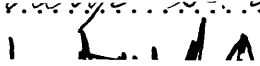



WOODWARD AVENUE, DETROIT:
A PEDESTRIAN ZONE FOR A CHANGING DOWNTOWN RETAIL STREET

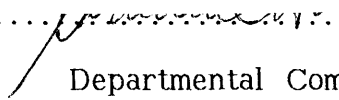
by

Philip Strickland Lewis
B.S.A.D., University of Michigan
1977

Submitted in Partial Fulfillment of the Requirements
for the Degree of
MASTER OF ARCHITECTURE
at the
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
June 1981

Signature of Author
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May 6, 1981

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Departmental Committee for Graduate Students

Rotch
MASSACHUSETTS INSTITUTE
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ABSTRACT

WOODWARD AVENUE, DETROIT:
A PEDESTRIAN ZONE FOR A CHANGING DOWNTOWN RETAIL STREET

by Philip Lewis

Submitted to the Department of Architecture on May 6, 1981, in partial fulfillment of the requirements for the degree of Master of Architecture.

The thesis studies the changing direction of Detroit's central downtown shopping street, Woodward Avenue. During the last two decades, Woodward Avenue has lost most of its retail market to suburban shopping centers. The downtown shopping district needs a physical design improvement, as well as economic help. Currently, there are various ongoing and proposed projects to help the Woodward Avenue shopping district: a Woodward Avenue pedestrian mall with trees and street furniture, a subway with Woodward Avenue stations, and an enclosed shopping center.

While these projects have the potential to greatly influence Woodward Avenue, they need to be tightly integrated with the existing street to truly help the business district. Perhaps most important, the proposed shopping center should be an active ingredient of the streetscape, rather than an introverted entity. The thesis design proposal attempts to integrate the various projects into a system of related improvements which reinforce the street.

Thesis Supervisor: Shun Kanda
Title: Associate Professor of Architecture

.

ACKNOWLEDGEMENTS



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Imre Halasz my readers

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and to Tim for immeasurable help with
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typing and drawing
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and for patience

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INTRODUCTION

Throughout the history of cities the public street has been the primary organizer and focal point of urban activity. Recently, many North American cities have been experiencing a change in this pattern. Large, privately owned megastructural developments have appeared in urban areas which turn the focus of activity toward interior courts and malls.

This introverted organization is a response on the part of developers to certain trends in ownership and marketing which lead toward the development of large, self-contained projects rather than the traditional incremental pattern. Developers now build private worlds for themselves over which they have total control, rather than pieces of the city street. This trend disrupts the traditional pattern of urban activity. These large projects undermine the public street in favor of private enclaves.

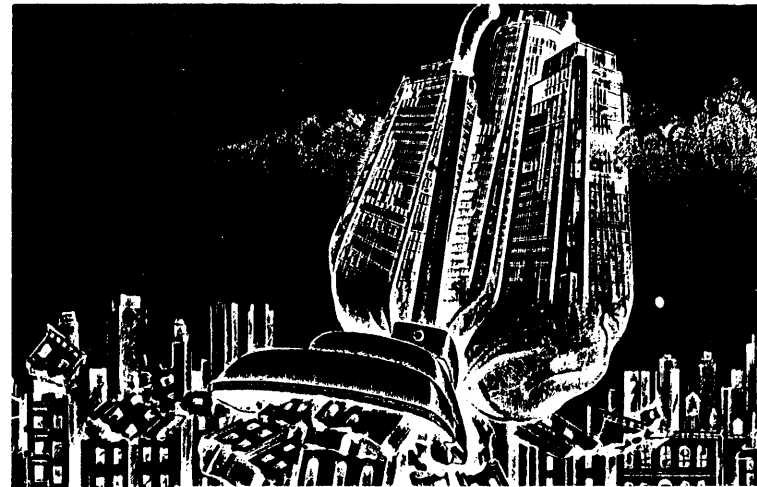
This thesis examines the particular case of Woodward Avenue in downtown Detroit, Michigan, where preliminary plans for a major retail complex in the area signal such a trend. Historically, Woodward Avenue has been the focal point of the downtown shopping district. The

Opposite page: Woodward Avenue looking north.

The megastructure enshrouds the creator's visions of a controlled environment. It respects neither the texture nor the geography of its surroundings. From the street, which the megastructure normally blind-sides with the exception of a grand entrance or two, the unrelieved boredom of whatever material is in vogue reveals the designer's hostility to the cities he professes to save.

William G. Conway, "The Case Against Urban Dinosaurs," Saturday Review, 14 May 1977, p. 14.

2.



new complex, Cadillac Square Mall, threatens to shift the major retailing focus to within its confines.

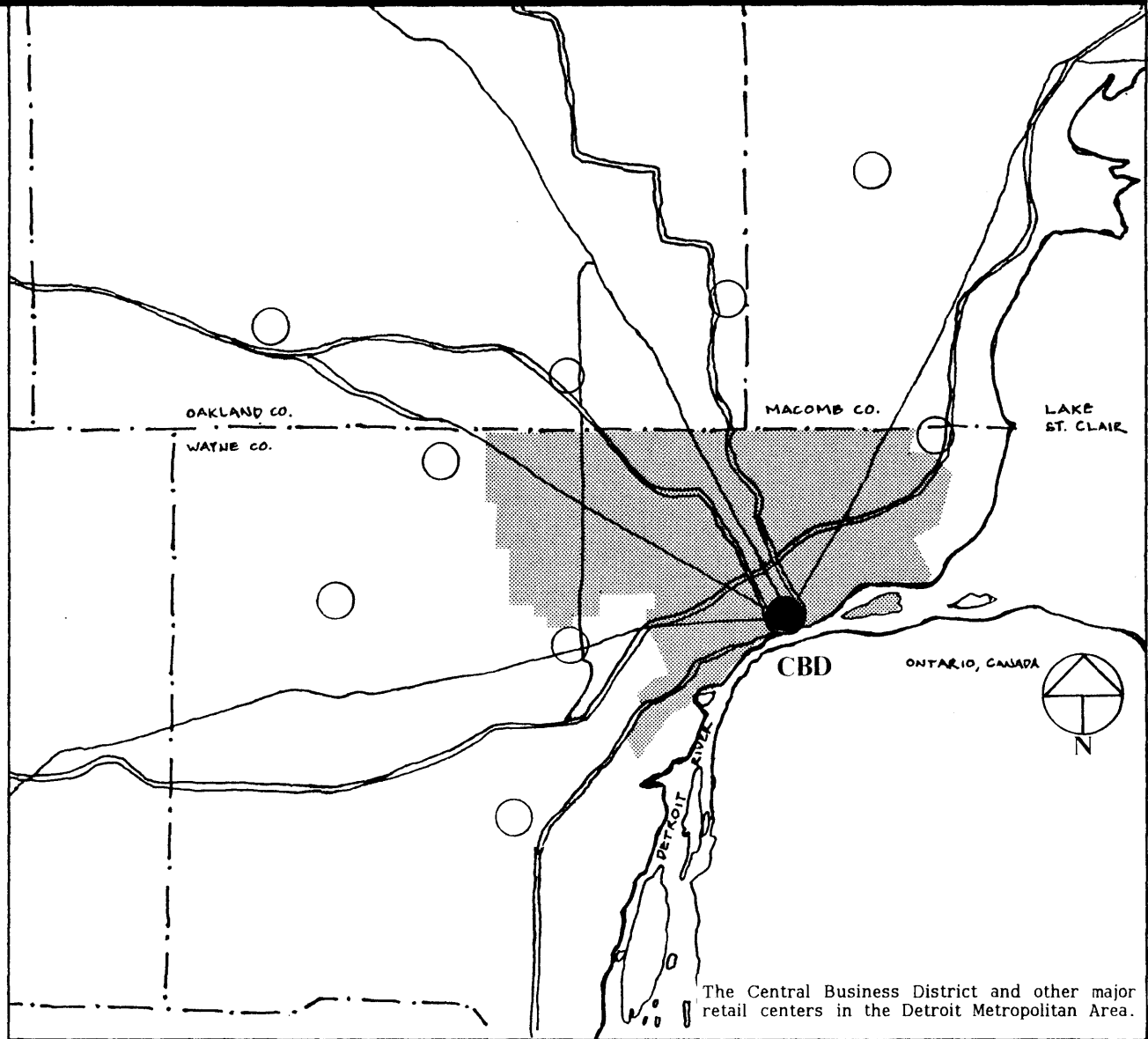
I offer a physical design proposal which provides an alternative to this introverted, private enclave. The thesis does not attempt to question the large megastructural development as a type. It is accepted as an economic reality. Instead, the thesis studies the ability of the street and Cadillac Square Mall to respond to each other. The design breaks open the introverted organization of the retail complex. It also upgrades and intensifies the existing retail environment on Woodward, to help it hold its own against the large shopping center.



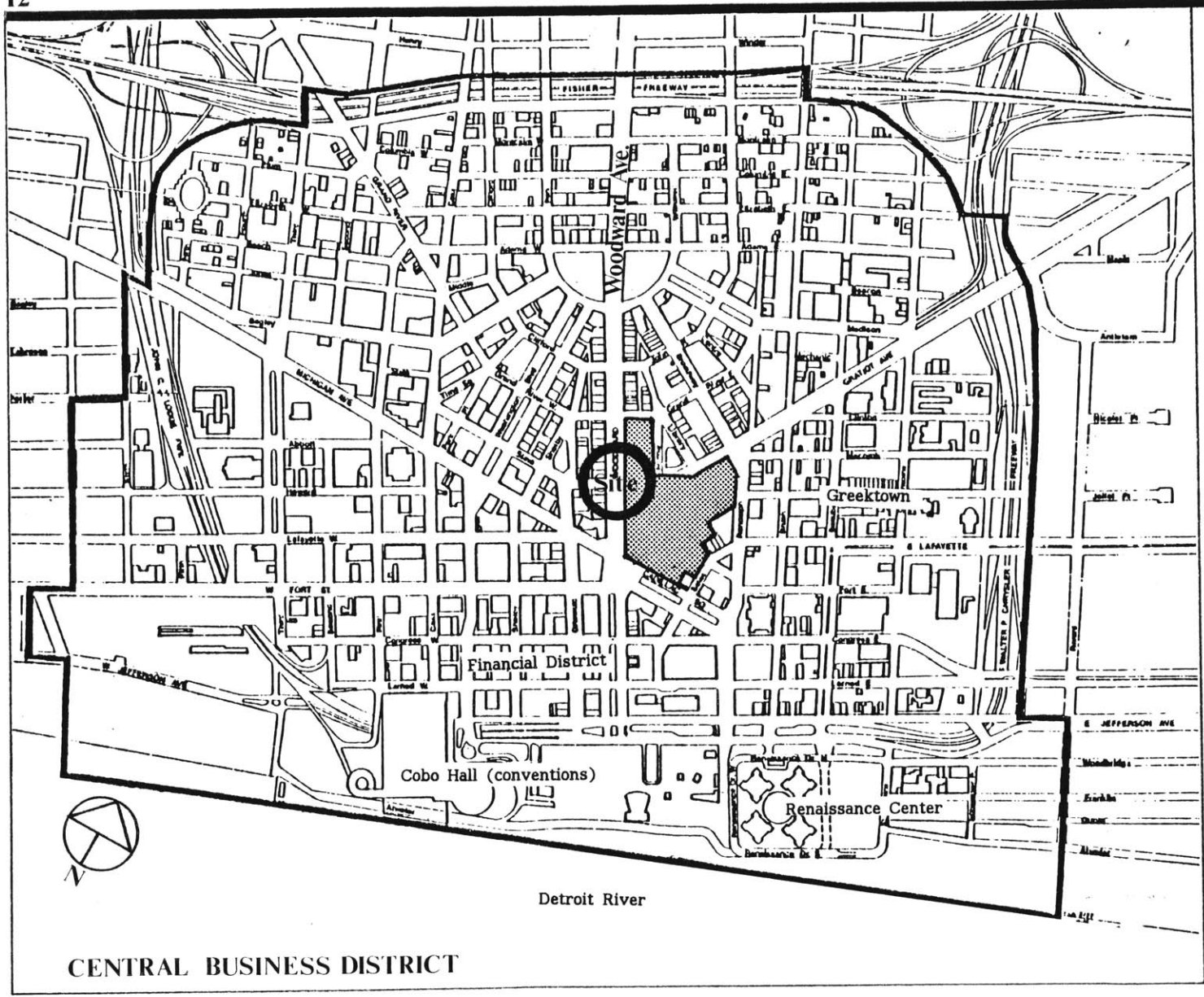
Currently proposed improvement projects will be used as entry points into the problem, and as building blocks for a solution. Presently they are disparate proposals - a subway station, street improvements, a second-level pedestrian system, and the shopping center - related only by location. I will combine them into a well integrated series of improvements which reinforce the street as a lively organizer of activities.



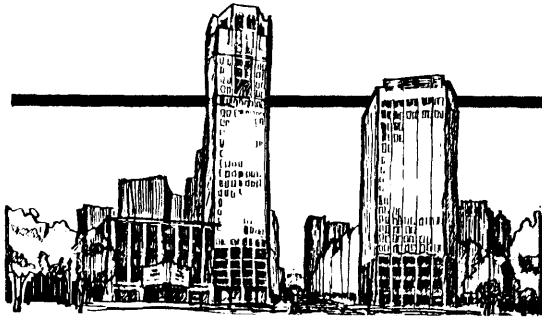
The first section of the thesis is a history of the site, followed by a description of the improvement projects and their potential impact on Woodward. Then, there is a catalogue of considerations in the design. Finally, I present the design of the pedestrian zone.



The Central Business District and other major retail centers in the Detroit Metropolitan Area.

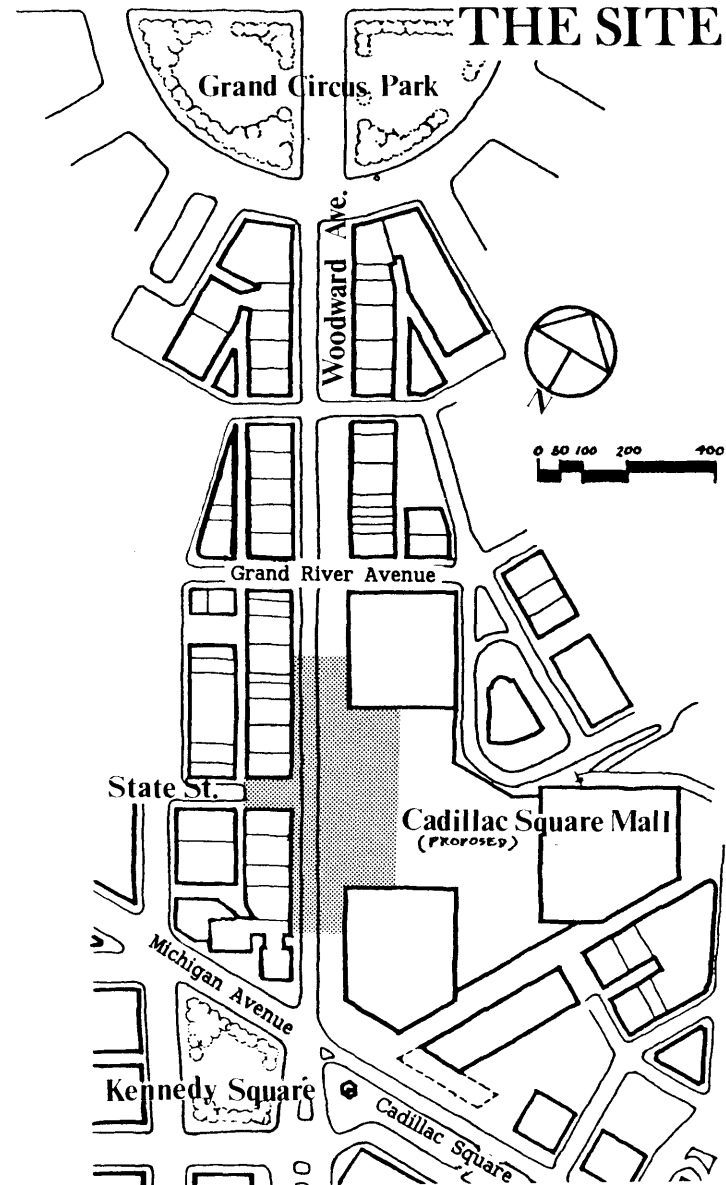


CENTRAL BUSINESS DISTRICT



The Woodward Avenue shopping district consists of the four blocks between Kennedy Square and Grand Circus Park. With the exception of the shopping center site, the street is completely built up with commercial buildings primarily from the late nineteenth and early twentieth centuries. The buildings form a solid wall along either side of the street which is punctuated at its ends with taller office buildings.

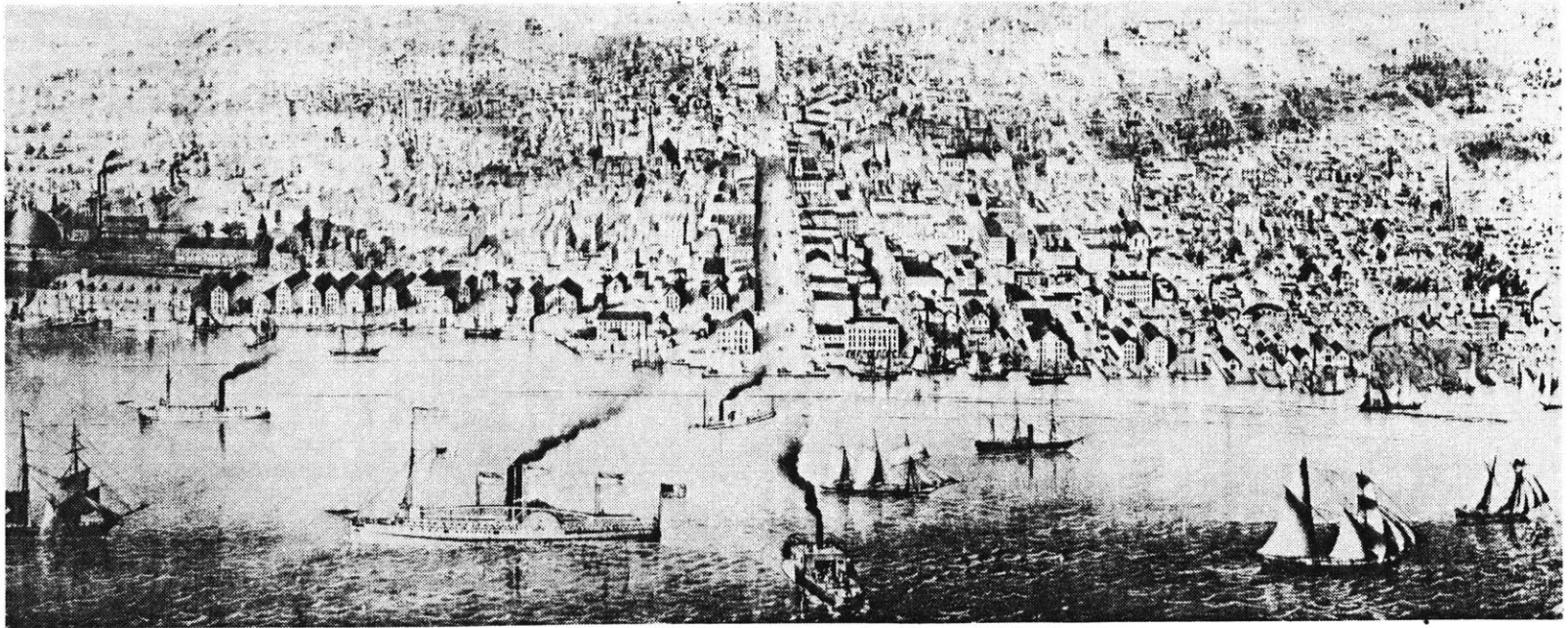
I will concentrate on the intersection of Woodward and the State Street pedestrian plaza, the busiest retail area of the street. The site is adjacent to Cadillac Square Mall and has access to a proposed subway station. I will assume that the locations of the proposed department stores within the shopping center remain constant and work with the smaller shops and pedestrian malls between them as well as the pedestrian zones of Woodward Avenue and State Street.



HISTORY

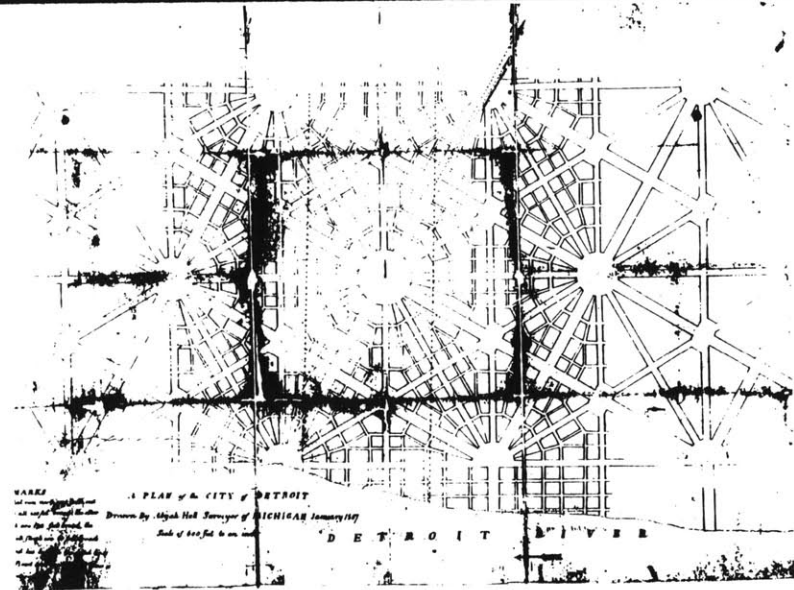
The City of Detroit was founded in 1701 on the north bank of the Detroit River by Antoine de la Mothe Cadillac, the eventual namesake of both the Cadillac automobile and the Cadillac Square Shopping Center. The town remained a small fur trading and agricultural community spread along the river bank throughout the eighteenth century.

3. View of Detroit showing Woodward Avenue, c. 1855.

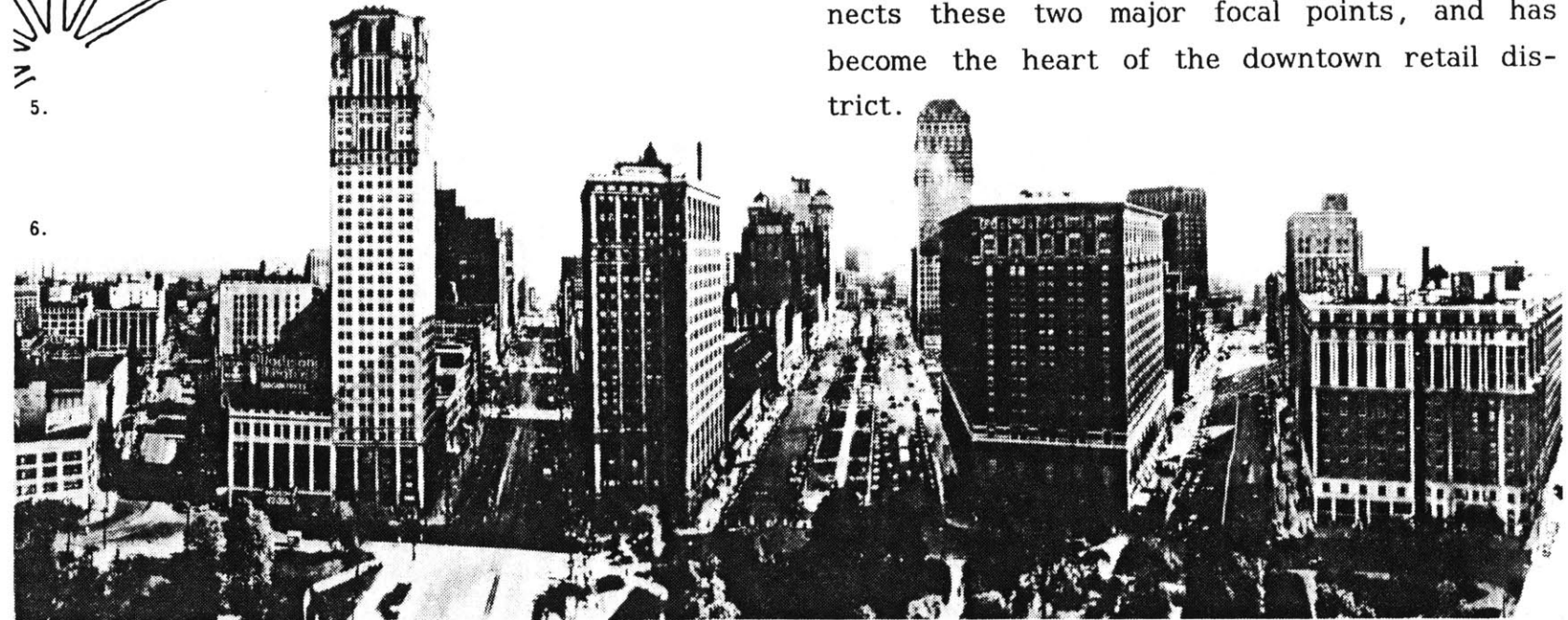
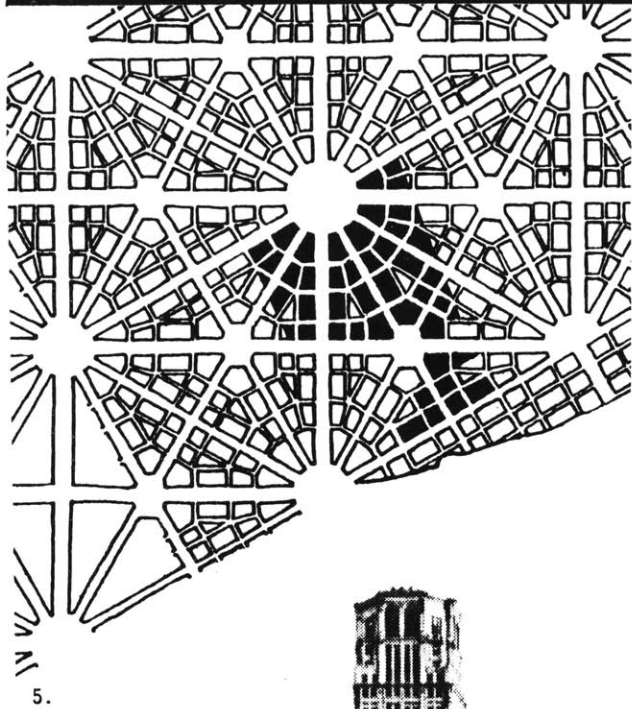


In 1805 a fire destroyed the town and it had to be completely rebuilt. Augustus B. Woodward, chief justice of the Michigan Territory, took it upon himself to draw up a new plan. Although Detroit was the largest settlement in the "West" at that time, it was still a small town with only about three thousand residents, most of whom were farmers. Woodward was an optimistic man, however, and had visions of the town becoming a great metropolis. He based his new plan on Major L'Enfant's plan for the nation's capital. The land on which Detroit sits is completely flat. With no hills to act as focal points for the new street pattern, pure geometry became its generator. A hexagonal street pattern was developed which, at least theoretically, could be repeated forever. A round park or "circus" was planned for the center of each hexagon, with two hundred foot wide parkways and one hundred twenty foot wide avenues radiating from the circus. Many smaller parks and squares were to be included in each hexagon.

