroad, and it was the property of the Washington Terminal Company (WTC) whose stocks were owned equally by these two railroads.

A steady decline in railroad use began in the early 1950s, and slid to a nadir in the mid-1960s, in Washington, D.C. as in other American cities. Thereafter the WTC suffered from huge deficits due to the decrease in ridership and the increase in maintenance costs for Union Station. On the other hand, Congress declared Union Station a historic national landmark in

25 Stephanie Stubbs and Douglas Gordon, "The Triumph of Union Station," *Inland Architect,* September/October 1990, p. 44.

1964, and subsequently designated the station as the site of a National Visitor's Center to be operated by the National Park Service in 1968, as part of the nation's bicentennial celebration. The railroad owners and the U.S. Department of Interior (DOI) agreed:

- to renovate the Main Building to prepare it for tourist-related functions;
- to construct a parking facility for 4,000 cars and 100 buses behind the Main Building; and
- to build a much smaller replacement station for continued railroad service to the city just under the garage.

The railroad companies estimated the costs of these alterations at $16 million. In exchange, the DOI would lease the station from their subsidiary, the WTC, for about $3.5 million annually for twenty-five years. In the original plan, the Visitor's Center, railroad station, and parking garage would become an intermodal complex where visitors arriving by car, train, subway, commuter trains, and bus could filter through for information about Washington, D.C.[26]

Due to financial constraints, however, the completed parking garage was smaller than half that of the original plan. The DOI opened a reduced version of the Visitor's Center to the public on July 4, 1976, the nation's bicentennial. In part because parking facilities were insufficient it was only sparsely attended.[27] Along with the reduced size of the center in the beginning, most center functions were curtailed when federal appropriations were reduced; therefore, the building continued to deteriorate, although the WMATA ran its Red line through Union Station in 1976.

In 1980, Congress authorized the DOI to spend $11 million to make emergency structural repairs and to install a new roof on the building, because heavy rain had damaged a large portion of the unprotected ceiling and flooded much of the building's interior. The following year, due to damage done to the interior, the National Park Service declared the Main Building unsafe and closed it to the public. Thus, pedestrian traffic to the smaller replacement

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[26] Harry Weese & Associates, *Union Station Historic Structures Report*, 1985.
[27] Ibid.

station to the rear was re-routed outside. In the meantime, train passengers had to walk through a rat's maze of plywood tunnels.[28]

2.3.3 Redevelopment process

Effective redevelopment began in 1981, when Congress passed the Union Station Redevelopment Act. This act was created in order to restore and repair the station and the rail services, to complete the parking garage, to explore development opportunities in the private sector, and to remove the government from most operations and from financial liability.

Two years after the act, Congress established the nonprofit Union Station Redevelopment Corporation (USRC) for the following purposes:

- to manage the public sector commitment;
- to secure necessary approvals; and
- to balance competing demands from preservationists, Amtrak, and developers.[29]

Its board of directors was comprised of the Secretary of the U.S. Department of Transportation (Board Chairman), the President of Amtrak (Vice Chairman), the Mayor of the District of Columbia, the President of the Federal City Council, a group of business and civic leaders, and the Federal Railroad Administrator from the U.S. Department of Transportation. These members recruited Keith Kelly, a private developer, to serve as president. In 1984, USRC selected Harry Weese & Associates of Chicago as architects to restore the exterior and significant interior spaces, mechanical systems, and other features, to renovate the remainder of building as a shell space for the developer's uses, to design new Amtrak facilities, and to advise the USRC on the effects of developer's proposals on the historic structure.

The USRC also designated the Union Station Venture, Ltd. (USV) as a commercial developer through a request for proposals competition in 1984. The USV was composed of

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[28] Stephanie Stubbs and Douglas Gordon, "The Triumph of Union Station," *Inland Architect,* September/October 1990, p. 45.

[29] Urban Land Institute, "Union Station, Washington, D.C.," *Project Reference File,* September 1991.

LaSalle Partners, a Chicago based full-service real estate company, William Jackson Ewing, a retail development and leasing firm of Baltimore, and Benjamin Thompson & Associates, an architectural firm of Cambridge, Massachusetts, and also an architect for the USV.[30]

With respect to the construction work of the total redevelopment (in the broad sense), the USRC and the USV shared responsibilities. The USRC was in charge of building rehabilitation including:

- repairs,
- restoration of the building exterior and the interiors of significant historic public spaces,
- renovation of interiors not to be restored, including building service areas, to a defined standard of base building (core and shell), and
- construction of a complete Amtrak passenger station facility.

On the other hand, the USV assumed responsibility for building redevelopment (in the narrower sense) with:

- installation of all retail tenants and activities within restored significant historic public spaces, and
- installation of all office tenants. [31]

In addition to the USRC and the USV, the District of Columbia also took part in the construction work. Its Department of Transportation was responsible for the completion of the adjacent parking garage and the construction of a connecting structure which would link the garage to the historic building.

The financial structure was complicated as displayed in Figure 2.10. The leasehold of the station was transferred from the DOI to the DOT, and the property of the station was purchased by the Federal Government in 1984 for $10 million, and then it was leased to the USRC. Subsequently, the USRC subleased the property to the USV in 1985, for a term extendable to 99 years. Total development costs were $155 million. For their construction

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[30] Ibid.

[31] Union Station Redevelopment Corporation, *Request for Proposals Architecture/Engineering Services for the Rehabilitation of Union Station*, p. 2.

work, the USRC spent $67 million, which came from Amtrak, who offered them a $70 million interest-free loan and subleased 100,000 square feet of office space to move its headquarters into Union Station. On the other hand, the USV had paid $42 million, financed with a bank loan, for construction and soft costs by the time of rededication. They also paid for all operating expenses, and $1 million of the base rent and participation rent to the USRC, as well as debt services for their bank loan.[32] Participation rent to the USRC was 50 percent of the net cash flow after subtractions of all operation costs including leasing, maintenance, and debt service from the gross revenue. This has been about half a million dollars annually.[33] Thereafter, the USRC paid rent to the federal government. Amtrak received the remaining balance along with farebox returns for the operation of trains. The District of Columbia spent $40 million to complete a parking garage which accommodates 1,550 automobiles and 80 buses; this money came, with a special permit, from the DOT in the form of federal highway funds.[34]

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[32] Urban Land Institute, "Union Station, Washington, D.C.," *Project Reference File,* September 1991.
[33] Interview with David S Ball, Union Station Redevelopment Corporation, February 19, 1997.
[34] Urban Land Institute,"Union Station, Washington, D.C.," *Project Reference File,* September 1991.

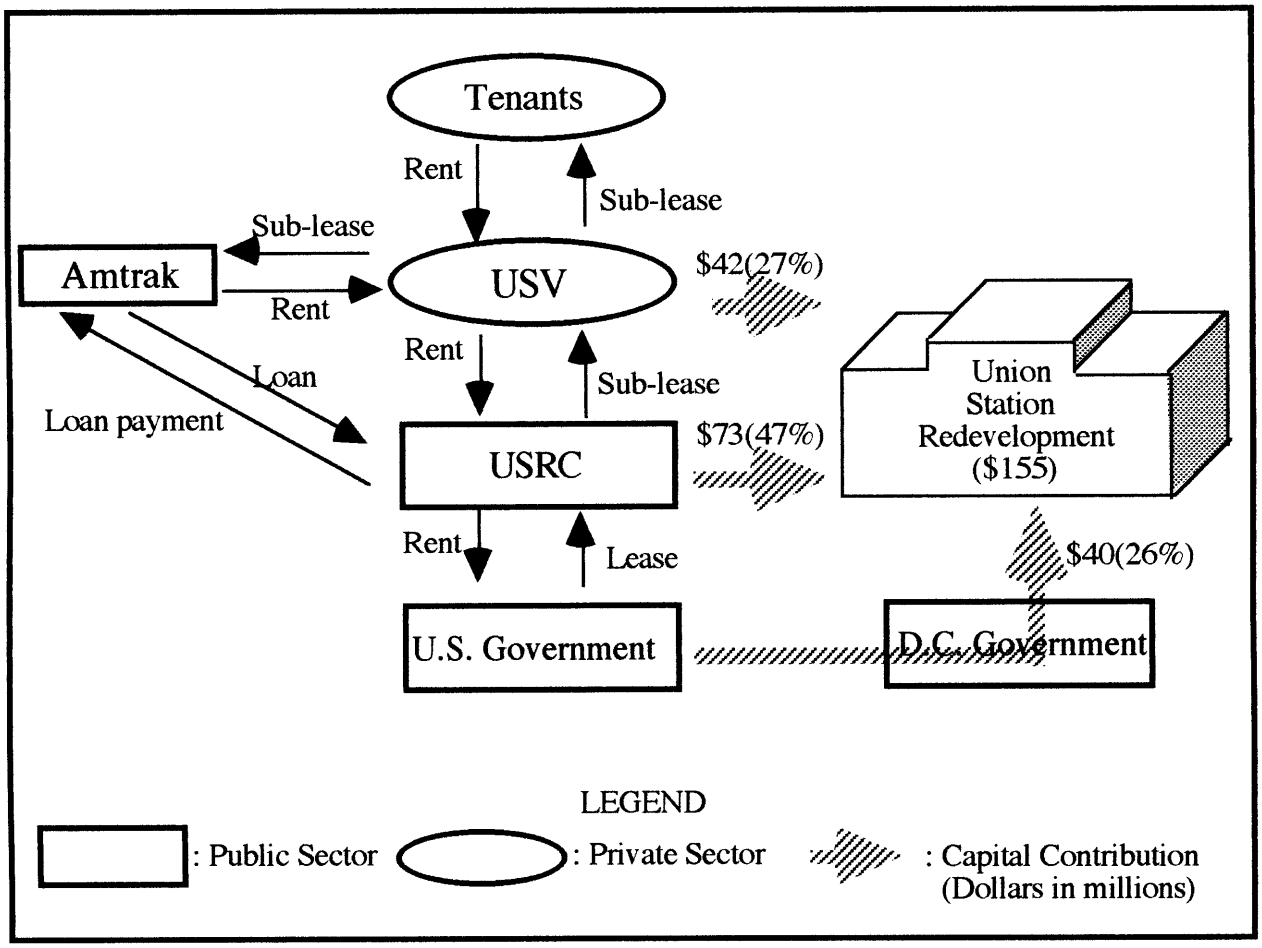

Figure 2.10: Financial Structure of Union Station Project

Planning the building was done to make the most of the historic station as much as possible and to provide as much commercial space as possible. Figure 2.11 shows the floor plan of new Union Station. The Main Hall provides a two-level kiosk which includes a cafe, information services, big displays of train-related information, and two fountains. The East Hall houses small shops offering a wide price range of home accessories, gifts, and collectibles. Most of these shops use movable mahogany counter-height kiosks that can be removed for special events. A destination restaurant is located at the end of the East Hall. The West Hall provides specialty shops not in a kiosk style and a specialty cafe at the end of the hall. The former train concourse, now called Main Concourse, has been converted into a three-level retail complex. On the ground floor, Amtrak's ticket counter is located at the center of the

concourse surrounded by retail shops. A new mezzanine level, which was created by the redevelopment to bring more retail space into the station, accommodates other retail shops which sell mostly clothing and accessories. The mezzanine is connected to a parking garage. The lower level which was excavated to a depth of 5 to 11 feet offers a food court and a nine-screen theater complex with 2,000 seats. The lower level also provides a new connection to the Metro. The train concourse was newly created behind the Main Concourse at the ground level.

Based on the above floor plan, the building was carefully designed. The USRC established standards of restoration of the highest order, exceeding those of the DOI for the National Register of Historic Places. The standards for rehabilitation and redevelopment applied to the work executed directly by the USRC and that executed by the USV. According to these standards, the design principle was that old should be old, and new should be new. Burnham's plan was reviewed cautiously, and original materials, decoration, and architectural elements were either restored or replicated. All modifications, including even new mezzanine level, had to be removable so that the historic building could be restored to its original form if required. Moreover, designs and materials for new spaces had to be compatible with the original; additions, however, were to be obviously new and different. [35]

The more than 100 stores and five major restaurants did not include a major anchor store. Instead, using the marketplace strategy developed in projects with the Rouse Corporation, e.g., Boston's Faneuil Hall Market, the USV planned to draw regular crowds with a wide rage of restaurants and shops. Visitors for Union Station were divided into five categories: tourists, commuters, neighborhood workers, neighborhood residents, and the Washington public. The fact that there are few retail shops and restaurants around Capitol Hill has also contributed to the success of Union Station.

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[35] Stephanie Stubbs and Douglas Gordon, "The Triumph of Union Station," *Inland Architect* September/October 1990, p. 47.

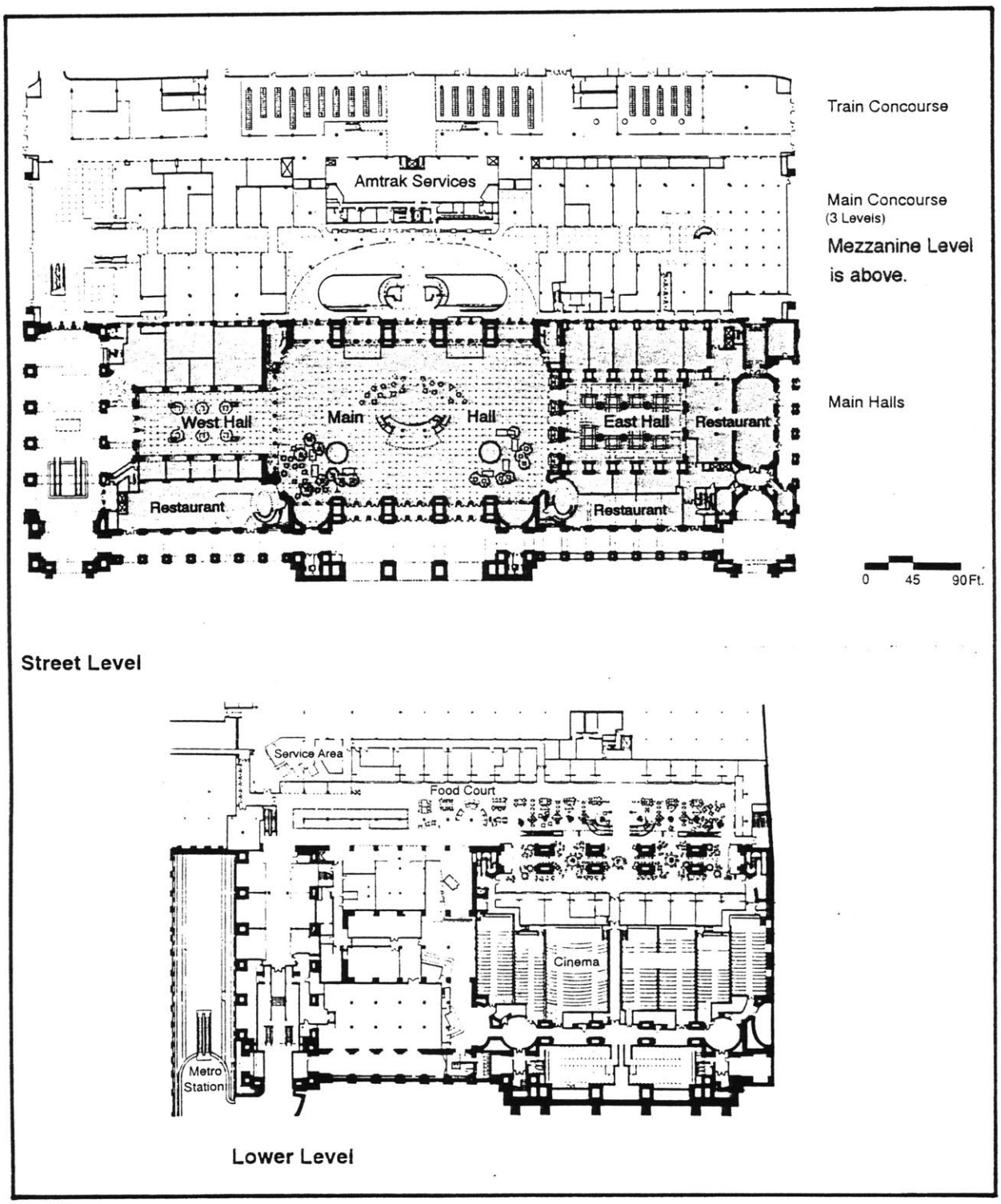

Figure 2.11 Floor Plan of Redeveloped Union Station

Source: Urban Land Institute, "Union Station, Washington, D.C.," *Project Reference File*, 1991

2.3.4 Results and impacts

By 1989, restoration and redevelopment were completed. Since then, Union Station has attracted many people, not only to the inside of the building but also to its neighborhood. Since 1989, Union Station has shown itself to be quite successful. Annual sales of tenants of Union Station (excluding transportation agencies) which were originally projected at $35 million were actually as high as $62 million in 1988, and rose to $87 million in 1990, and $99 million in 1996. The current rate of sales per square foot is $452, which ranks as second in the D.C. tract. Besides its impressive square-foot sales, Union Station has maintained a 96 percent occupancy rate and a 6 percent turnover rate per year.[36]

These successful commercial operations have stimulated neighborhood revitalization in the following ways:

- within a six-block radius, three private office buildings and one public office building whose gross building area amounts to about 4 million square feet have been completed;[37]
- a group of private developers has already invested $2.5 million in plans to develop an office building on the site that they own immediately east of Union Station;[38]
- in 1990, the DOT had a plan to move their headquarters to a site in the air-rights of Union Station. The cost was estimated at $624 million, and it was to be one of the Federal Government's largest buildings, serving 10,800 employees then working at three different locations.[39] Just because of the belt-tightening budget of the Federal Government and opposition from the owners of adjacent land to be purchased by the DOT, however, this plan was scraped.[40]
- in 1995, members of the House Transportation and Infrastructure Committee approved the sale of the development rights over the railroad tracks behind Union Station instead of the

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36 Interview with David S Ball, Union Station Redevelopment Corporation, February 19, 1997.
37 Urban Land Institute,"Union Station, Washington, D.C.," *Project Reference File,* September 1991.
38 *Washington Post,* June 28, 1990.
39 *Washington Post,* January 17, 1990.
40 *Washington Post,* June 28, 1990.

DOT headquarters. They estimated that it would bring $40 million to the Federal Government and that a seven-story office building and two levels of parking could be built on the platform. These development rights are now owned by Amtrak and the DOT. The development plan is still in the planning stage.

2.3.5 Lessons and implications

The Union Station redevelopment project offers us lessons in partnership, good planning, and good design in the joint development of historic stations. The project serves as a true example of public and private partnership accomplishing what government alone could not, and perhaps should not do, and what private interest, in all probabilities, could not afford to undertake. This partnership was characterized by the creation of a nonprofit organization, the Union Station Redevelopment Corporation (USRC), and the leadership of the Federal Government.

The USRC has played a significant role in the redevelopment as a project coordinator to mediate the various interests of each participant. Managing such varying interests is difficult and may be a major source of delay or even the incompletion of a project. The USRC's success is partially derived from its powerful board members who are representatives of the Federal Government, the local government, the transportation company, and the group of business and civic leaders, and the owner of the station. Thus, if a problem occurs, board members can find solutions in a discussion with one another and carry out them through top-down decisions.[41] Union Station project has also featured the leadership of the federal government, which was worried about the deterioration of Union Station in the middle of the century and took measures to restore and revitalize it, eventually founding the USRC and putting federal money into the redevelopment. In this sense, the project is different from the other two projects discussed.

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[41] Interview with David S Ball, Union Station Redevelopment Corporation, February 19, 1997.

Careful planning and design were also indispensable for the success of the project. It made full use of the historic building. Restoration and replication have contributed not only to the preservation of its historic architecture but also to the fascination of the building both as a station and a mall. People who come to Union Station have enjoyed its historic and sophisticated atmosphere. From this standpoint, although the cost of replicating historic features ran as high as $15 million, it proved not to be a waste of money, and the creation of such new retail spaces as the mezzanine has worked well to compensate for construction costs.

Although this project added large commercial spaces to the station, it did not expand transportation modes but rather supplemented them with another function. In fact, Not only has it called passengers back to Union Station, it has also induced new customers to come to the station mall, customers come from neighboring offices, from the D.C. area, and from all over the world as tourists. This shows that it is possible to revitalize historic stations not only as transportation center but also as shopping malls and even as places of cultural interest.

2.4 30th Street Station, Philadelphia

2.4.1 Background

30th Street Station is located one mile from the center of Philadelphia to the west of the city and across the Schuylkill River. It is adjacent to University City which is comprised of the University of Pennsylvania and other colleges to its west. Fairmount Park and the Philadelphia Zoo, which are attractive destinations for Philadelphia residents, are also within one mile of the station along the Schuylkill River. (See Figure 2.12)

30th Street Station is the main entrance for Amtrak's intercity trains to Philadelphia, and is also a key station for the Southeastern Pennsylvania Transportation Authority (SEPTA), the third largest public transit agency in the country, which operates commuter trains, subways, and buses throughout the metropolitan Philadelphia area. 30th Street Station is the second most active of all Amtrak stations. Through it, on a daily basis, Amtrak operates 94 intercity trains, and the SEPTA operates 300 regional trains. These trains carry 20,000 passengers into the station each day. Figure 2.13 is a view of 30th Street Station from the southeast.