Needless to say, the local farmers were not attracted to the idea of huge two hundred foot



4. The Woodward Plan, 1807.



wide boulevards slashing at all angles through their cropland and resisted the plan. Only a small portion, shown in black on the map, was completed. The area now called Kennedy Square and Grand Circus Park were the only two major intersection points that were even partially completed. Many of the major downtown streets radiate off the half of Grand Circus Park that was completed; and Kennedy Square serves as the focal point of several major regional arteries. Woodward Avenue connects these two major focal points, and has become the heart of the downtown retail district.

The discovery of iron ore in Michigan opened the door to the town's growth into an industrial city in the latter half of the nineteenth century. As Detroit grew, Woodward Avenue became the city's major north-south artery.

The early years of the twentieth century brought the automobile. With it came phenomenal growth as Detroit earned its title, "the Motor City." Between 1900 and 1920 the population soared from 300,000 to 1,000,000. During

this period of growth most of the present retail buildings on Woodward between Kennedy Square and Grand Circus Park were constructed.

During the 1950's, Woodward Avenue was a thriving shopping district. The street was lined with large multi-story retail establishments. Three full-line department stores - Kern's, Crowley-Milner, and J.L. Hudson's - were in operation, all on the present shopping center site.





The Hudson's store, on Woodward between Grand River Avenue and State Street, continued to add to its size until it was a massive block of store. With twenty-four stories and over two million square feet of floor area, it is second in size only to Macy's in New York. The store became a Detroit institution and a major focal point of downtown activities. On Flag Day, Hudson's displayed "the world's largest flag" on its Woodward facade and on Thanksgiving it sponsored the large Santa Claus Parade which marches down Woodward Avenue.



The fifties also brought the suburban movement to the metropolitan area and reoriented retail sales. In 1954, the J.L. Hudson Company opened the Northland Shopping Center, about ten miles north of the downtown area. Northland was the first of several major Detroit suburban centers constructed and it signaled the decline of the downtown retail core.

The decline continues into the present. Crowley's and Kern's are closed and demolished, providing a large portion of the Cadillac Square Mall site. In addition, several of the smaller stores on Woodward have closed. Lower quality establishments, such as wig shops, replaced many of the stores. A few storefronts remain vacant. The drop in sales required Hudson's, the last remaining department store, to drastically reduce selling space and close off upper levels of the store. In all, the downtown area dropped from its prominent position in the metropolitan area. The suburban malls are now the dominant force in Detroit area retail.

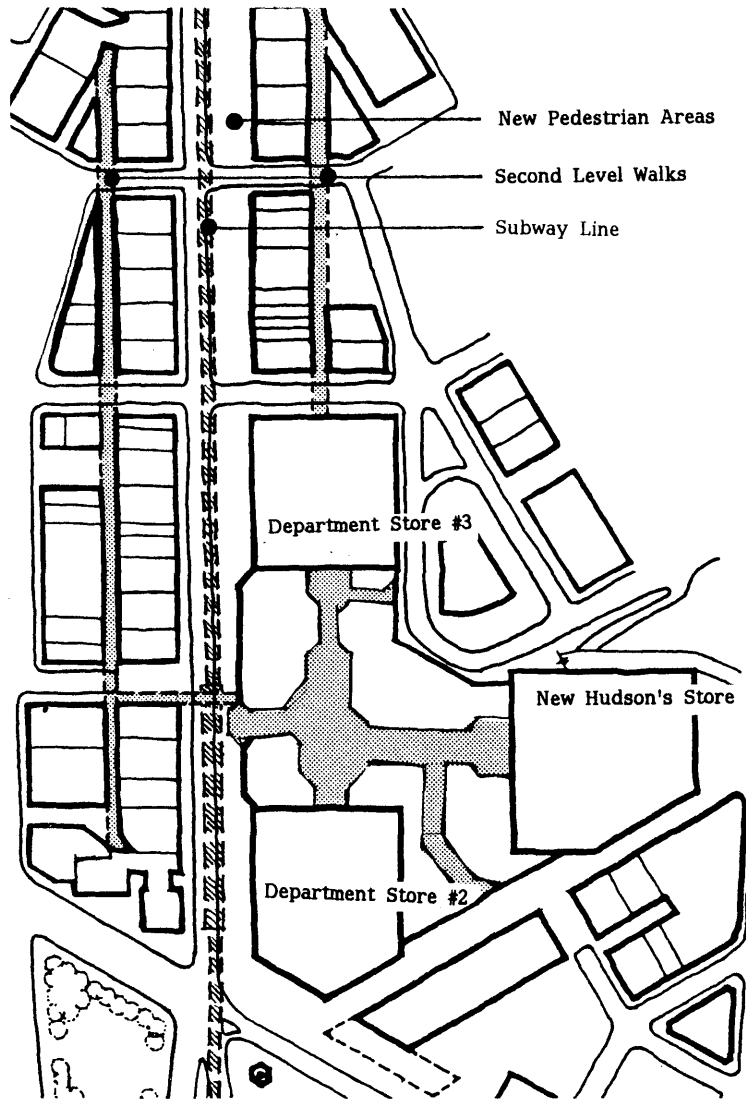
Renaissance Center, the huge, mixed-use megastructure, opened in 1976 as an effort by

local businesses to rekindle interest in the downtown. While attracting activity and new people to the downtown district, Renaissance Center's location on the fringe of the shopping area and its extremely introverted configuration prevent it from having a sizable impact on the Woodward shopping district. In fact, the massive complex has absorbed much of the growth which may have occurred closer to the core of the area and have been of greater benefit.

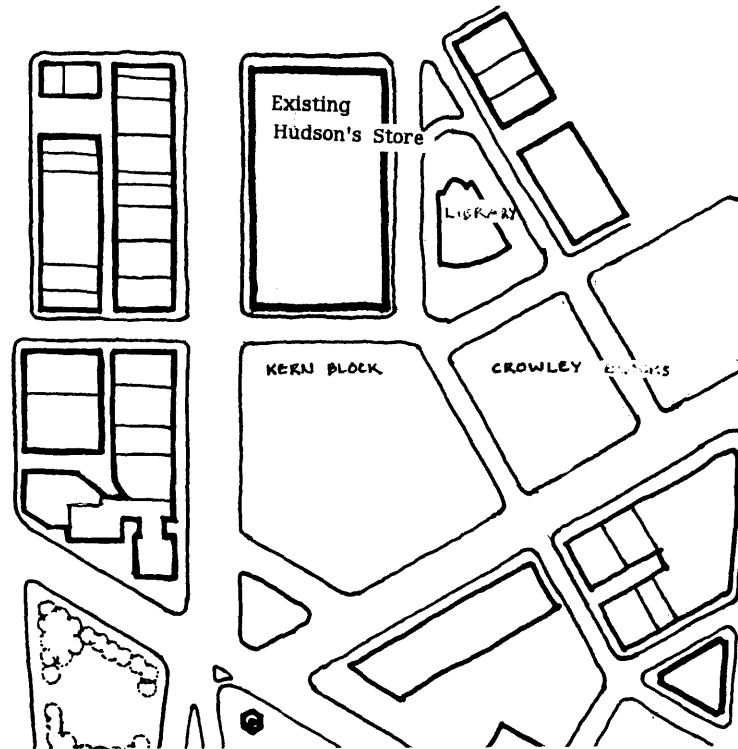
Renaissance Center was built to save downtown Detroit from itself. Now Cadillac Square Mall has been proposed to save downtown Detroit from Renaissance Center. Cadillac Square Mall is in the right location - the center of downtown - but the present proposal is, like Renaissance Center, so completely inward facing that I fear something is going to have to save downtown Detroit from it.



CURRENT IMPROVEMENT PROJECTS



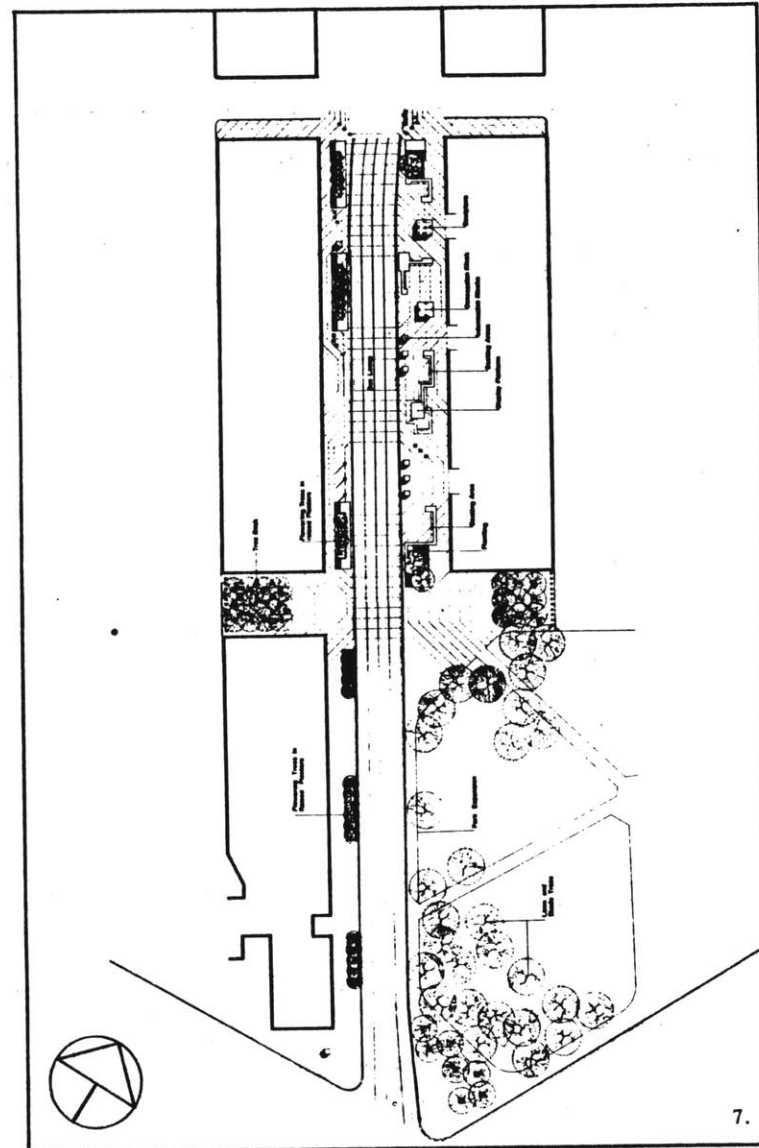
Cadillac Square Mall is one of a handful of projects recently proposed or undertaken which will have an effect on the Woodward Avenue shopping area. These include a street improvement project which has recently been completed, and proposals for a mass transit system and a second-level pedestrian walk system. The following is a brief discussion of each and their probable impact on the street.



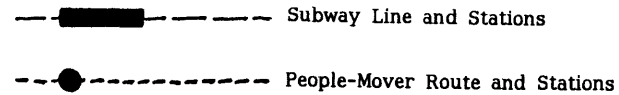
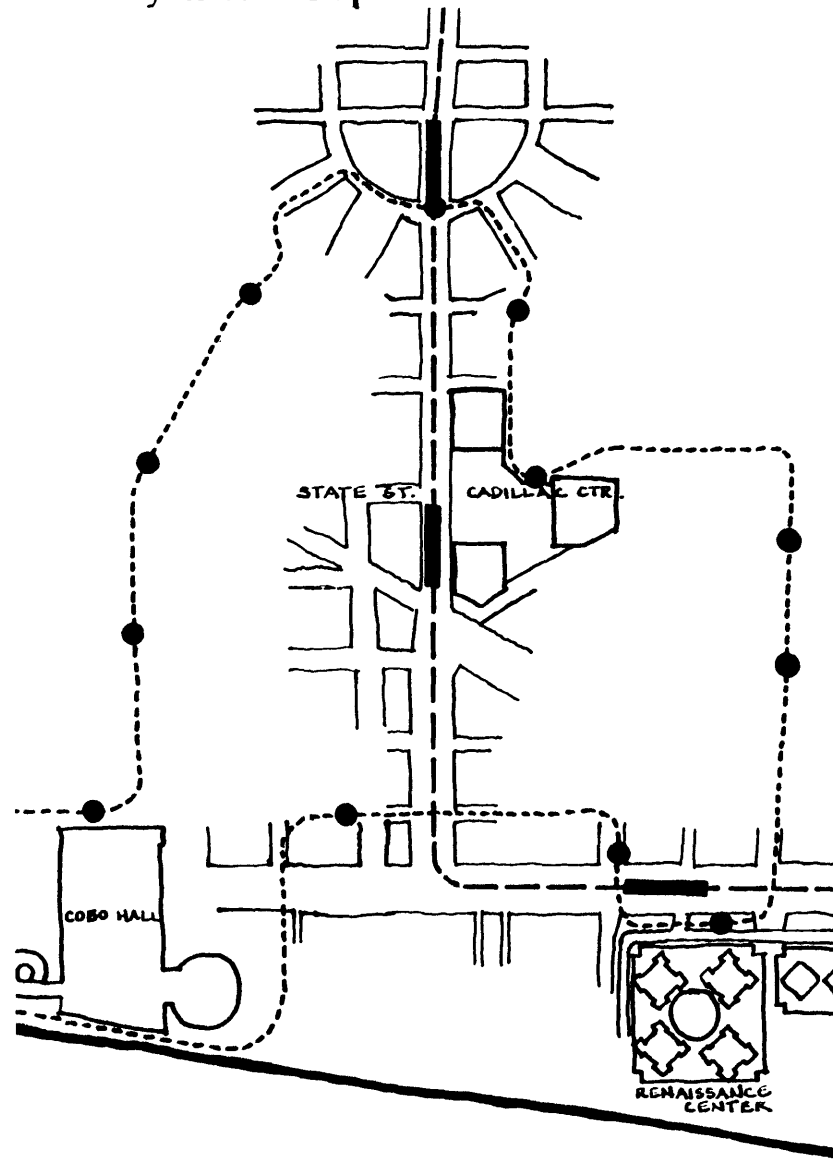
Transit Mall Conversion

Historically, Woodward Avenue has been an eight-lane traffic artery with twenty-foot sidewalks on either side of the street. Recently, the city government converted the four-block length in the shopping district to a four-lane "transit way" as part of a scheme to improve the pedestrian environment in the downtown area. The narrowed street is now limited to four lanes of traffic and is a major dropoff and pick up point for many city and suburban bus lines.

Benches, trees, planters, drinking fountains, and various other amenities now furnish the widened sidewalks. Both the street and the walk, once concrete and asphalt, are paved with colorful brick and slate blocks. These changes have been purely cosmetic and have not been successful at attracting large numbers of shoppers back to Woodward, but do provide a more attractive setting for future improvements.



Subway and People-Mover



A proposed subway line connects the downtown area and Detroit's northern suburbs. Of the three stations planned for the central business district, two are located along the Woodward shopping district. One of these stations lies beneath Woodward Avenue, adjacent to the proposed Cadillac Square Mall. This thesis primarily studies the northernmost access point of this station, at State Street. A proposed elevated people-mover system will connect the shopping district to other major downtown areas such as Renaissance Center and Cobo Hall. These transit systems will increase the pedestrian traffic volume on Woodward Avenue, improve the accessibility of the area, and expand the demand for office space on the street.

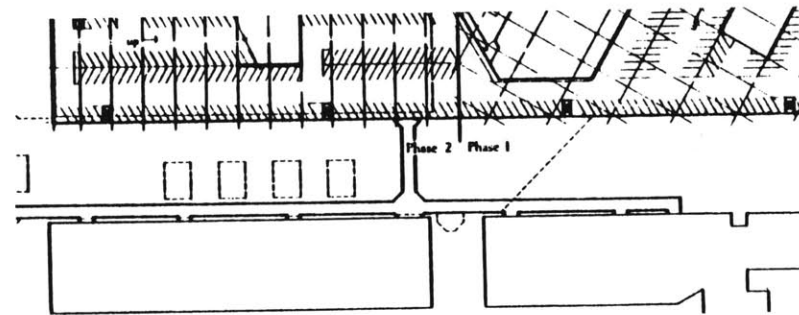
Second-Level Walk

Besides the site of the shopping center itself, there are no vacant lots on which to build in the immediate area. It would be unfortunate if chunks of existing building stock on Woodward were demolished for new office towers as a response to an increase in demand for space. The street should be allowed to intensify within its existing framework. It can do this by making better use of space above the stores in the old buildings which sits empty or underused as storage space. Use of the upper floors is hindered by the fact that in most cases there is no independent access system. Elevators and stairs can be reached only through the retail establishments on the ground floor, making it difficult to rent space above to other concerns. An estimate shows that some 220,000 square feet of vacant or underused space exists on the one block between State Street and Grand River Avenue.

In order to provide access to the unused floors without slicing up ground floor retail space with lobbies and corridors, the city has proposed a second-level walk running adjacent to the buildings. Originally these were to run

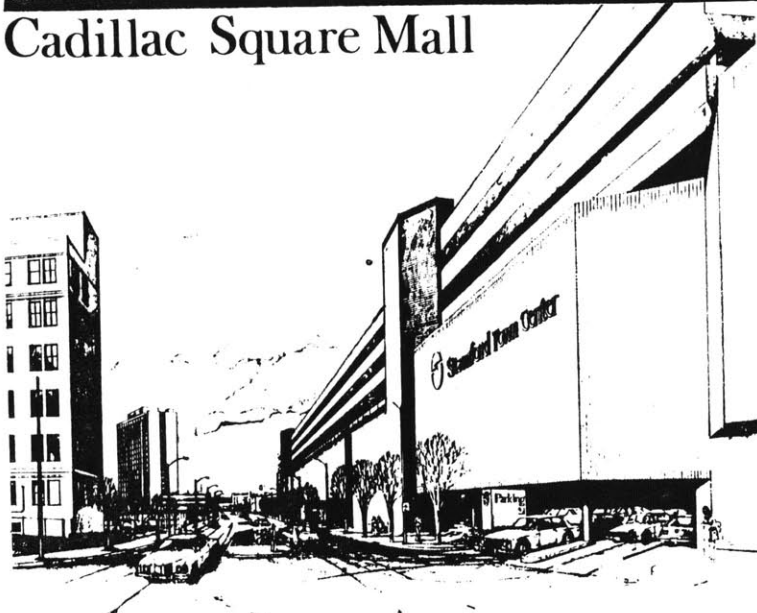


8. Minneapolis' skyway system.



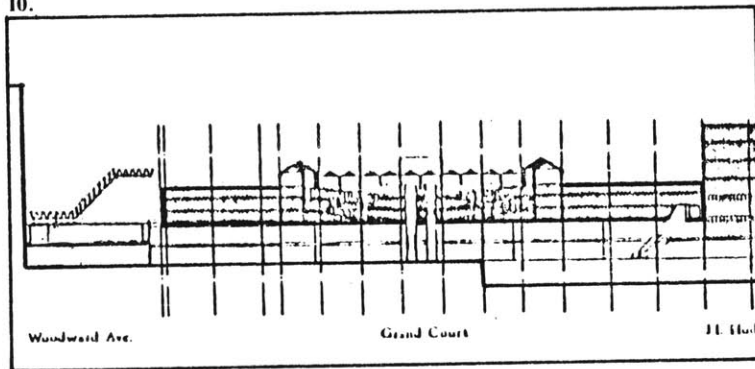
across the fronts of the buildings on either side of Woodward. Plans were later shifted to the alleys at the rear to hold down costs. This is a bad move because it splits movement along Woodward into three separate paths with no interaction with each other. Woodward needs its activity intensified, not diffused.

Cadillac Square Mall



9. The street facade of Stamford Town Center being built by the Taubman Company in downtown Stamford, Connecticut. Preliminary plans for Detroit's shopping center are closely based on the Stamford design. A mammoth thing with inactive edges which turns its back on the street.

10.



Cadillac Square Mall, to be developed by the Taubman Company, will occupy a fifteen-acre site near the center of the central business district. It will have two blocks of frontage on Woodward. Plans call for the demolition of the existing Hudson's store and construction of a new, smaller Hudson's elsewhere in the complex. 1.1 million square feet of retail space will be constructed including three large department stores and about one hundred smaller shops. One of the department stores will be the new Hudson's. The other two have yet to be determined. Presently, construction of the complex is being delayed pending the procurement of at least one of the other department stores.

The developer's plans call for two full levels of retail with a partial level below grade to provide access to the proposed subway station. Another partial level at the third floor contains a cluster of restaurants. Above this is several levels of garage with some 3,600 parking spaces.

Except for the fact that one parks on the roof rather than in lots surrounding the center,

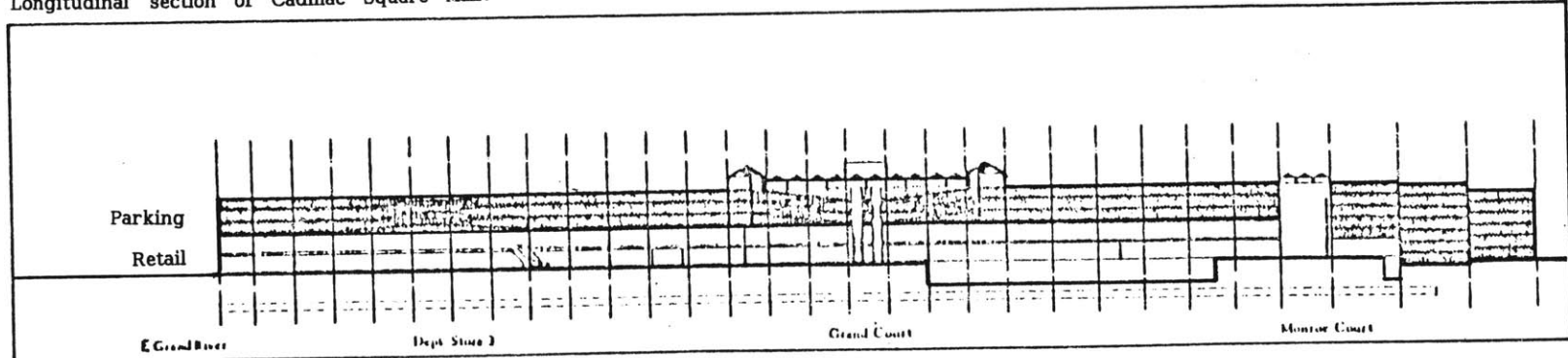
Cadillac Square Mall is very much like its suburban counterparts. Its form is the product of an extensive body of knowledge of retailing, but one which was developed in a suburban, not urban, setting. The result is several drawbacks to the design from the point of view of its impact on the surrounding environment.

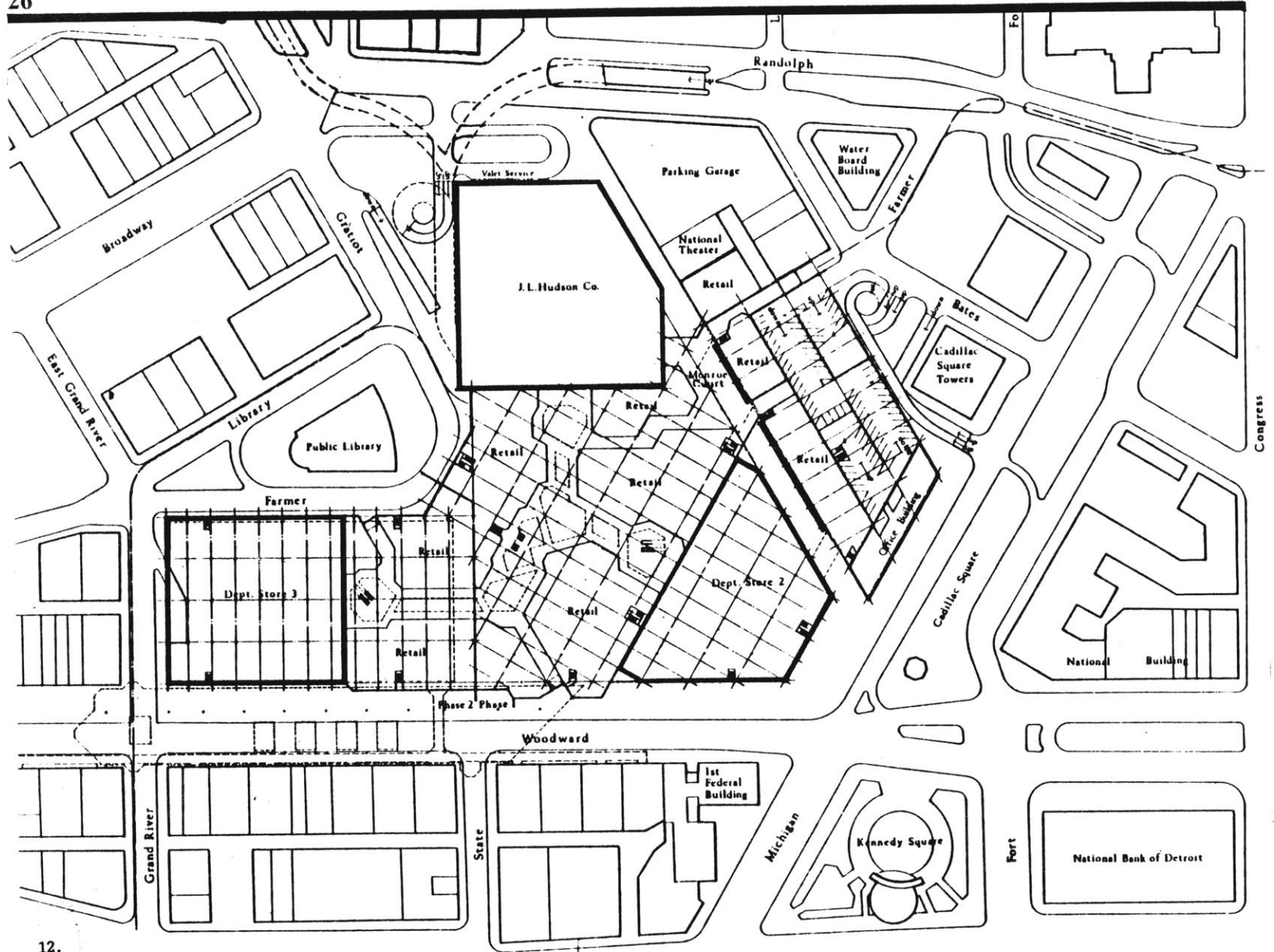
It is an extremely monolithic complex which covers several square blocks with a single, relatively low structure. This contrasts strongly with the densely packed incremental pattern which typifies the urban core. It is also a single-use project which foregoes the opportunity to make much more intense and diverse use of a large, desirable site.

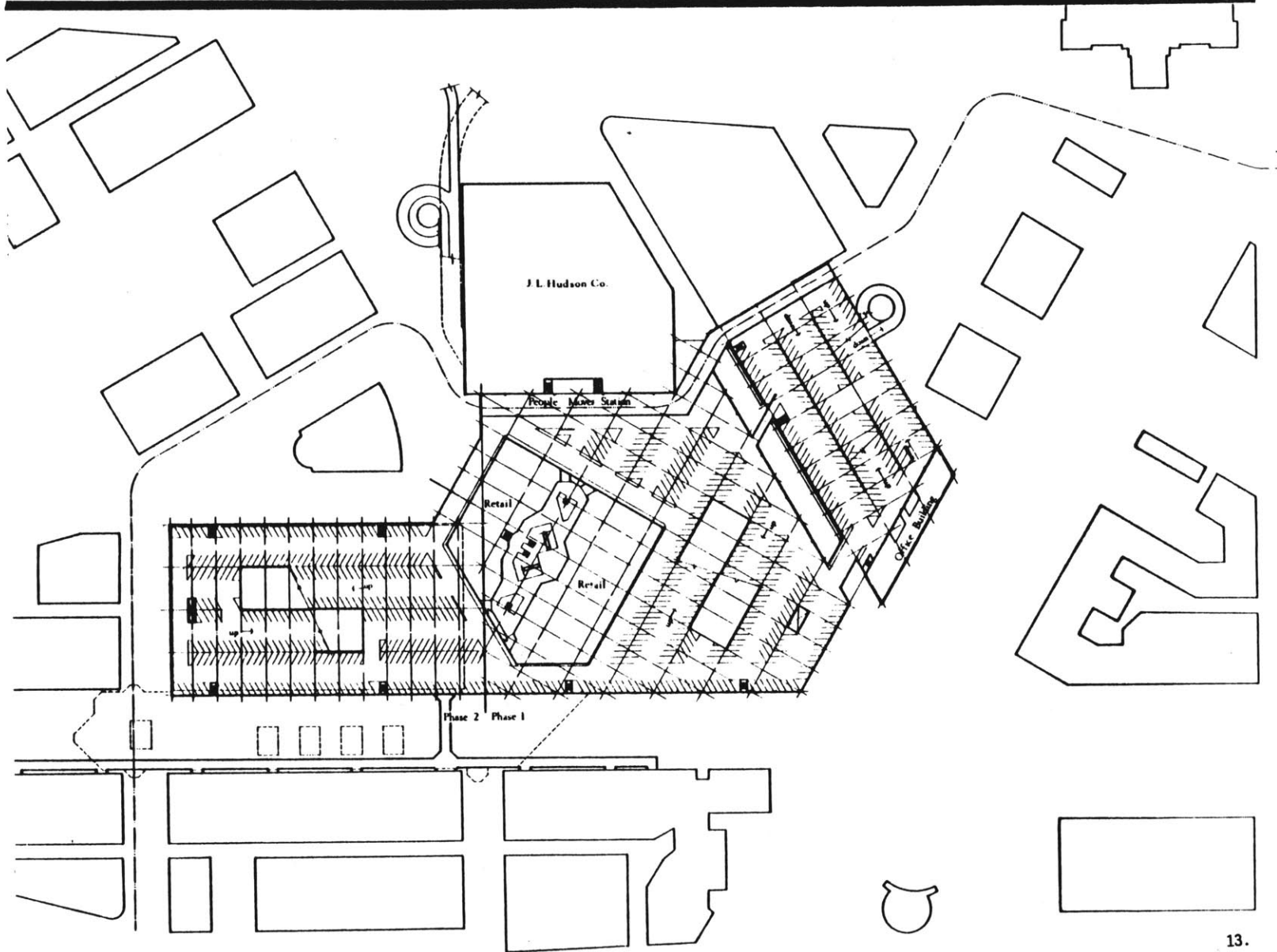


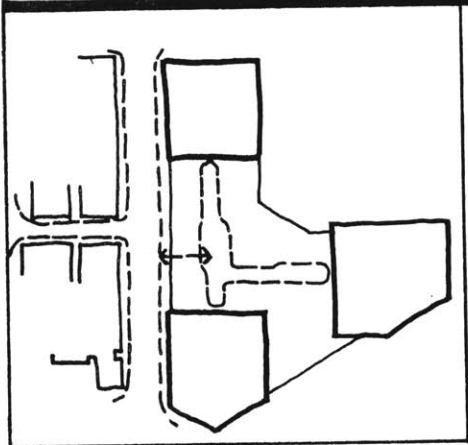
Longitudinal section of Cadillac Square Mall.

11.



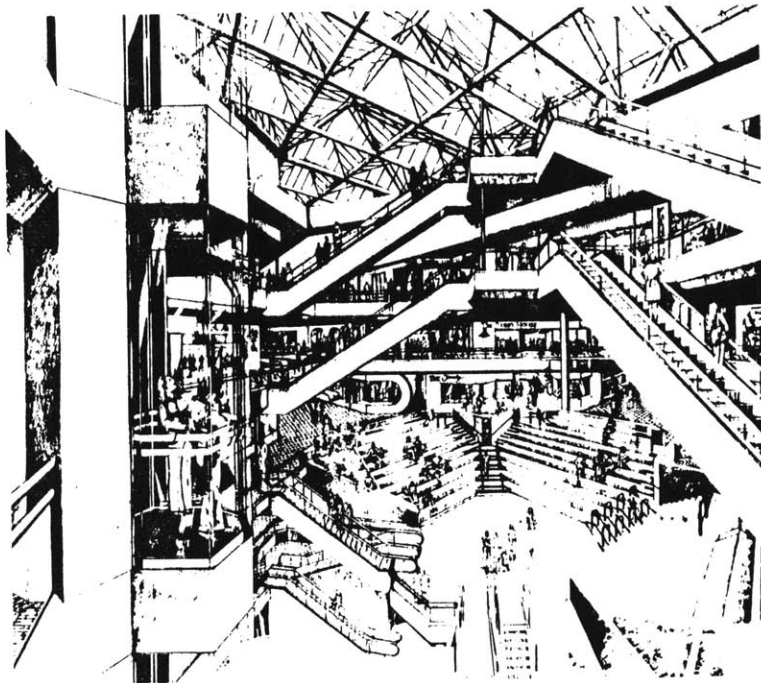






The Grand Court, Stamford Town Center:
an introverted private enclave.

14.



The most serious drawback to the design is its introverted organization. Shoppers park their cars in the garage above the shopping center, and walk toward the skylighted central court where they take glass elevators to the shopping levels. Here they are completely surrounded by a barrage of stores on various levels facing into interior malls. There is no stimulus to venture out onto Woodward or other streets in the area. The view to the exterior is minimal and no use is made of exterior space. The facade along Woodward Avenue is merely a brick wall, broken only by one entrance, a row of display cases, and third floor restaurant windows. The shopping center is planned as a total retail environment, rather than as the portion of the larger district that it actually is.

Much of what I have said regarding the shopping center has been negative. Still, the great potential of Cadillac Square Mall to rejuvenate Detroit's downtown retail core should not be underestimated. Downtown shopping centers have the ability to combine two types of retail markets which have been growing increasingly separate in cities with unpopular downtown areas.

One market is the "captive" downtown market which consists of office workers and other people who tend to be downtown during the day. In an area like Detroit's central business district, which has lost the ability to draw shoppers from outside the downtown area, these are the people on which the retail core presently depends. They support a brisk lunchtime business, but leave for home as soon as work is out. J.L. Hudson's reports that it does two thirds of its business between 11:00 a.m. and 2:00 p.m., then closes for the night at 5:45 p.m.

In her book, The Death and Life of Great American Cities, Jane Jacobs describes a similar situation in downtown Manhattan, which has be-

POTENTIAL OF THE SHOPPING CENTER

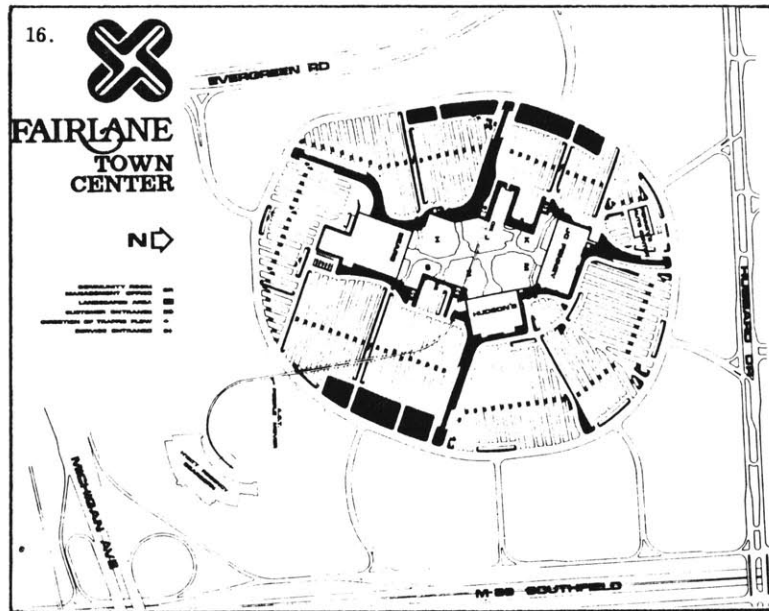


15.

come so completely business oriented that almost one hundred percent of the retail trade is this captive lunchtime crowd. The result is that despite the great density of people in downtown Manhattan during the day, the number and variety of retail establishments is extremely limited because shops can't survive very well on just three good hours of business per day.

The second market might be called the "destination" market. It consists of these shoppers who head out of the house in the family car with the intention of picking up a pair of shoes, or a bedspread, or whatever. For them, the shopping center is their destination. This is the market off of which the suburban malls thrive. Peak hours for this trade are in the evenings and on weekends.

Shoppers are drawn from residential areas to the suburban centers because of all the established and well known reasons that the cen-



ters have become such an important part of American society. They are strategically located relative to their markets. They are easily accessible by car. They offer a large number of stores under one climate-controlled roof. And, they offer two or three or more major department stores which act as "magnets" to attract shoppers. Although the malls do quite well relying on this type of trade, they too have their limitations, as Jane Jacobs points out:

Shopping centers that serve only residential primary use have a trouble similar to that of lower Manhattan, but in reverse so far as time is concerned. Thus many such shopping centers have been closing up in the mornings and staying open in the evenings. "The way things are now," said a shopping center executive quoted in the New York Times, "you could shoot a cannon down the mall of any shopping center at midday and not hit a soul." The innate inefficiency of serving a single primary use is one reason (in combination with several others) why so few shopping centers are able to support any but standardized, high-turnover enterprises.*

Shopping centers in downtown areas can combine these two retail markets by providing the qualities that attract the evening destination market and capitalizing on the downtown locations to attract the captive daytime market. This keeps the center busy day and night, and more profitable than the typical suburban center. Indeed, the large downtown shopping complexes that have been built recently are among the most successful shopping centers in the country.

Cadillac Square Mall can combine the "captive" market and "destination" market and become quite successful at attracting great numbers of people downtown to shop. To realize its full potential, however, it must capitalize on the opportunity to join with the street in a large, diverse, and intense retail environment.

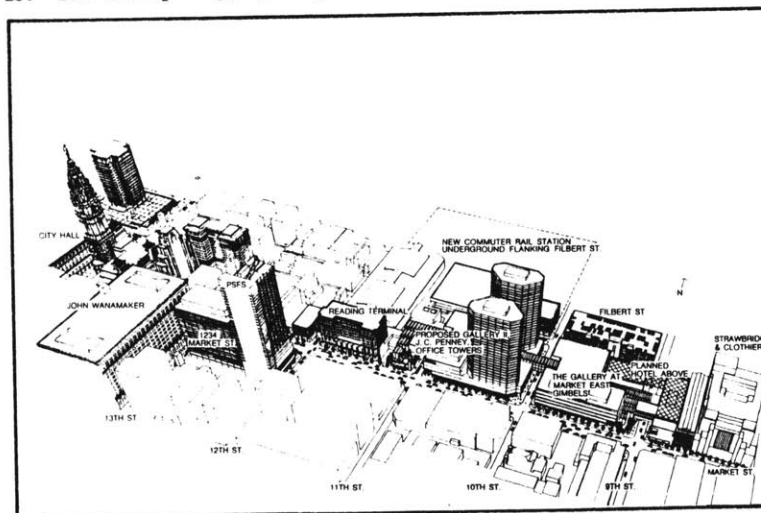


17.



18. Eaton Center, Toronto.

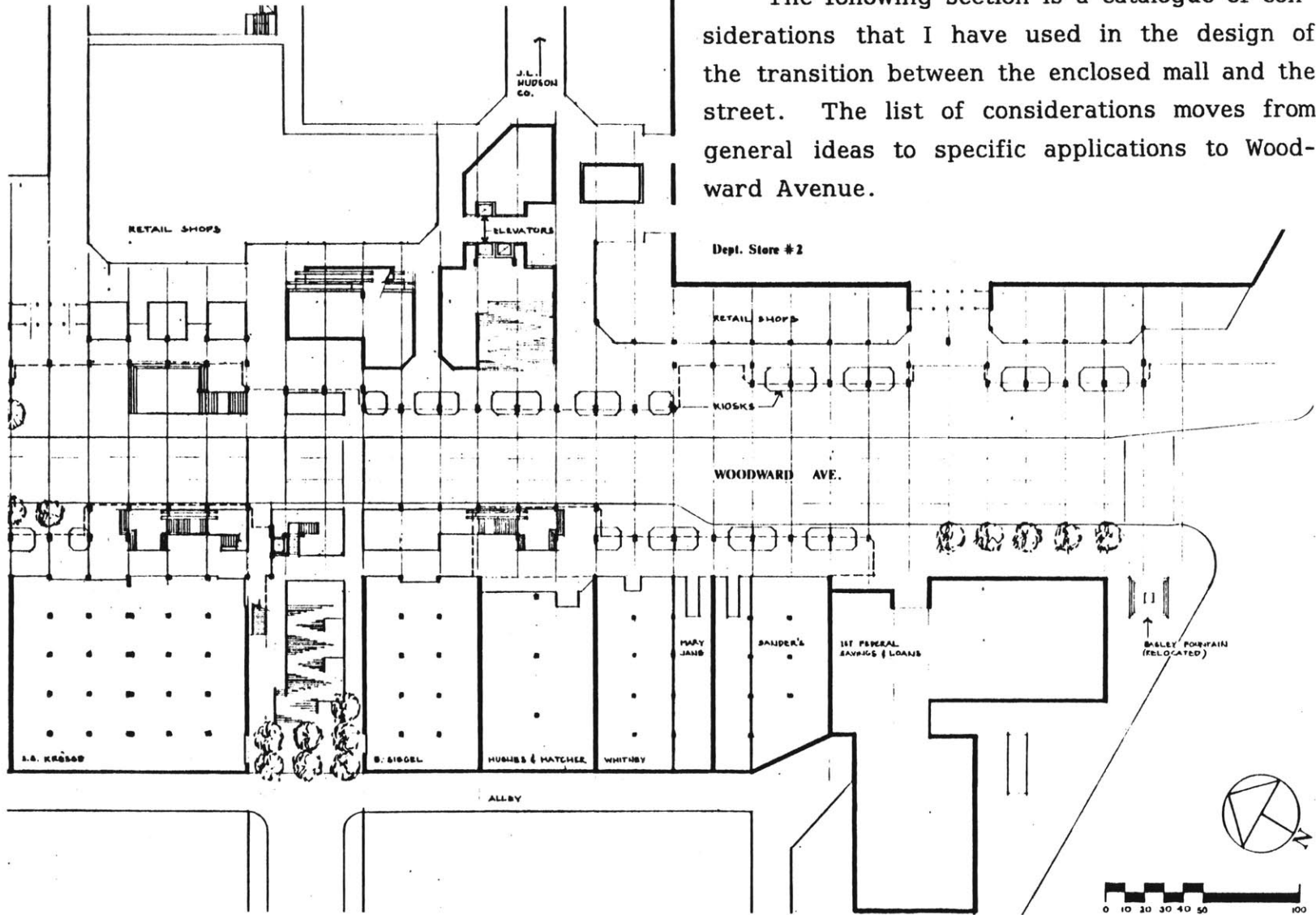
19. The Gallery shopping complex, Philadelphia.



*Jane Jacobs, *The Death and Life of Great American Cities*. New York: Random House, 1961, p. 162.

DESIGN CONSIDERATIONS

The following section is a catalogue of considerations that I have used in the design of the transition between the enclosed mall and the street. The list of considerations moves from general ideas to specific applications to Woodward Avenue.



Introverted vs. Extroverted Organization

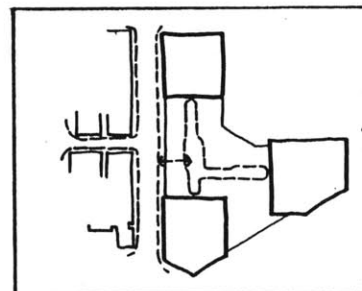
Suburban shopping centers try to attract people inside and keep them there, spending money, as long as possible. The view out, the changing climate, and other relationships to the outside are cut off in favor of a totally controlled, introverted, retail-oriented world.

A downtown shopping center cannot be seen as an isolated entity, but as a piece of a larger retail district. Shoppers should not be isolated indoors, but should be encouraged to freely stroll throughout the district. No single piece should interrupt this flow.

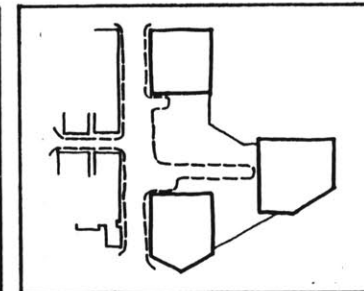
Active streets are more successful at promoting free movement throughout the district than internal enclaves because they are tied into an interlacing network of streets. The pedestrian moves easily from one street to another. To really benefit the downtown environment, the pedestrian paths of the shopping complex must be streetlike and tie into the patterns of the area. A complex should look outward and contribute to the activity of the surrounding streets.



20.

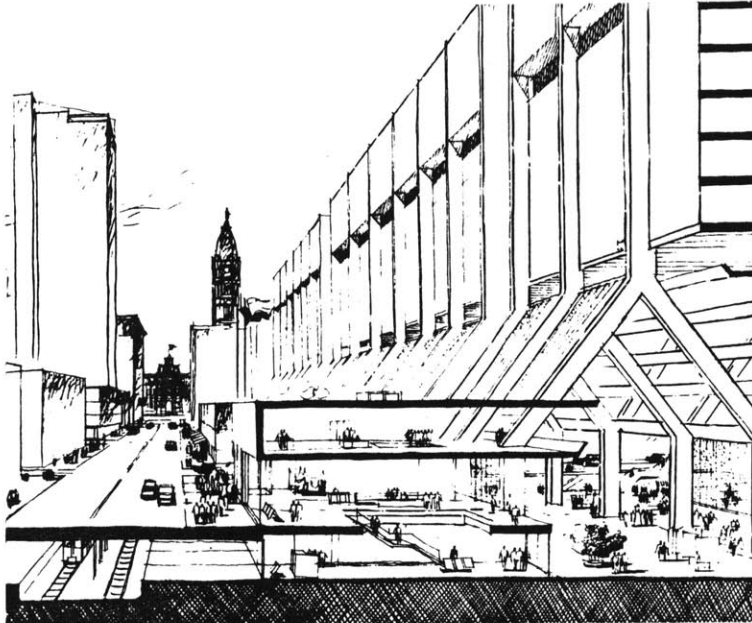


Introverted organization:
separate from the street.

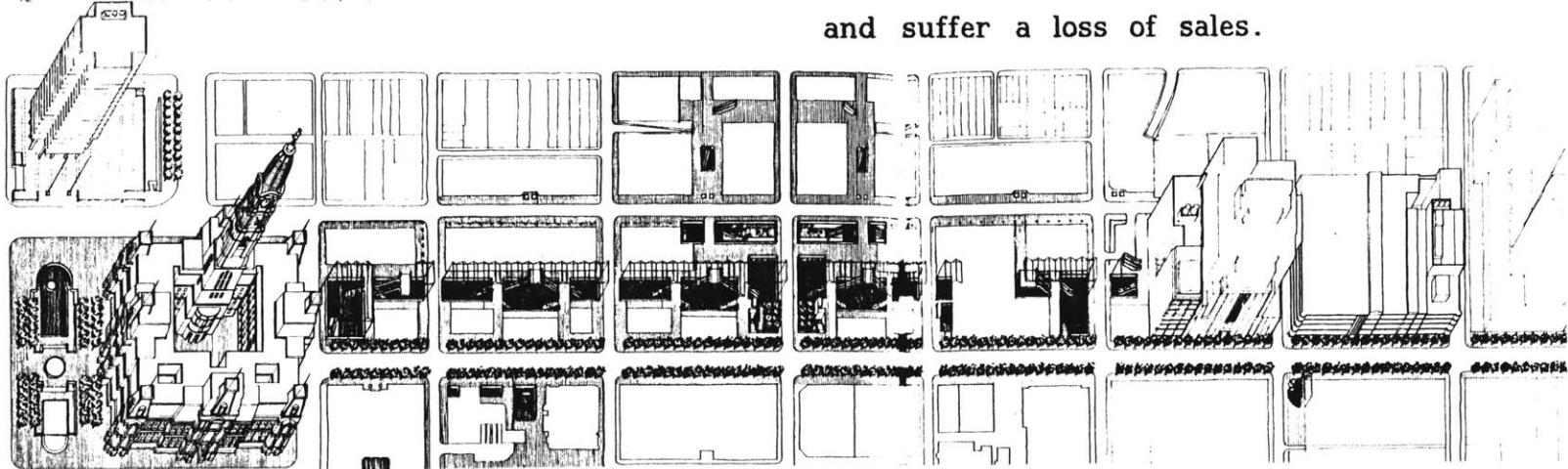


Extroverted organization:
interlaced with the street.

Parellel vs. Perpendicular Paths



21, 22. Market Street, Philadelphia.

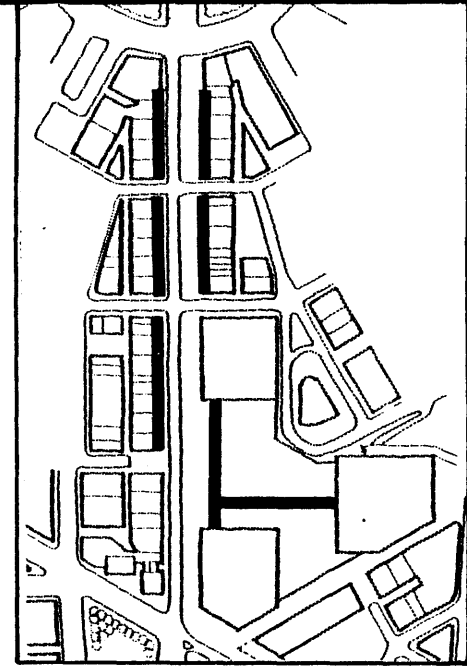


Paths which run parellel to each other tend to compete for the same traffic. A given flow of pedestrians will be split between the two paths, and lessen the intensity of activity on each path. An area such as Woodward Avenue should strive to focus, and therefore intensify, the activity--not disperse it.

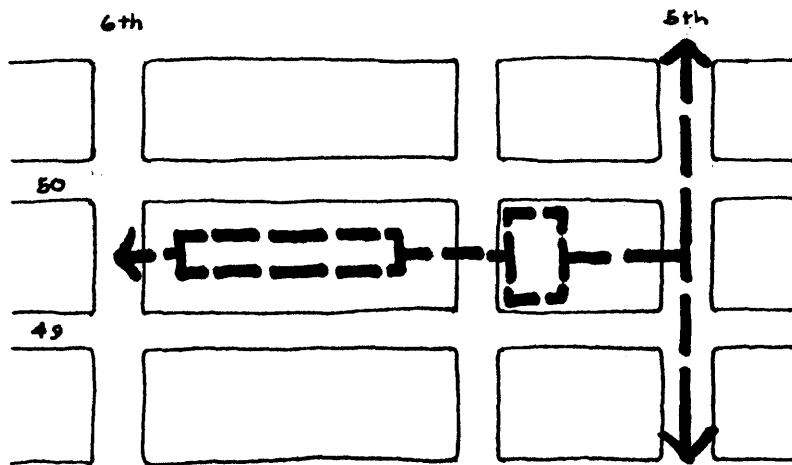
Philadelphia's proposed plan for Market Street establishes separate pedestrian paths running parellel to the street for several blocks. When completed this path will provide a temperature controlled, multi-level environment with which it will be impossible for Market Street to compete. The stores that face onto Market Street will lose much pedestrian traffic and suffer a loss of sales.