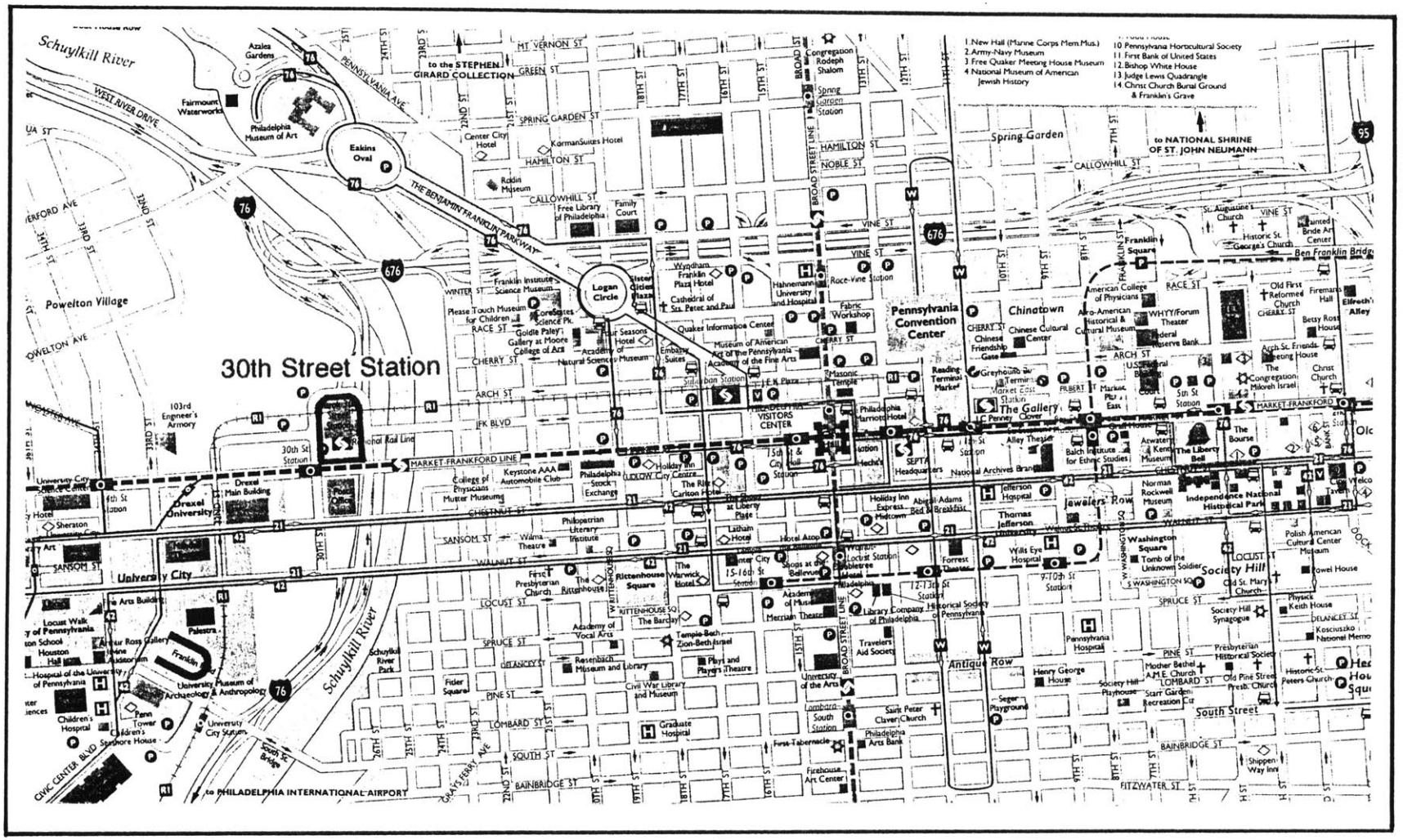

Figure 2.12 Vicinity of 30th Street Station

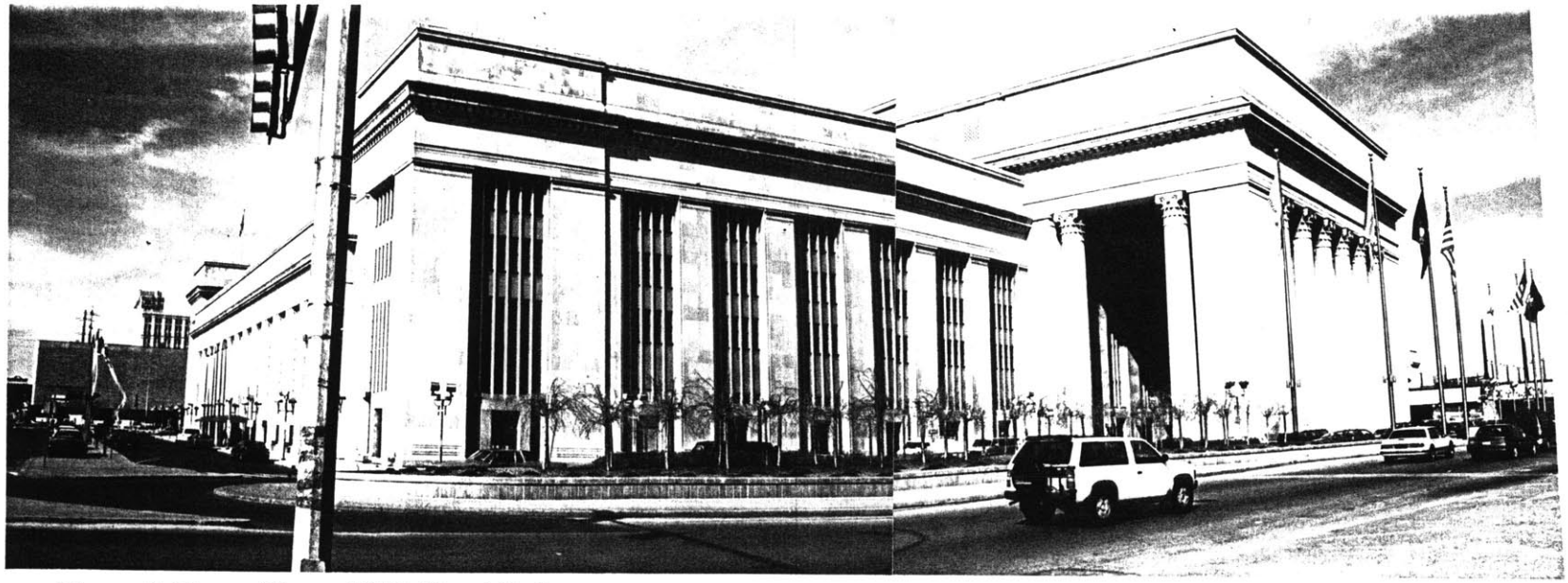

Figure 2.13 View of 30th Street Station

2.4.2 From dedication to deterioration

30th Street Station was completed in 1934, in the midst of the Great Depression. Construction took place after the nineteenth century, as a series of several downtown Philadelphia stations succeeded one another. The Pennsylvania Railroad (PR) built the first, Broad Street Station in 1881, to serve intercity trains connecting Washington, D.C. and Boston, and commuter trains. This was destroyed by fire in 1923. Afterwards, the PR and the City of Philadelphia undertook a project called the Philadelphia Improvements, which began in the 1920s but was not completed until the 1960s. Among its features were a new station west of the Schuylkill River (the present 30th Street Station) and another new station that replaced the Broad Street Station (the present Suburban Station). This project also included new tracks, bridges, tunnels, and electrification, and the removal of the remains of the former Broad Street Station.[42] Suburban Station was created one block west of Broad Street Station in the 1930s. This 20-story building included offices, a main level concourse, and platforms below street level.[43] Construction on 30th Street Station, called Pennsylvania Station in the early years, began in 1929.

30th Street Station was designed by the Chicago architectural firm of Graham, Anderson, Probst, & White, and the monumental neo-classical structure was intended to be nothing less than magnificent. Completion of the station in 1933, gave the Philadelphia area a major transportation center and provided the PR with headquarters on the second, third, and fourth floors of the station. At the time, the station offered PR lines, suburban lines, a Greyhound Bus Terminal, taxi cabs, other ground transportation, and a potential helicopter pad for landings on the roof.

Over the years, some alterations were made. In 1952, when the Greyhound Bus terminal relocated to a new facility, the vacated terminal was converted to a bowling alley. A large new drugstore was designed and built in the South Retail Area at the western end of the

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[42] Dan Peter Kopple & Associates, *Press Kit*, 1994.
[43] Janet Potter, *Great American Railroad Stations*, 1996, p. 202.

main concourse, and other improvements to retail and food service facilities were still under construction in the 1950s.[44] These efforts to improve the station did not succeed, however, because of the decay of the railroads in the following decades.

Although the station maintained its status as a gateway to Philadelphia in the 1960s and '70s, the deterioration of the building's fabric, inappropriate alterations, its lack of modern building systems, the diminishing number of its public amenities, and the growing dominance of intercity air travel conspired to make it into an unattractive specter of its former grandeur. Moisture infiltration had damaged limestone parapets and plaster relief had suffered serious damage. On the ground floor, the main concourse was dark with vacant shop spaces, and on the upper floor, the inefficiently divided office spaces had fallen into disrepair. In 1972, the underground pedestrian tunnel connecting the subway to the station was closed because of hurricane and flood damage, and the bowling alley was closed as well.[45]

2.4.3 Redevelopment process

In 1976, the Federal Railroad Administration (FRA) began its Northeast Corridor Improvement Project (NECIP) by preparing a master plan for the renovation and rehabilitation of all the Amtrak stations from Washington, D.C. to Boston. Following this, 30th Street Station underwent several restoration projects. In 1978, the first rehabilitation and renovation plans, called Project "A," began. These featured the restoration of interior stonework and exterior glass, the repainting of ceilings, reconstruction of the original ticket counter, and other mechanical repairs and installations. In the same year, the station was designated in the National Register of Historic Places. In 1981, because of the reduction of federal funds for NECIP and because of its new status as a historic landmark, Amtrak drew up a new plan, Project "B," in cooperation with the City of Philadelphia and the SEPTA. This included the restoration of the

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44 Dan Peter Kopple & Associates, *Press Kit,* 1994.
45 Ibid.

glass roof of all suburban train platforms and improvements to platform stairways, lighting and drainage.[46]

In 1985, Amtrak sought a public and private partnership for the rehabilitation of 30th Street Station. The new development partnership, the 30th Street Limited, L.P. (TSL), invited rehabilitation proposals from teams of developers, architects and engineers for design and documentation services. A limited partnership is a widely-used vehicle for raising equity capital from the public for real estate ventures. Public sectors combine the limited liability feature of investment in a corporation with such advantages of a general partnership as avoidance of double taxation, pass through of loss, and so on. Liability, however, is limited to the initial contribution of capital plus any unpaid contributions that must be made in the future. Responsibility for the management of the partnership and unlimited liability rests with the general partners, of whom a limited partnership has to include at least one. The TSL is comprised of private investors, and its general partner is a Philadelphia-based lawyer named, Jeffrey Rotwitt. The TSL contracted Gerald D. Hines Interests (GDHI) as development manager, Dan Peter Kopple & Associates (DPK&A) as architect, the King-Lindquist Partnership as mechanical/electrical engineer, Clio Group, Inc. as historic consultant. GDHI is a Houston-based investment building firm which has received national recognition. DPK&A is a Philadelphia-based architectural and planning firm that handles small- and large- scale projects with public and private clients.

In 1987, the design was approved by the National Park Service, the Pennsylvania Bureau of Historic Preservation, and the City of Philadelphia Historical Commission. It included the followings improvements:

- improvements to the site;
- a new parking facility below street level for 415 cars;
- restoration of the historic elements on the station's exterior and public interior;
- improvements to passenger services;

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[46] Ibid.

- reconstruction of retail facilities with 57,000 square feet to accommodate 35 shops and restaurants;
- renovation of two four-story office buildings containing 265,000 square feet;
- completion of air conditioning, mechanical, and electrical systems; and
- conservation of public art.[47]

Figures 2.14 and 2.15 show the improved 30th Street Station. The George Hyman Construction Company was awarded the contract for general construction and began the work in 1988.

The grand opening of the rehabilitation of 30th Street Station was held in 1991, but some projects remained uncompleted until 1992, when the retail area in the south concourse was re-opened.

As illustrated in Figure 2.16, the total cost of this project amounted to $75 million.[48] The cost was financed in part by a $13 million Urban Development Action Grant (UDAG) and $30 million in Industrial Revenue Bond (IRB). Of the remainder, $15 million came from private investors through TSL[49] and $17 million came from loans. UDAG was given to local governments by the U.S. Department of Housing and Urban Development from 1977 through 1988, when a revitalization project involving private entities was planned. Therefore, the TSL has an obligation to the City of Philadelphia under its UDAG loan agreement. The principal is being repaid in $130,000 annual installments until 2011, and the balance will be due in 2012. The City's rights under the UDAG loan agreement are secured by a leasehold mortgage. The UDAG loan bears no interest.[50] On the other hand, IRB is a tax-exempted bond which was issued by local governments to fund capital investment in private factories and equipment. In the 1970s, however, developers began to use the IRB for various kinds of investment, such as shopping malls and offices, in addition to industrial facilities.[51] In the case of the 30th Street

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47 Ibid.
48 Ibid.
49 Telephone interview with Jeffrey B. Rotwitt, 30th Street Limited, L.P., April 25, 1997.
50 National Passenger Railroad Company, *1995 Annual Report, 1995.*
51 Timothy Barnekov, et al., *Privatism and Urban Policy,* 1989, pp. 86-89.

Station project, therefore, the City of Philadelphia, instead of Amtrak which was not eligible for tax-exempted bonds, issued the IRB.

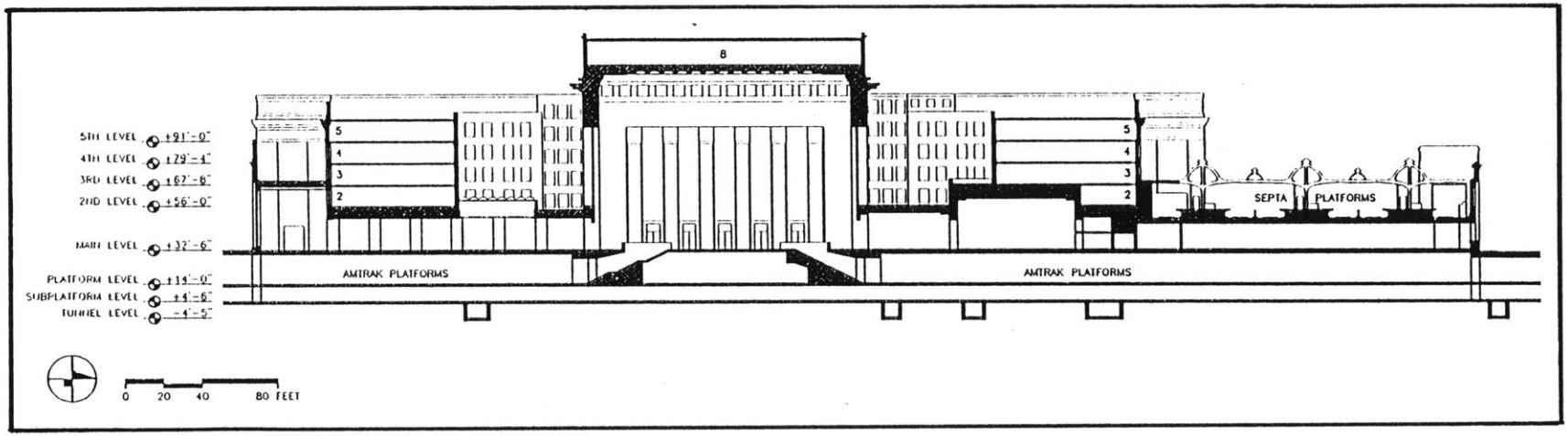

Figure 2.14 Longitudinal Section of the Redeveloped 30th Street Station
Source: Dan Peter Kopple & Associates, 1996

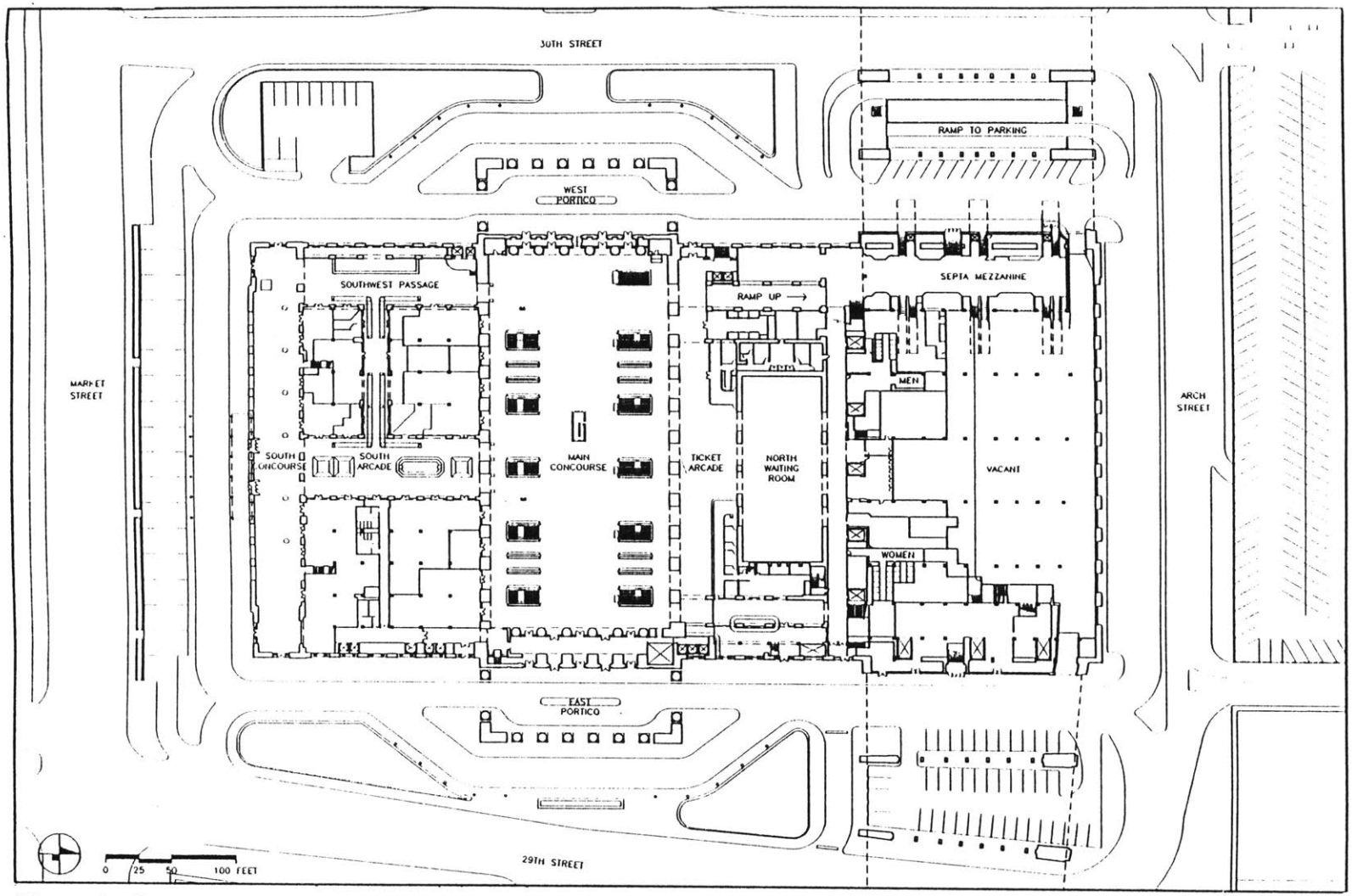

Figure 2.15 First Floor Plan of the Redeveloped 30th Street Station

Source: Dan Peter Kopple & Associates, 1996

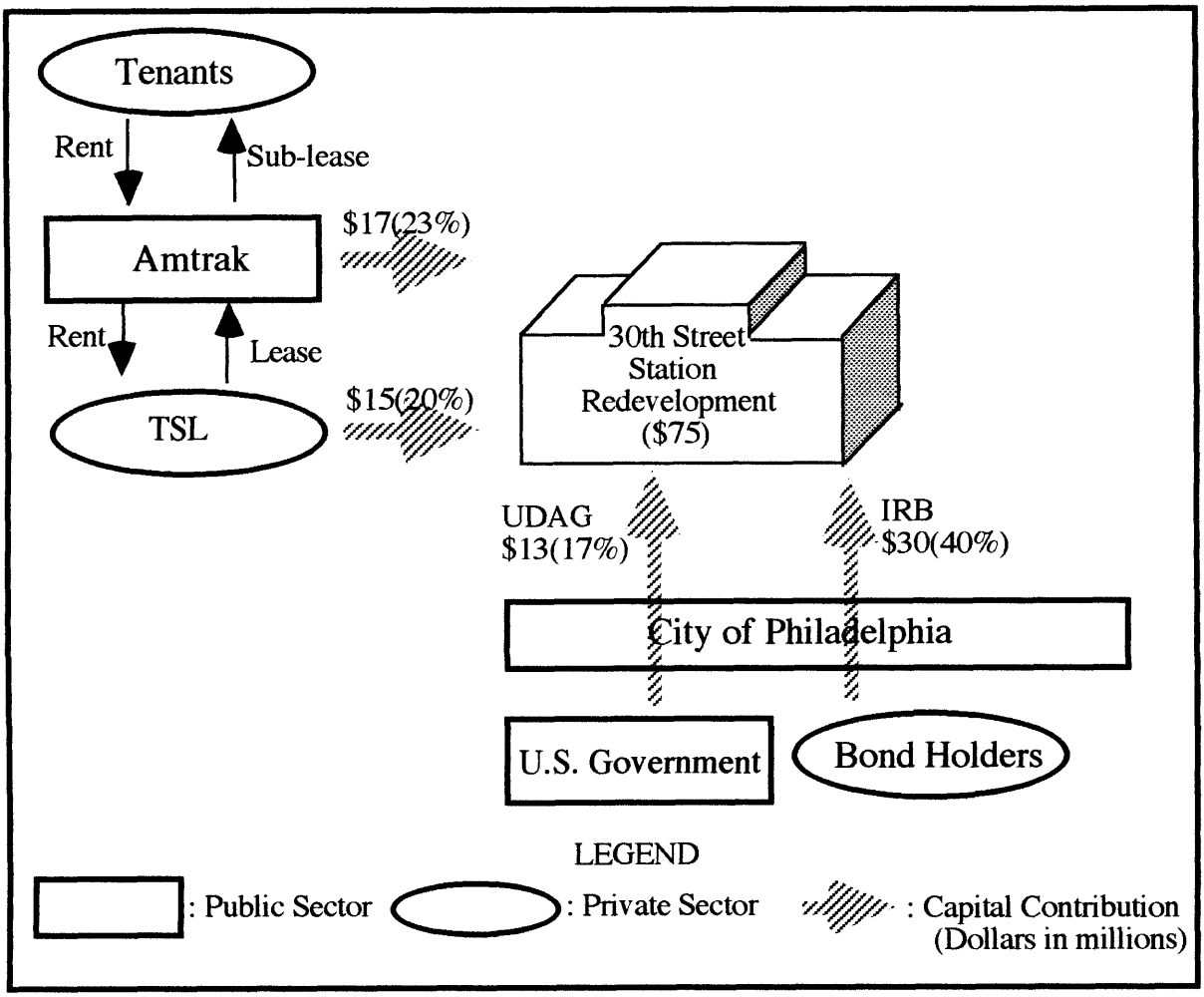

Figure 2.16: Financial Structure of the 30th Street Station Project

2.4.4 Results and impacts

30th Street Station is now the largest existing and second most active railroad station in the U.S. railroad passenger services, and retail amenities have been reconstructed in improved configurations consistent with the original building's design. A 37,000 square-foot retail space has become a specialized retail complex, occupied by travel-related specialty stores, a post office, a high-quality fresh food market, cafes, coffee bars and restaurants, all of which serve the needs of commuters, neighboring office workers, and tourists. Offices located in the two

towers which stand at both ends of the main concourse have been completely reconstructed as contemporary executive and office facilities. It is occupied by the headquarters of one of Amtrak's strategic business units, Northeast Corridor Unit. New landscaping and paving outside have created a pleasant approach to the station for pedestrians. A slightly revised traffic pattern mitigates conflicts between pedestrian and vehicular traffic, while allowing increased automobile access to entrances, new fountains, and pedestrian seatings. A new 415-car parking garage below street-level features direct access to the station, the street, and the commuter rail and subway systems.