Where they must exist, parallel paths should be made not to compete for the same traffic. One may be made primary, working off of and constantly relating to the first. The secondary path may be made of a series of discontinuous links which provide specific access functions, but cannot be used to duplicate the general circulation of the primary path.

A system of discontinuous second-level walks provides access to upper portions of buildings, yet they cannot compete with the street as a primary circulation path.



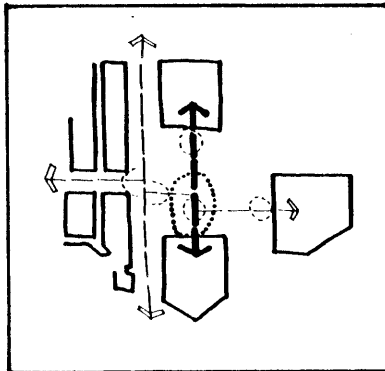
Main pedestrian path at Rockefeller Center does not compete with Fifth Avenue.



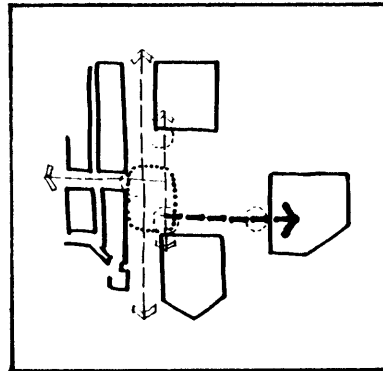
Major paths should run perpendicular to one another so that they don't dilute the intensity of use on each. Originating in different places the paths will generate traffic from different sources and therefore will not compete for the same traffic. Rockefeller Center in New York City is a good example of this. It has turned its major pedestrian axis perpendicular to Fifth Avenue. The center maintains a very active pedestrian environment without causing that major retail street to suffer.

The intersection of two perpendicular paths forms a "joint," a place of intensified activity, a destination, a change in direction, a place to pause. Dimensions and possibilities for use and activity must be increased at these points. These are the public squares in a system of paths.

In the case of Cadillac Square Mall, the Hudson's store should be used to generate a major pedestrian mall perpendicular to Woodward Avenue. Hudson's is the largest store of the center, so the link between it and Woodward can become the dominant direction of the center, rather than the north-south mall, as the developer proposes.

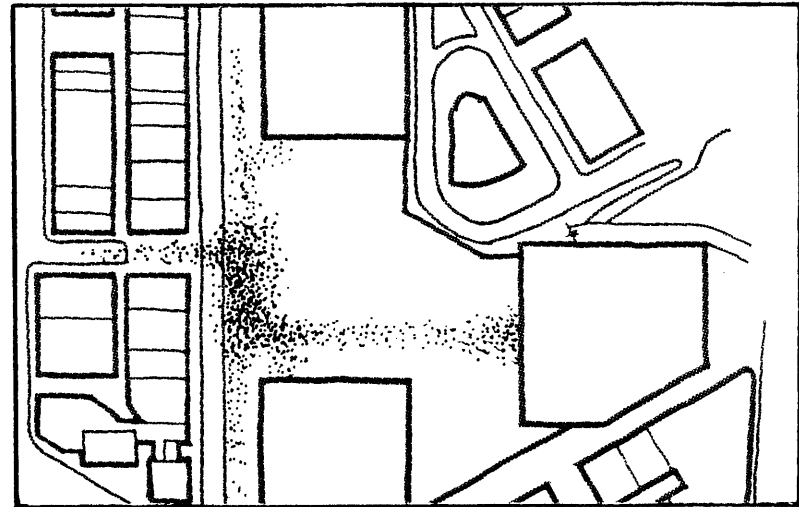


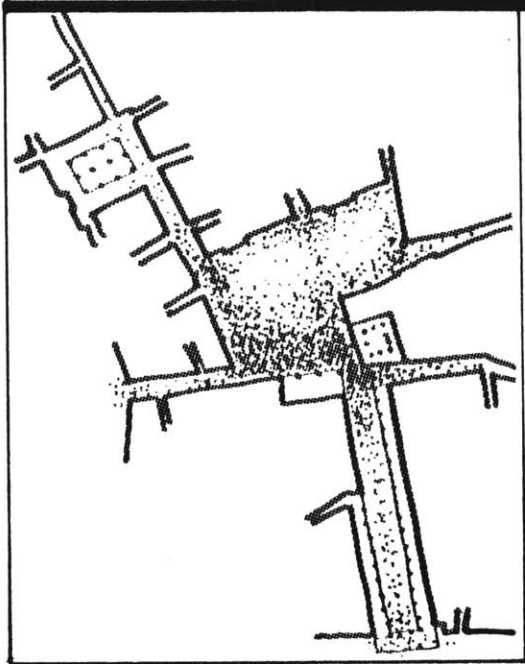
Dominant path parallel to street as presently proposed.



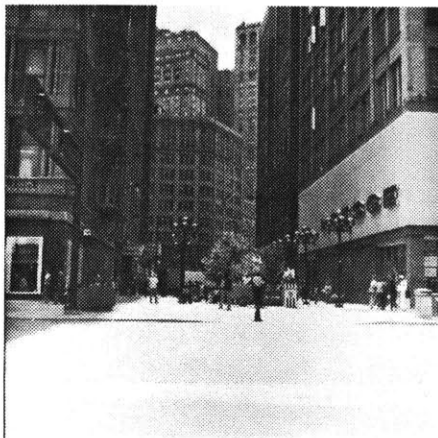
Dominant path perpendicular to street, and formation of a major "joint" at intersection.

Stores #2 and #3 relate to an enriched edge along Woodward rather than to the interior north-south mall. Extending the east-west path all the way to Woodward Avenue and moving the north-south path to the street edge creates a more extroverted organization for the shopping center. The intersections of State Street, Woodward Avenue, and the malls of Cadillac Square form a major joint that becomes the focal point of whole shopping districts. This joint forms the essential link between the shopping center and the street.

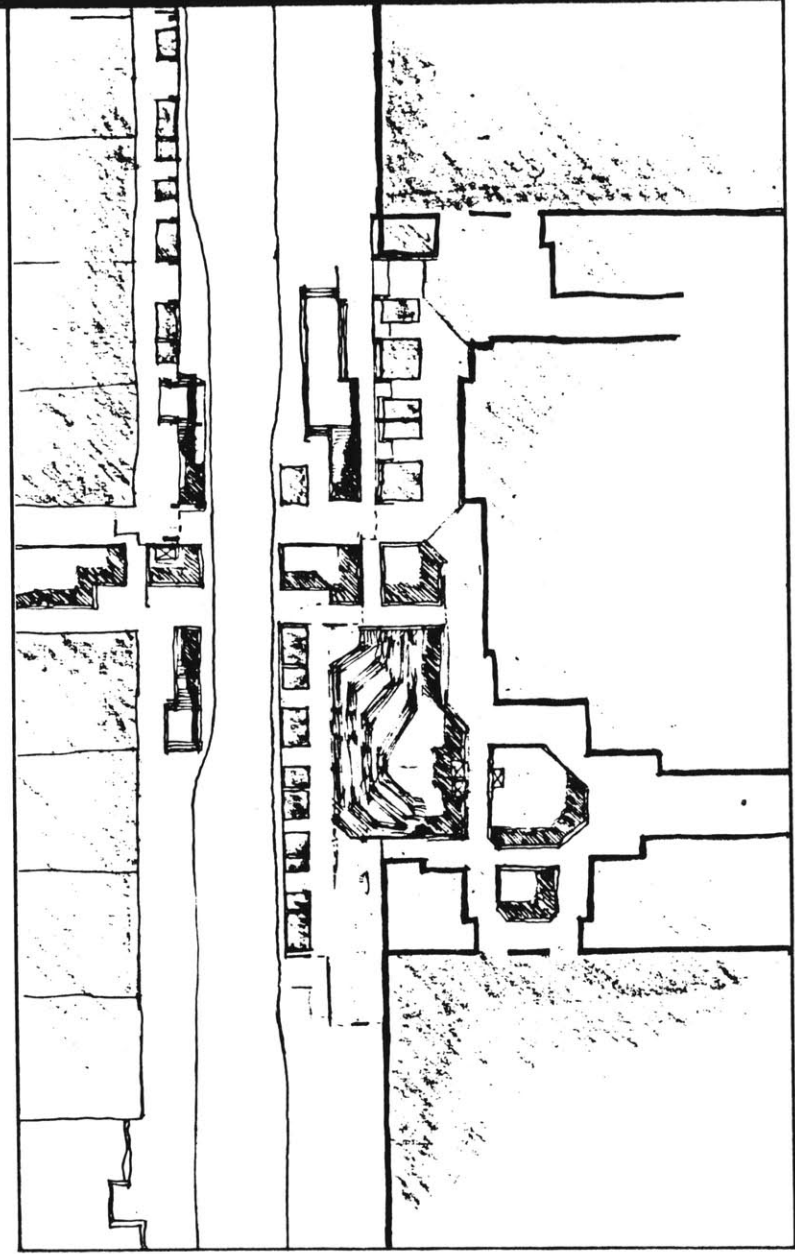




The Piazza della Signoria, Florence.
Several paths intersect to form a place of increased activity and dimension--a public square or "joint."



State Street intersection with Woodward.



Subway Access

A major subway station can be a great generator of activity. Large crowds of people, using a subway station, add to the bustle of an area. The transition between the below grade subway level and the street invites interesting design solutions. All too often, however, subway entrances amount to little more than a stairway or escalator which vanishes into a small dark hole in the sidewalk. This creates completely separate worlds between the streets and the subway.

The transition from the subway platform to the street should be an easy, natural one which maximizes the sense of unity between the two. For reasons of security and esthetics, the subway access should be visible from the street and receive natural daylight from above. The open recessed areas which allow this become an opportunity to form multi-level activity spaces. The balconies, bridges, and stairways which surround the recessed areas make great people-watching platforms where one can get up above events and observe.

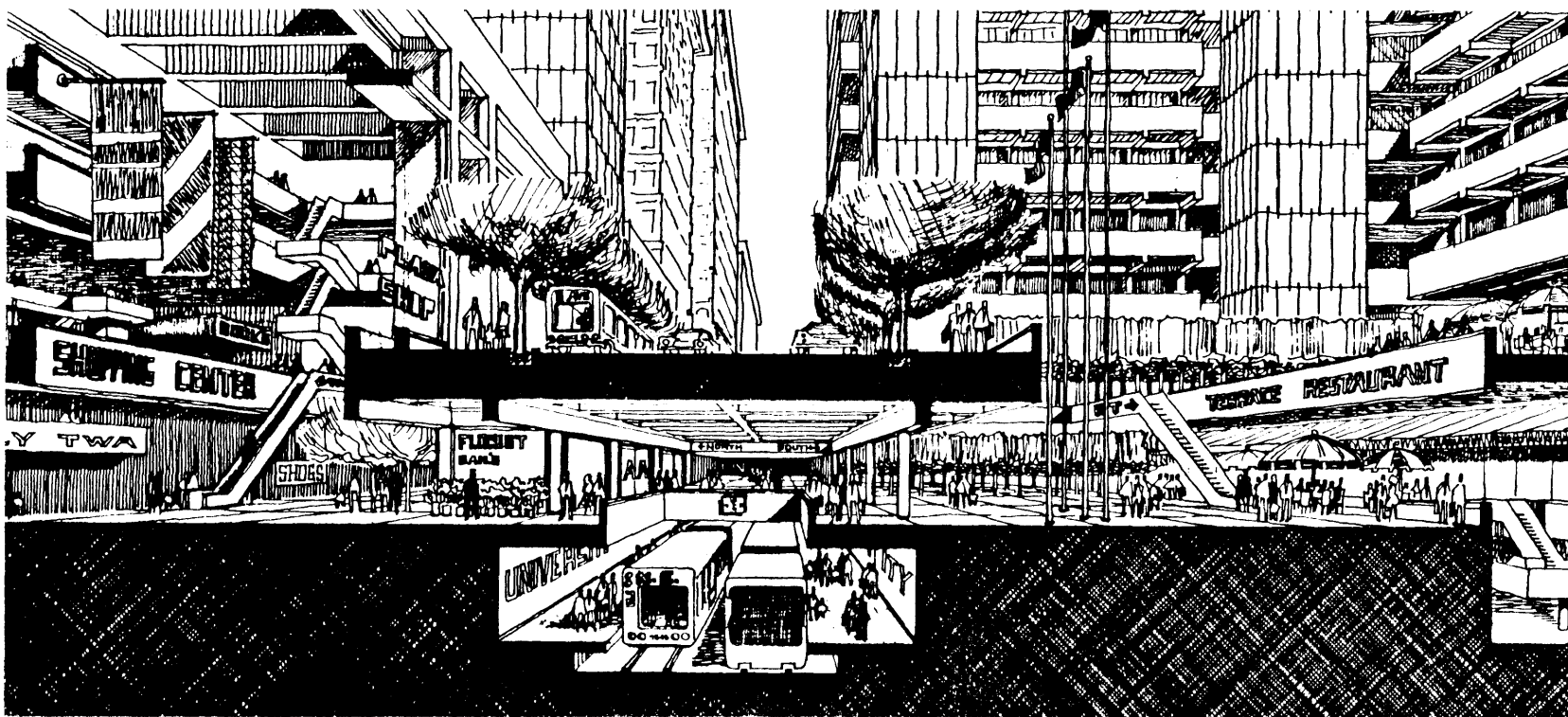
Overpasses, stairs and lagoons in Comacchio, Italy provide graceful and intriguing transitions between various levels of activity.

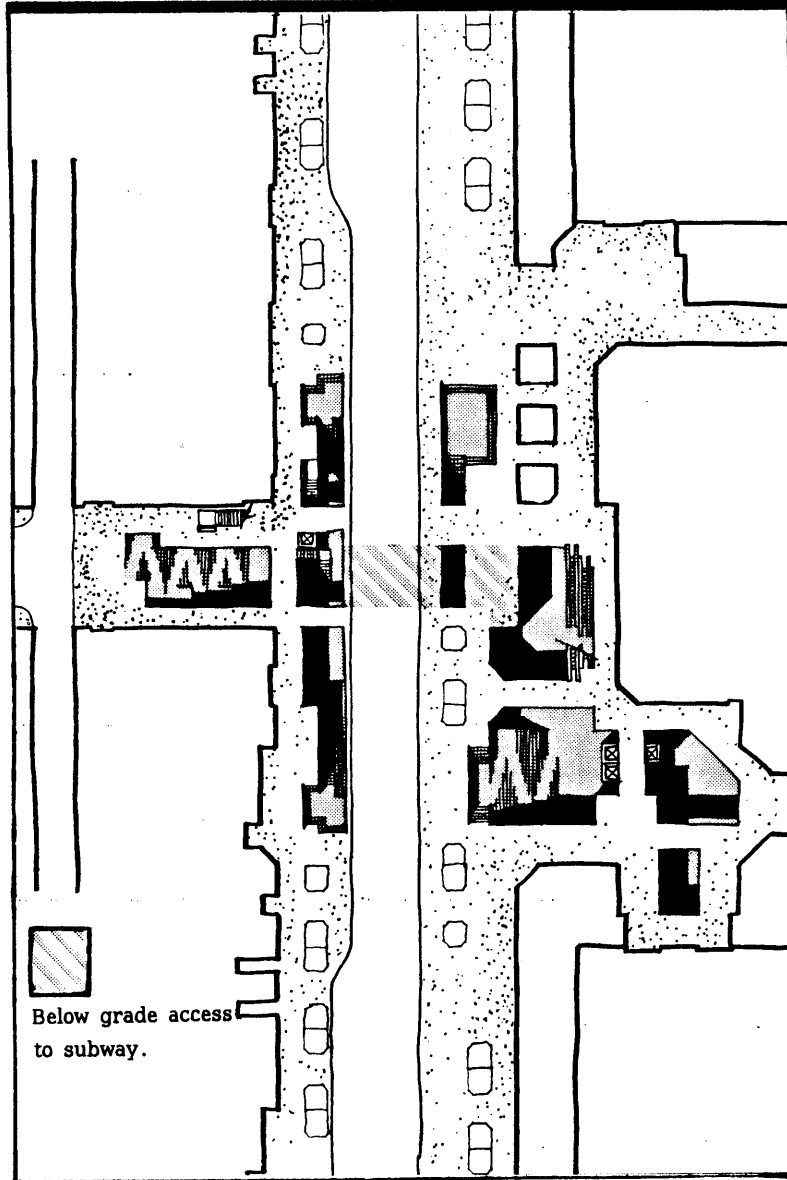


However, the inconsistent bursts and moving pedestrian traffic generated by the subway stations cannot solely maintain an active space. The surge of activity is short-lived. Passengers arrive on a train and then quickly disappear to their destinations. A recessed area which only serves the subway traffic runs the risk of becoming an inactive pit the majority of the time.

There should be a natural flow of people through the space who are not using the subway. The space should encourage various activities, such as retailing, personal interaction, and casual entertainment, which invite the passerby to pause for a while and contribute to the activity of the place.

24. Rapid transit study, Seattle.





The ample pedestrian areas of the Woodward Avenue site provide an opportunity to open up areas to the level below. The sidewalks on either side of the street are wide enough to allow for access and sunlight to below while leaving ample room above for circulation. State Street which intersects Woodward on the west side has already been converted into a pedestrian plaza and completely shuf off from vehicular traffic. The plaza will, in my proposal, form a large recessed access way to the subway station, and provide a sheltered route for pedestrians to cross Woodward.



Theater of the Street



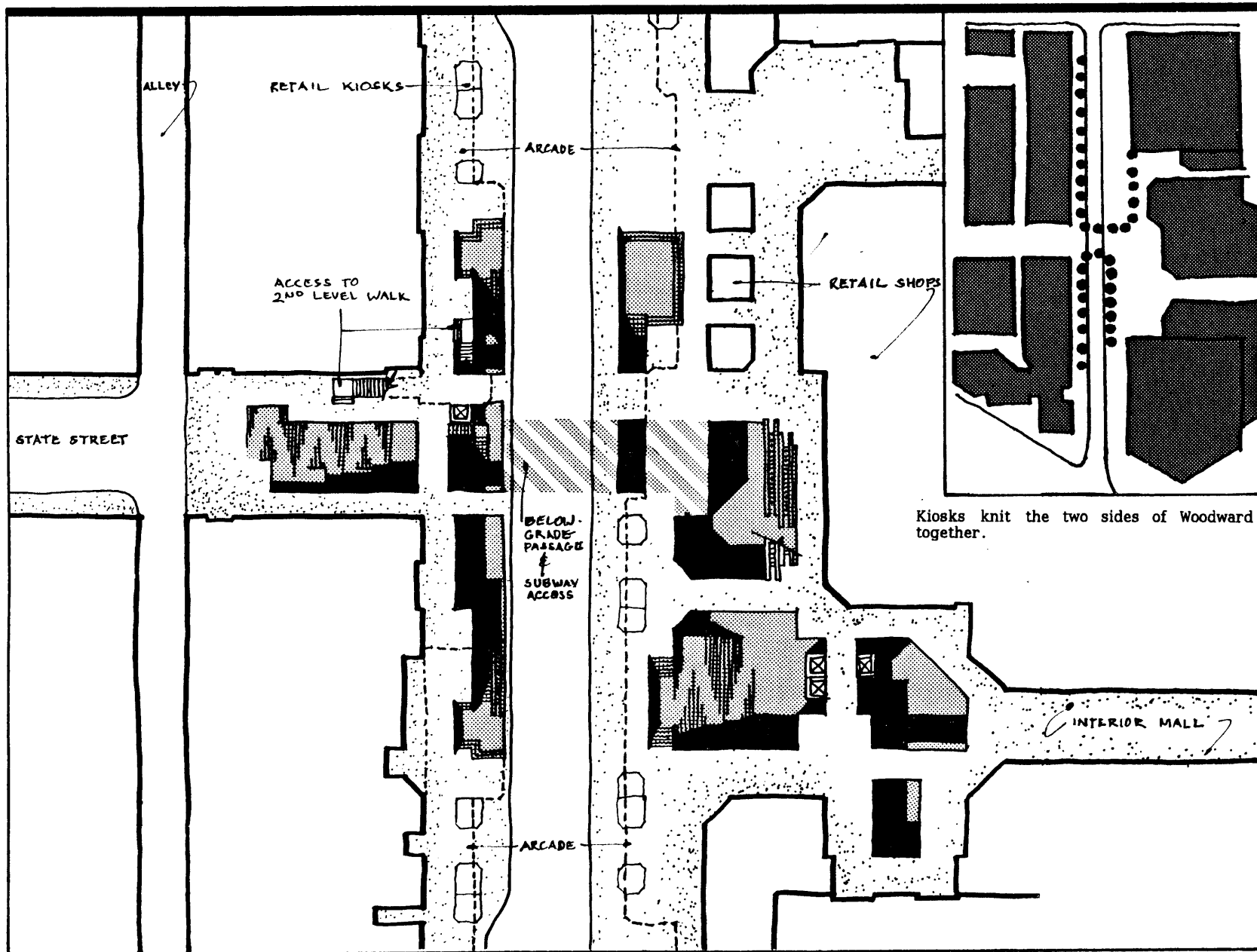
25. The Ripetta, Rome.



This proposal establishes a lower level pedestrian path which connects the two sides of Woodward Avenue. It will act as a mezzanine level for subway access below the street and connect lower level retail in Cadillac Square Mall with existing basement level retail across Woodward. By providing the pedestrian with an easy and protected way of crossing Woodward and by connecting the two clusters of lower level retail, the path generates its own pedestrian traffic in addition to that generated by the subway. It is open to sunlight on one end at State Street and on the other end at the shopping center's central space. Kiosks line the connection between the two sides of Woodward, joining the two retail environments.



The location of this recessed crossing at a busy pedestrian intersection will make it a major focal point of the area. Already the intersection is a popular place. It is the busiest retail intersection in downtown Detroit and people enjoy sitting and relaxing on the benches on State Street. Street vendors add to the flavor of the place, selling ice cream, fruit, candy, apples, newspapers, and various trinkets. The subway and the shopping center will greatly increase the number of people moving through the space.



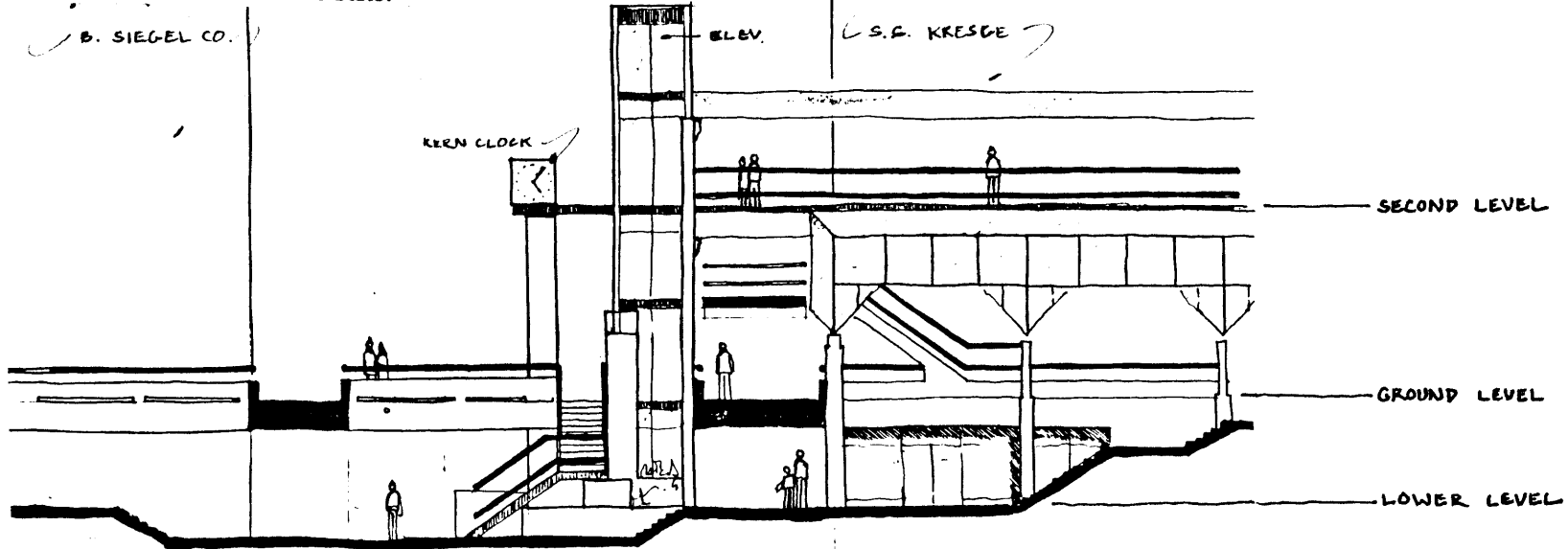
Kiosks knit the two sides of Woodward together.