The renovation project of 30th Street Station was undertaken as part of the Center City West project (See Figure 2.17). This plan includes 65 acres of air rights over Amtrak rail yards to the north of 30th Street Station. The station will occupy the focal point of this massive future development which will include office buildings, hotels, apartments, shops, restaurants, and an arts and cultural entertainment district which will extend west from Philadelphia's prime commercial district on 20th Street to 30th Street Station and then along the western banks of the Schuylkill River. More than 30 million square feet of new construction are planned to provide what is intended to be an ideal urban center of the next century. This ambitious project is the work of five private sponsors, including Amtrak and Gerald D. Hines Interests, and it is being coordinated by DPK&A, and has the full support of the City Planning Commission.

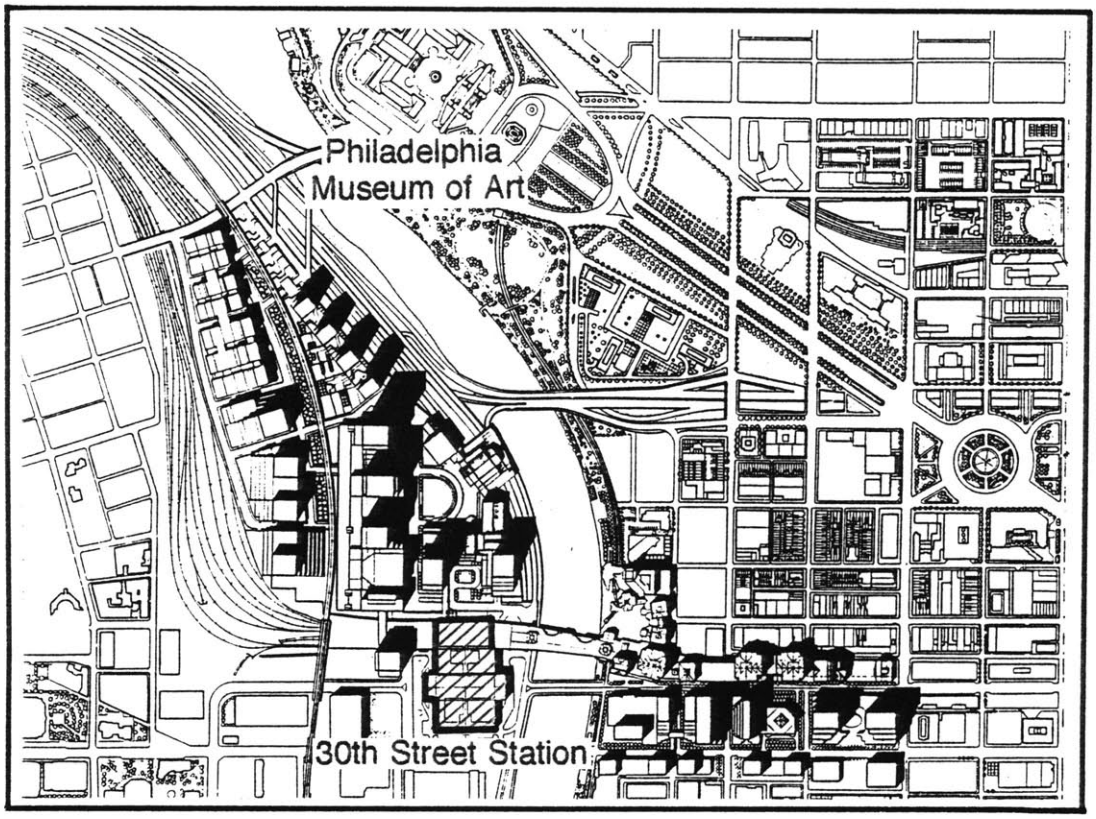

Figure 2.17 Plan for Center City West

Source: Center City West Brochure, Philadelphia: Dan Peter Kopple & Associates, et.al.

2.4.5 Lessons and implications

In terms of its planning process, the 30th Street Station project was initiated and basically led by Amtrak which began redevelopment in 1976, with funds from the FRA; improvements to the interior and exterior of the building were made through Projects "A" and "B," although these programs had to be curtailed because of reduced funding. To secure further redevelopment, Amtrak contrived to arrange three types of funding from other sources. First, it obtained other federal funds in the form of a UDAG through the City of Philadelphia. This funding, therefore, was done by the public sector. Next, Amtrak received money from Industrial Revenue Bond (IRB) sold to private bond holders and issued by the City. With these funds, a public arrangement induced private equity. Third, the TSL brought private equity as had been done with the IRB, but it did not need to arrange it with the City. The remaining funds were borrowed by Amtrak from banks. As we can see, the 30th Street Station project was characterized by the fact that Amtrak made use of a variety of funding arrangements, from absolute public funds to private debt.

Therefore, this project contains two lessons. One is that even a public transportation company, Amtrak, can play a leading role in joint development. The other is that Amtrak could raise up to sixty-seven percent of its total costs from private sources.

Finally, as regards the station's function, with the exception of a garage, this project did not bring different transportation facilities to the station, but it renovated the concession areas and the office space, as the Union Station project had done. The retail and restaurant areas of the 30th Street Station, however, are much smaller than those of Union Station.

2.5 Conclusion

These three projects offer various lessons and implications if considered together with one another. First, they were all renovation projects utilizing historic station buildings. Their histories, from dedication to renovation, are very similar: they all were created to take over the duties of other smaller stations around the turn of the century; they all experienced deterioration with the decline of the railroads from the 1950s through the 1970s; they were all listed in the National Register of Historic Places in the latter stages of their deterioration; and finally, they were redeveloped around 1990, after a series of efforts of revitalizations. There were, however, differences among them in terms of their physical way of redevelopment. To accommodate a new food court, the South Station project reproduced a formerly demolished west wing. The Union Station project did not create any new buildings, but rather generated a new mezzanine level within the existing historic building. In contrast to the other two projects, the 30th Street Station did not produce any new spaces. These differences are because of its original floor plan and the current status of each building. Of the three stations, only 30th Street Station had a large retail and food area, i.e., the South Concourse, from the time of its dedication, and it had kept this until the time of its redevelopment. On the other hand, South Station and Union Station did not include an aggregated retail area although they did have scattered commercial space. In addition, a part of the South Station building was demolished during its period of deterioration. Thus, the lesson here is that it is important to make the most of existing historic buildings and to reconstruct demolished floors or construct new floors that are consistent with the existing buildings if they are needed to increase the revenue through the rent.

We can find one more lesson in terms of the preservation of historic buildings. These three projects renovated historic stations as stations, while many other old stations were converted into museums, libraries, and shopping malls which did not offer transportation facilities any longer. The success of these three examples is that they have become vital transportation facilities as well as important shopping destinations. Each purpose contributes to

the success of the other. The transportation benefits might not have been achieved had they not been located in densely populated regions of the U.S. and offered intercity trains on Amtrak's Northeast Corridor.

Second, while all three stations experienced nearly the same history, the process and financial structure of each redevelopment was interestingly different. Overall, the South Station project was led by the local transit agency, the MBTA; while Union Station and 30th Street Station were lead by the federal government and Amtrak, respectively. The Union Station project had a unique process and financial structure if compared with the two other projects. In that project, the federal government realized the importance of Union Station and the necessity of its revitalization in the early stages of its deterioration. Thus, the federal government passed a particular act to execute this redevelopment and formed a non-profit organization, the Union Station Redevelopment Corporation. The USRC then played an important role throughout the entire period of redevelopment, controlling private developers in terms not only of the conservation of the historic station but also in terms of the design and management of the commercial area. In addition to its development process, the financial structure of Union Station was quite different from that of the other projects. While both of South Station and 30th Street Station received federal grants, such as an FTA (formerly a UMTA), an FRA, and a UDAG, the Union Station project was not awarded any federal grants. Instead, the U.S. Government assumed ownership of the property and leased it to the USRC, which then subleased it to private developers. The USRC also took out an interest-free loan from Amtrak, which amounted to forty-seven percent of the total cost.

Compared to Union Station, the South Station project involved mainly local agencies, i.e., the Boston Redevelopment Authority (BRA) and the Massachusetts Bay Transportation Authority (MBTA). The property was originally purchased by the BRA to accomplish its Urban Renewal Project; the property was, however, later transferred to the MBTA to be eligible for funds available to transit agencies. After this transfer, the MBTA took advantage of funds available for the development of the main terminal and the bus terminal.

The 30th Street Station project had another type of process and financial structure. While the MBTA obtained federal funds from the DOT, Amtrak did not count on this kind of funding. Instead, Amtrak made use of federal funds eligible for urban development, funds which were not specifically for transportation or for railroads. Another difference in funding was that Amtrak got federal funds from the UDAG and tax-exempted private money from the IRB through the City of Philadelphia, while the MBTA obtained federal funds directly. Therefore, in the case of 30th Street Station, the partnership between Amtrak and the City of Philadelphia was relevant even though the city itself did not actually provide any funding.

A summary of each participant's role is provided in Table 2.2. In addition, because the funding of a project is an important issue, the financial contribution of each party is illustrated in Table 2.3. According to Table 2.3, the federal government provided for as much as seventy-three percent of the total cost of the Union Station project, while it provided for only forty percent of the total cost of the 30th Street Station project. Local governments and transit agencies spent their own funds only on the South Station project, while for the other two projects they obtained the same amounts of federal money as they spent. Private money was raised for up to sixty percent of the project cost for the 30th Street Station project, while it was raised from zero to about thirty percent for the others.

As we can also see in Tables 2.3 and 2.4, all projects involved private entities with respect to management or funding. This means that public agencies sought private developers to meet construction costs, and to obtain the know-how of private developers.

There are several possible reasons for the various processes and financial structures mentioned above. One is the intensity of each agency's interest in each city. In Washington, D.C., the federal government was considered to be more concerned with Union Station than the D.C. Government and the transportation agencies, because it was a notable station and one of the main entrances to the Capital as well. In Boston, both the City of Boston and the MBTA were concerned about South Station. The City intended to make the station the core of the redevelopment of downtown Boston, and the MBTA considered it a key station for commuters

and tourists both then and for the future. In Philadelphia, Amtrak which had one of its main offices in 30th Street Station, was intensely interested in the station. In addition, the City of Philadelphia and the SEPTA may have been more interested in other downtown areas, such as the City Hall area or the Old City. Another reason is the availability of public funding. Since each leading party got federal funds, it is clearly important that an entity with access to federal funds take the initiative.

Table 2.2 Roles of Each Party in U.S. Projects

Project	South Station	Union Station	30th Street Station
Federal Government	- awarded project grants through the MBTA. (M)*	- purchased the building from the station company. - founded the USRC. - financed the project through Amtrak and the D.C. Government.	- awarded project grants through the City. - financed the project through Amtrak.
Amtrak	- operated intercity trains. - sub-leased the office space. (M)	- loaned money to the USRC. - operated intercity trains. - sub-leased the office space.	- financed the project. - operated intercity trains. - leased the whole building from the TSL. - managed the commercial space.
Local government	- purchased the building and sold it to the MBTA. (M) - financed the project - held the air-rights and planned its development.	- financed the project with funds from the federal government.	- made arrangements for the UDAG and the IRB.
Transit agency	- funded the project - held the ownership of the building. - operated commuter trains and subway.	- approved the new connection between the renovated station and the WMATA's station. - operated commuter trains and subways.	- operated commuter trains and subways.
Private developers and investors	- financed the project. (M) - managed the commercial space.	- financed the project. - managed the commercial space.	- financed the project.

* (M) denotes an item that applies only to the main terminal of South Station.

Table 2.3 Financial Contributions of Each Party in U.S. Projects

Project	South Station		Union Station	30th Street Station
	Main Terminal	Bus Terminal		
Federal Government	$57 (60%)	$34 (42%)	$113 (73%)	$30 (40%)
Grants	$57 (60%)	$34 (42%)	$ 0 (0%)	$13 (17%)
Others*	$ 0 (0%)	$ 0 (0%)	$113 (73%)	$17 (23%)
Local public agencies	$14 (14%)	$47 (58%)	$ 0 (0%)	$ 0 (0%)
Private investment	$25 (26%)	$ 0 (0%)	$42 (27%)	$45 (60%)
Total	$75(100%)	$81(100%)	$155(100%)	$75(100%)

(Dollars in millions)
* Contribution through Amtrak and local governments.

Third, there are also some resemblances among these three projects in terms of marketing and the management of commercial areas. All three projects targeted commuters, tourists, neighboring office workers, and neighborhood residents. However, the majority of the actual patronage for each project is different. South Station serves mainly commuters and neighboring business people, Union Station serves commuters, tourists, and neighboring business people evenly, and 30th Street Station serves mainly business travelers. These differences come from the location of the stations.

We can see that there is a common strategy for advertising these commercial facilities, promoting events rather than spending more money on other kinds of advertisement. A large concourse, which is usually occupied by passenger-related or food-related services can be temporarily cleared to create a good space for various events. The advantage of this space is that it has a historic atmosphere but is not necessarily expensive to rent, because it is not maintained as an event space exclusively. In addition, South Station has taken a unique strategy. The Beacon Management Company sponsors a radio station located there which broadcasts events and special promotions.

Chapter 3: Case Studies of Japanese Projects

3.1 Introduction and background

3.1.1 Japanese railroad companies and joint developments

There are some distinctive differences in the railroad industry in the U.S. and in Japan. To begin with, the Japanese railroad system has been more highly relied on by commuters, business travelers and tourists than that of the U.S. or even that of Europe. Table 3.1 shows that although the share of rail transportation in Japan has decreased it is still much higher than it is in other countries. The U.S. share of rail transportation, on the other hand, has remained stable at less than one percent.

Table 3.1 Comparison of the Share of Rail Transportation Internationally*

Year	Japan	U.S.	France	West Germany	U.K.
1965	66.8	1.9	N.A.**	11.2	10.5
1970	49.2	0.9	12.0	8.6	8.7
1975	45.6	0.7	12.0	7.5	8.9
1980	40.2	0.7	10.7	6.9	7.3
1985	38.5	0.7	10.4	7.2	7.0
1990	34.8	0.7	8.9	6.2	6.0

* The number represents the percentage of rail transportation in terms of passenger-km (the accumulation of the product of the number of passengers and the distance which each of them traveled).
** Not available.
Source: Ministry of Transport, *Rail Fact Book '96*, Japan Transport Economics Research Center, Tokyo, 1996, pp. 18-19. (in Japanese)

The decrease in rail share in Japan is largely the result of the increased prevalence automobiles. The decrease is not yet affected as significantly by an increase in air travel as it has been in the U.S. (See Table 3.2) Due to Japan's small and densely populated land mass,

airplanes are used only for 4.6 percent of all travel, as compared with 18 percent in the U.S., even in 1990.

Table 3.2 Share of Rail Transportation in Japan*

Year	Railroad	Automobile	Ship	Airplane
1965	66.8	31.6	0.9	0.8
1970	49.2	48.4	0.8	1.6
1975	45.6	50.8	1.0	2.7
1980	40.2	55.2	0.8	3.8
1985	38.5	57.0	0.7	3.9
1990	34.8	60.0	0.6	4.6

* The number represents the percentage of rail transportation in terms of passenger-km.
Source: Ministry of Transport, *Rail Fact Book '96*, Japan Transport Economics Research Center, Tokyo, 1996, pp. 10-11. (in Japanese)

Japanese passenger railroad enterprises can be divided into six categories by transportation type, main service areas, and ownership, according to the Ministry of Transport as shown in Table 3.3. Six regional JR companies were created by privatization of the Japan National Railway (JNR) in 1987, and these have offered intercity and commuter transportation all over Japan. Because the Japanese Government which originally owned all of the stocks at the time of privatization has since gradually released it, the stock of two JR companies is now held jointly by private investors and the Japanese Government, while that of the five other companies is still held only by the government. Fifteen large private companies have been operating commuter trains in four major metropolitan areas, since the beginning of the century. There are also many small private railroad enterprises which exist throughout the nation and offer commuter and sightseeing trains. Thirty-six percent of the small private companies in urban areas were created to take over branches of the JNR in smaller urban areas; these are called the "Third Sector," and their stock is owned by local governments and private sectors. Thirteen public transit agencies operate street cars and subways mostly for commuters, and their stock is held only by local governments. Although Eidan, or the Teito Rapid Transit

Authority (TRTA), which operates the subways in Tokyo's metropolitan area, is similar to other public transit agencies; its stock is owned jointly by the Japanese Government and by local governments.

Table 3.3 Classification of Passenger Rail Operators*

Classification	Transportation Type	Main Service Areas	Ownership	Operators in 1996
JR Group	intercity & commuter	6 regions	private & national government	6
Large Private	commuter	4 metropolises (Tokyo, Osaka, Nagoya, & Fukuoka)	private	15
Small Private in Metropolitan Areas	commuter	Tokyo & Osaka	private	6
Small Private in Urban Areas	commuter sightseeing	from large to small urban areas	private	100
Public	commuter (subway)	9 large cities	public (local governments)	13 (9)
Eidan	commuter (subway)	Tokyo	public (national & local governments)	1 (1)

* This table was originally made by Mizutani[1] and modified by the author in accordance with the Ministry of Transport's *Rail Fact Book '96*, Japan Transport Economics Research Center, Tokyo, 1996, pp. 8-9. (in Japanese)

Because of its high share of transportation, most Japanese railroad enterprises have been financially sound. Private railroads are profitable for the most part, and even public railroads are profitable if depreciation is excluded from their operating costs. The profitability of Japanese railroads is in strong contrast with that of other industrial countries' railroads[2].

Despite their high profitability, Japanese railroad companies have traditionally pursued side-businesses in addition to their train operations. Historically, these side-businesses were initiated by large private companies to increase their rail patronage. From this point of view, the most effective side-business was housing and amusement development along rail lines. Some private companies developed suburban residential areas for downtown office workers, and

[1] Fumitoshi Mizutani, *Japanese Urban Railways: A Private-Public Comparison*, 1993, p. 9.
[2] Ibid., pp. 43-48.

others developed academic areas which were then occupied by colleges. Amusement parks and resort areas were developed in more distant locations from downtown than residential and academic areas. Development brought benefits to companies not only from an increase in ridership but also in profits from the sales of developed land and from rent. However, because companies sometimes sold their land at low prices, the main motivation for development along rail lines seemed to be to increase patronage. When the number of passengers at their terminal stations increased because of an increase in population along their lines, terminal station areas were enlarged, and became new downtown areas. Subsequently, department stores were built over terminal stations and were operated by rail companies; supermarkets, too, were built at terminal and suburban stations.

Gradually, after World War II, private railroad companies expanded their side-businesses. They began to build and rent office space at their stations and at even other sites, and they ran tourist and leisure businesses such as hotels and sports clubs. In addition, they manufactured rail cars, managed contractors, ran communications and broadcasting businesses, such as cable TV stations. Although these businesses were related to train operation to some extent, they no longer contributed to their ridership. The main reason for them was revenue production for the rail companies.

3.1.2 The East Japan Railway Company

The first Japanese railroad was created in Tokyo in 1872 by the national government. After that, many private and national railroads were constructed and operated separately. By 1922, most of the private railroads with the exception of some commuter rails in metropolitan areas, had been purchased and were operated by the national government, which was anxious to improve rail networks all over the nation. After World War II, in 1949, the government formed the Japan National Railways (JNR) to operate its nation-wide rail system. Although the JNR played an important role in post-war rehabilitation, it suffered from the rapid increase in

automobiles and operated with increasing losses until the late 1960s. Although the environment around railroad systems was changing rapidly, the JNR could not respond to the changes; i.e., it could not restructure its business and improve productivity; therefore, it reached an impasse in the 1980s. The main reason for this was that the JNR was not cost-conscious and did not take into account many regional circumstances. As a result, it was privatized in 1987, and divided into six regional passenger companies and a single freight company. Although all of the stock for these companies was still owned by the national government at that time, a certain number of shares in the East Japan Railway Company (EJR) were released to private investors in 1993 and that of the West Japan Railway Company was released in 1996. Most companies have been operating in the black and have substantially improved their services.