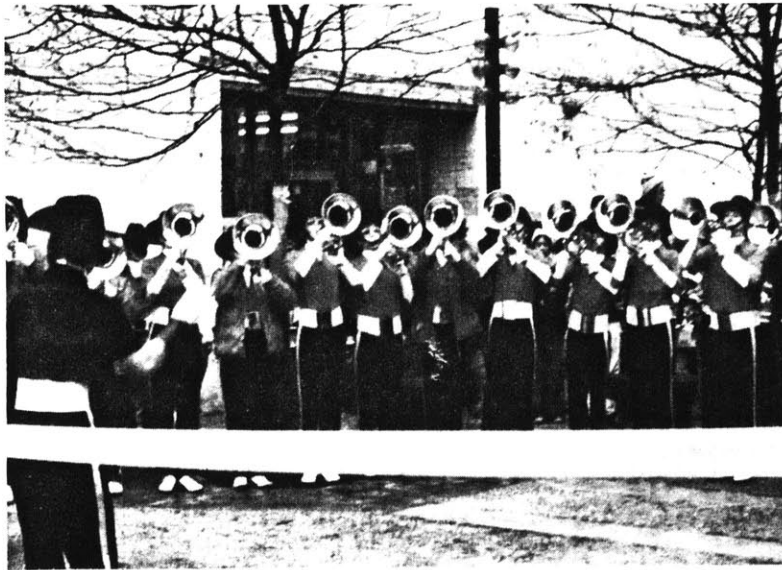
Activity, in my proposal, occurs on three levels. The street level and the lower level serve as the major pedestrian levels. A second floor provides access to offices, apartments and the upper levels of shops. This adds another dimension to the space and allow it to be used by more people and in more ways.

The intersection becomes both theater and stage with people casually taking part in activities of the street and observing them. The second level walk becomes a balcony overlooking the happenings below.

West elevation of Woodward at State.



Aside from the activities of the pedestrians themselves, there are many things which would occur in a busy area like this to which the typical person is an observer, rather than a participant. These "spectator" activities may be either programmed or unprogrammed. The programmed activities tend to be related to the private domain of the shopping center and include various concerts, performances, and speakers, all provided by the developer for the entertainment of shoppers. This is the kind of entertainment found today in many shopping centers.



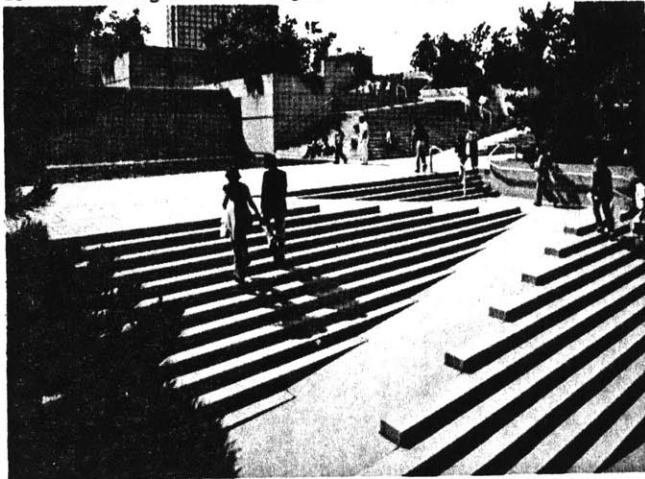
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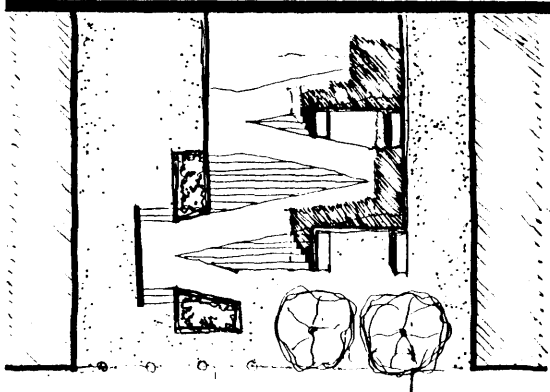


27. Stairs as a theater of urban activity: the Spanish Steps, Rome.

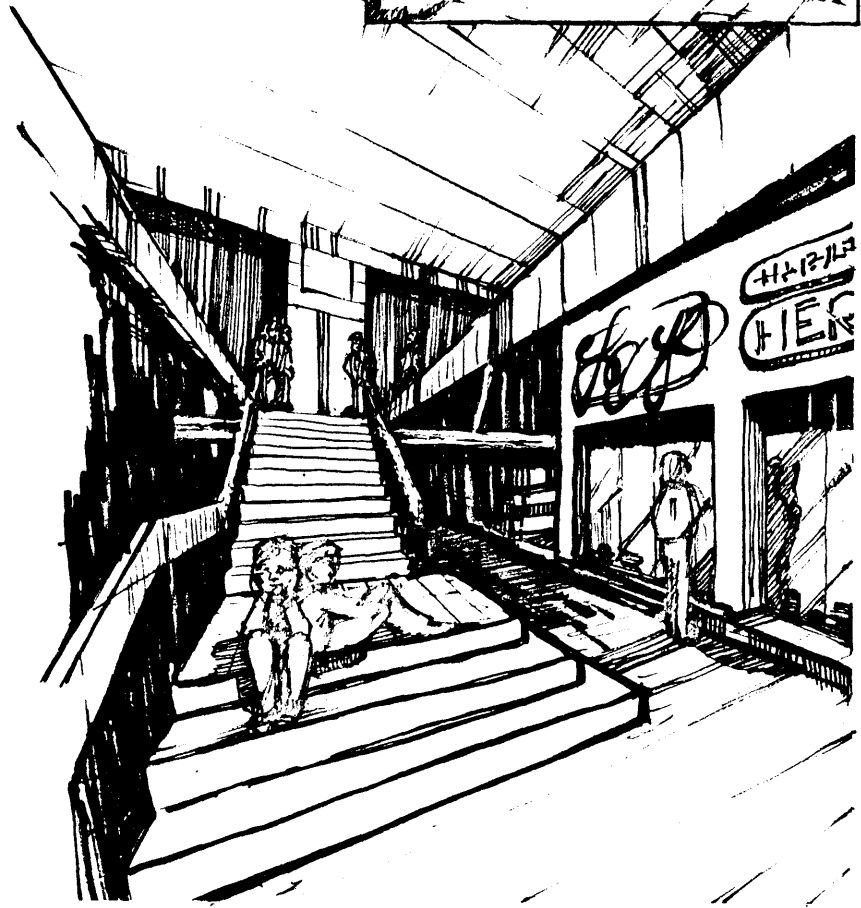
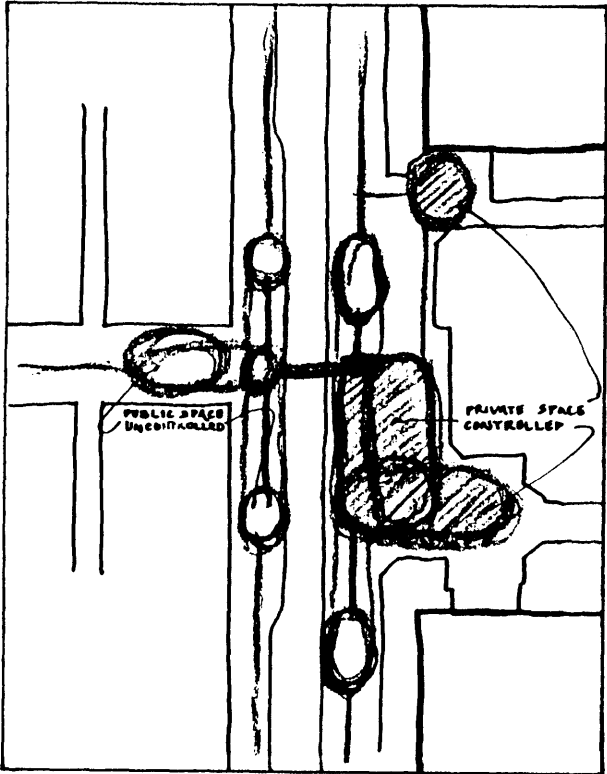
28. Cascading tiers of steps, Vancouver Government Center.



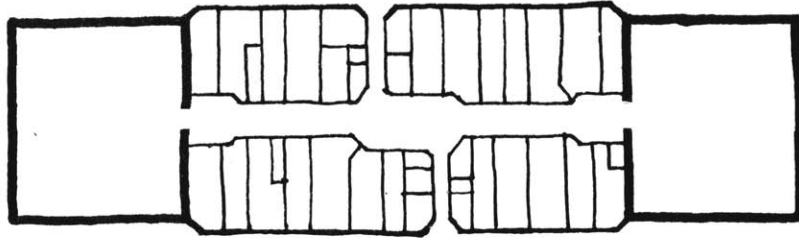
A public street supports a different kind of entertainment, the unprogrammed assemblage of street musicians, peddlers, and spontaneous speakers, which would not be permitted inside a private mall. This kind of street theater is always sorely missing from the activity of a suburban shopping center and is essential to the flavor of an active downtown gathering place. The central space of the Cadillac Square Mall will be controlled by the developer who, more than likely, will not permit such spontaneous entertainment to take place. The ground form of the public areas just outside the space includes informal theaters and stages where unprogrammed events may take place. Small areas have been defined--such as the recessed or raised landings at stairways and clusters of seating--which invite various kinds of activity and entertainment.



Designs to accommodate various types of informal activity.



Edges



A typical suburban shopping center's double-loaded mall arrangement leads to blank exterior malls.

29.

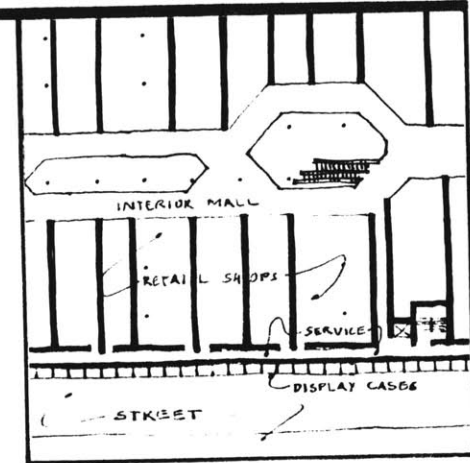


The conventional shopping center arrangement provides an enclosed mall with shops opening up on either side and anchored at the ends by large department stores. This practice, while economical for the developer, is in direct conflict with any attempt to provide the center with active, usable exterior edges. The stores present their fronts to the interior mall and their rears to the exterior edge. These rear edges are used for storage areas and service entrances, so we consistently find blank walls encircling shopping centers. All activity is oriented toward the inside mall.

This simple, double-loaded mall arrangement is very efficient for the developer who wants to minimize the amount of public circulation that he is maintaining in order to give access to the shops. This is fine when the center is located in the isolation of a suburban setting, completely surrounded by parking lots; but, it is damaging in an urban setting. Here, the center must not ignore its context: the street on which it sits, other retail establishments in the area, etc. The primary direction of the mall is parallel to the street and com-

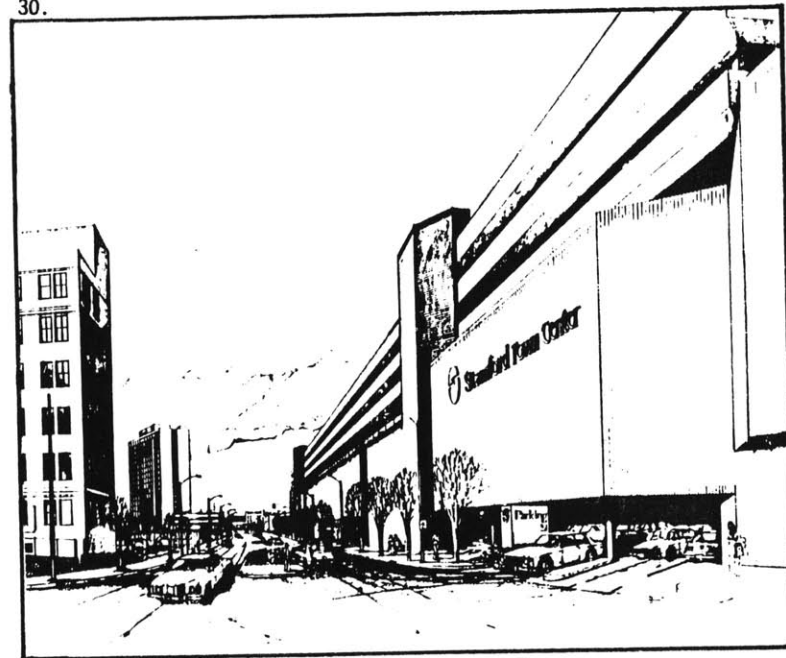
petes with it for pedestrian traffic. The row of stores facing inward forms a very thick and opaque barrier between the interior and exterior paths. There tends to be few entrances into the mall, minimizing the loss of valuable retail space. The result is very little relationship between the interior mall and the street.

The developer's present proposal for Cadillac Square Mall is very much like this: simply a suburban scheme transposed into an urban setting. The mall is separated from the street by a row of stores with their backs toward Woodward, a service corridor for deliveries to the stores, and a long brick wall broken only by a row of display windows - the only concession given to the street. Besides those in the department stores, there is but one entrance into the center along Woodward.



Cadillac Square Mall edge is blank to the street. The suburban model transposed into an urban setting.

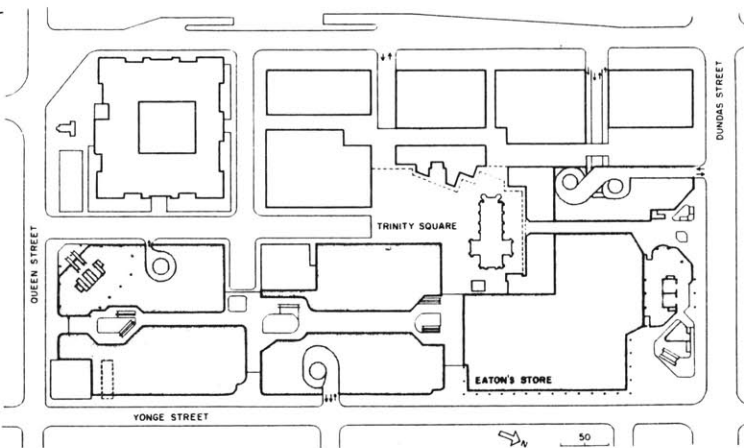
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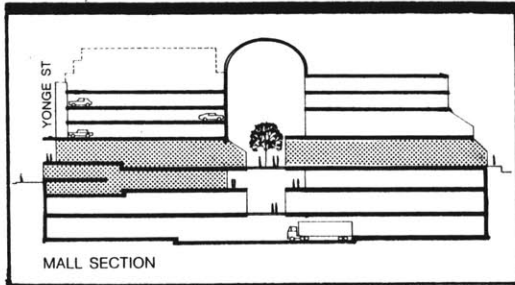


Eaton Center, Toronto: Unused storefronts face the street.

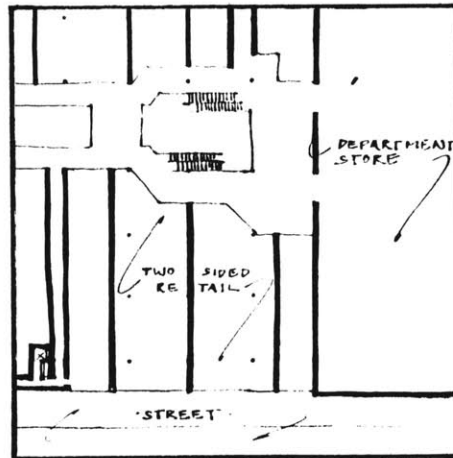
32.



In Toronto, the large downtown shopping complex, Eaton Center, attempts to solve this problem of the blank wall along the street while retaining that efficient double-loaded mall configuration. The framework provided by the developer allows for two-sided stores which open both into the interior mall and out onto Yonge Street, the popular shopping avenue in Toronto. As it turns out, however, retailers don't consider two-sided stores to be practical. They require two sets of security, two sets of cashiers, and people tend to use them as thoroughfares to get into and out of the shopping center. Most stores, therefore, have tended to favor one side over the other. Although Yonge Street is amazingly active and full of pedestrian traffic all day long, it can't compete with the well programmed, controlled retail world inside Eaton Center. So, the shops face onto the interior mall and present false, unused storefronts to the street.



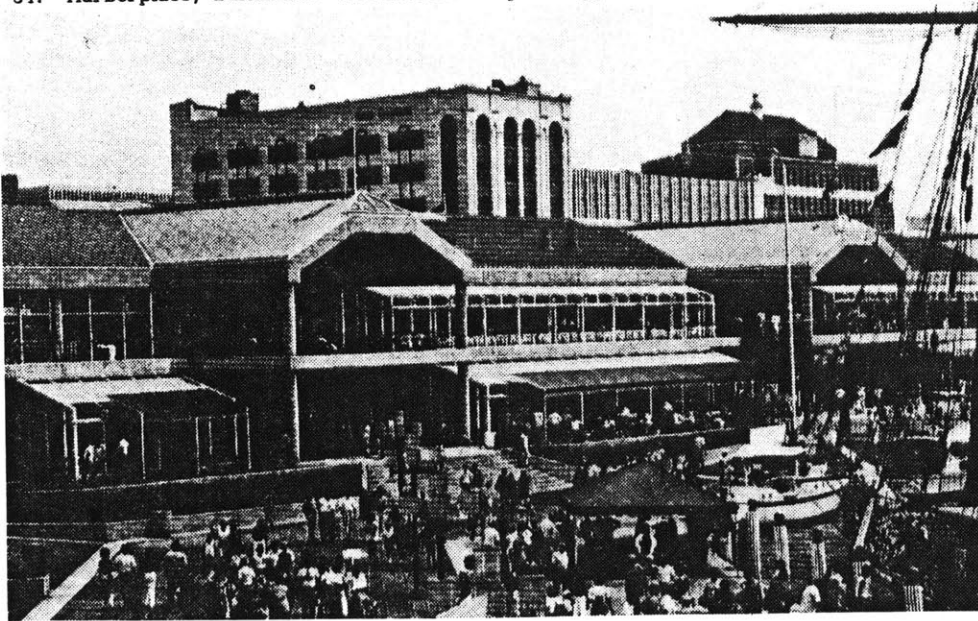
Most shops prefer to face onto the lively interior space rather than the street.



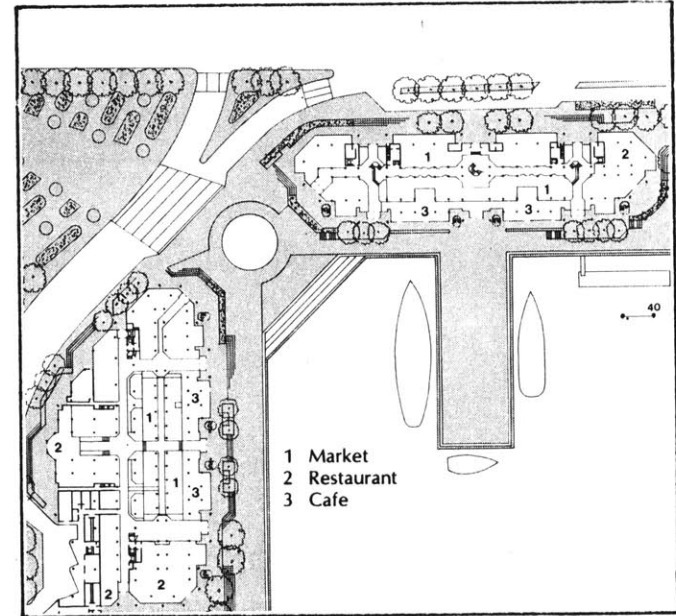
Harborplace in Baltimore acknowledges the fact that two-sided retail isn't practical. Being a specialty shopping center of somewhat smaller scale than Cadillac Square Mall, it has no large department stores and concentrates on small boutiques and eating places in the two buildings which make up the complex. It does have the more or less typical double-loaded malls running down its center, the shops on either side having blank walls at their rears. The difference

is that here several restaurants and cafes encircle much of the perimeter of the two buildings and are oriented to the outside rather than to the mall. They present lively glass facades which open to the exterior in good weather, and get rid of the problem of dealing with exposed blank walls at the rear of stores. Placing an additional row of stores along the street edge of Cadillac Square Mall would provide a more pleasant pedestrian zone than the row of display windows that have been proposed.

34. Harborplace, Baltimore: Restaurants wrap the typical double-loaded configuration.



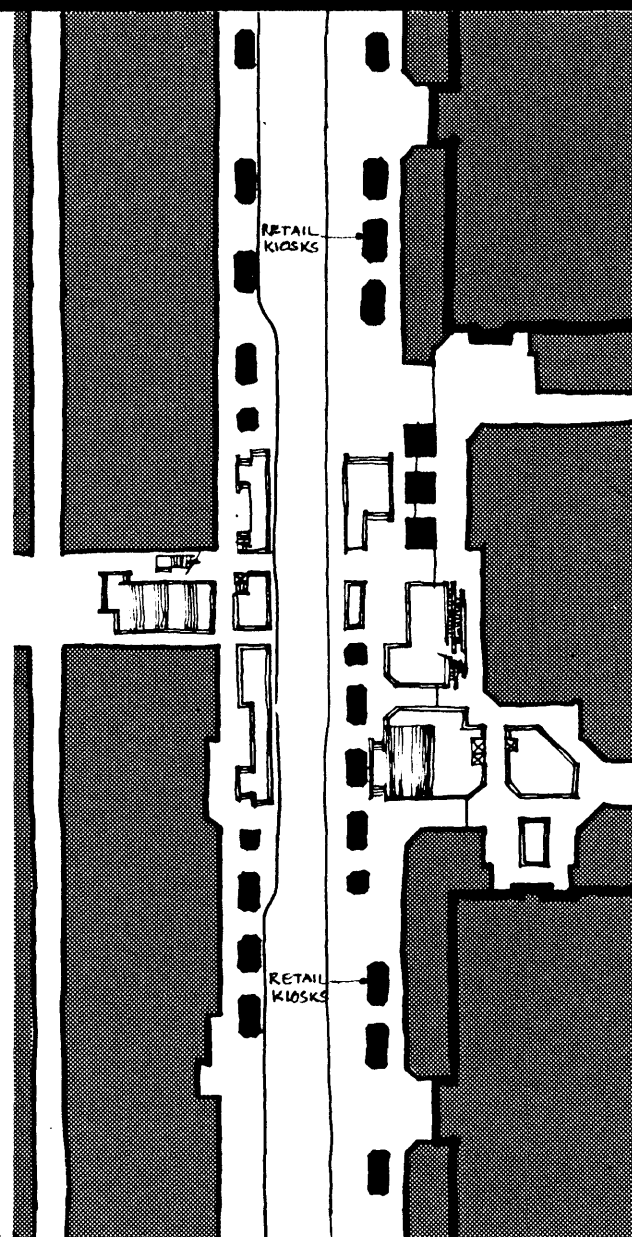
35.



The real solution seems to be to combine the path along the street and that along the shopping center mall into one. The stores of the shopping center would face out onto the street in the manner that is typical for retail stores. This implies only one row of stores as opposed to two as is found with interior malls. The single-loaded shopping space is very inefficient for the developer who can only lease half as many stores as usual.

What I propose for Cadillac Square Mall is to use this basic single-loaded concept, supplemented by a zone of retail kiosks in the pedestrian zone. This restores a double-load space along the pedestrian path, while separating the street and the path with a relatively thin, permeable, and basically transparent zone of retail, unlike the more typical thick, impassable and opaque zone.

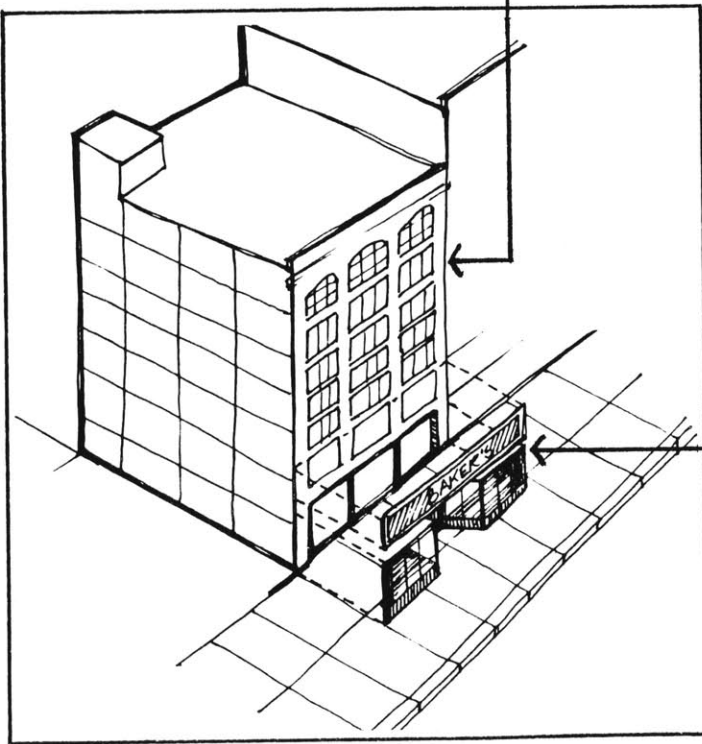
Proposed Cadillac Square Mall edge.



Framework and Infill

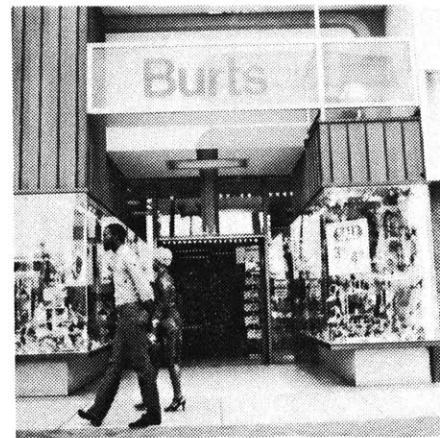


Framework



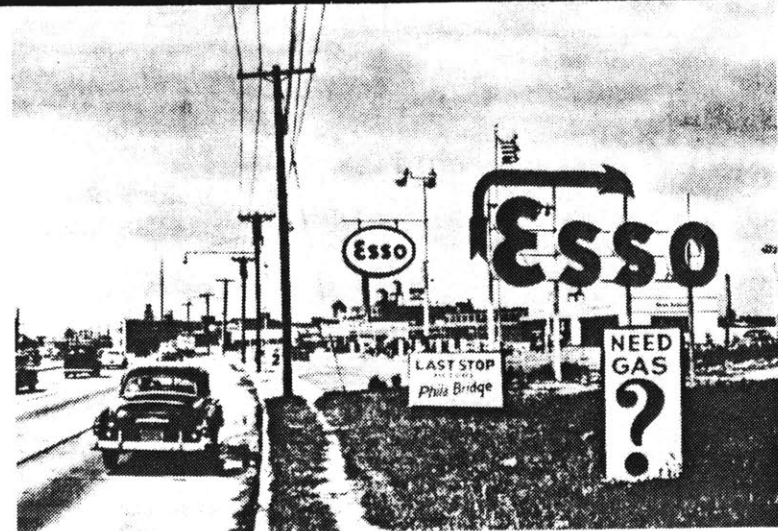
Infill

For the purposes of this thesis, I shall define framework as the predetermined and relatively permanent built system or form into which retail shops are placed. Infill is the assemblage of more changeable elements which occupy parts of the framework and make up the shops. On Woodward Avenue the framework is the rows of existing buildings which line the street and the shell of the proposed shopping center as provided by the developer. The infill is all of the stores, store fronts, signs, displays, etc., which are added by individual retailers.



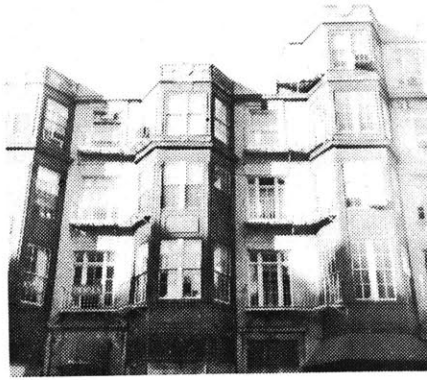
The character of retail streets and complexes runs the gamut from total chaos to total order. The former is typified by the American "strip" where retail establishments compete for the attention of quickly passing automobiles by presenting to the street huge, garish signs and bizarre, brightly colored buildings. Each attempts to be a unique, memorable image. All of this passionate, attention-grabbing infill occurs within the very weak context of the suburban highway. There is no strong framework of built form holding these highly individualized infill elements together. The result is complete visual chaos.

37.



36. The American strip: All infill with no framework.

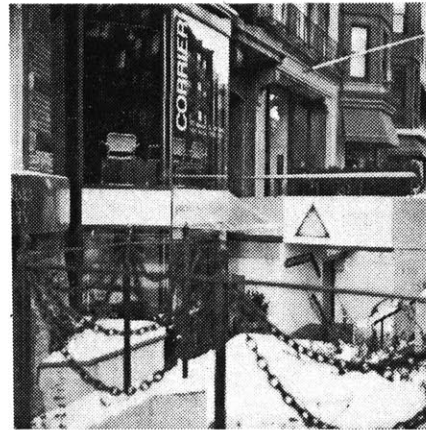
The other extreme, complete order, occurs when all built form has been prescribed by someone with authority over the whole complex. An example of this is Mies van der Rohe's Dominion Center shopping concourse in Toronto where storefronts and signs are all exactly alike--an uninteresting, international-style assemblage of black steel, glass, and Helvetica Medium. Essentially, the shopping concourse is all framework with very little opportunity for individual shop owners to create images of their own.



Newbury Street, Boston:
A rich framework.



Most retail environments lie between these two extremes. One of the most visually satisfying is the Newbury Street shopping area in Boston, where a very strong framework is complemented by a diversity of infill. Continuous walls of nineteenth century brick townhouses provide rich framework for the retailers to inhabit. As shops strive to create unique images for themselves, they must also work with and capitalize on the existing built form. Beside the usual zoning laws, there are no particular guidelines or rules to follow except those implied by the form of townhouses and good retailing sense. The result is a marvelous play of a diverse infill within a rich framework, full of subtle variations.



In a retail environment, the framework must be constructed first, stores and displays being filled in later. The developer or architect has direct control over the design of the framework and it is here that the greatest control over the image of the resulting environment can be exercised. Otherwise, careful control must be maintained over the design of each individual store to produce the desired environmental quality.

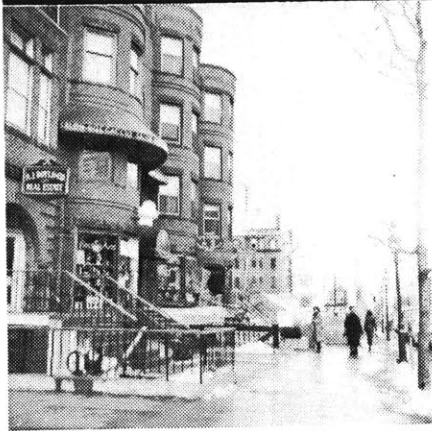
The Rouse Company, for instance, has created two very successful and attractive retail environments in Boston at Faneuil Hall Marketplace, and in Baltimore at Harborplace. Particularly in the case of Harborplace, the framework is basically a simple shed-like building infilled with various shops, kiosks, and carts. The resulting environment is pleasing but it is the product of very careful control of the shops, their appearance, and their quality, on the part of the developer. This is practical here because the Rouse Company, being a private developer and manager, has the ability to and interest in maintaining strong, continuous control. Usually, this is not the case when

dealing with a public street.

In cases where control over individual store design is not easily achieved, or is not desired, the framework should be strong and rich in appearance, not simply background.

38. Harborplace, Baltimore: Simple shed-like structure.





Like Newbury Street's framework, it should be able to stand by itself as a piece of cityscape, then offer, through its form, clues or guidelines on how it may be inhabited by infill. The storefronts, signs, displays, and kiosks which occupy the framework will enrich the framework by adding depth, variety and intensity.



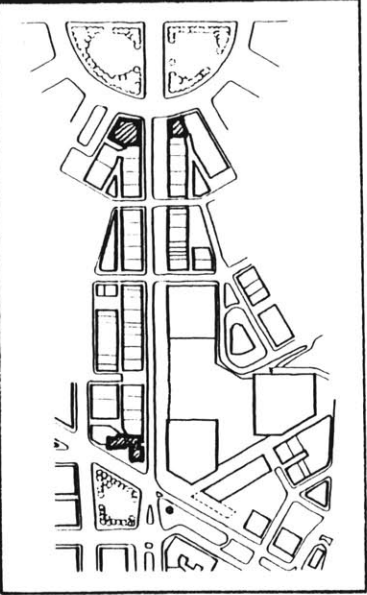
B. Siegel Co.

Being a public street, Woodward Avenue does not have the control over its tenants that the Rouse Company has at Harborplace. There is no public organization with the responsibility to set up guidelines governing the form and quality of storefronts and kiosks, review tenants plans, and constantly monitor alterations and signs. While the formation of such an organization is possible and not unheard of, the bureaucracy and the cost to the public that accompany it should be avoided and minimized. Woodward must rely primarily on its physical framework to give guidance to stores and signs.

When observed on the larger scale, Woodward's existing framework is handsome and well defined. Its walls of somewhat pretentious turn-of-the-century commercial buildings provide a warm, colorful backdrop for retail activity on the street. The four-block area punctuated by taller buildings at its ends reads well as an urban space and has the spirit of an important shopping district.



Kennedy Square.



Woodward Grand Circus Park:
A well-defined urban space.

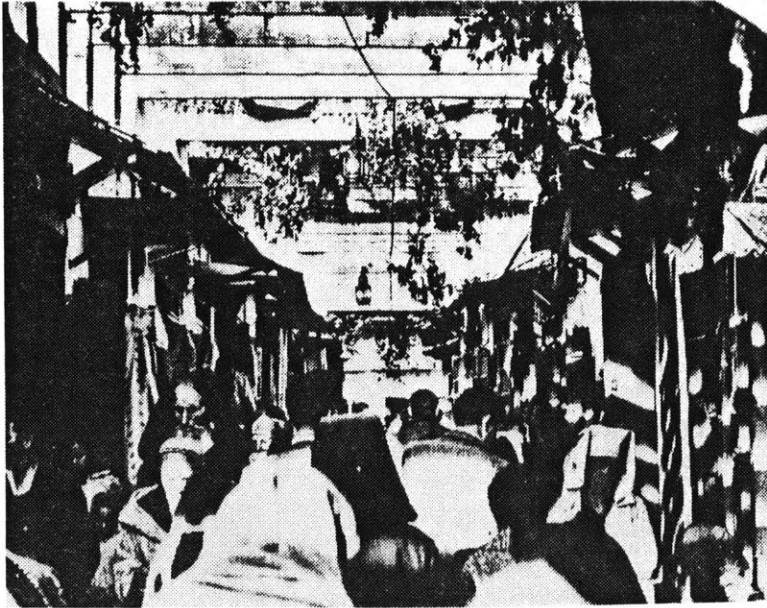




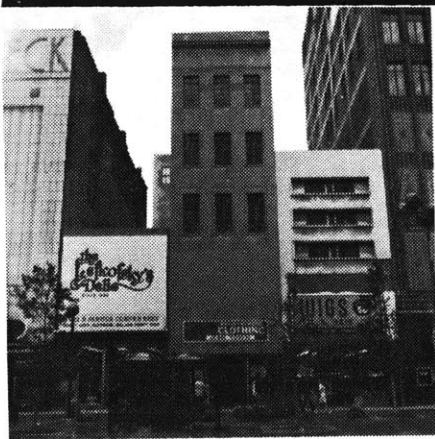
Newbury Street

Morocco: A canopied pedestrian street provides a framework to be inhabited by merchants.

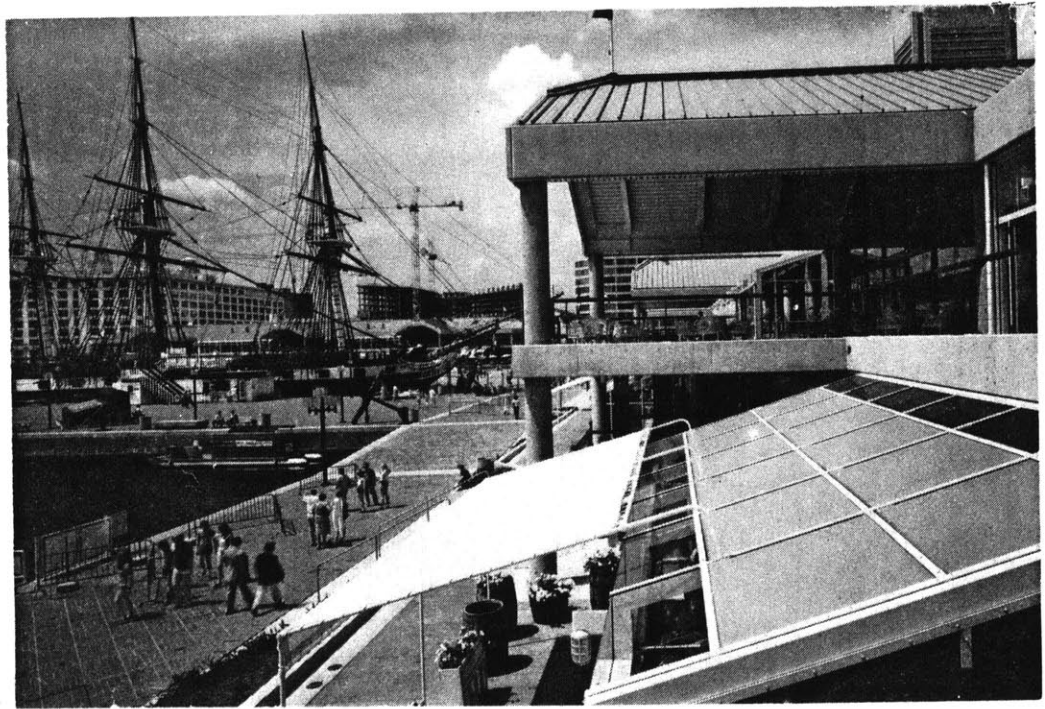
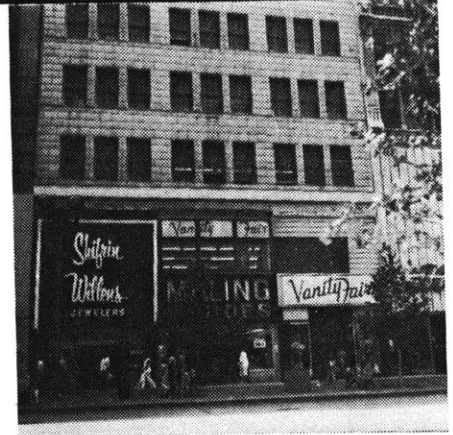
39.



On a smaller scale, however, the framework is rather weak. It gives the retail infill very simple clues as to how it may be inhabited. Display windows occupy the first floor facing directly onto the sidewalk. Only inset doorways brake the flat street edge. Large signs occupy the second level of the facade, frequently meaning no window at this level. The form of the buildings does not suggest canopies and few stores have taken the initiative to provide them. There are no bay windows to inhabit or setbacks to bridge as on Newbury Street in Boston. Nor do the building facades imply depth, as they do in Harborplace in Baltimore. There is no zone of transition between interior and exterior, or continuous pedestrian shelter as with arcades and the canopied streets of Morocco. The result is that there is no zone of transition between interior and exterior, or public and private spaces. There are no spaces in the public realm that can be claimed and occupied by private retail, and there are no spaces in the private realm that really contribute to life of the street.

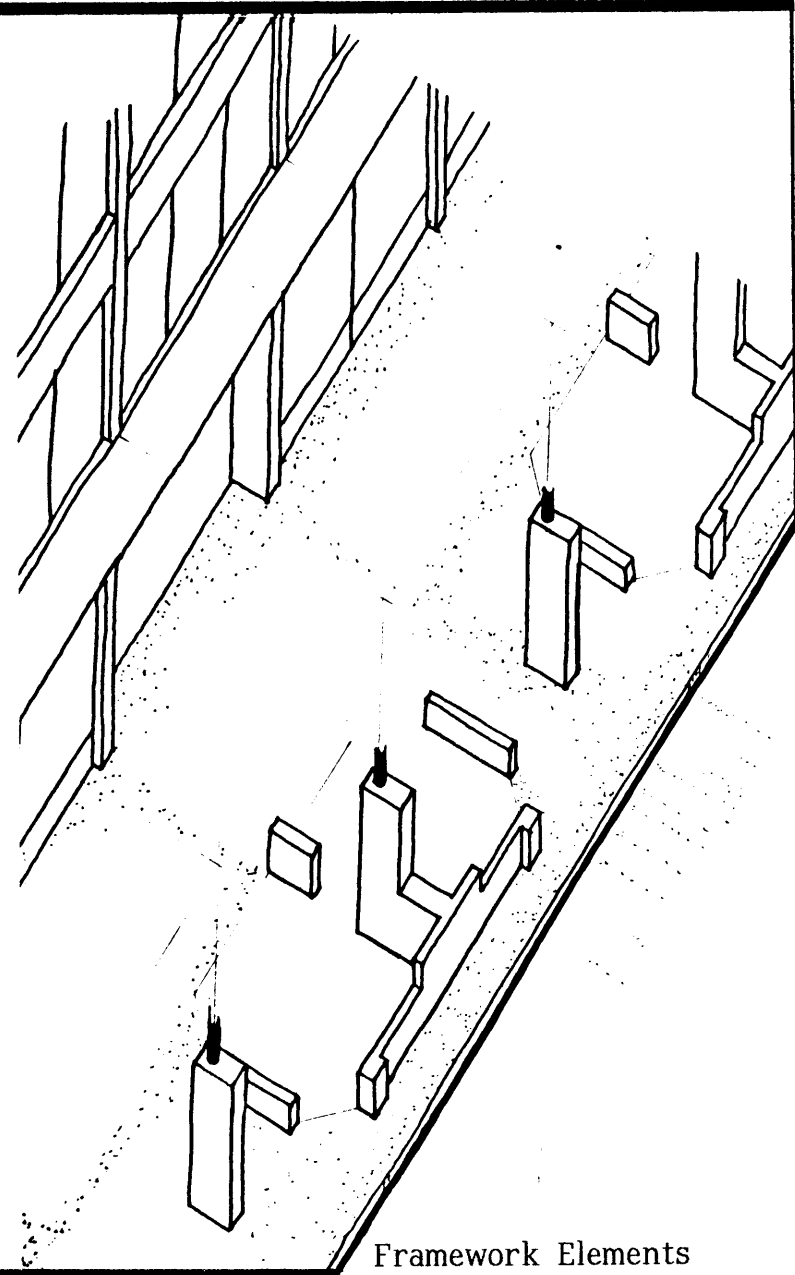
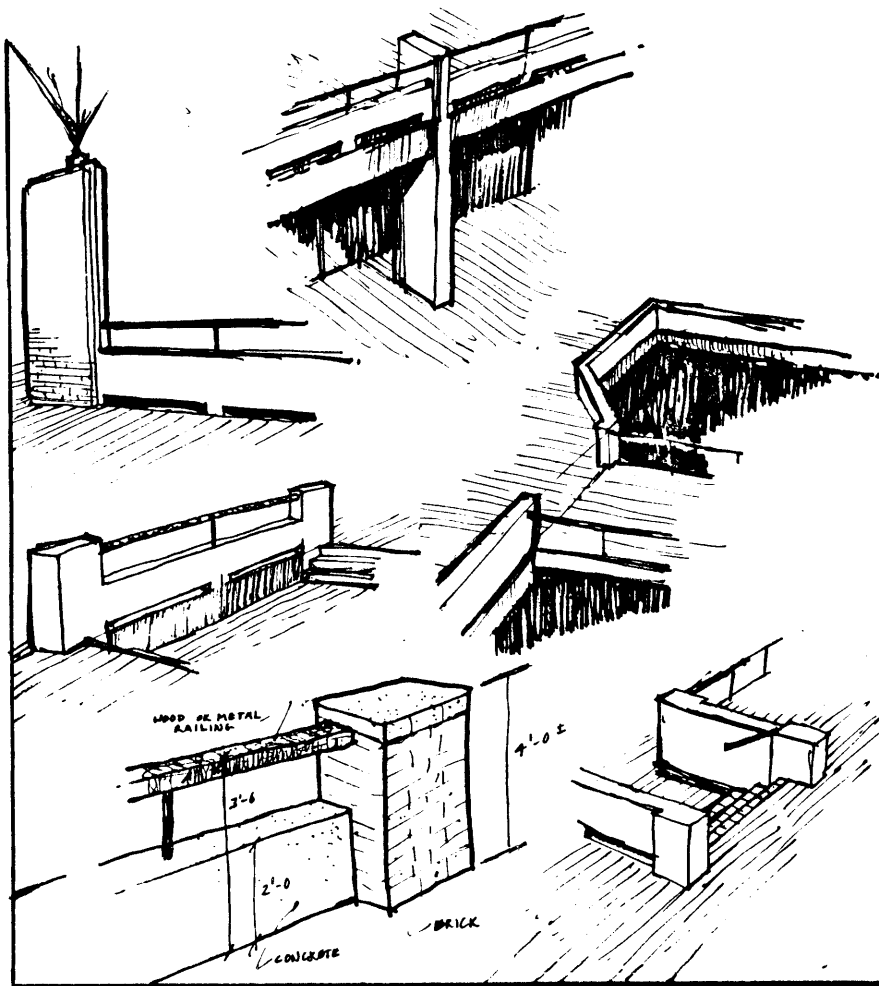


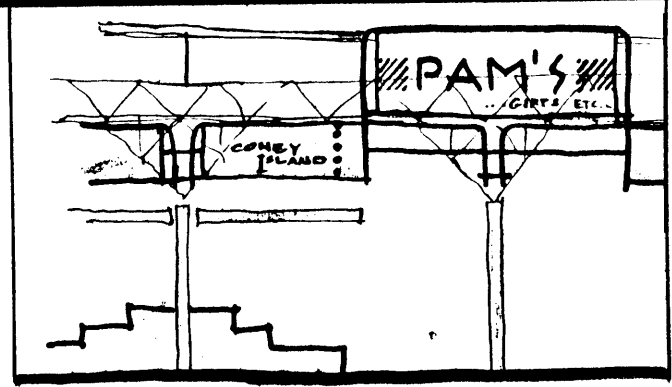
Flat facades along Woodward.



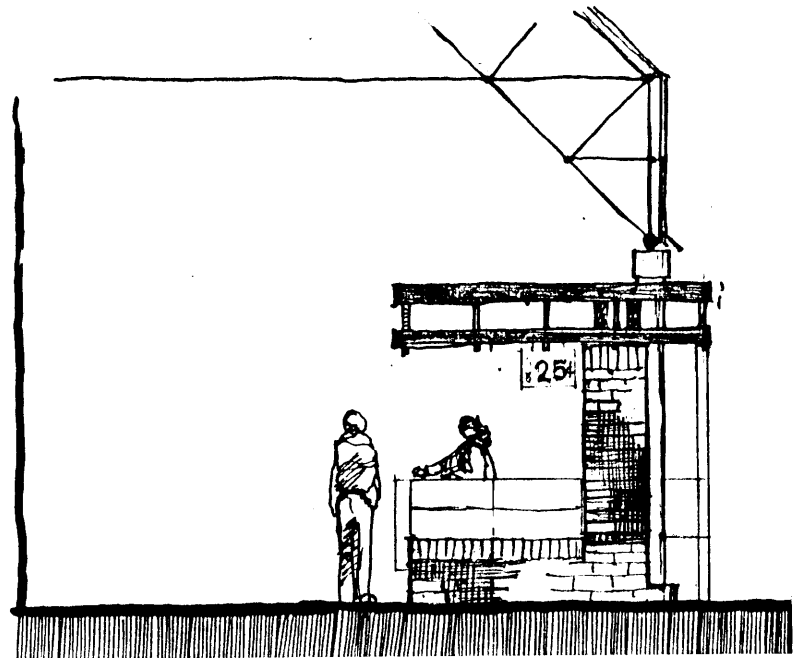
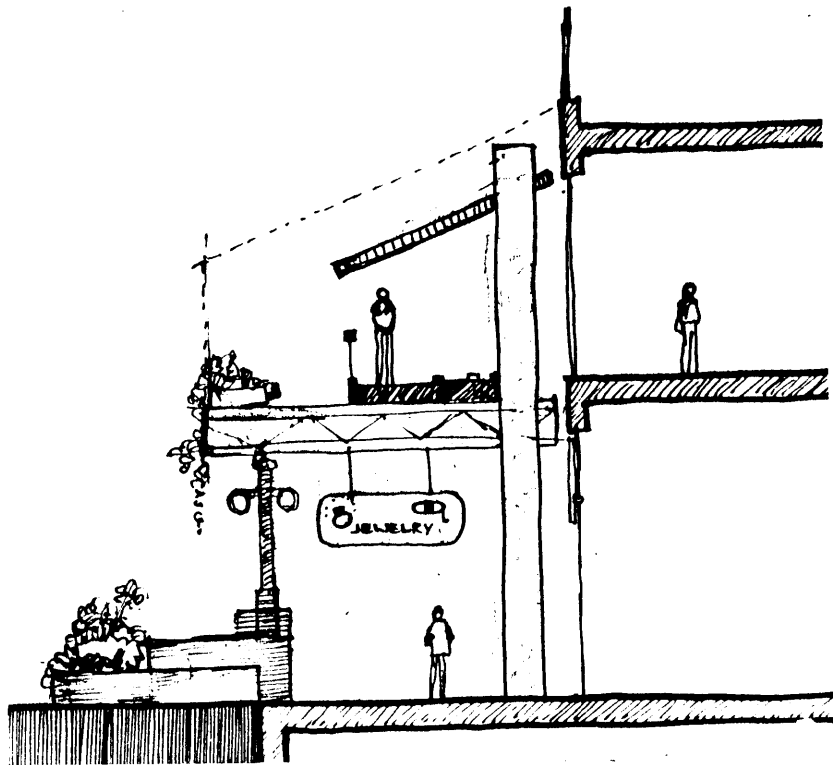
40. Harborplace, Baltimore: Depth of the facade.

The arcade proposed in this thesis will act as a piece of the street's physical framework. It will add depth, transparency, shelter, and claimable areas to the building edge, enriching it as a framework.

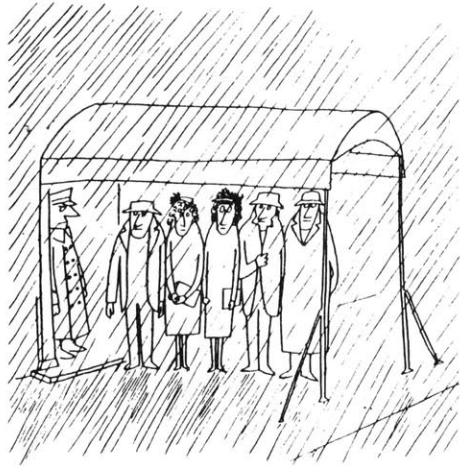




Infill Elements

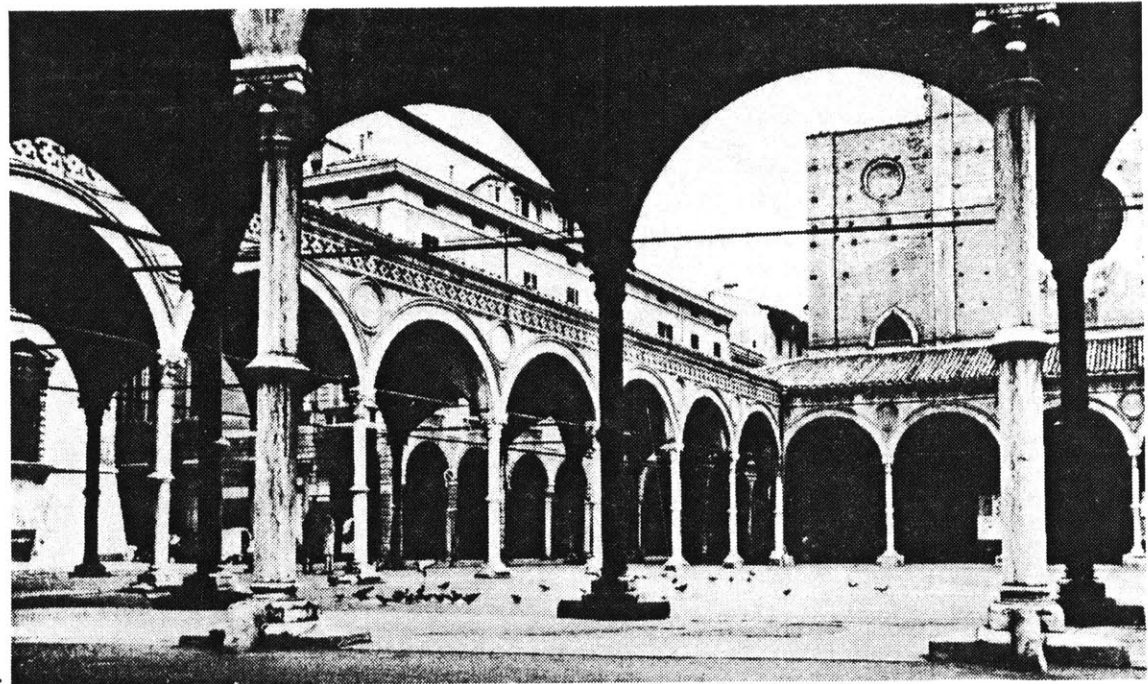


Enclosure



41.