The EJR operates intercity and commuter trains in the eastern part of the main island of Japan; its operating area includes the Tokyo metropolitan area. It runs over 12,000 scheduled trains every day on its 7,500 kilometers (4,460 miles) of tracks, serving more than 16 million passengers daily.[3] The EJR consistently generates earnings that are among the highest of all Japanese companies. Its operating revenues and operating income have been ¥1.9 billion ($15.3 million[4]) and ¥400 million ($3.3 million), respectively, over the last five years.[5]

Since the founding of the EJR, it has broadened its range of business, and is now involved in travel, retail, hotels, real estate, credit cards, and other side-businesses. Although the revenue share of the side-businesses rose from five percent in 1987, to eight percent in 1995, it is still far below that of the large private railroads.

The EJR operates 72 shopping malls through 46 subsidiaries, whose sales amounted to about ¥840 billion ($7 million) in 1995, making the EJR group the sixth largest retailer in Japan.[6] These shopping malls all include station facilities in the same building, and for that reason, they are called "Station Buildings." A station building is based on the same concept of

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[3] East Japan Railway Company, *Annual Report '96*, 1996, p. 10. (in Japanese)
[4] The exchange rate used is ¥120 = $1.00, the rate prevailing at the beginning of 1997. This rate will be used hereafter, unless otherwise specified.
[5] Ministry of Transport, *Rail Fact Book '96* , 1996, p. 73. (in Japanese)
[6] East Japan Railway Company, Guidebook for Affiliated Enterprises, 1997. (in Japanese)

joint development as found in U.S. rail stations. The first of these was created in the Nagoya metropolitan area by the JNR in 1950, through the "People's Station Program." Under the People's Station Program, a local community would pay for the construction cost of a station building, donate station facilities to the JNR, and then occupy a commercial space by itself. This was the first effort to create station buildings as for the JNR. When the Japanese National Railways Act was amended to allow the JNR to invest money in SBs in 1971, the JNR began actively pursuing a program of station building development.

Even after the new act, before privatization of the JNR, by law it could neither own nor operate SBs by itself. For that reason, the JNR adopted the "Land Leasing Method (LLM)," in which it leased its land to a subsidiary which would then build a station building and lease commercial spaces to tenants. After privatization, however, most of the regulations regarding the EJR's side-businesses were eliminated, and it was able to own and manage station buildings itself, without restriction. Since that time the EJR has practiced the "Building Leasing Method (BLM)," in which the EJR puts up a station building and leases it to a subsidiary, who then subleases its space to tenants. The BLM is better than the LLM for all of the following reasons:

- the BLM has more added value and will produce more profits, especially long-range profits;
- the BLM does not incur any of its tenants' land-leasing rights, which are stronger than building-leasing rights; and
- the BLM can allow an owner to depreciate a building, creating a tax credit for the owner.

3.1.3 The Rail Network and Downtown Area in Tokyo

Metropolitan Tokyo consists of the Ward area in the east and the Tama area in the west. The Ward area is made up of 23 wards and the Tama area is comprised of 27 cities and 14 towns and villages. In the center of the Ward area runs the EJR's Yamanote Line, which

connects some of the terminal stations of the EJR and other private railroads as shown in Figure 3.1. The Yamanote Line is 35 kilometers (22 miles) long and has 29 stations. Private railroad companies operate commuter trains from their downtown stations, most of which connect to the Yamanote Line's stations and suburban stations. The TRTA, called Eidan, also operates subway lines which run through the terminal stations of the Yamanote Line. On some lines, the TRTA cooperates with the EJR and private railroads, so that the TRTA's subways and others' commuter trains can run beyond their sections by connecting to each other and thereby relieve commuters of the inconvenience of transferring. Although a certain number of commuters do benefit from this arrangement, most commuters still have to get off trains from suburban stations and transfer to the Yamanote Line or the Eidan lines at terminal stations.

Downtown areas had been dominated by terminal stations on the Yamanote Line, until the separated downtown areas merged into a larger downtown area because of the expansion of each smaller downtown areas and the improvement of transit networks by public transportation. Thus the large urban areas around and inside the Yamanote Line became a single downtown area altogether.

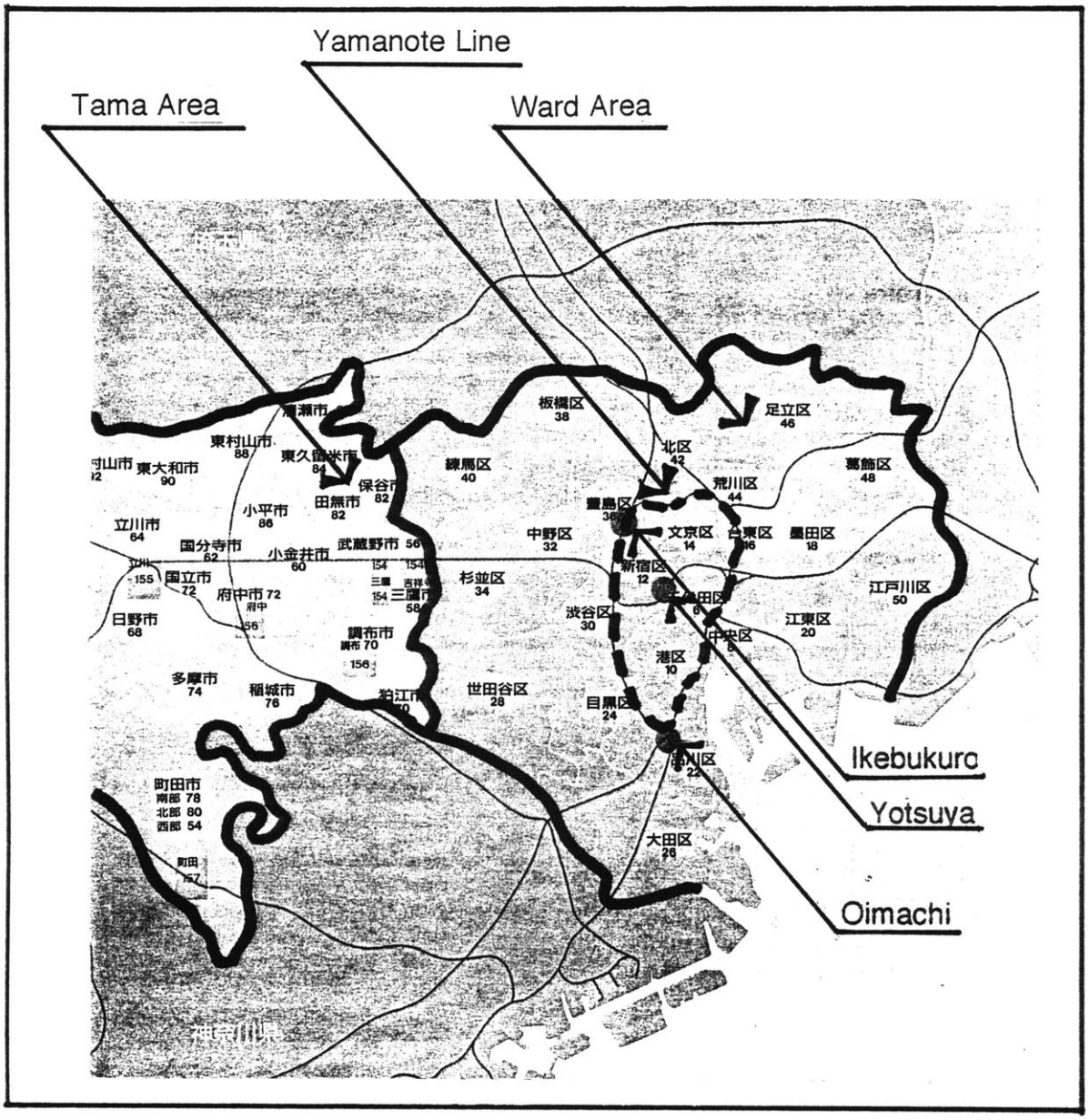

Figure 3.1 Metropolitan Tokyo

3.1.4 Case Study Projects

For this chapter, I have chosen the following three stations in the Tokyo area: Ikebukuro Station, Oimachi Station, and Yotsuya Station. I have make this choice for the four following reasons: they are all located in downtown Tokyo as shown in Figure 3.1; each of them offers several commuter trains and subway lines, as shown in Table 3.4; these projects all include a shopping mall inside the redeveloped building; and they were all completed in the early 1990s. These four criteria are meant to be consistent with similar U.S. projects. In addition, their recent completion contributes to the availability of information about them.

Table 3.4 Overview of Japanese Case Study Projects

Project	Ikebukuro Terminal Building (Metropolitan Plaza)	Oimachi Station Building	Yotsuya Station Building
Year of dedication	1903	1935	1928
Year of Redevelopment	1992	1993	1990
Commuter Lines	The Saikyo Line & the Yamanote Line (EJR) The Ikebukuro Line (Seibu) The Tojo Line (Tobu)	The Keihin-Tohoku Line (EJR) The Oimachi Line (Tokyu)	The Chuo Line (EJR)
Subway Lines	The Marunouchi Line & the Yurakucho Line (TRTA)	N.A.	The Marunouchi Line and the Nanboku Line (TRTA)
Location of Development	Beside the station	Above the station	Above the station
Building Size	22 stories above ground and four below	9 stories above ground	3 stories above ground
Gross Building Area	142,000 square meters (1,530,000 sq.ft.)	26,500 square meters (285,000 sq.ft.)	2,900 square meters (31,000 sq.ft.)
Usage and Space Allotment	Office: 18,400 m^2 (198,000, sq.ft.)* Department Store: 29,000 m^2 (312,000 sq.ft.) Shopping Mall: 14,000 m^2 (151,000 sq.ft.)	Retail: 6,100 m^2 (66,000, sq.ft.) Restaurant: 2,200 m^2 (23,700, sq.ft.) Others: 500 m^2 (5,400 sq.ft.)	Retail: 1,000 m^2 (11,000, sq.ft.) Restaurant: 500 m^2 (5,400 sq.ft.)
Total Cost	¥57,500 million ($480 million)	¥12,000 million ($100 million)	¥1,600 million ($13 million)

* 0.0929 square meters = 1 square foot

3.2 Ikebukuro Terminal Building

3.2.1 Background and history

Ikebukuro Station is located in the northwestern part of Tokyo's downtown area. It offers access to the Yamanote Line and the Saikyo Line operated by the EJR, the Marunouchi Line and the Yurakucho Line operated by the Teito Rapid Transit Authority (TRTA), the Ikebukuro Line operated by the Seibu, a private corporation, and the Tojo Line of the Tobu, also a private corporation. Although each agency has a station connected to all the others, that station is separated from the other stations by fare gates and is managed by separate agencies. (See Figure 3.2) Throughout this thesis, I use the term of *Ikebukuro Station* when referring to the whole station composed of the stations of all of the rail companies, and I use the term *agency station*, e.g., EJR's Ikebukuro Station or EJR's station, when referring to any station area enclosed by gates. While most passengers are commuters who transfer from their trains at Ikebukuro Station, a portion of them remain there and work or shop in the Ikebukuro area. The Ikebukuro area itself is an active center which includes office spaces, retail shops, department stores, hotels, and cultural facilities, but the east and west gate areas have not been developed equally. The east gate area houses the Toshima Ward Town Hall, two large department stores, and a huge complex development including the tallest building in Japan, known as Sunshine City Mall. The west gate area, however, was not highly developed until recently. The main development around the west gate is the Tobu Department Store (TDS), a subsidiary of the Tobu located above Tobu's station.

EJR's Ikebukuro Station was the second most active station among all EJR stations in 1993, with an average of 610,000 boarding passengers daily.[7] Each of its separate stations, Seibu, Tobu, and the TRTA is the most active among all the stations on its line, with 338,000 passengers, 305,000 passengers, and 301,000 passengers, respectively.[8]

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[7] East Japan Railway Company, *Annual Report '96*, 1996, p. 146. (in Japanese)
[8] Ministry of Transport, *Rail Fact Book '96* , 1996, p. 33. (in Japanese)

The Ikebukuro Terminal Building, called Metropolitan Plaza, is a complex building immediately connected to Ikebukuro Station as shown in Figures 3.3 and 3.4. It is one of the largest station buildings in Japan, with twenty-two stories above ground and four below, and its gross floor area amounts to 142,000 square meters (1,530,000 square feet). Metropolitan Plaza includes office spaces, a department store, retail shops, restaurants, and public facilities. Construction of it started in 1989, and was completed in 1992.[9]

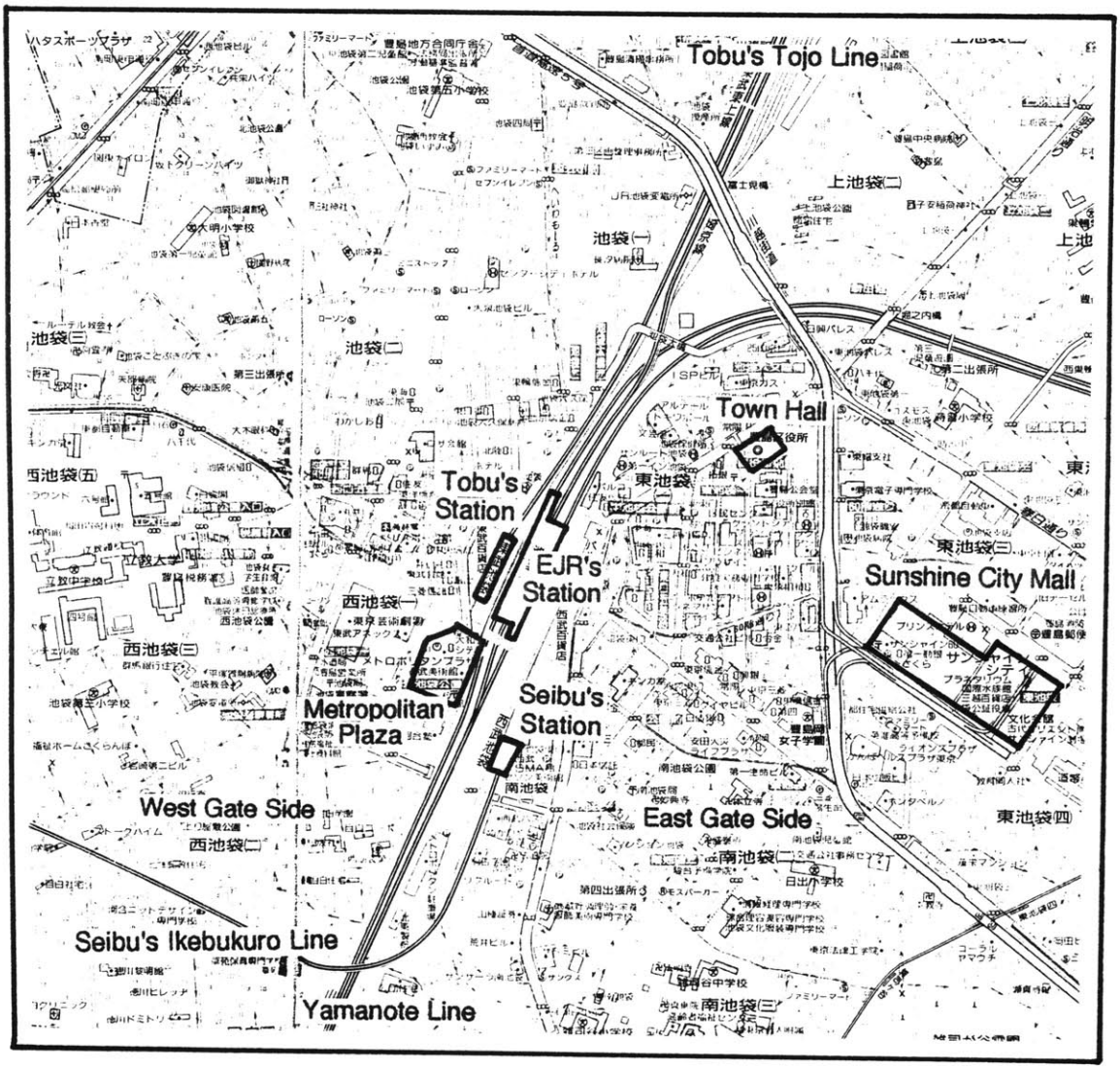

Figure 3.2 The Ikebukuro Station Area

9 Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993. (in Japanese)

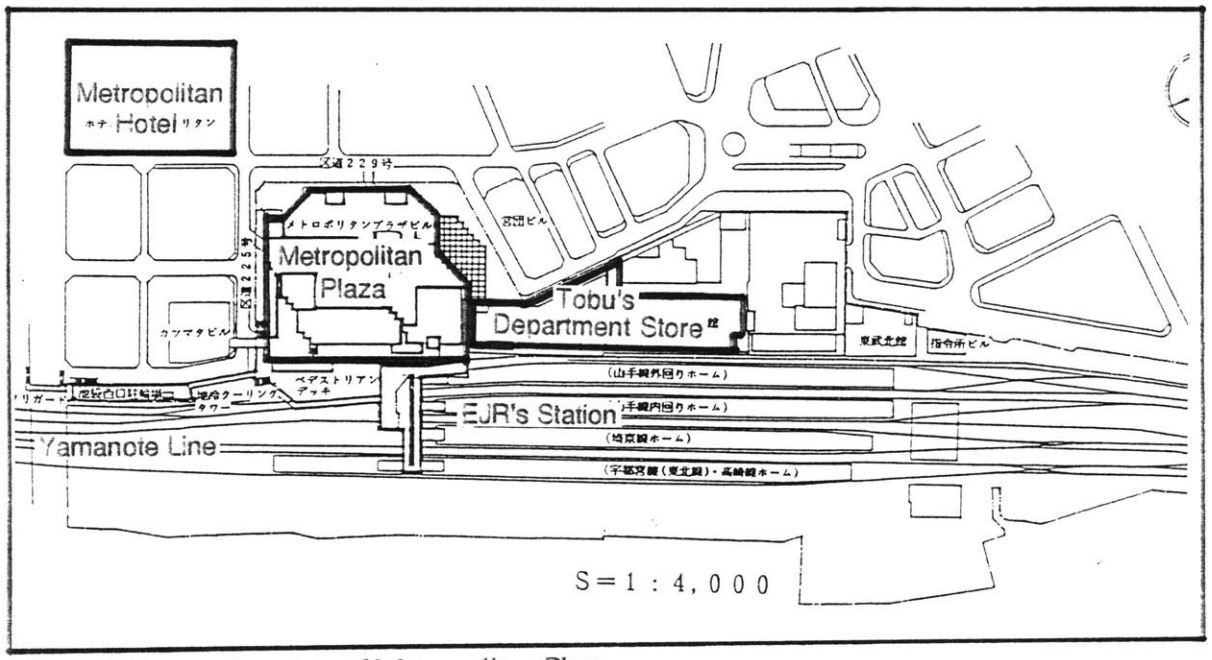

Figure 3.3 Location of Metropolitan Plaza

Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993.

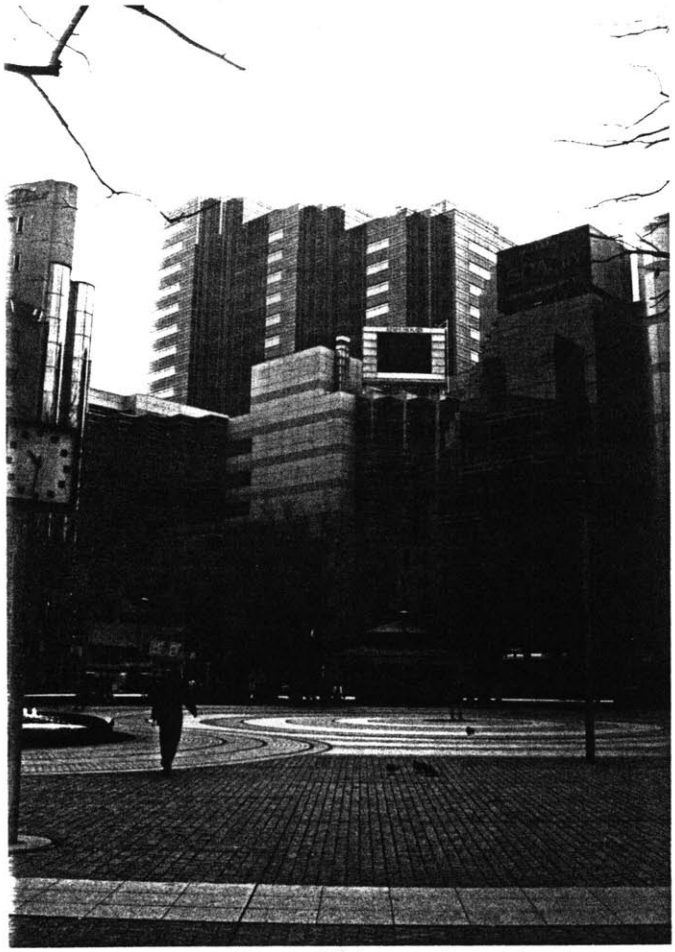

Figure 3.4 View of Metropolitan Plaza

3.2.2 Redevelopment process

The first motivation for this development came from the mutual concerns of the JNR and the neighborhood around the west gate area. The JNR owned 154,000 square feet of vacant land in the west gate area, as shown in Figure 3.5, and intended to make the most of it to compensate for its huge rail operation loss. On the other hand, the west side neighborhood was worried about the inferior commercial activity of that side when compared with the east side.