There are basically two concerns with the various types of enclosures used in the project. They are weather protection for the shoppers and the establishment of a transitional zone between interior and exterior areas.



42.

43. Nicollet Mall, Minneapolis.



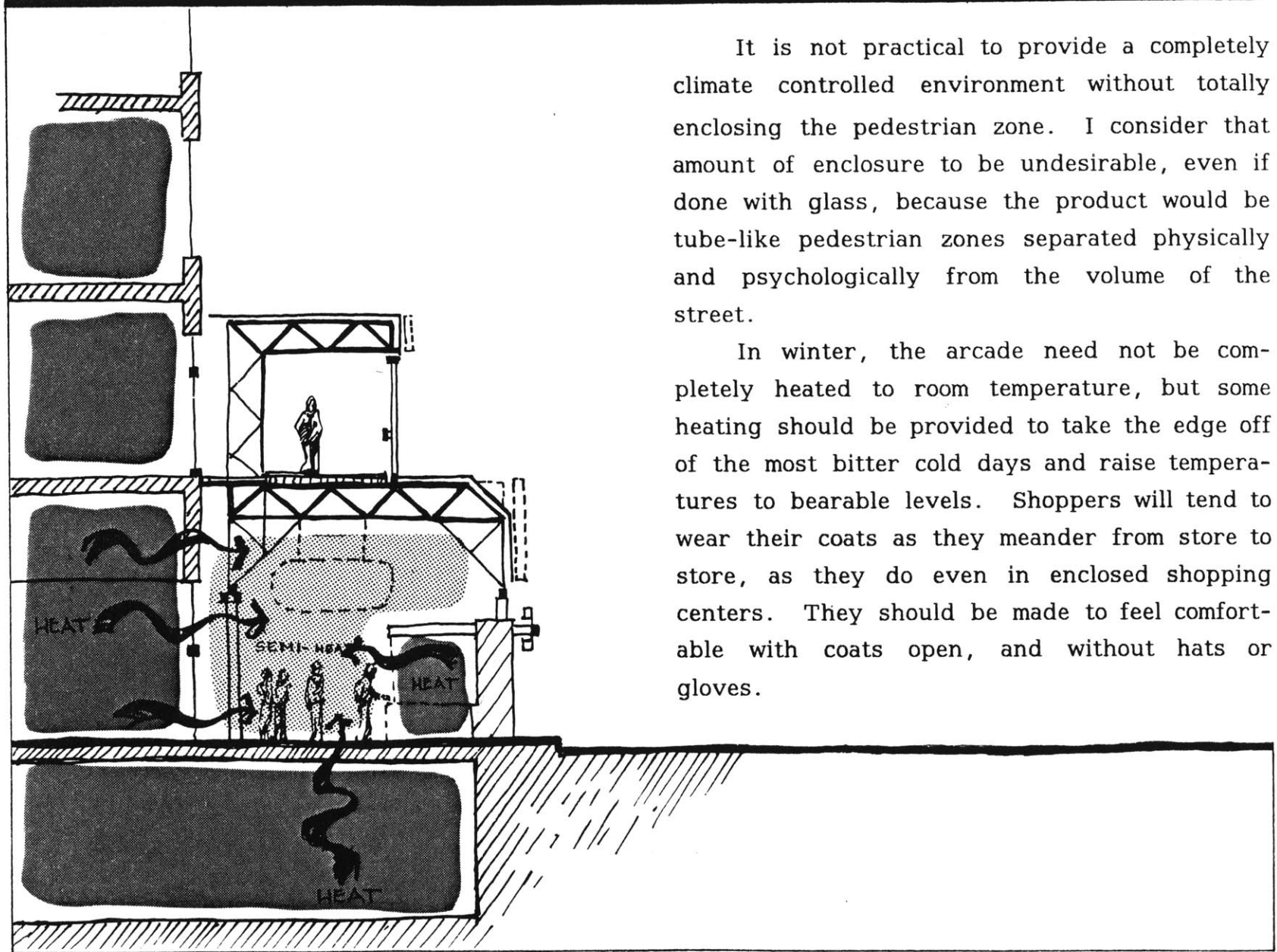
Weather Protection

The climate in Detroit is rather harsh with its cold, snowy winters. Attention must be paid to the comfort of Woodward Avenue shoppers if the street is to compete successfully with Cadillac Square and other enclosed shopping centers in the area. This is especially true in light of the importance of the Christmas season to any retailer.

The primary pedestrian paths should be covered with an arcade or such to protect shoppers from rain and snow. Extra protection may be provided in some critical areas--stairs, for example--by use of side enclosures of

buried electrical heating units in the walking surfaces to melt snow as was done on Minneapolis' Nicollet Mall.

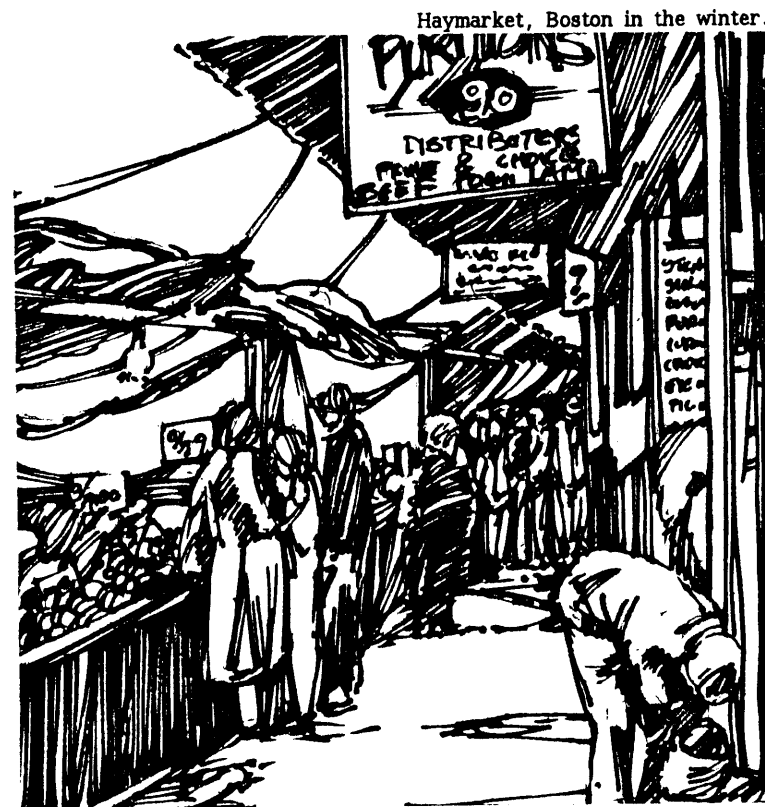
It is important that there be controls for the wind along the pedestrian path within the arcade, because of the possible wind tunnel effect which can occur on the long street and the wind-chill factor's impact on the shoppers' comfort in the winter. The space will be made "rough" with various signs, partitions, and other obstructions to help impede air flow through the space.



It is not practical to provide a completely climate controlled environment without totally enclosing the pedestrian zone. I consider that amount of enclosure to be undesirable, even if done with glass, because the product would be tube-like pedestrian zones separated physically and psychologically from the volume of the street.

In winter, the arcade need not be completely heated to room temperature, but some heating should be provided to take the edge off of the most bitter cold days and raise temperatures to bearable levels. Shoppers will tend to wear their coats as they meander from store to store, as they do even in enclosed shopping centers. They should be made to feel comfortable with coats open, and without hats or gloves.

Kiosk owners, however, will tend to want their small shops heated more closely to indoor temperatures, although they are actually outdoors. The shoppers will be drawn toward the warm little havens just as people tend to huddle around a fireplace. Heating can be provided by each kiosk individually with small electric units. Heating in the arcade will be kept minimal. Comfort can be maximized by keeping winds out and "stealing" heat from the kiosks and buildings. Warm buildings line one side of the pedestrian zone within the arcade. The other side becomes more protected as more kiosks are established. Heat from these two sources along with the cover should keep the pedestrian zone relatively comfortable.



Transition

Creating a sense of smooth transition from the interior world of the shopping center to the exterior world of the street is essential. For shoppers, the flow between the two should be natural, almost unconscious. A major blockade to the effective integration of an enclosed complex and an open street is the strong distinction that exists between interior and exterior. The traditional types of enclosure provide a

definite perimeter wall and an abrupt entrance and exit which differentiates strongly between the interior and exterior, therefore impeding the natural flow from one to the other. It also becomes difficult for retail activities to occupy exterior space without any partial shelter available. The existing storefronts tend to be simple glass curtain walls, sometimes with recessed entrances. Most shops offer no shelter from sun or rain to pedestrians, and none occupy or energize the sidewalk to any extent.



44.

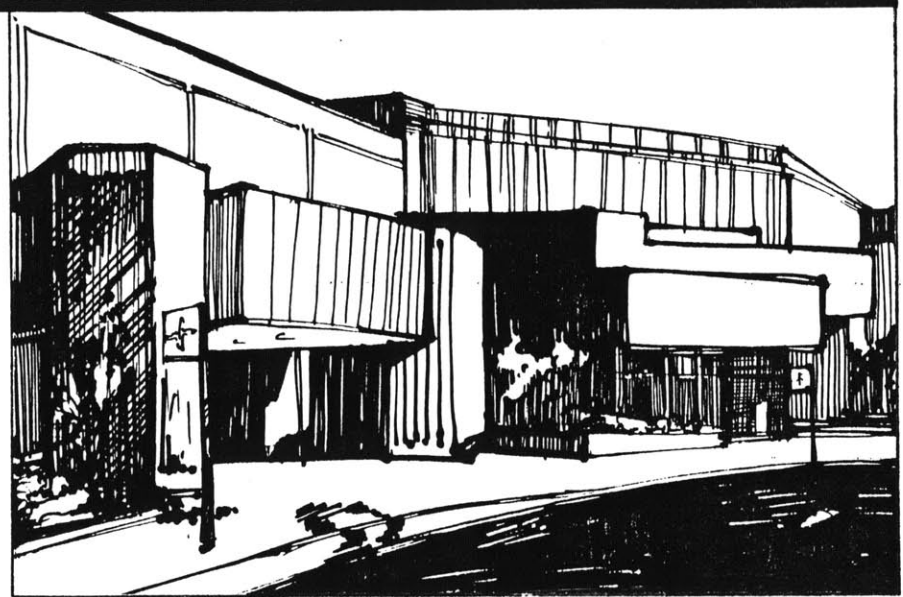
45.

Arcades form a zone of transition from interior to exterior.

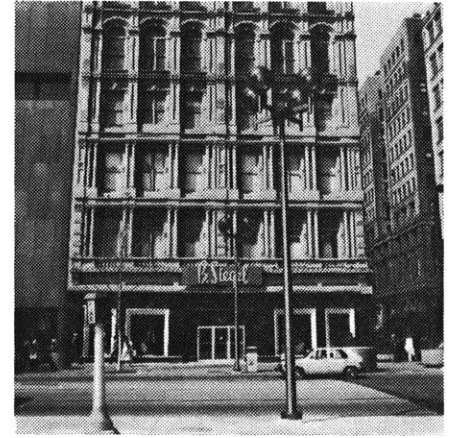




The Gallery, Philadelphia: The entrance, though large and made of glass, is set back from the street and is too abrupt. The street and the interior mall remain quite separate.

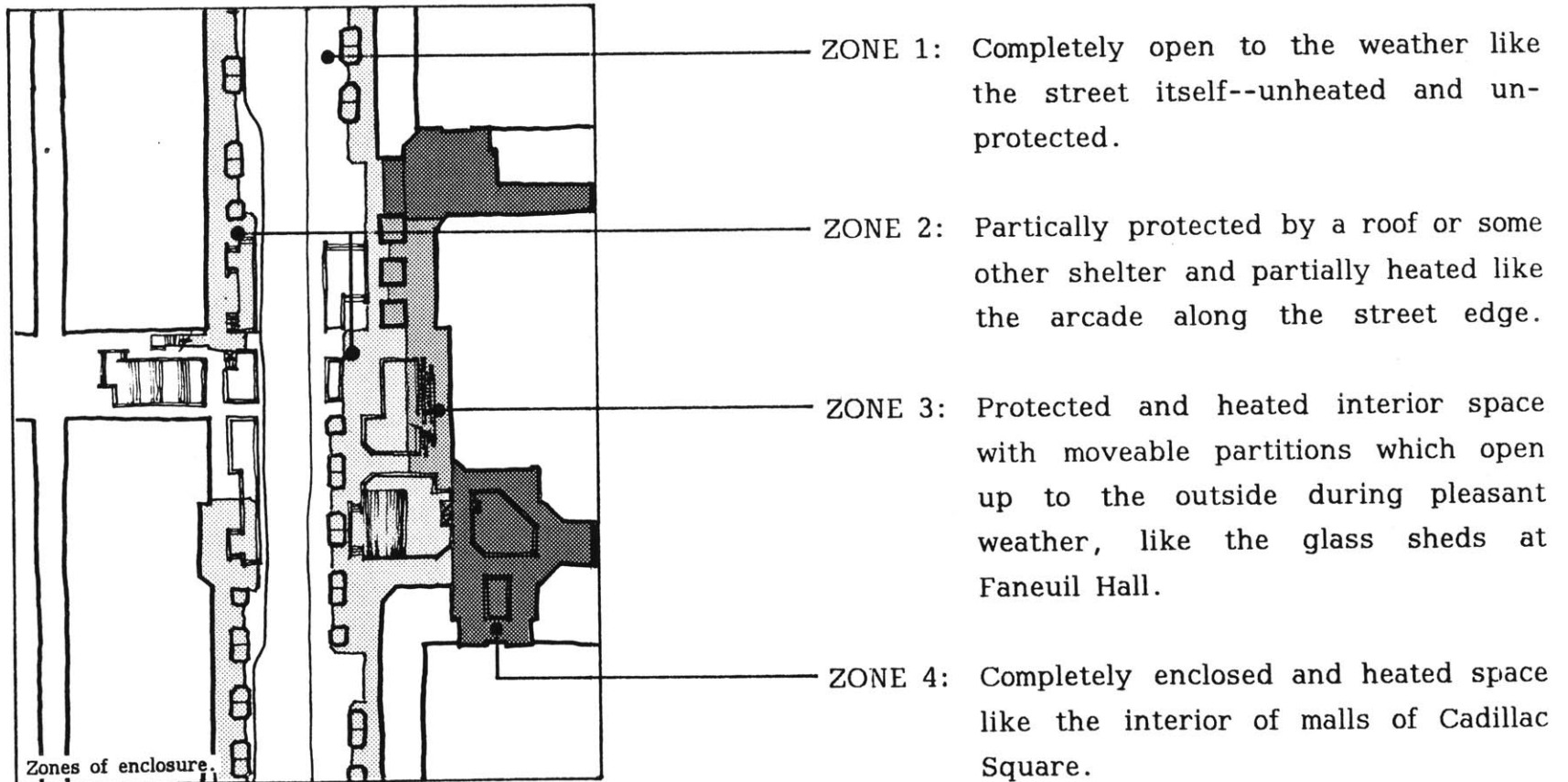


Fairlane Town Center, suburban Detroit: sharp interior/exterior differentiation.



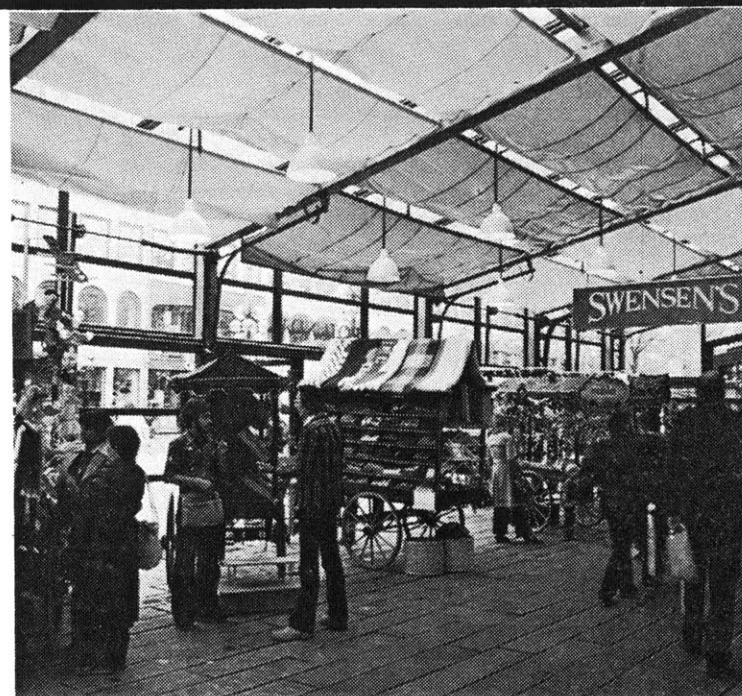
If the degree of enclosure gradually changed as one filtered through various layers of partial enclosure, the interior to exterior transition becomes much smoother and more natural. With no sharp differentiations between interior and exterior, the two worlds begin to blend together.

For Woodward Avenue we can set up a simple system of zones of enclosure to aid in the transition from interior to exterior.





ZONE 1: open street.



ZONE 3: movable enclosure.

47.

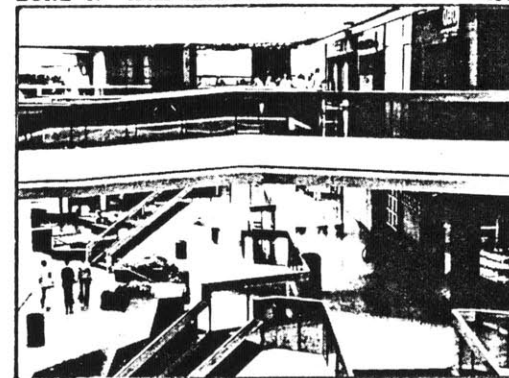
ZONE 2: shelter.

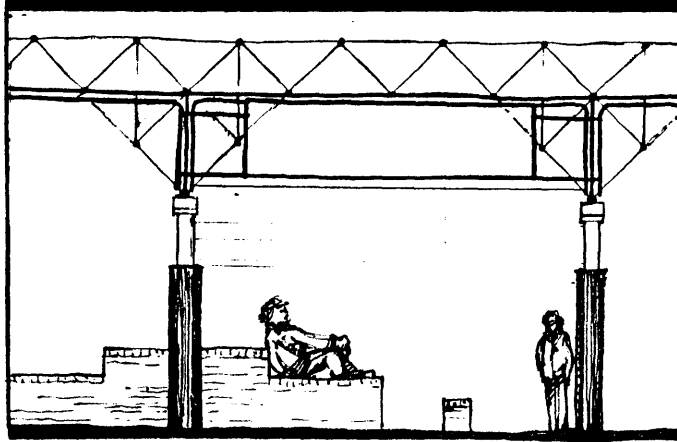
46.



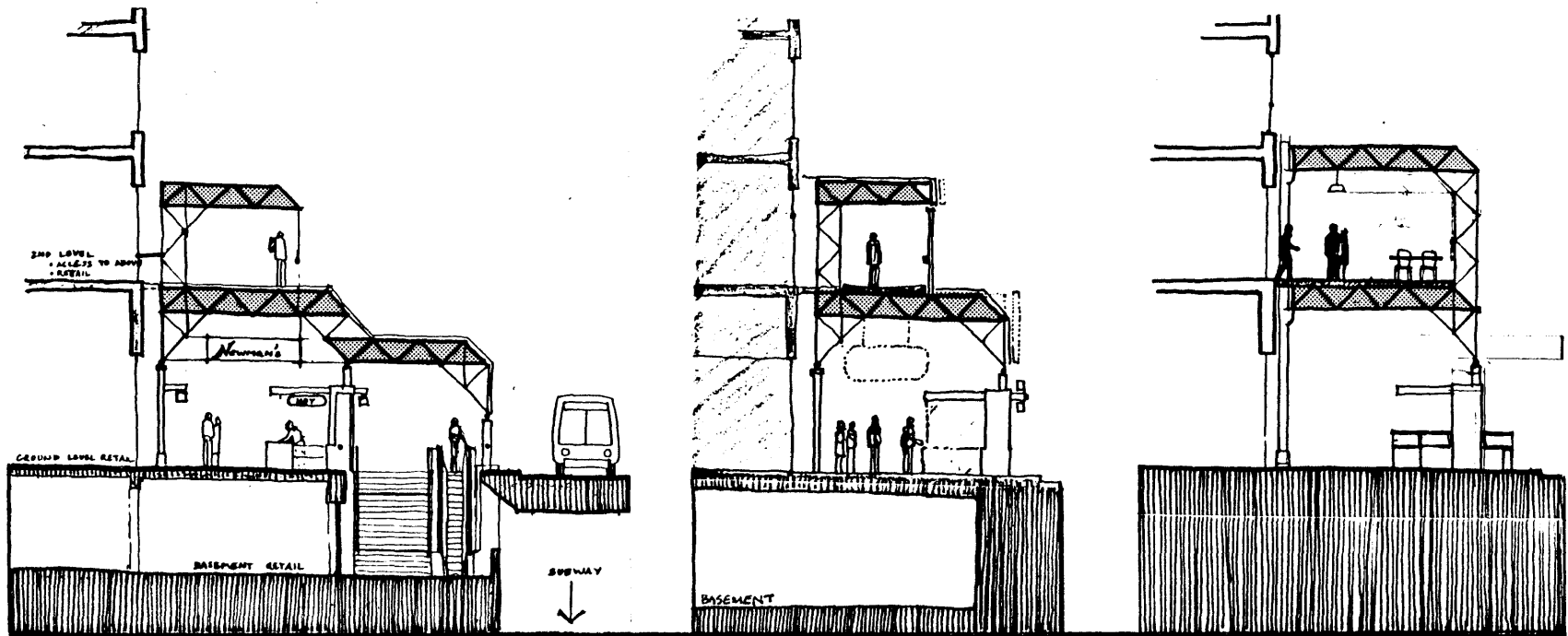
ZONE 4: total enclosure.

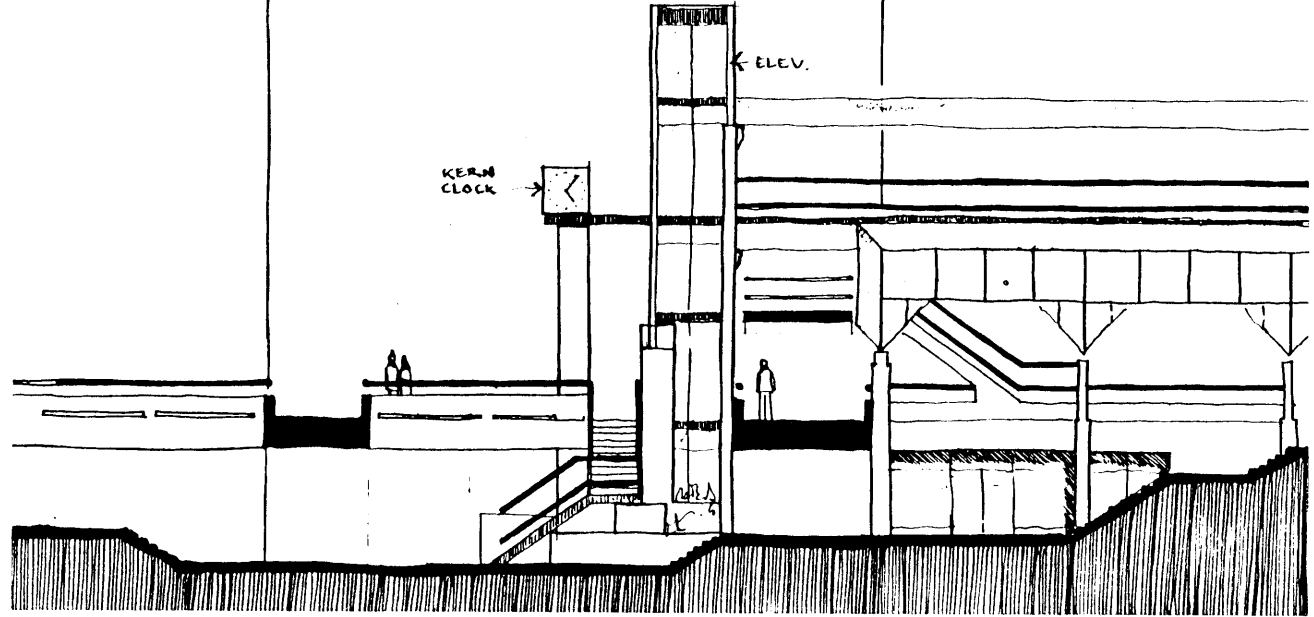
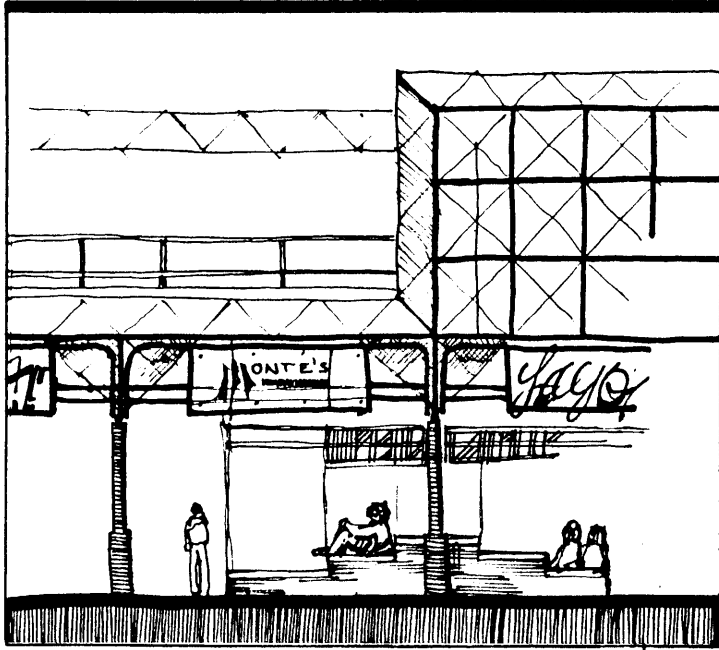
48.