The first plan for redevelopment was created in 1972, after a large site occupied by a national college was vacated. However, this plan did not involve the local neighborhood directly. The second plan was created by the Committee for Redevelopment of West Gate Area of Ikebukuro Station (the Committee) in 1982. The Committee was made up of representatives from the Tokyo Metropolitan Government (TMG), Toshima Ward, the JNR, the Tobu, the TRTA, the TDS, the Chamber of Commerce of West Ikebukuro, and a group of neighborhood residents and academic advisers. Although the Committee's primary goal was to coordinate the larger area of 120,000 square meters (1.3 million square feet), it focused on the redevelopment of the JNR's vacant land, since the redevelopment of the other blocks was already under progress. After careful consideration, the Committee made its proposals, the Committee's Plan, in 1985. According to their plan, shown in Figure 3.6, the vacant land was to be developed as a commercial, cultural, and public space and was to include several small adjacent lots and a narrow street which ran between the land and Ikebukuro Station. This plan, it was felt, would maximize the block's potential and strengthen its connection with the station.

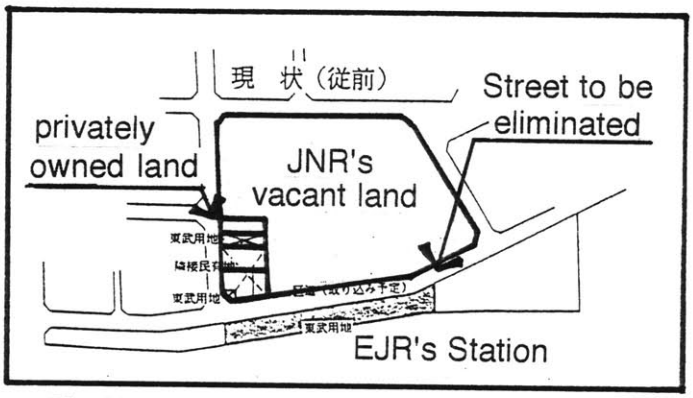

Figure 3.5 The Vacant Land Owned by the JNR
Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993.

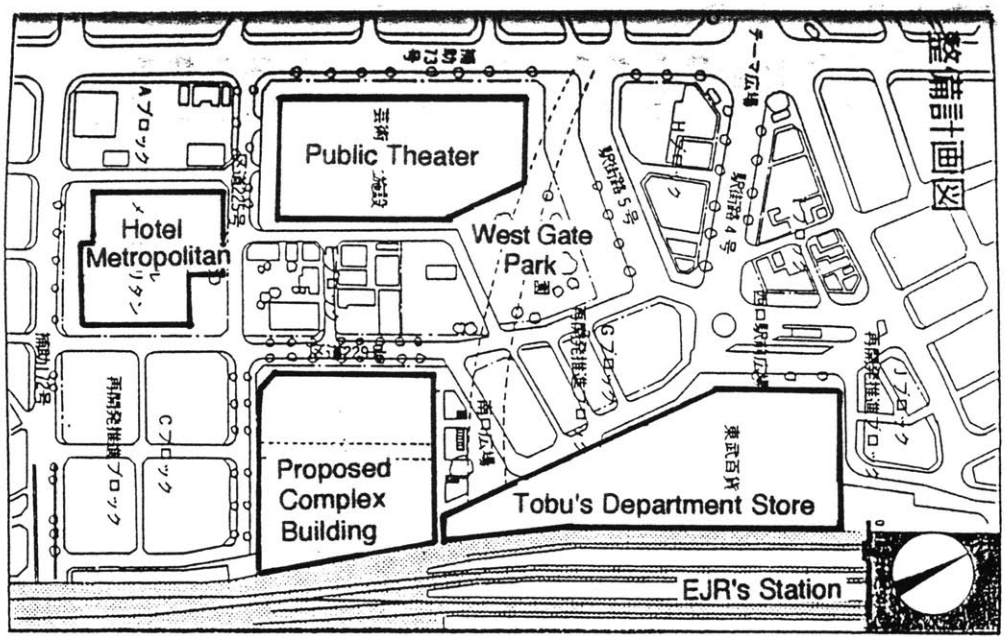

Figure 3.6 The Committee's Plan
Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993.

Because the Committee's Plan had no legal power, the owner of the site, the JNR, had to negotiate the plan with Toshima Ward, which required the following conditions in exchange for the elimination of the adjacent narrow street:

- development was to include adjacent privately-owned lots;
- the two other streets facing the development site would be widened;
- the developed building would be adequately connected to Ikebukuro Station;
- a plaza of more than 1,700 square meters (18,300 square feet) would be created on the north side of the block;
- a passageway from the north to the south would be created on the ground floor for pedestrians to reach the south part of redeveloped West Ikebukuro;
- the building would include a community center for women; and
- the building would provide HVAC facilities for the whole area of redeveloped West Ikebukuro Redevelopment.[10]

In 1981, however, while the Committee was still deliberating, the JNR formed the Ikebukuro Terminal Building Company (ITBC). Currently, the EJR, successor of the JNR in Tokyo are, holds fifty-one percent of ITBC stock; Tobu holds twenty-five percent; and a number of banks and travel agencies hold less than five percent each. The ITBC, on its own, constructed and began to manage Hotel Metropolitan, an 818-room hotel, one block away from Metropolitan Plaza in 1985. This was one of the buildings proposed in the Committee's Plan.

The first condition from Toshima Ward was the hardest for the JNR to clear, because, as usual, land owners had their own plans for their land and the property rights of their heirs. After tough negotiations, they finally agreed in 1988, that some of the landowners would sell their lots to the JNR and the remaining two would be part of the construction of a cooperative building.[11] This cooperative building would be owned by the ITBC, the JNR, the Tobu, and two small-lot owners. The ITBC then contracted with four other landowners to construct their cooperative building and manage it. Then, the ITBC also contracted with RB Toshi-Kenchiku

[10] Ibid.

[11] A cooperative building is a building whose land and building are owned by several landlords.

and Yasui & Associates for the planning and architectural work of the development. According to their working plan, the height of the building was to be 100 meters (328 feet) to make the most of the allowable floor area ratio and, at the same time, to avoid environmental assessments.[12] The circulation plan of the building was very difficult because many facilities were planned for one building, and four agencies' stations were to be connected to Metropolitan Plaza. In order to make the building easy for visitors to understand, it was vertically divided into four parts according to function, and the entrances of the building were clearly indicated.

The lowest floors (the fourth basement and third basement) were occupied by parking garages, delivery areas and an HVAC plant for the West Ikebukuro area; the next floors (the second basement to the eighth floor) were used for a shopping mall and a department store, the ninth and the tenth floors were used as cultural facilities, and the highest floors (the 11th to the 22nd floor) were offices. (See Figure 3.7)

Because Metropolitan Plaza connects to the south part of Ikebukuro Station and most passengers use the basement floor of the station to transfer and to exit, the architects considered the north part on the basement to be the most relevant entrance. With this in mind, they created a huge atrium in the basement which reached to the fifth floor, making access to the building clear and characterize the building. (See Figure 3.8) The atrium also connects directly to the new gate of Tobu on the ground floor and is close to the new gate of the EJR on the second floor. (See Figure 3.9) Thanks to this circulation plan, Metropolitan Plaza would not only attract visitors from the station, but would also relieve congestion by creating new transfer routes within Metropolitan Plaza. Metropolitan Plaza is also horizontally divided by a passageway on the ground floor which creates a north-south axis. The passageway, together with the atrium, provides access from the station to the office entrance and the southern part of the West Ikebukuro area, including the Hotel Metropolitan. Three escalators beside the passageway divide the lower levels of Metropolitan Plaza into a shopping mall and a department store. (See Figure 3.10)

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[12] Environmental Assessment was required of a building higher than 100 meters in the Tokyo area.

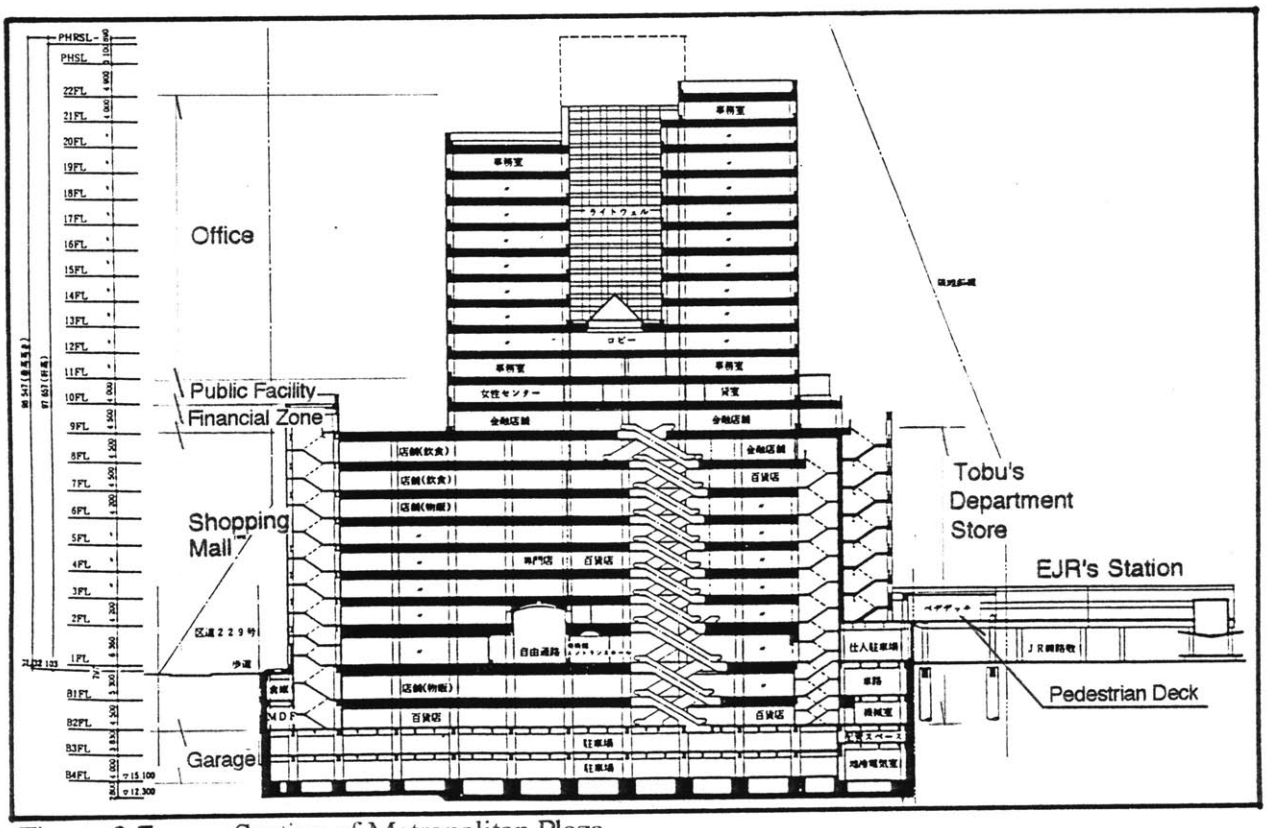

Figure 3.7 Section of Metropolitan Plaza

Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building,* 1993.

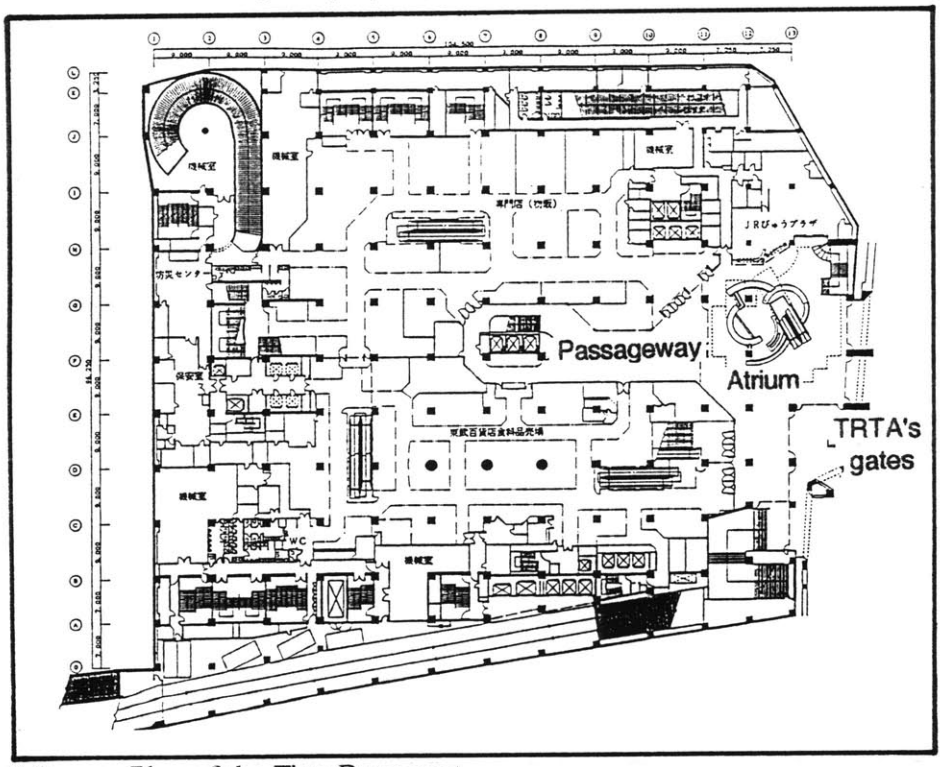

Figure 3.8 Plan of the First Basement

Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building,* 1993.

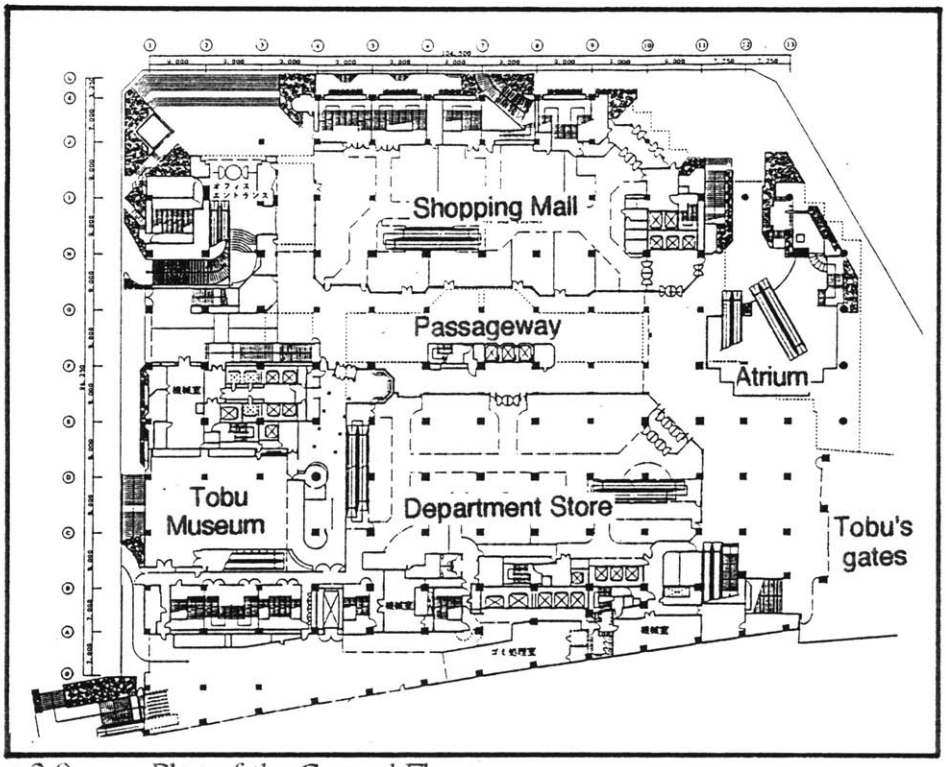

Figure 3.9 Plan of the Ground Floor .

Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993.

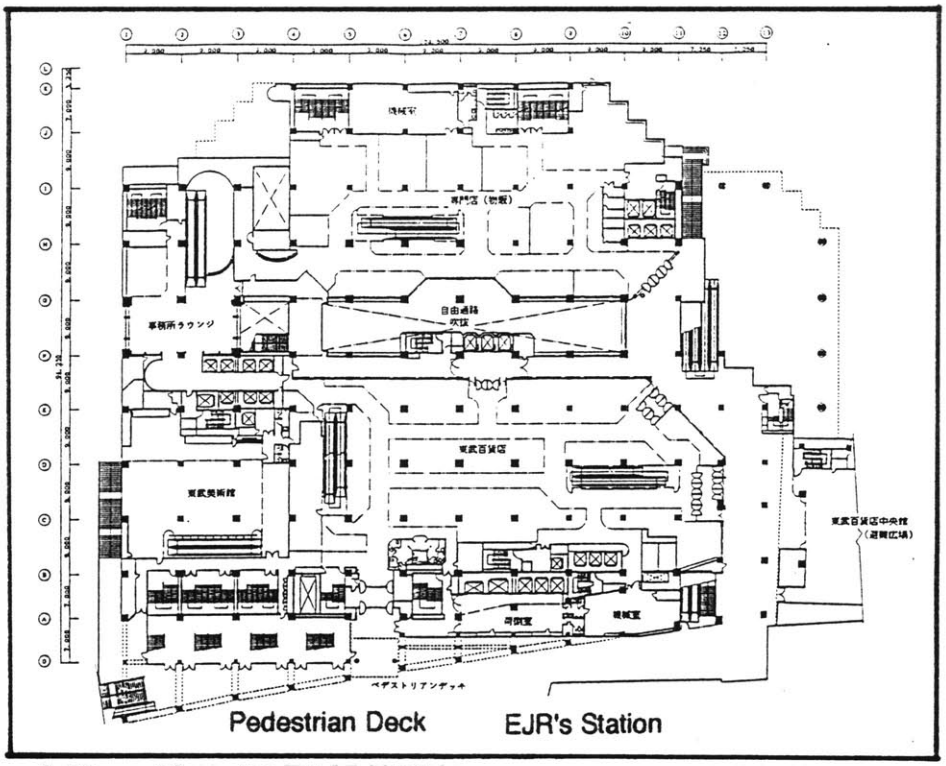

Figure 3.10 Plan of the Second Floor

Source: Ikebukuro Terminal Building Company, *Report on the Ikebukuro Terminal Building*, 1993.

The shopping mall offers retail and restaurant space for 157 tenants with 142,000 square meters (1,530,000 square feet). The department store space of 29,000 square meters (312,000 square feet) is fully leased to the Tobu Department Store (TDS), which originally managed the previous space of 44,000 square meters (477,000 square feet). When Metropolitan Plaza was constructed, the TDS created another building with their own funds which could offer an additional floor space of 9,700 square meters (104,000 square feet). This connected the existing store to the new store in Metropolitan Plaza. Tobu's entire store of 83,000 square meters (893,000 square feet) in three parts was the largest in Japan until 1997; the length of its corridors amounted to 350 meters (1,150 feet). The new floor of the TDS included the Tobu Museum which was large enough to house authentic exhibitions.

One half of the eighth and ninth floors is called the "Financial Zone," and is occupied by branches of banks and insurance companies, and so on. Another half floor houses "Met Hall," a 360-seat hall for such events as concerts, movies, exhibitions, lectures, fashion shows, etc. On the tenth floor, Metropolitan Plaza has a Community Center for the female residents of Toshima Ward, which was requested by Toshima Ward in the early stages of planning. Restaurants are located on the seventh and eighths floor. All floors between the 11th and 22nd floors house an office space of 18,400 square meters (200,000 square feet).

Metropolitan Plaza also includes public spaces related to Ikebukuro Station activities. In terms of the connection with EJR's station, a large pedestrian deck and a new fare gate were constructed. The pedestrian deck was required as a shelter for Metropolitan Plaza in the case of an emergency, and it was also consistent with the tentative plans for an over-track bridge between the west gate and the east gate sides of the Ikebukuro area. Due to shelter requirements for the function of the refuge, the deck was not allowed to be covered in any way or to include any commercial facilities. Because these conditions tended to make the deck unappealing, the architects made efforts to pave it in a consistent way with the floor of the Metropolitan Plaza and added brightly colored columns to improve its appearance. The new gate to EJR's station which connects immediately with the pedestrian deck was added to alleviate congestion in the

underground concourse of Ikebukuro Station and to facilitate access to the south block of the West Gate area. The flooring of the new gate was the same as that of the pedestrian deck. This made the connecting zone and the station totally consonant with one another.

The total cost for the construction of Metropolitan Plaza was ¥57,500 million ($472 million). ITBC paid ¥47,300 million ($394 million), the EJR paid ¥9,300 million ($77.5 million) for common spaces such as passageways and parking garages, and Tobu and two other landlords paid ¥900 million ($7.5 million) for their share of floor space, as shown in figure 3.11. Since the land for Metropolitan Plaza is still owned by four landlords, and the building is managed by the ITBC, the ITBC has to pay an annual rent of ¥3,300 million ($27.5 million) to the EJR and a much smaller rent to the other landlords.[13]

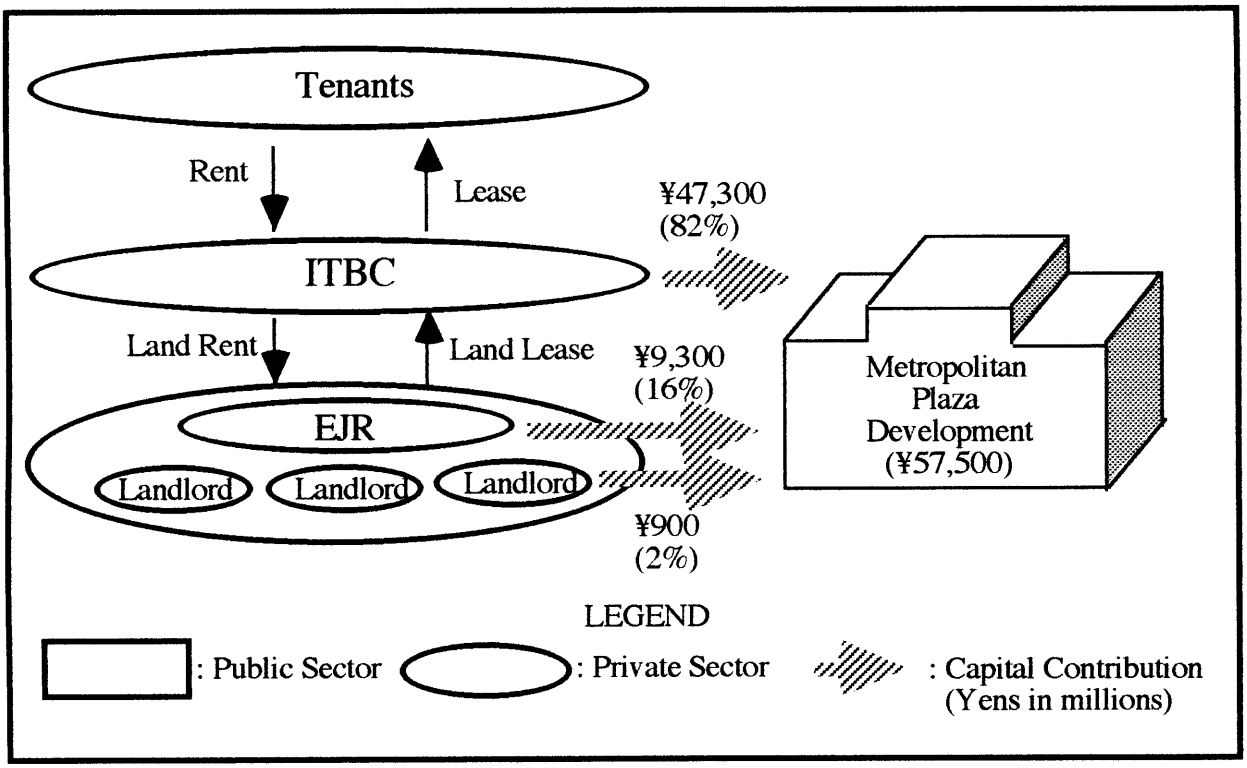

Figure 3.11 Financial Structure of the Development of Metropolitan Plaza

3.2.3 Results and impacts

[13] Interview with Takao Matsudaira, East Japan Railway Company, March 7, 1997.

With completion of Metropolitan Plaza of 1992, the Committee's 1985 Plan was almost finished. The redevelopment based on the plan produced the Tokyo Metropolitan Theater which is owned and managed by the Tokyo Metropolitan Government (TMG) in addition to private development projects, which are represented by Hotel Metropolitan and Metropolitan Plaza. These projects changed the slightly blighted west-gate side of the Ikebukuro area into an attractive cultural and shopping area.

Due to a shrinking office market in Tokyo, that began in the early 1990s, office spaces in Metropolitan Plaza have not been fully leased. Consequently, since 1993, the EJR has worked out plans to rent it for half of the original price to assist its subsidiary, ITBC.[14]

3.2.4 Lessons and implications

This project is characterized by the strong leadership of local governments. The Tokyo Metropolitan Government (TMG) and Toshima Ward led the whole redevelopment of West Ikebukuro, which included Metropolitan Plaza, the Hotel Metropolitan, the Tokyo Metropolitan Theater and others. These individual projects were specified in the Committee's original plan, and were carried out by local governments, the EJR (JNR), and private entities. During the whole development process, the TMG and Toshima Ward oversaw the redevelopment. In the case of Metropolitan Plaza, Toshima Ward requested that the JNR make sure its new building would be well-connected to Ikebukuro Station, that the entire block would be developed and not leave any small privately-owned lots, and that it would include public facilities in the building. Elimination of the narrow street which existed between the JNR's vacant lot and the station was considered critical. Combining small lots resulted in effective development of the block, although it was hard to come to an agreement with the owners of the small lots. The negotiation among landowners became a catalyst for the foundation of a cooperative building. According to the suggestion of the local governments, the Ikebukuro Terminal Building

[14] Ibid.

Company (ITBC) included such public facilities as a large atrium in the basement, a pedestrian deck on the second floor, a multi-purpose hall on the eighth floor, and a community center on the 10th floor. These facilities encouraged the local public to socialize as the local governments had anticipated; in addition, they induced more patronage.

As concerns the development of small adjacent lots, adopting a cooperative building method was a good strategy for obtaining the cooperation of small landlords and getting them involved. Because they were insistent on their property rights, it was easy to imagine that they would not release ownerships of their land. Therefore, a cooperative building was thought to be a desirable alternative. Because ownership of the area close to downtown stations tends to be complicated due to the relatively long history and higher price of the land as compared with other areas, this was a good lesson for any private developer owning land near a downtown station.

In terms of the function of this project, it not only added a large commercial facility to the station but made new transfer routes for passengers within the station. The former made Ikebukuro Station a revenue-producing joint development, and the latter facilitated passengers transferring from one railroad line to another. This function was critical because the building was enormous; it would have confused passengers if there had not been elaborate new routes. The combination of a new building and new connections to existing transportation facilities is one of the lessons to be drawn from the Metropolitan Plaza project.

This project also shown us that a large joint development should provide good connections between developed buildings and the outside surroundings, as well as existing transportation facilities with a station. Metropolitan Plaza created such good connections as an atrium at the northwest corner, and a public passageway on the ground floor, as well as a pedestrian deck on the second floor which prevented the separation of the development from its surrounding neighborhood.

As regards the planning period for this project, it took about ten years from the foundation of the Committee for the Redevelopment of the West Gate Side of Ikebukuro Station

in 1982, and that of the Ikebukuro Terminal Building Company (ITBC) in 1981, to the completion of Metropolitan Plaza. We can infer that there were no major objections or problems other than those of the land assembly from the fact that although the ITBC wasted five years getting agreements from adjacent landlords it, nonetheless, completed construction within another five years.

3.3 Oimachi Station Building

3.3.1 Background and history

Oimachi is located at the center of Shinagawa Ward, which is in the southern part of metropolitan Tokyo. The EJR and the Tokyu Corporation, a private railroad corporation, have stations that are located at a distance of 330 feet from one another as shown in Figure 3.12. EJR's station serves the Keihin-Tohoku Line, which runs from the northern suburbs to the southern suburbs through the eastern part of the Yamanote Line. It is one stop away from Shinagawa Station, one of the Yamanote Line stations, and had a daily average of 78,000 passengers in 1995.[15] Tokyu's station serves the Oimachi Line, which connects Oimachi and Hutago-Tamagawa-En Station, one of the stations on another of Tokyu's lines, and had a daily average of 70,000 passengers in 1995. In addition, Tokyu operates bus lines which serve 7,500 passengers daily.[16] Most passengers transfer from the Oimachi Line to the Keihin-Tohoku Line to commute to their offices or schools every morning.

EJR's station was constructed in 1935. Although the Oimachi area was considered to be part of the downtown Tokyo area, it was less commercially active than other downtown areas until recently. The reason for this was that the overall character of the area was not well-defined. There was an assortment of small and medium-sized stores, offices, and residential buildings built together around Oimachi Station. There was also a lack of public facilities for relaxation when out of shopping or walking. For these reasons, officials of Shinagawa Ward were concerned about the station area, because they considered the Oimachi area to be the center of Shinagawa Ward.

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15 East Japan Railway Company, *Annual Report '96*, 1996, p. 146. (in Japanese)

16 Tokyo Area Station Building Company, *Summary Report on the Oimachi Station Building*, 1996. (in Japanese)

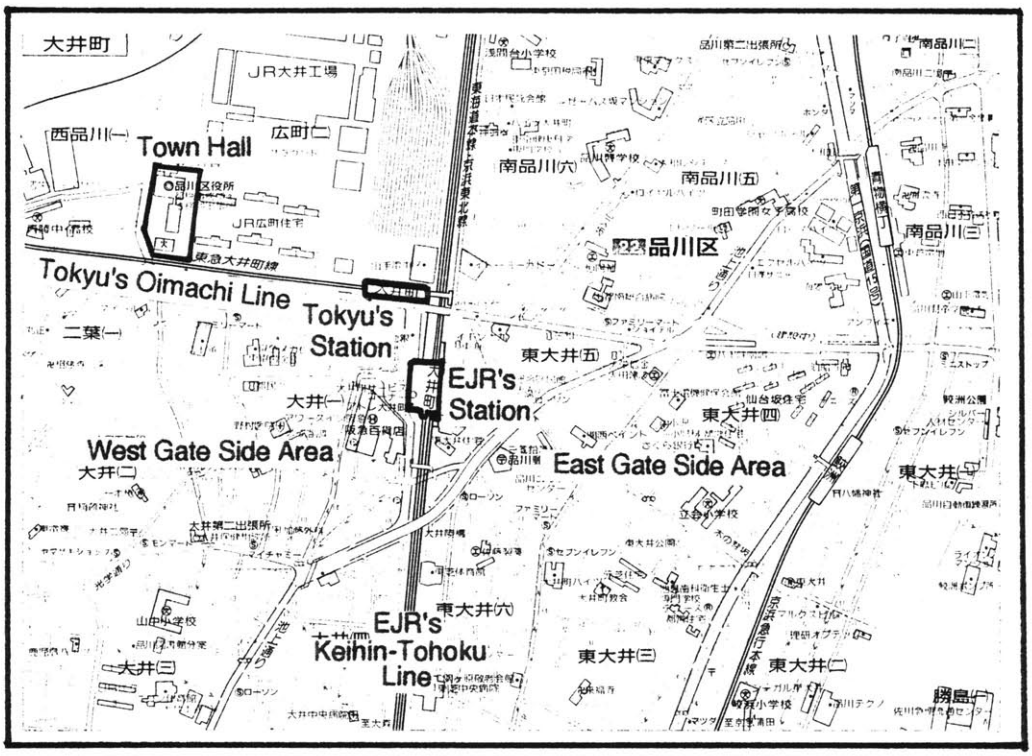

Figure 3.12 The Oimachi Station Area

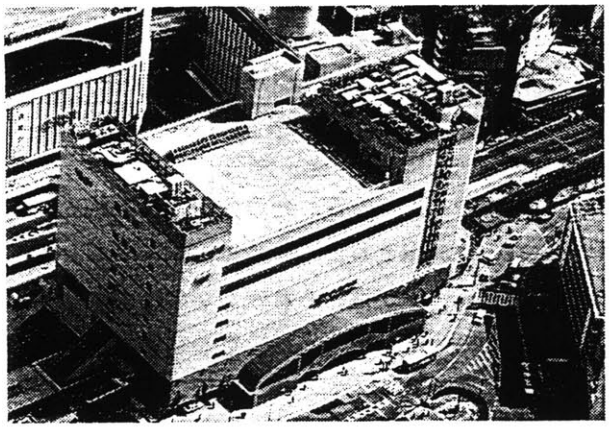

Figure 3.13 View of the Oimachi Station Building

Source: N. Saito, et al., "Construction of the Oimachi Station Building," *ARAN*, JULY 1993, p. 23.

3.3.2 Redevelopment process

After some consideration, Shinagawa Ward drew up a redevelopment plan for the neighborhood around Oimachi Station (the Plan) in 1984. The plan proposed that Oimachi Station should be the core of the neighborhood with respect not only to transportation but to industry, local administration, and culture, as well. To implement the plan, it was indispensable to combine both sides of EJR's station in such a way as to revitalize the neighborhood which had been divided by EJR's tracks and station for a long time. In 1984, Shinagawa Ward requested the JNR to create an over-track bridge between both gate sides. The Plan also suggested that the east gate side should be redeveloped as a public hall and a commercial complex that would include a department store as its key tenant. At that time, the East Oimachi Redevelopment Corporation (EORC), which was comprised of Shinagawa Ward, landlords from the area, and private developers, was established.[17]

Almost coincidentally, the JNR had considered replacing the old station, which was no longer sufficient for the increasing number of passengers, with a new station that would include a commercial building above the station facility. Accordingly, the JNR agreed with Shinagawa Ward in 1986, that together they would build a new station, an over-track bridge, and a station building. In addition to Shinagawa Ward and the JNR, the EORC agreed to proceed in accordance with the plans, and in 1989, the EORC constructed the Public Hall of Shinagawa Ward and the commercial complex. Then, in 1993, the EJR completed the Oimachi Station Building (OSB) in 1993.

The OSB is nine-stories above the ground. (See Figure 3.13) On the second floor, the building incorporates the public passageway which connects both sides of the station. On the east gate side, the passageway links up with the pedestrian deck which was created by the EORC and which leads to the Public Hall and the new complex; on the west gate side, the passageway reaches the ground level through a stairway. Station facilities, such as fare gates

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[17] East Japan Railway Company, *Proposal for the Oimachi Station Building*, 1989. (in Japanese)

and ticket counters, are located beside the public passageway on the second floor, along with the food court and the entrance to the shopping mall. (See Figure 3.15) Those floors between the third and the seventh are occupied by retail shops, and the seventh floor itself accommodates restaurants. On the eighth floor there is a sports club, and the ninth floor is used for non-public facilities such as the manager's office.[18] (See Figure 3.16)

The OSB targeted people who shopped and had dinner in other larger parts of downtown than Oimachi; i.e., young female commuters, young families, and so on. The mall offered shops with a slightly higher grade of clothing that would appeal to them.

The OSB was created with the Building Leasing Method of the EJR. The EJR owned both the land and the building, and leased it to the Tokyo Area Station Building Development Company (TASBDC), a subsidiary of the EJR. The TASBDC then added interior and the equipment, and subleased the building to tenants. In this way, all the floors, except those used for the station and public facilities were managed by the TASBDC.

Because Shinagawa Ward was making such a serious effort to revitalize the station area of Oimachi, this project was awarded a grant from the local and the national governments. Out of the total construction cost of ¥12 billion ($100 million), ¥8 billion ($67 million) was used for the shopping mall and ¥4 billion ($33 million) for the station facilities and the public passageway. Public funds from Shinagawa Ward and the national government as well went to defray the costs of the passageway, a total of ¥600 million ($5 million). This money was allocated in proportion to the floor area for each specific purpose. The Complex Infrastructure Improvement Program (CIIP), which was founded by the Ministry of Construction (MOC) in 1989, was, for the first time, applied to this project. The CIIP basically promised that the national government and a local government would each pay one third of the construction costs for a compounded infrastructure which involved public and private sectors or other public sectors. In the case of the public passageway over the tracks at Oimachi, the national government, Shinagawa Ward, and the EJR were each expected to spend upwards of ¥200

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[18] Tokyo Area Station Building Company, *Summary Report on Oimachi Station Building,* 1996. (in Japanese)

million ($1.7 million).[19] Thus, ¥400 million came from public funds and ¥200 million came from the EJR. Figure 3.14 illustrates the funding structure of this development.

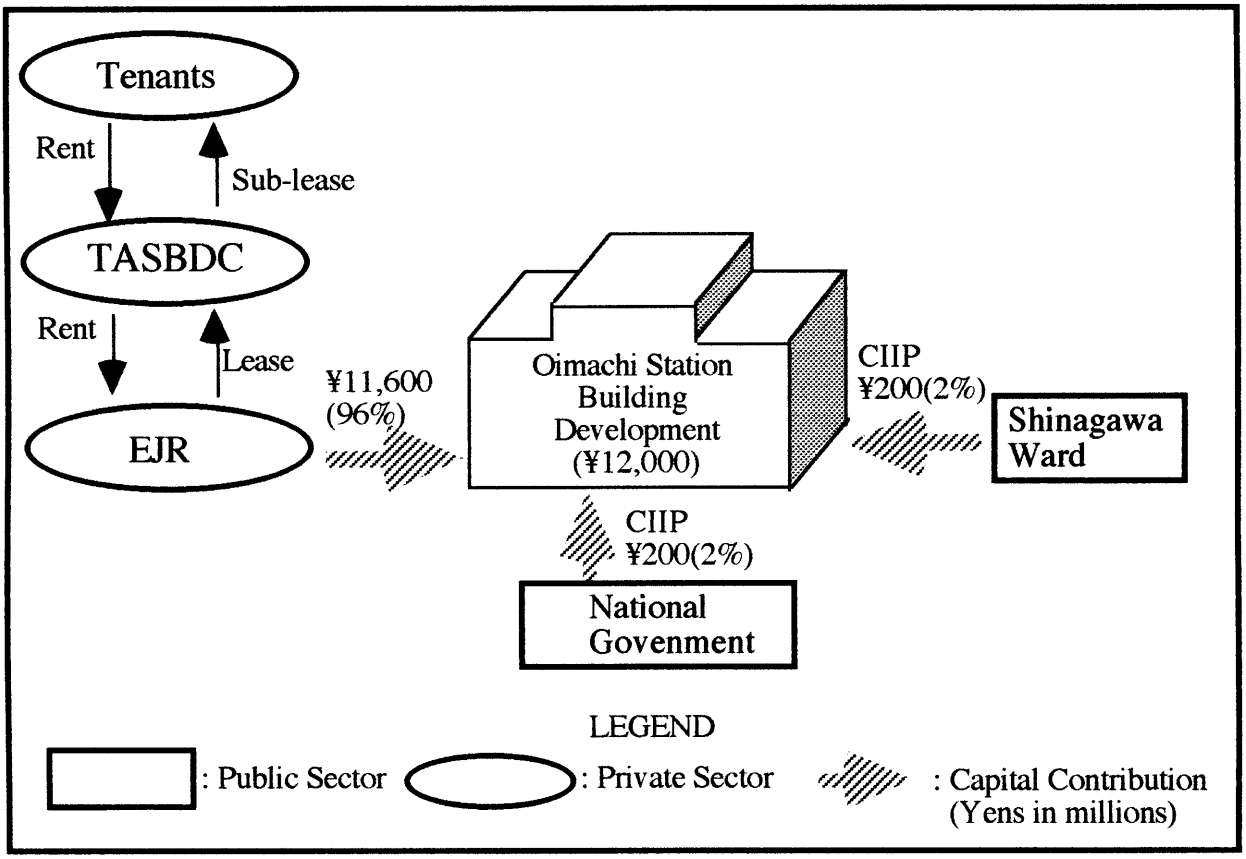

Figure 3.14 Financial Structure for the Development of the OSB

Since almost all of the building sits over the EJR's four tracks, construction work could not be done during daytime hours until the over-track slab was completed; for this reason, the construction costs were about 60% higher of those of a similar building on normal ground.[20]

[19] Interview with Hirohiko Kojima, East Japan Railway Company, March 5, 1997.
[20] Ibid.

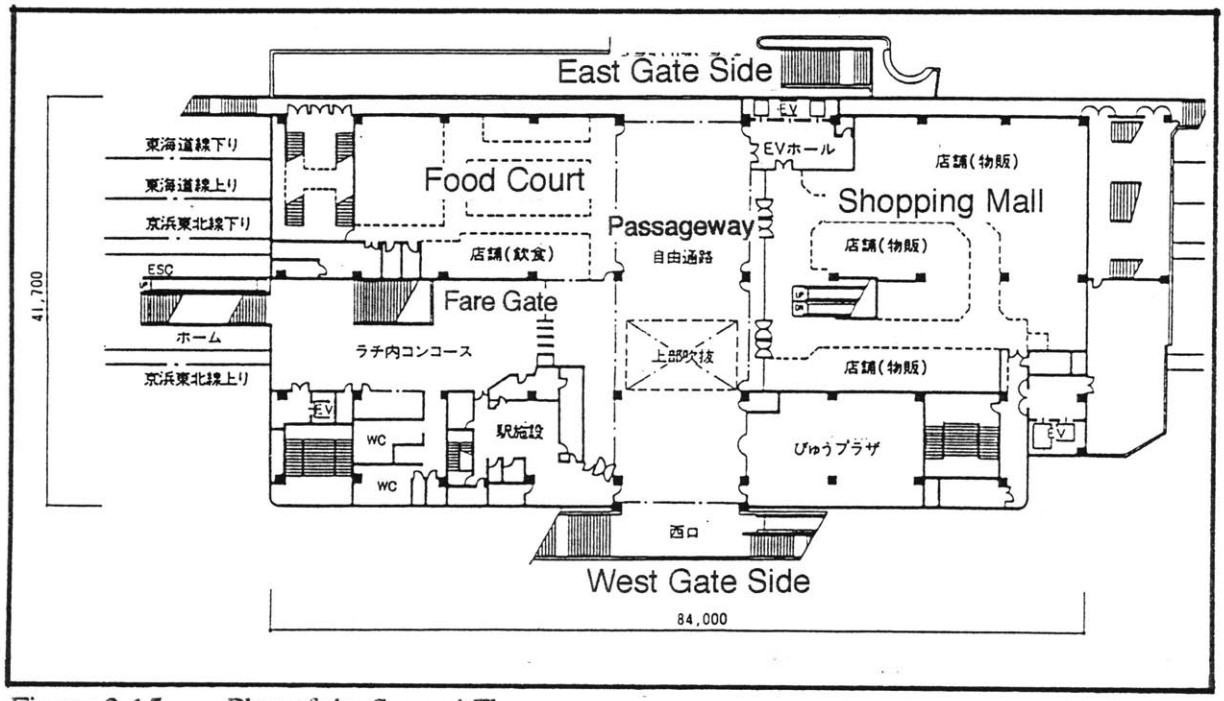

Figure 3.15 Plan of the Second Floor

Source: N. Saito, et al., "Construction of the Oimachi Station Building," *ARAN*, JULY 1993, p. 23.

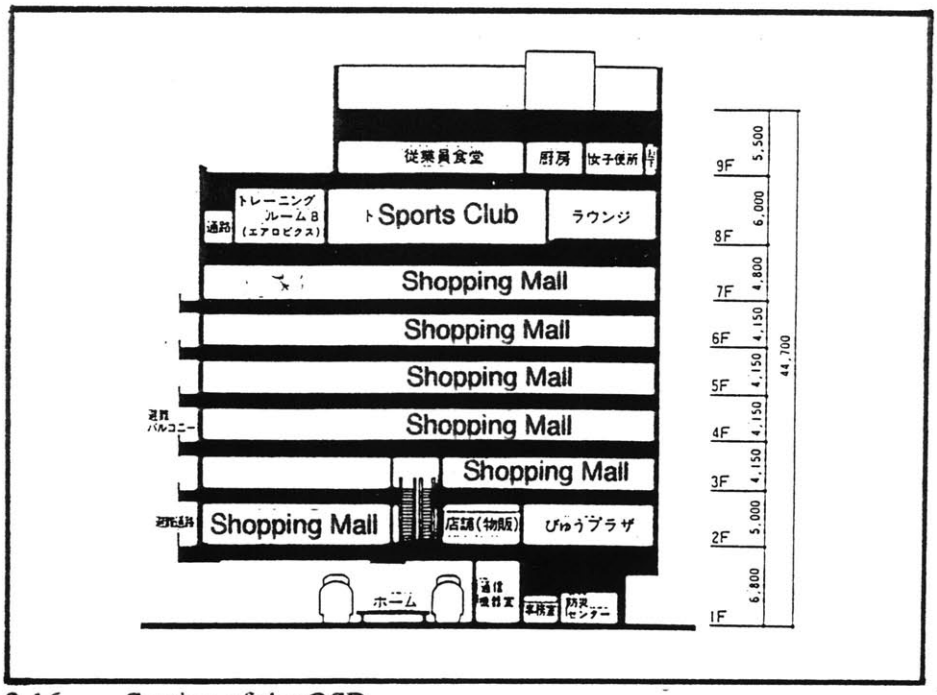

Figure 3.16 Section of the OSB

Source: N. Saito, et al., "Construction of the Oimachi Station Building," *ARAN*, JULY 1993, p. 24.

3.3.3 Results and impacts

The station and the shopping mall were both opened in 1993. The building accommodates 100 tenants, including 37 clothing shops, 10 accessory shops, 23 variety shops, 19 restaurants, and 11 other shops. The annual sales were ¥8,100 million ($67.5 million) in 1993, ¥8,300 ($69.2 million) million in 1994, and ¥8,900 ($74.2 million) million in 1995.[21] These figures show that annual sales increased slightly by 2.5% from 1993 to 1994, and by 7.2% from 1994 to 1995. Nonetheless, they were less than the projected amount. There are two main reasons for this. One is the recession in the national economy. The other one is that the OSB does not house grocery stores which sell fresh fish, meat, vegetables, and fruit. In general, most Japanese households buy fresh groceries for dinner every day at grocery stores in their neighborhoods. Therefore, if a station's neighborhood includes residential areas, it is a common strategy to lease a portion of the floors to grocery stores, because it is known that commuters and shoppers will buy fresh groceries on the way home. Due to a lack of enough loading space and objections from the existing store owners close to the station, the TASBDC was not able to include grocery stores in the OSB. The OSB's loading space is small because its ground floor is limited to a small area away from the tracks; unfortunately, grocery stores need frequent loading. These situations were not compatible.

3.3.4 Lessons and implications

This project is a good example of a public/private partnership in the joint development of a rail station in Japan. First, the OSB was funded both by private and public moneys. Public funds came through the Complex Infrastructure Improvement Program (CIIP) which had been founded four years before the completion of the OSB, and was first awarded to the OSB. Although the share of public funds was very small, because the public funds had been

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21 Tokyo Area Station Building Company, *Summary Report on the Oimachi Station Building*, 1996. (in Japanese)

calculated according to the floor area of the public passageway, it was, nonetheless, innovative that both the national government and the local government had combined their funds in a joint development led by the private sector. Second, not only did Shinagawa Ward contribute to the financial work of the OSB, but also it coordinated the entire redevelopment of West Oimachi including the Public Hall and the complex building, as well as the pedestrian deck next to the station. This coordination was critical because synergistic effects were expected between the OSB and other redevelopment projects, including the pedestrian deck, Public Hall, and the complex building.

Next, the EJR tried to overcome some physical restraints caused by the fact that it stood directly over the tracks. The most significant constraint was that construction costs were much higher than for other buildings of the same size; another was the lack of loading area on the ground and basement floors. This resulted in the lack of grocery stores which would have drawn residents or transferring passengers to the station building, brought in revenue, and encouraged customers to shop for other goods. To compensate for this loss, the OSB made an effort to attract customers with things other than groceries. It included an exhibition stage on the fourth floor of the atrium, and this sponsored various events. There was also a small branch of the Town Hall of Shinagawa Ward on the ground floor, so that people could take care of official business without a ten-minute walk to the Town Hall.

This project did two things for the station area: one, it created a commercial facility in the station, and two, it connected the east and west sides of the station. Before this development, both sides had been completely separated by the old station and its tracks, and those who wanted to move from one side to the other, had had to walk around to a bridge 300 feet away or pay an admission fee and go through the fare gates of the station. The OSB project changed this undesirable situation by creating a public passageway which allowed people to cross freely over the tracks. Although this function did not directly produce revenue, it served the purpose of combining the OSB and the neighborhood.

3.4 Yotsuya Station Building

3.4.1 Background and history

Yotsuya Station is a station on the EJR's Chuo Line, which connects downtown Tokyo with the western suburban area. It is located nearly in the midst of the section between Tokyo Station and Shinjuku Station, each one of which is a large downtown station. EJR's Yotsuya Station connects with the Tokyo Rapid Transit Authority's station by means of the Marunouchi Line and the Nanboku Line. Ridership at EJR's Yotsuya Station amounts to an average of 88,000 people daily, which is ranked as the 44th of all of their stations, in 1995.[22]

Around Yotsuya Station are the Japanese Government Guest House, foreign embassies, and some prestigious private schools, as shown in Figure 3.17. The station itself sits within the stone walls of the moat of the former Edo Palace, which was a residence of the Shogun during feudal times and which is now used as the Imperial Palace. These surroundings mean that Yotsuya Station is favored with a natural and historic atmosphere. On the other hand, with respect to land use, office buildings dominate over retail shops and restaurants. The station sits on the border of Chiyoda and Shinjuku Wards; each ward has a most active station, i.e., Tokyo Station in Chiyoda Ward and Shinjuku Station in Shinjuku Ward. In this sense, Yotsuya Station is not in a central area of either ward.

Beside the station there is a historic bridge, the Mitsuke Bridge. It crosses the castle moat and once served as one of the most important bridges in downtown Tokyo, connecting the Imperial Place with the Guest House and another imperial house, as well as the two largest commercial zones in the city, Shinjuku and Yuraku-cho. The bridge was critical from a standpoint of landscape and traffic capacity, but it had become old and was often congested with the increasing traffic of the 1980s. This bridge was maintained by the Tokyo Metropolitan Government (TMG).

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[22] East Japan Railway Company, *Annual Report '96*, 1996, p. 146. (in Japanese)

The historic moat also imposed some restrictions on its vicinity in terms of construction and the reconstruction of buildings and infrastructures. Because the moat was valuable for its historic beauty, any buildings or structures within the moat had to be approved by the Ministry of Cultural Affairs (MOCA), under the terms of the Cultural Asset Act. In addition, the station area of Yotsuya within the moat was designated as a city park area, in which no building or structure should exceed the established guidelines. Thus, both Yotsuya Station and the Mitsuke Bridge had to satisfy regulations which did not necessarily apply to other development projects.

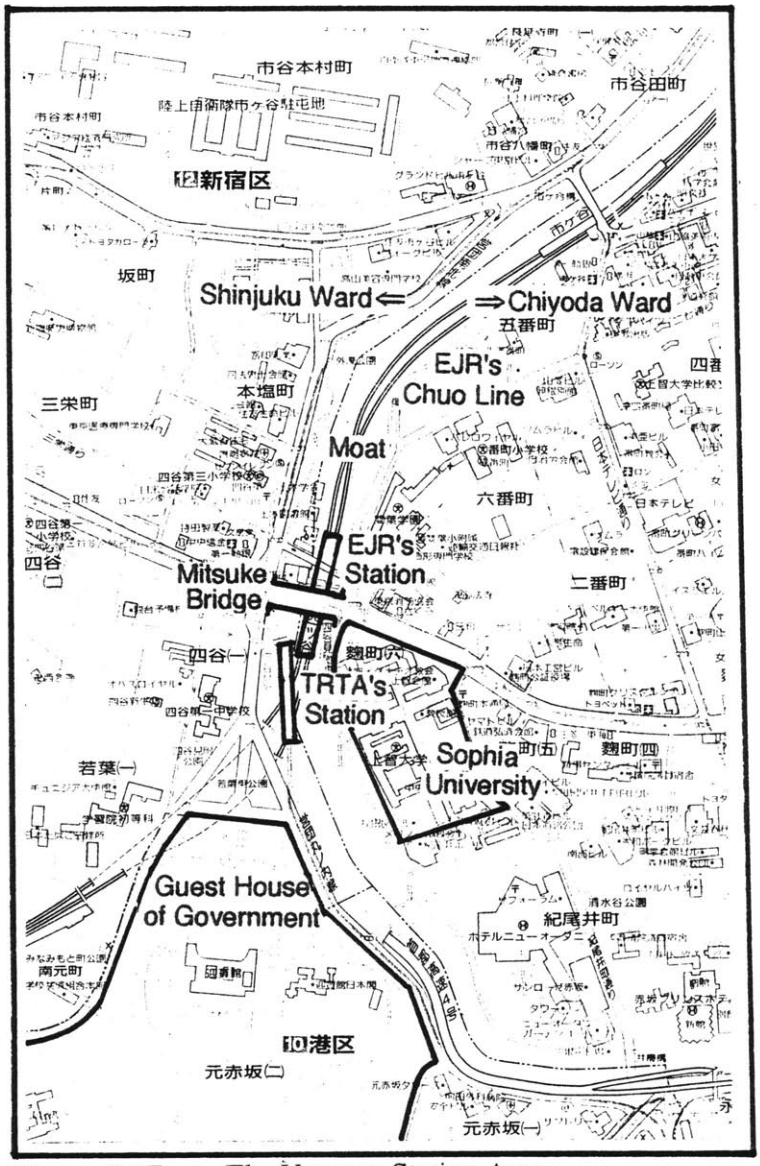

Figure 3.17 The Yotsuya Station Area

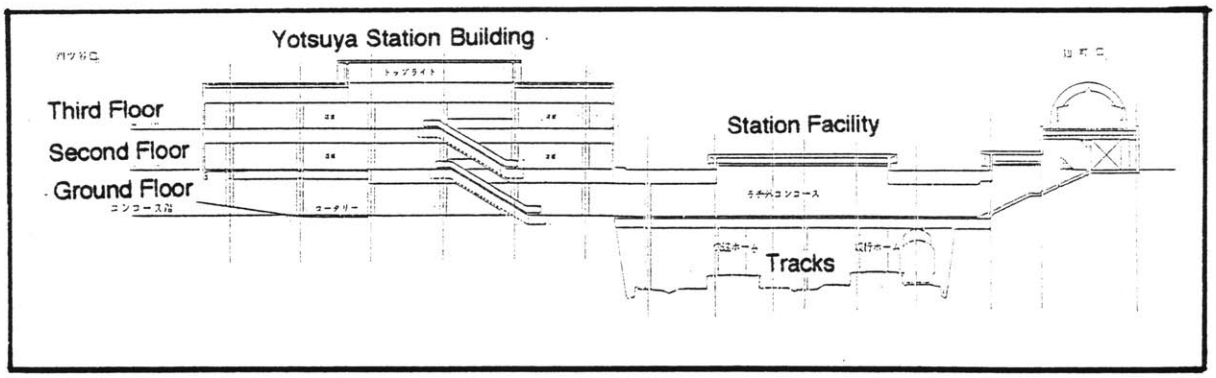

Figure 3.18 Section of the Yotsuya Station Building

Source: East Japan Railway Company, *Proposal for the Yotsuya Station Building*, 1987.

3.4.2 Redevelopment process

EJR's first station was originally built in 1928, but it became obsolete and congested with increasing passengers. Such deterioration and congestion encouraged both wards to redevelop the station and the station's neighborhood as well. Initially, they requested the JNR to construct a public passageway and to replace the old station. Accordingly, the JNR started making plans for the redevelopment of the station, including the construction of a shopping mall.

On the other hand, the TMG intended to widen the bridge and to increase traffic lanes in order to alleviate traffic congestion. When the JNR and the TMG presented their separate plans to the MOCA in 1985, it notified them that it would examine their plans simultaneously, to maintain consistency within the two projects. Because the TMG persisted in its plans to complete the renovation of Mitsuke Bridge by 1990, at which time their main office would move to Shinjuku, 1.5 miles away from the bridge, the JNR concurred with the TMG that the JNR should proceed with its application for the construction of new station building but exclude the time-consuming shopping mall. Following that, the MOCA approved the TMG's plan to renovate the bridge and the EJR's plan to renew the station. Afterwards, the MOCA approved the modification of the JNR's plan and agreed that the projected station could include a shopping mall, now called the Yotsuya Station Building (YSB).[23]

According to the City Park Act, the YSB could not exceed three stories, nor could it include more than station facilities on the ground floor. Thus, the shopping mall now occupies the second and third floors of the building, and there are connected by an atrium with light well as is illustrated in Figures 3.18 through 3.20. Because the Yotsuya area was dominated by office buildings and because there were few retail shops around the station, the YSB has targeted mainly young females who work in offices near the station. Thus, all of the eleven retail spaces in the YSB are leased to fashion and accessory shops. In addition to retail spaces,

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[23] East Japan Railway Company, *Proposal for the Yotsuya Station Building*, 1989. (in Japanese)

the three food spaces are provided with cafes and a restaurant which attract office workers, regardless of age or sex, who gather for lunch and dinner.

The YSB was developed according to the Building Leasing Method and is managed by the Tokyo Area Station Building Development Corporation (TASBDC) as is the Oimachi Station Building. The total construction cost of ¥1,600 million ($13.3 million) was entirely funded by the EJR. Although this project included the construction of a public passageway joining both sides of the station, no funding was available from the public sector, because the funding program which was later applied to the OSB had not yet been established.

Figure 3.19 View of the YSB

Figure 3.20 Inside View of the YSB

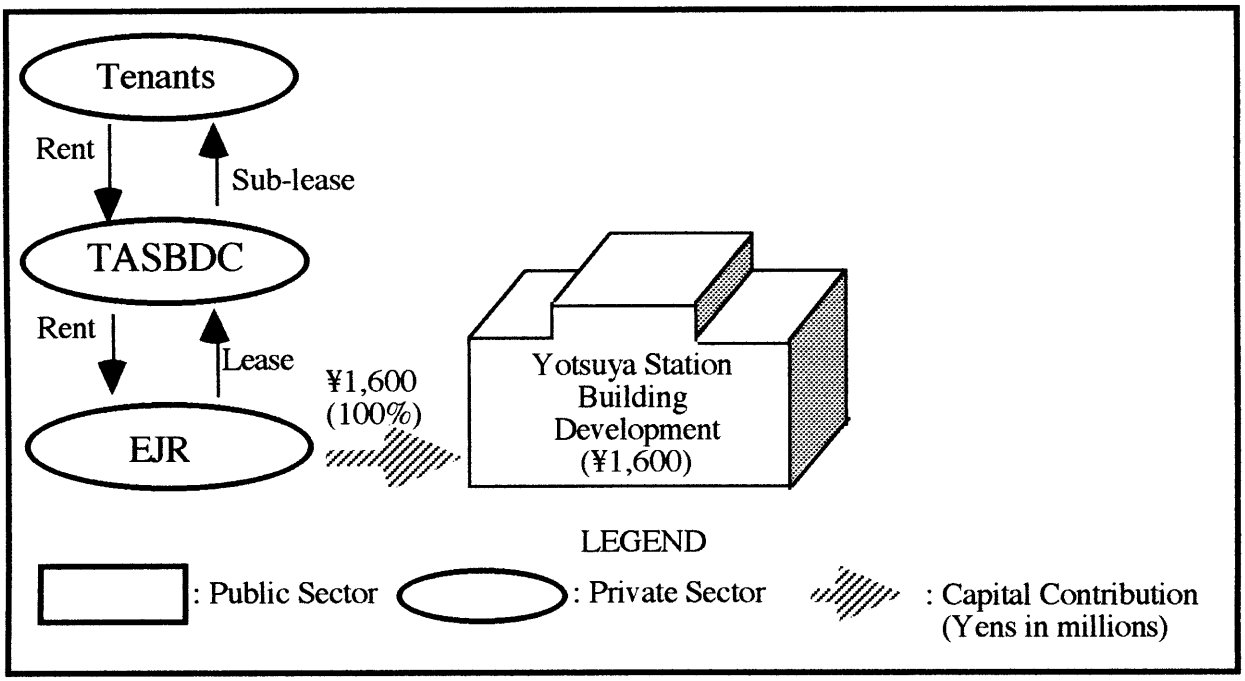

Figure 3.21 Financial Structure of Development for the YSB

3.4.3 Results and impacts

The station facility and the shopping mall were completed in 1988 and in 1990, respectively. The overall change in the YSB's sales is similar to that in the OSB's sales. Although the YSB's sales have shown a constant though slight increase, then have not amounted to what was expected because of the national recession which began in the early 1990s.[24] Also this development did not lease big commercial spaces in the neighborhood, since the gross building area of 31,000 square feet was so small that other commercial development needed. It did, however, contribute to the maintenance of the historic image of the Yotsuya area, as did the reconstructed historic Mitsuke Bridge. The Yotsuya area has for a long time been perceived as a decent downtown area surrounded by historic buildings and structures, and the YSB project reinforced this perception of it.

[24] Interview with Shingo Muraoka, East Japan Railway Company, March 5, 1997.

In addition, this project was important for the EJR. Because this was the first joint development after its foundation, the YSB brought the EJR valuable business experience with joint development and gave it a good reputation as a private developer. First, the EJR was able to learn practical and suitable methods for developing stations and for managing station buildings. Formerly, the JNR had developed station buildings including commercial spaces using the Land Leasing Method but it had never been involved in a total development like the YSB. Second, the YSB had an impact on the public image of the EJR as well as on the neighborhood of the station. This development informed the public of the capability and capacity of the EJR. Based on the success of the YSB, many people recognized that the EJR not only operates trains but is also able to develop an attractive commercial space with a station and manage it. This reputation helped the EJR to expand its real estate development, other affiliated businesses, and even rail operations.

3.4.4 Lessons and implications

An important lesson can be drawn from the fact that the projected building was restricted by two special acts in addition to other common restrictions. In this respect, it was instructive to learn how to deal with these constraints and still have a profitable development. By the two acts, the shopping building was limited to three floors and the retail and food spaces were to be located on the second and third floors. This meant that the YSB was not supposed to be as large as other shopping malls in downtown Tokyo. Accordingly, the developers, i.e., the EJR and the TASBDC, strategically selected tenants for the building. To draw as many visitors as possible, they limited the tenants chosen to proprietors of fashion and accessory shops which could attract the targeted market, i.e., young female office workers. Generally speaking in Japan, young women, more than any other group, have more money to spend, especially for clothing and food. In addition, there were few retail shops in the Yotsuya neighborhood, but

there were many offices there. Both the general business rule and the local market condition of the area were favorable to the tenants selected by the developers.

This project changed a small downtown station into a small commercial center and connected both sides of the station with a public passageway. Unlike the Oimachi Station Building, there had been a bridge over the tracks beside the station, one on which people could come and go freely, even before the redevelopment of the station. Although the impacts on pedestrian traffic was less than that of the OSB, it was undoubtedly a convenience for passengers and residents of the neighborhood.

3.5 Conclusion

In this section, I will consider the three Japanese projects from the following points of view: development process and financial work, physical planning, and marketing and managing.

First, regarding the development process and financial arrangement, some types of partnership were involved in all three projects. Before the discussion of partnership, it is useful to clarify the status of the EJR. As described in Section 3.1, the EJR was created through the privatization of the JNR in 1987, and only part of the EJR's stock was transferred from the national government to private investors. With respect to ownership of its stock, therefore, the EJR may not be called a public agency in this sense. At the time of privatization in 1987, however, it was released from restrictions which applied to public agencies and began to be regulated as other private entities were. After 1987, for instance, the EJR could expand its business beyond railroad-related activities, while it needs any necessary permissions to construct buildings which were not required to the JNR before, because it was thought to be an affiliate of the national government. In this paper, therefore, the EJR is perceived as having been a private company since it began.

Throughout the three projects, the EJR formed a good relationship with public agencies and other private entities. Table 3.5 shows each party's role. More critical partnerships with public agencies are found in Metropolitan Plaza and the Oimachi Station Building. In the Metropolitan Plaza project, Toshima Ward prevented the project from leaving small adjacent lots undeveloped, by requiring the developer to merge the small lots in exchange for permission to demolish a narrow street. Although the Ward and the Tokyo Metropolitan Government did not fund the project, they contributed to the success of Metropolitan Plaza through their guidance and through other projects within the West Ikebukuro area. On the other hand, in the case of the OSB, Shinagawa Ward not only worked together with the EJR on the planning but also funded the project. In addition, in the sense that the Ministry of Construction created the

Complex Infrastructure Improvement Program (CIIP) and applied it immediately to the OSB, the national government also played as important a role as the Ward.

Partnership between the EJR and other private entities was observed in the Metropolitan Plaza project. The Tobu Railroad and two landlords of the adjacent small lots worked together with the EJR. The Tobu's cooperation included participation in the cooperative building as well as creation of gates connecting to Metropolitan Plaza and the leasing of half of the Metropolitan Plaza's floor space to expand their department store. This partnership was consistent with the marketing strategy of tenant-mix.

Table 3.5 Roles of Each Party in Japanese Projects

Project	Metropolitan Plaza	Oimachi Station Building	Yotsuya Station Building
National Government	- vacated the large land by moving the national college.	- financed the project through a new funding scheme.	- approved the project under two special acts.
Tokyo Metropolitan Government	- constructed and managed the Tokyo Metropolitan Theater close to the project. - provided the permission for the construction.	- provided permission for the construction.	- stimulated the initiation of the project by reconstructing the adjoining bridge. - provided permission for the construction.
Ward government	- coordinated the redevelopment of the West Ikebukuro area.	- financed the project. - completed the adjacent redevelopment. - leased the floor space for its branch.	- requested the JNR to reconstruct the station.
EJR (former JNR)	- financed the project. - held the ownership of the land.	- financed the project. - held the ownership of the land and the building.	- financed the project. - held the ownership of the land and the building.
EJR's subsidiary	- managed the commercial spaces. - held the ownership of the building.	- managed the commercial spaces.	- managed the commercial spaces.
Other transportation agencies	- financed the project. - approved new connections between its station and the project. - occupied a part of the floor for its subsidiary department store.	N.A.	N.A.

Table 3.6 Financial Contributions of Each Party in Japanese Projects

Project	Metropolitan Plaza	Oimachi Station Building	Yotsuya Station Building
National Government	¥0 (0%)	¥200 (2%)	¥0 (0%)
Local government	¥0 (0%)	¥200 (2%)	¥0 (0%)
Private developer	¥57,500(100%)	¥11,600 (96%)	¥1,600 (100%)
Total	¥57,500(100%)	¥12,000(100%)	¥1,600 (100%)

(Yens in millions)

Table 3.6 represents the cost allocation of the three projects. Out of them, the OSB was the only project involving a public/private financial partnership. The OSB was awarded the CIIP fund for the construction costs of the public passageway. Although the YSB also included a public passageway over the tracks and Metropolitan Plaza included some public facilities, they did not obtain public funds. The reason the YSB was not funded was that the CIIP did not exist when the YSB was planned. This was also the reason for the 100% private funding of Metropolitan Plaza; there was no appropriate acts to fund private development at rail stations.

With respect to the development strategy of the EJR, it adopted both the Land Leasing Method (LLM) and the Building Leasing Method (BLM). The former was applied to Metropolitan Plaza and the latter was applied to the OSB and the YSB. There were two reasons the EJR used different methods. One was that the Ikebukuro Terminal Building Corporation (ITBC) was founded in 1981, and that the ITBC had begun to manage Hotel Metropolitan in 1985, before the privatization of the JNR. Another reason was that the land under Metropolitan Plaza was owned by the EJR and others; it was much more difficult to use the BLM where the site was owned by several landlords.

Second, in terms of the physical planning of joint development, all the projects made good connections between the stations and the neighborhoods. Both the OSB and the YSB provided new commercial cores for the station areas and public passageways over tracks as well. The public passageways played an important role in the revitalization of the station areas by improving pedestrian traffic between both sides of the stations. On the other hand, Metropolitan Plaza provided attractive entrances and a public passageway within the building,

as well as a pedestrian deck which will connect a potential over-track bridge. This planning was enough to combine the projects with the neighborhoods, given that Ikebukuro Station was too large to combine both sides of it.

Third, each project had its own marketing strategy. The common strategy for most station malls is to include fashion and accessory shops for young women and fresh groceries for housewives passing through the stations. While Metropolitan Plaza and the OSB had a wide range of tenant-mix for every group of customers, the YSB mainly targeted younger female customers, on the grounds that the gross building area of the YSB was much smaller than that of the two others. In this sense, narrowing the range of its customers was a reasonable strategy for the smaller station buildings. Conversely, Metropolitan Plaza adopted a marketing strategy characteristic of a big project. The combination of many small retail shops and a large department store was successful in terms of attracting many visitors. Its power to attract customers was reinforced by the fact that the Tobu Department Store became the largest store in Japan when it combined its existing floor space with the newly created floor space.

As we have seen above, in the case of the three Japanese projects, the EJR played a leading role in planning and financial contributions. The public sector and other private entities were involved in some projects. Thus, the lesson here is that a railroad company, like the EJR, can carry out a development project on its own, but larger developments should involve other private entities.

Chapter 4: Conclusion

4.1 Introduction

It is important to clarify how the background of joint development in the U.S. and in Japan differs, before international similarities and other differences can be considered. First, the Japanese rail system attracts a greater portion of passengers, as described in Section 3.1. When considered nationwide, the share of rail transportation of the U.S. was 0.7 percent, while that of Japan was as much as 34.8 percent in 1990, although if we take into account only the commuters in the Northeast region of the U.S., the share will increase somewhat. In the context of joint development, this difference means that the number of passengers passing through stations daily is much greater in Japan than it is in the U.S. In Japan, therefore, joint development has a great advantage over other development in terms of the number of potential customers.

Another important difference is that Japanese stations were rarely revitalized within existing station buildings. This is partly because the station buildings were not so magnificent as those of the U.S., many of which were valuable in terms of their historic architecture, and partly because the rapid increase of ridership made the capacity of the old stations insufficient.

Based on my individual analyses of the U.S. projects and the Japanese projects, and on the differences in the background of joint development in the two countries, I will discuss the comparison from the following three points of view: development process and financial structure, site and floor planning, and marketing and management. Finally, I will consider the mutual applicability of joint development.

4.2 Development process and financial structure

First of all, we can see that the planning process and financial structure of joint developments were more publicly-led and more flexible in the U.S. Although I studied three joint development projects at downtown stations which are similar in that all projects were led by public sector, these demonstrated different processes of development. By contrast, the development processes of Japanese projects were mainly led by the private sector and were somewhat rigid. However, it was common in the Japanese projects for local governments to assist or guide the private sector in making plans and maintaining consistently with other projects carried out by the public sector. Thus, public participation was limited to this, and in that sense, the foundation of a non-profit organization for the Union Station project was innovative in comparison with Japanese projects.

An another means of public participation for U.S. projects was federal grants to joint development. While federal funds were poured into the three U.S. projects, the Oimachi Station Building (OSB) was the only project among those in Japan to receive government funding. This is partially because of the differences between the two countries in the profitability of joint development at stations. As I mentioned in the previous section, the profitability of such undertakings is one of the most important differences between the two countries.

In both countries, it might be difficult to share construction costs among several private entities or between private agencies and private entities. In the U.S. projects, initial costs were funded by means of various grants and subsidies; however, I could not find out what they used as a basis for allocation. On the other hand, in the case of the OSB, there was a certain way of allocating funds. This was in accordance with the physical share of the building. This proportional cost allocation is a conventional way for a project which involves some entities that share floor spaces within the project in Japan.

4.3 Site and floor planning

Both site and floor planning in the two countries demonstrated careful consideration. First, I reexamine how to the quantity of the floor area was planned. Although the U.S. projects were renovations of historic station buildings, two of these projects added new commercial spaces to increase rented revenues. The Union Station project created a mezzanine level and excavated the basement to accommodate a food court and a cinema complex, and the South Station project regenerated a new West Wing, which had been previously demolished. On the other hand, the 30th Street Station had retained its commercial spaces; therefore, the project did not need to add new floors. Thus, it is important to make the most of the existing floor space and to create additional floor space which, if needed, will be consistent with the existing floors. By contrast, Japanese projects were all new buildings created above or adjacent to the stations. In one case, there were some restrictions on the space the developer wanted. The Yotsuya Station Building (YSB) was, by necessity, a small building, but it found a good solution for the constraints by narrowing its targeted customers.

Second, different ways to attract customers were found in the two countries. The large and historic concourse and other historic floors were used to great advantage in the U.S. Although the Japanese projects did not contain historic concourses or other such spaces, they made substitutions for them; that is, they generated public facilities and atria, so that patrons could get together and socialize. Metropolitan Plaza included various public spaces, such as a passageway and an event hall. The OSB included an event space with an atrium and a branch of the Town Hall. The YSB had a small but bright atrium.

A parking garage was another difference in the physical planning of joint development in the U.S. and Japan. All three U.S. projects included parking garages, but in Japan, only Metropolitan Plaza had a parking garage within the building. This difference results from the fact that Japanese automobiles do not have such a great share as modes of transportation as they do in the U.S. In Japanese metropolitan areas, most commuters and shoppers come to the

downtown area by railroad. That is why Japanese joint development rarely includes parking garages.

Third, some projects made use of improvements in building technology. The large concourse of South Station was created by virtue of long-truss technology. The OSB applied new piling technology, because it had to set many piles next to active tracks. In this sense, we can say that new technology has made joint development more feasible than ever before, and that it may improve this feasibility in the future.

Fourth and lastly, there were clearly differences in the creation of relationships between joint developments and neighborhood. Because U.S. projects were based on the redevelopment of existing historic buildings and completed within those buildings, they did not have to worry about conflicts or connection problems with the neighborhoods. By contrast, Japanese projects were reconstructions or new constructions of station buildings which might easily incur such kinds of problems. Then these developers overcame by alleviating pedestrian traffic by creating public passageways.

4.4 Marketing and management

There were differences between the contents of the tenant-mix in station malls of the U.S. and those of Japan. Developers of U.S. projects intended to make the developments "market places," which included more various food services and specialty shops than others, rather than a large key tenant or a majority of women's fashion shops. In contrast, Japanese projects included many women's fashion shops in all the three and a key tenant in Metropolitan Plaza. This means that U.S. projects tried to differentiate station malls from suburban malls, because competition among urban and suburban malls was strong, but that Japanese malls have not yet experienced this kind of competition.

While we can see differences in the tenant-mix of joint developments in the U.S. and Japan, there has been a common strategy in the promotion of development sales in the U.S. and

Japan. The three U.S. projects have all tried to attract customers with special events, such as dance parties, concerts, and exhibitions, instead of spending more money on general advertising. This happened in Japan as well. Metropolitan Plaza utilizes its event hall not only for rental revenue from temporary leasing but also to attract potential customers to the building. The OSB holds many fashion shows and special promotions for its tenants in the exhibition space located at the center of the building, and benefits from the increase in the number of visitors. This strategy needs to be consistent with the physical planning, in which joint development projects should provide appropriate space for small events or exhibitions. U.S. projects have included historic concourses and Japanese projects have provided station buildings with exhibition spaces as discussed in the previous section.

4.5 International applicability

In this last section, the applicability from one country to another will be presented based on the above examination. First, I will consider the applicability of U.S. projects to Japanese projects. Although downtown stations in Tokyo have enjoyed many more visitors than U.S. projects, this is not always true in other regions of Japan. While Osaka and Nagoya, the second and the third largest metropolitan areas, are similar to the Tokyo Metropolitan Area in terms of ridership and the behavior of commuters, other smaller metropolitan areas are similar to the cities of U.S. projects. In general, commuters and shoppers in local cities in Japan may move by car even within the downtown area; this is not true of larger metropolises like Tokyo.

Therefore, it is possible to apply U.S. strategies to Japanese projects located in the downtown stations of similar cities. Need for grants or subsidies and the use of historic buildings can be applicable to local stations. Because the profitability of station malls in these areas is questionable because of less ridership when compared to downtown stations in larger metropolises, it may be indispensable for the national government and/or local governments to

support the development in initial cost and/or operating cost. Differentiation from suburban malls is another application for Japanese downtown joint development. The fact that shopping malls and discount stores are located along main roads shows that suburbanization is prevailing in smaller metropolitan areas as well as in lager metropolitan areas. To compete with suburban shopping malls, station malls should be different from new suburban malls in some way. Fortunately, there remain more historic stations and rail-related structures, such as train factories and storage spaces made of bricks, in smaller metropolis than in large ones. Thus renovation of these historic buildings and structures is one possible way to differentiate station malls from suburban malls.

Unlike the two applications mentioned above, the application of parking garages from the U.S. projects will not work well, if we consider downtown areas in Japan from a comprehensive standpoint. It is easy to attract drivers to station malls by providing them with parking garages as did the three U.S. projects, but this also brings many more automobiles to the downtown area and creates major traffic problems. Because Japanese downtown areas have many traffic jams already, even in smaller cities, joint developments with parking lots will aggravate the condition. Thus, although such joint development is beneficial to commercial developers, it should be avoided.

Next, I will examine the applicability of Japanese projects to U.S. projects. Basically, as long as the economic situation around downtown rail stations does not change, the Japanese scheme will have little applicability to U.S. development due to discrepancies in ridership. A possible application may occur when the U.S. situation changes in the future. If the ridership of subways or commuter lines within downtown areas increases, we can apply the following lessons to downtown stations: allocate construction costs consistent with the share of floors; create good connections between the station and the neighborhood; create a public facility within the station as a core for urban activity; and, narrow the customer profile.

Although the U.S. projects were able to obtain federal and local funds in addition to private funds, it was ambiguous how to allocate these and allocation did not seem to be

consistent with benefits. On the other hand, in Japanese projects, the total cost of the Oimachi Station Building was allocated in proportion to the floor area by usage, and the cost of the public passageway was partially absorbed by the national government. Even if this particular approach to allocation is questionable, continued efforts of this kind may eventually lead to the right system or formula. Second, the connection between the station and the neighborhood should be carefully designed. If downtown stations are surrounded by densely built neighborhoods, the station and the ground tracks, if any, may separate the neighborhood. Thus, a public passageway where people can walk over the station and tracks without entering station fare gates is important to combine both sides. Third, if the station is not a historic one which includes a large concourse, it should, instead, should provide public facilities such as a public hall or a branch of the Town Hall. Fourth and lastly, even if the station seems too small for shopping purposes, it is possible for the success to narrow the targeted shoppers, as was done in the Yotsuya Station Building.

4.6 Directions for further research

Several things remain to be done for a comprehensive study on joint development at downtown rail stations. First, as regards the development process, risks and political issues should be analyzed. It is important to consider which of the entities involved in each development will take financial risks, when they will take them, and to what extent. This issue should be analyzed together with the profit allocations of each development, because the risks taken will be compensated for by the profits allocated from the total profits of the development. It is also important to consider the political issues involved; i.e., who supported and opposed the development, why they did so, and how they negotiated with one another. This is one of essential perspectives in the analysis of the relationship among the entities in each development. Despite the importance of these two issues, I have had to leave them untouched because of a lack of information.

The evaluation of each project in a quantitative way would also be interesting. Consecutive changes in ridership of rail lines, in sales of commercial facilities, in property values, and in property tax revenues over time would help establish the objective outcomes of a development and the correlation between it and its effects on each entity. Although, in some projects, I did research changes in ridership and in the sales of commercial developments, I could not obtain enough information to discuss these issues in a meaningful way.

Therefore, because of the many parties and problems involved in joint development, we will need further research on these issues in the future, if we are to draw a more comprehensive conclusion.

BIBLIOGRAPHY

Books and articles in periodicals:

Alexander, Edwin P. *Down at the depot; American railroad stations from 1831 to 1920.* New York: Crown Publishers. 1970.

Aoki, Eiichi, et al. *Mintetsu-keiei no Rekishi to Bunka.* Tokyo: Kokon-shoin. 1992. (in Japanese)

Barnekov, Timothy, Robin Royle, and Daniel Rich. *Privatism and urban policy in Britain and the United States.* Oxford (England): Oxford University Press. 1989.

Barrett, Richard C. *Boston's Depots and Terminals.* Rochester: Railroad Research Publications. 1996.

Boston Redevelopment Authority. *Central Business District Urban Renewal Plan.* Boston: Boston Redevelopment Authority. 1968.

Center City West Brochure, Philadelphia: Dan Peter Kopple & Associates, et.al.

Cervero, Robert, Peter Hall, and John Landis. *Transit Joint Development in the United States.* Institute of Urban and Regional Development, University of California at Berkeley, 1992.

Chu, Michael. *Development plan for the air rights at South Station transportation center.* Thesis (M.S.). Cambridge: MIT. 1985.

Dan Peter Kopple & Associates. *Press Kit.* Internal Report. 1994.

Davis, Wilson H. *Joint public/private development: the case of Charleston.* Thesis (M.C.P.). Cambridge: MIT. 1980.

East Japan Railway Company. *Annual Report '96 (Kaisha-Yoran '96).* 1996. (in Japanese)

East Japan Railway Company. *Guidebook for Affiliated Enterprises (Kanren-Jigyo Guidebook).* Internal Report. 1997. (in Japanese)

East Japan Railway Company. *Proposal for the Oimachi Station Building (Oimachi Kaihatu-ni Tsuite).* Internal Report. 1989. (in Japanese)

East Japan Railway Company. *Proposal for the Yotsuya Station Building (Yotsuya-Eki Kaihatu-ni Tsuite).* Internal Report. 1987. (in Japanese)

Francis, George B. "The South Terminal Station, Boston, Massachusetts." *Proceedings of the American Society of Civil Engineers,* Vol. 25, No. 10. December 1899.

Frieden, Bernard J. ,Lynn B. Sagalyn, and Joseph E. Coomes, Jr, *Government roles in city development in the United States.* Cambridge: Center for Real Estate Development, M.I.T. 1988.

Frieden, Bernard J. and Lynn B. Sagalyn. *Downtown, Inc., how America rebuilds cities.* Cambridge: MIT Press. 1989.

Fukumura, Takashi. *The Omiya Sonic City: A Case Study of the Public/Private Partnership in Japan.* Thesis (M.C.P.). Cambridge: MIT. 1994.

Greenberg, Paul C. *Delivery of Tren Urbano Stations as Strategic Urban Nodes.* Thesis (M.S.). Cambridge: MIT. 1996.

Gregerson, John. "South Station: Derailed by 'Progress,' a Boston Landmark Reclaims its role in urban life." *Building Design & Construction* November, 1990.

Harry Weese & Associates. *Union Station Historic Structures Report.* 1985.

Ikebukuro Terminal Building Company. *Report on the Ikebukuro Terminal Building (Ikebukuro Eki-biru Kensetu Kouji-shi).* Internal Report. 1993. (in Japanese)

Kuznik, Frank. "Colossal Comeback." *Historic Preservation* September/October 1988.

Leventbal, Alan. "Boston's 'New' South Station." *Urban Land* October 1993.

Ministry of Transport. *Rail Fact Book '96 (Suji de Miru Tetsudo '96).* Tokyo: Japan Transport Economics Research Center. 1996. (in Japanese)

Ministry of Transport. *Transportation Annual Report '96 (Unyu-Hakusho '96).* Tokyo: Printing Bureau, Ministry of Finance. 1997. (in Japanese)

Mizutani, Fumitoshi, *Japanese Urban Railways: A Private-Public Comparison.* Dissertation. Cambridge: Harvard University. 1993.

National Council for Urban Economic Development. *Moving Towards Joint Development: The Economic Development-Transit Partnership.* Washington, D.C.: National Council for Urban Economic Development. 1989.

National Passenger Railroad Company. *1995 Annual Report.* 1995.

Potter, Janet G. *Great American Railroad Stations.* New York: John Wiley & Sons, Inc. 1996.

Saito, Naomichi, et al. "Construction of the Oimachi Station Building (Oimachi Eki Shinchiku)." *ARAN.* JULY 1993.

Sriver, Jeffrey J. *Factors Influencing Land Development Around Rail Transit Stations.* Thesis (M.S.). Cambridge: MIT. 1995.

Stubbs, Stephanie, Douglas Gordon. "The Triumph of Union Station." *Inland Architect* September/October 1990.

Tenney, Daniel G. Boston's South Station: *The Process and Consequences of Preservation and Reuse.* Thesis (M. Arch.). Cambridge: MIT. 1984.

Thomas, James E. *The interaction of public/private development constraints: opportunities for the reuse of Kansas City's historic Union Station.* Thesis (M. Arch.). Cambridge: MIT. 1986.

Tokyo Area Station Building Company. *Summary Report on the Oimachi Station Building (Oimachi Eki-biru Gaiyo).* Internal Report. 1996. (in Japanese)

Union Station Redevelopment Corporation. *Request for Proposals Architecture/Engineering Services for the Rehabilitation of Union Station.* Internal Report. 1984.

Urban Land Institute, Research Division. *Joint development: Making the real estate - transit connection.* Washington, D.C.: The Urban Land Institute. 1979.

Urban Land Institute. *Union Station, Washington, D.C. redevelopment of a rail terminal into a mixed use urban center.* (Videotape). Washington, D.C.: The Urban Land Institute. 1992.

Urban Land Institute. "Union Station, Washington, D.C.," *Project Reference File.* Washington, D.C.: The Urban Land Institute. September 1991.

Newspaper Articles:

"Developers Oppose Plan to Build DOT Headquarters Next to Union Station," *Washington Post,* June 28, 1990.

"DOT Plans Headquarters over Rail Station Tracks," *Washington Post,* January 17, 1990.

"Glory Days: South Station Ready to Rise," *Boston Globe*, November 4, 1989.

"Helicopter Pad Proposed for South Station," *Boston Globe*, January 5, 1980.

"MBTA Names Firm to Lease and Develop South Station, "Boston *Globe*, March 18, 1987.

"New South Station Already SRO: Artery Project Engineers Gobble Up All New Office space," *Boston Globe,* February 7, 1988.

"South Station Gets Back on Track," *Boston Globe,* May 22, 1990.

"South Station Shows Its Age Trash, Peeling Paint Mar an 85-year-old," *Boston Glove,* December 27, 1983.

Interviews:

Aronson, Sherman, Architect. Dan Peter Kopple & Associates. Philadelphia. March 19, 1997.

Ball, David S. Vice President, Union Station Redevelopment Corporation. Washington, D.C. February 19, 1997.

Bellet, Sally J. Vice President Commercial Development, National Railroad Passenger Corporation. Philadelphia. March 19, 1997.

Butler, Peter S. Capital Program Analyst, Massachusetts Bay Transportation Authority. Boston. April 4, 1997 and April 28, 1997. (Telephone Interview)

Donnely, E. Owen. Deputy Director, Boston Redevelopment Authority. Boston. March 13, 1997.

Happ, David A. General Manager, U.S. Equity Realty, Inc. Philadelphia. March 19, 1997.

Karoff, John M. General Manager, Beacon Management Company. Boston. March 18, 1997.

Kojima, Hirohiko. Manager, Tokyo District Head Office, East Japan Railway Company, Tokyo. March 5, 1997.

Matsudaira, Takao. Manager, Affiliated Enterprises Headquarters, East Japan Railway Company, Tokyo. March 7, 1997.

Muraoka, Shingo. Manager. East Japan Railway Company, Tokyo. March 5, 1997.

Rotwitt, Jeffrey B. General Partner, 30th Street Limited, L.P., Philadelphia. April 25, 1997. (Telephone Interview)