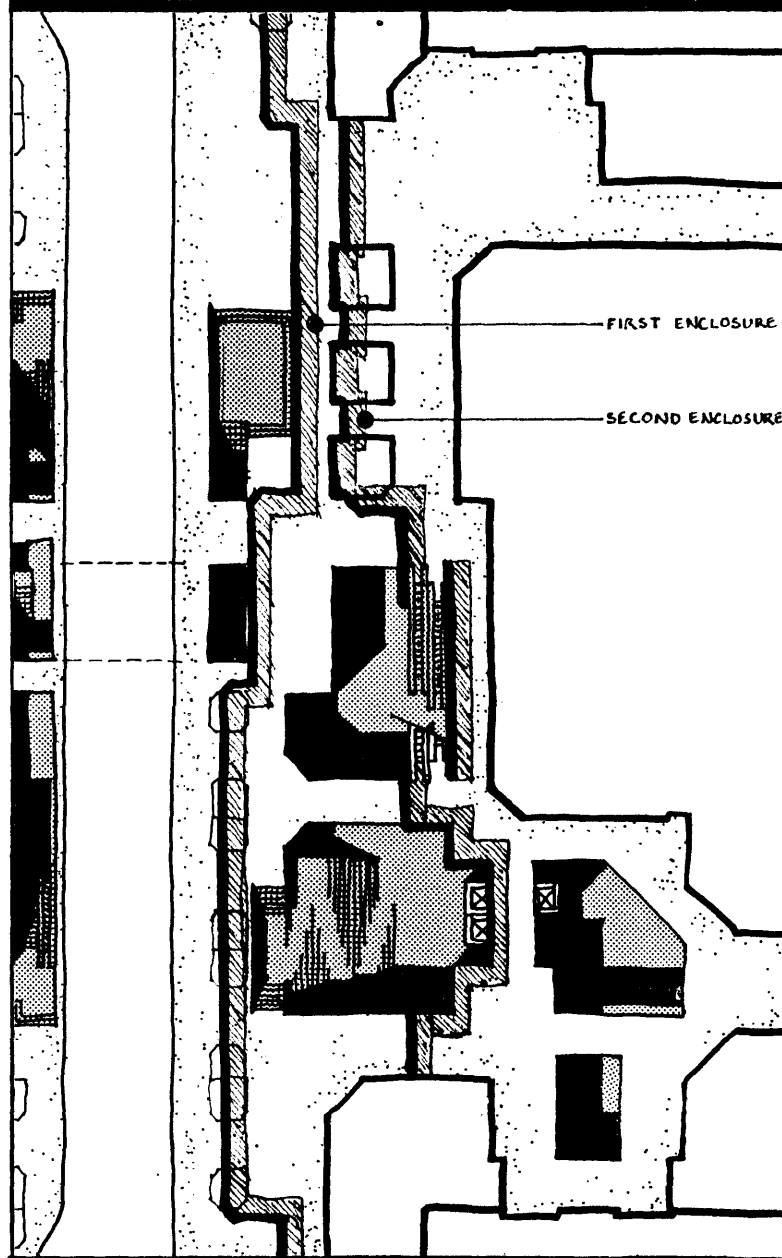




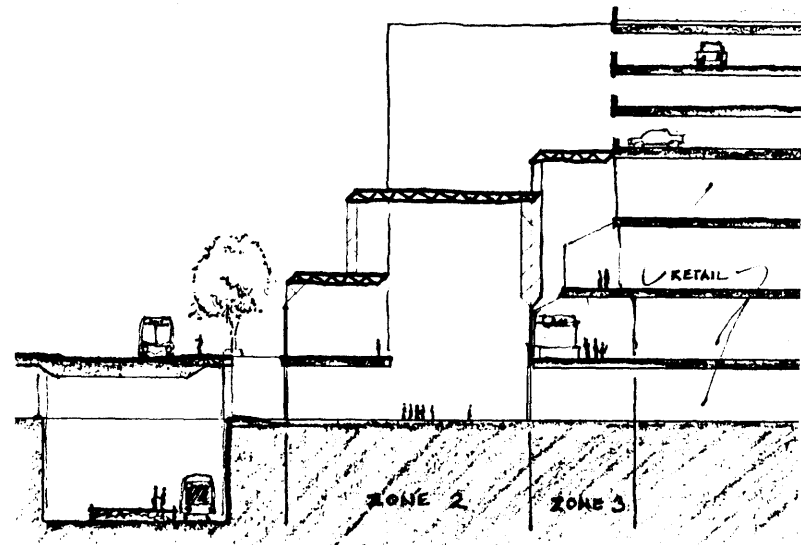
The arcade will establish an intermediate zone of partial enclosure (ZONE 2) and protection between Woodward Avenue and the shops which line it. It will mediate between the controlled climate of the shops and the uncontrolled climate of the street. It also allows retail activity to reach out of the buildings and inhabit space under the arcade.







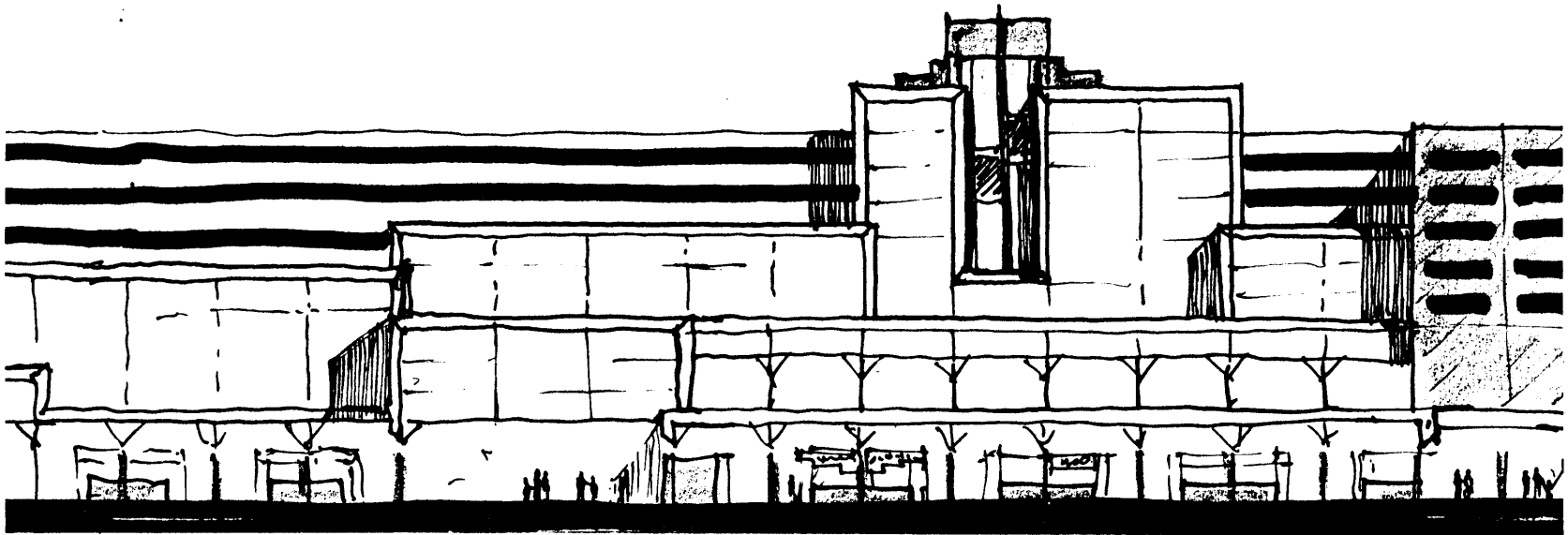
For the entrance to the shopping center, I establish two lines of enclosure, one at either edge of the central space. The first is reinforced with a line of retail kiosks along the street edge. This line represents partial enclosure (ZONE 2), similar to that of the colonnade across the street, but larger in scale. A transparent shelter of glass spans the central space, offering protection from rain and snow to the users. The second occurs on the other side of the space, along the edge of the stores, and defines a more completely climate controlled zone (ZONE 3).



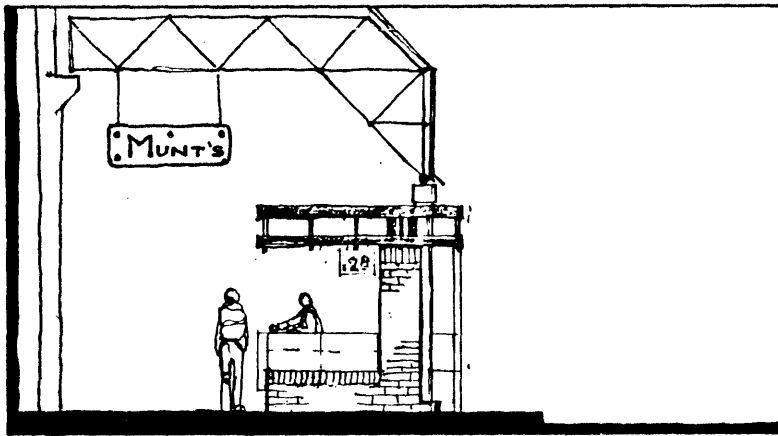
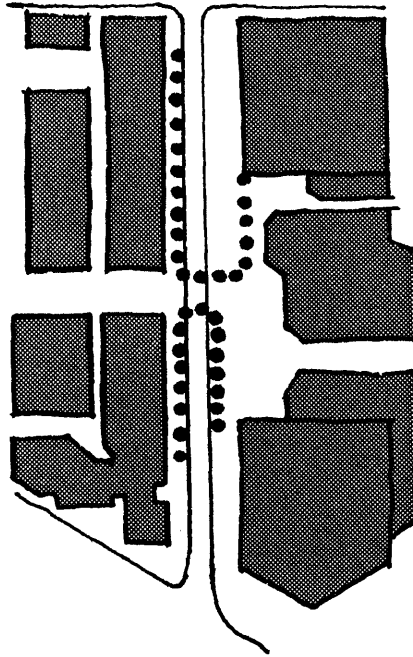
As with the arcade, there is no closure at ground level on the street edge, except that provided by the kiosks. The shelter extends beyond the traditional building line of the street edge and partially crosses the walk. In this way, a pedestrian moving along the walk is not confronted with a set of doors through which to pass, nor must a major decision be made to go inside the shopping center or stay out on the street.

While following a path along the street edge and remaining involved with the activity of the street, the pedestrian passes through a

portion of Cadillac Square Mall's central space and becomes involved with its activity. In fact, the division between activity associated with the street and that associated with the shopping center becomes ambiguous. Some activities belong to both, particularly that of the kiosks, and knit the two environments together. The ZONE 3 category is enclosed with moving glass partitions which open up to the central space during good weather and then close when the temperature gets too cold. As one moves further into the complex, one reaches ZONE 4, the completely climate controlled interior mall.



Kiosks



A network of retail kiosks and seating areas border the street edges of the pedestrian shelters, along both the arcade and the central space. Most of the kiosks will be small retail shops, mixed with an assortment of information and advertising kiosks. They provide active, permeable edges which bring marketing out into the public areas.

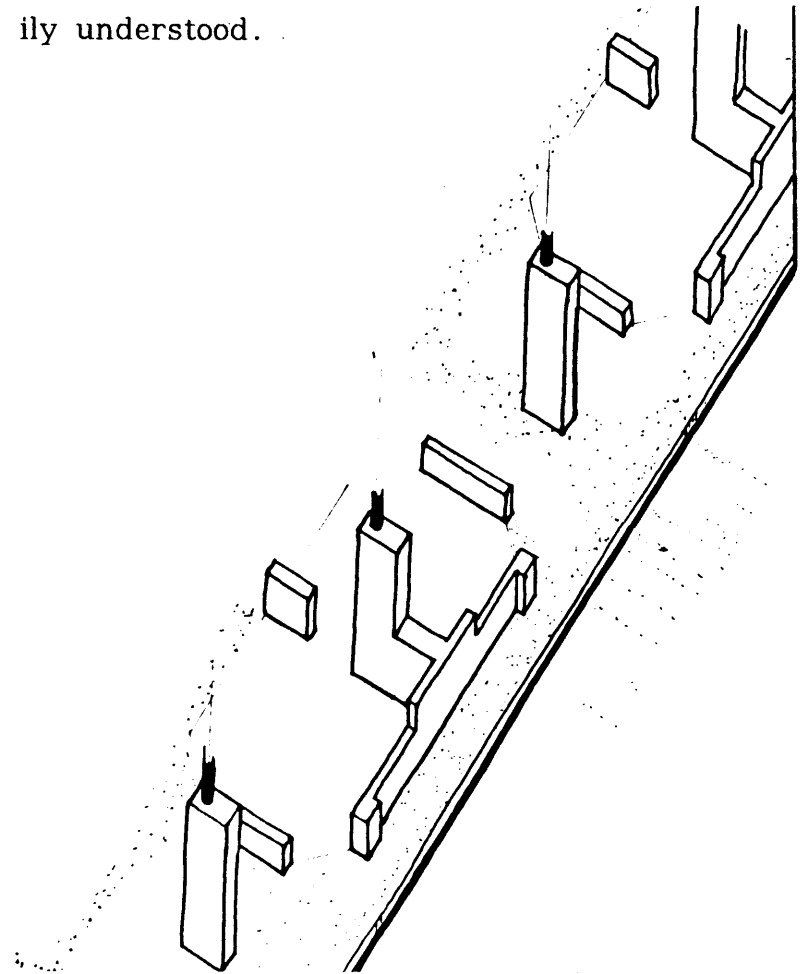
This zone allows the shopping center to orient its mall toward the street while making efficient use of its retail space. Across the street the existing stores will benefit from the new diversity and density of retail establishments which the kiosks provide. This variety is attractive to potential customers. It helps the existing stores to react to and compete with the shopping center. The network of kiosks will tend to knit the two sides of the street together to an extent not possible in the present scheme where the new shopping center and the older stores exist as discretely separate entities.

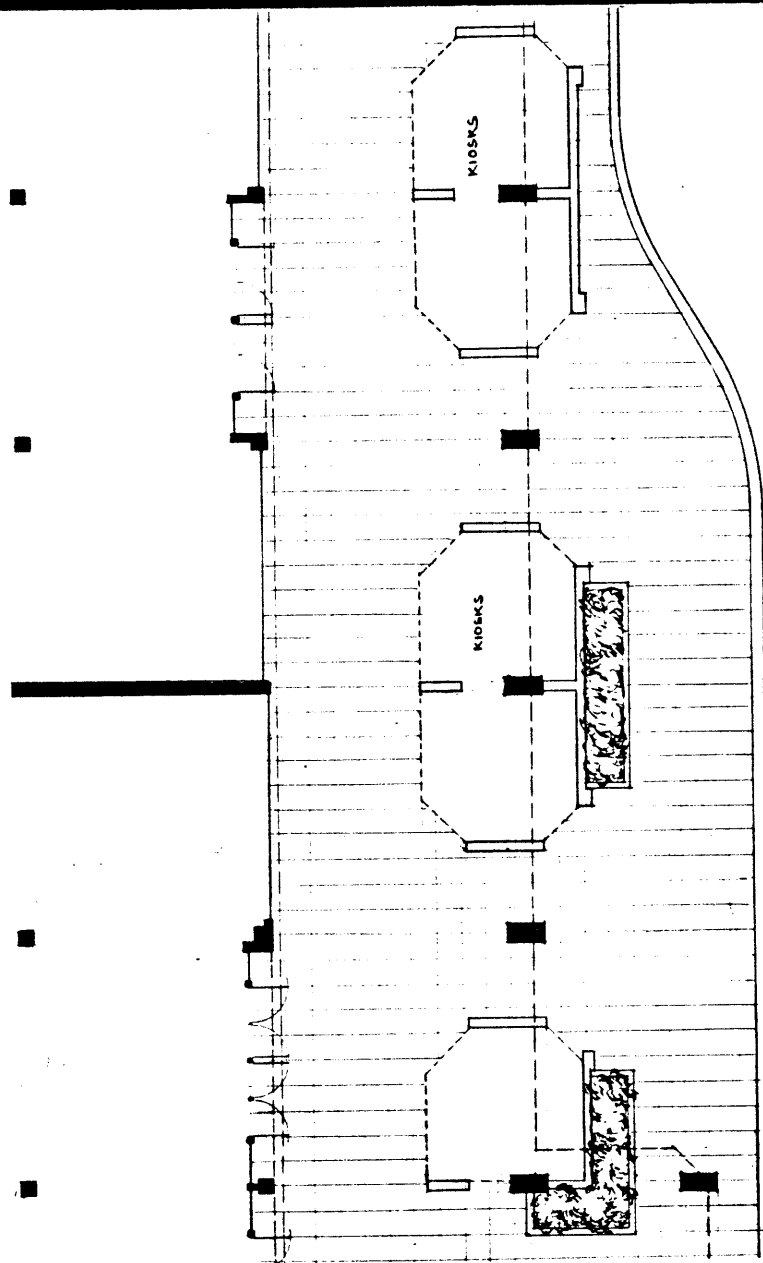
The arcade would be constructed first, then kiosks would be added by individual retailers as infill to the existing framework of the arcade. Approximate location and size of these kiosks are suggested by the placement of columns and low walls. The walls form a base on which kiosk owners can build walls, counters and displays.

In the absence of a kiosk at a particular location, the low walls can serve as a surface on which shoppers can sit, lean, or set packages and belongings. These low walls are placed so that seating areas occur in little pockets of space just off the main pedestrian path allowing people to get away from the flow and bustle a little as they rest, snack, converse, or wait for a bus.

The partial definition provided by the columns and walls allows for flexibility in arrangement, size and type of kiosk. It allows kiosks to build enclosures for themselves in various ways, insuring a variety along the street. It also implies certain limits to the size of the establishments in terms of the maximum length one kiosk may extend along the street and the

maximum encroachment into the pedestrian path and the curb area. These limits need to be reinforced by a set of guidelines for merchants to follow, but because of the placement of the columns and walls, these are made simple and easily understood.





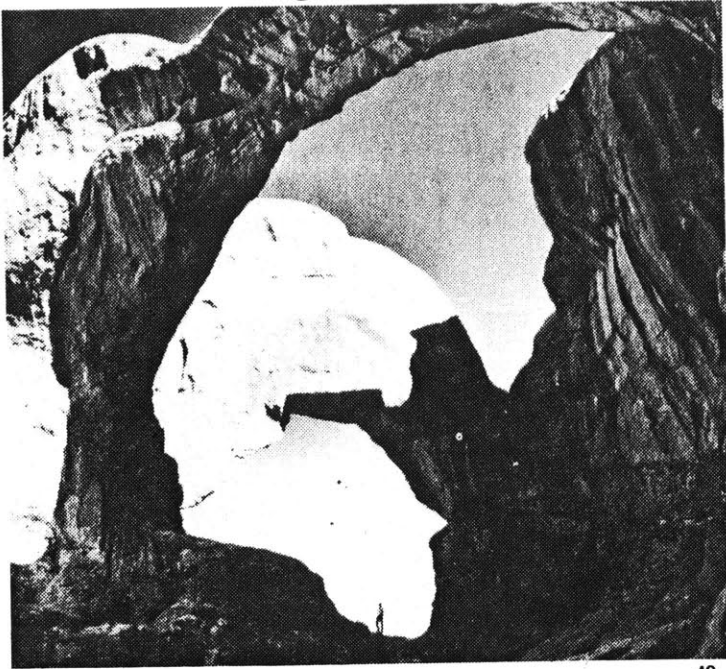
The strip of kiosks which defines the edge of the arcade and central space provides a piece of the transition between interior and exterior. The kiosk zone is placed between ZONES 1 and 2, the exterior area of the street and the partially protected area of the pedestrian zone, and acts as a filter between the two in a variety of ways. It facilitates circulation between the two zones. It maintains a visual and, therefore, psychological, link between the two. And, as discussed earlier, kiosks help in the climatic transition from inside and outside, by contributing heat to the pedestrian zone.

The kiosks form a highly permeable edge through which it is easy for pedestrians to pass. They are not a solid, continuous wall with each kiosk butted against the next; rather they are frequently separated by passages. People can walk around the kiosks to get to and from the street and the shops at intervals much shorter than those found in a typical shopping center edge.

Despite the fact that the street and the pedestrian zones are separated by thin, permeable kiosk zones, they are nevertheless separated. A visual connection must be maintained between the two. The kiosks should act as a visual filter, not a blockage. People in the street should always be aware of activity in the arcade, and those in the arcade should be aware of the activity in the street and in the pedestrian zone across the street. The bustle of activity and the colors and objects of merchandising should read through the line of kiosks and enliven the entire street.

Besides having frequent open passages between them, the kiosks should be essentially transparent to allow for vision through the zone and, of course, into the kiosks themselves. They will be open on the side facing the pedestrian zone so that shoppers may enter or goods may be sold over a counter. There is, however, a need for enclosure on the street side to keep cold air and wind out. While the design of this enclosure is the responsibility of individual kiosk owners, it is necessary that it be composed primarily of glass.

Formal Language



49.



A heavy stone arcade reminds one of a natural rock outcropping.

In searching for a formal language on which to base the arcade design, I first look at various existing examples of arcades and canopies to see what they might tell me. I have grouped arcades into two basic categories: those that are like ground form and those that are like tree form. Ground form arcades have heavy, massive colonnades and roofs. They seem to be upward extensions of the earth, like rock outcroppings. Tree form arcades are lighter in weight. They seem to be an assemblage of pieces which span much like the branches of a tree. Naturally, there is a whole range of arcades between these two types, but this gives me a basis on which to study.

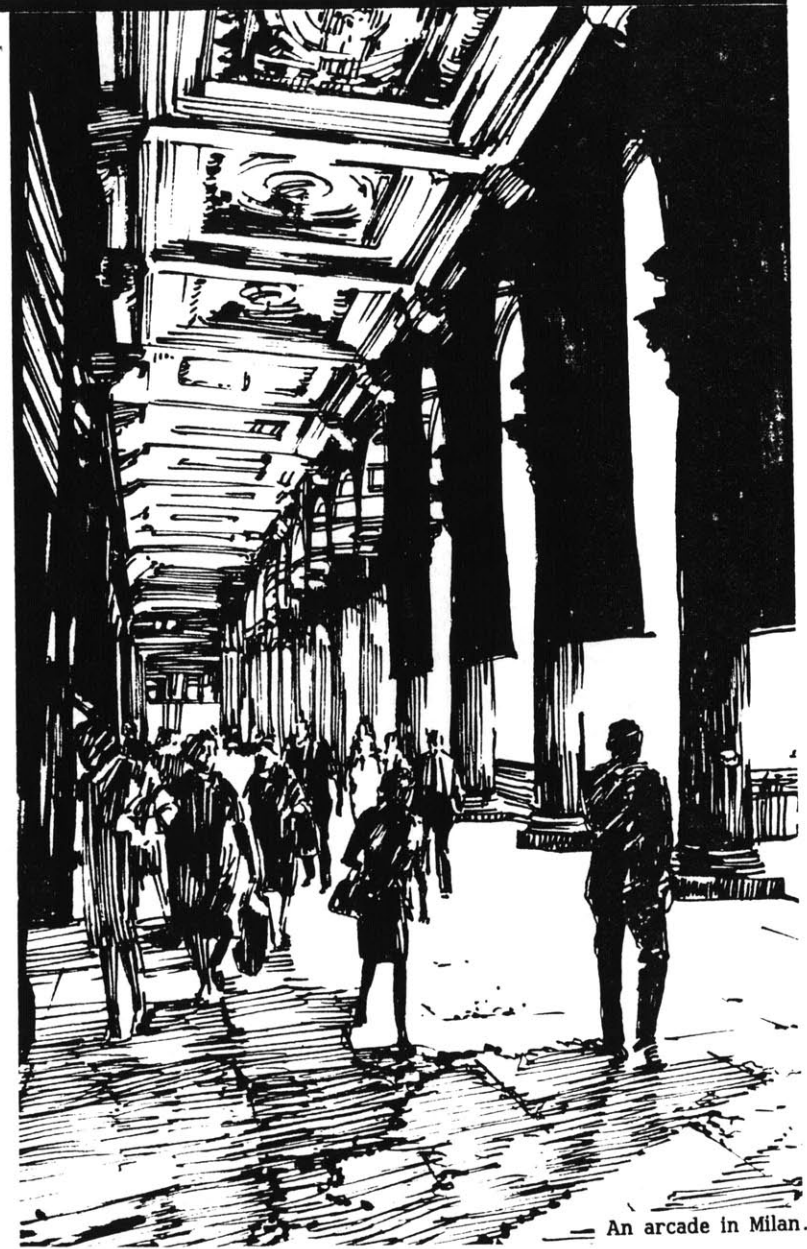
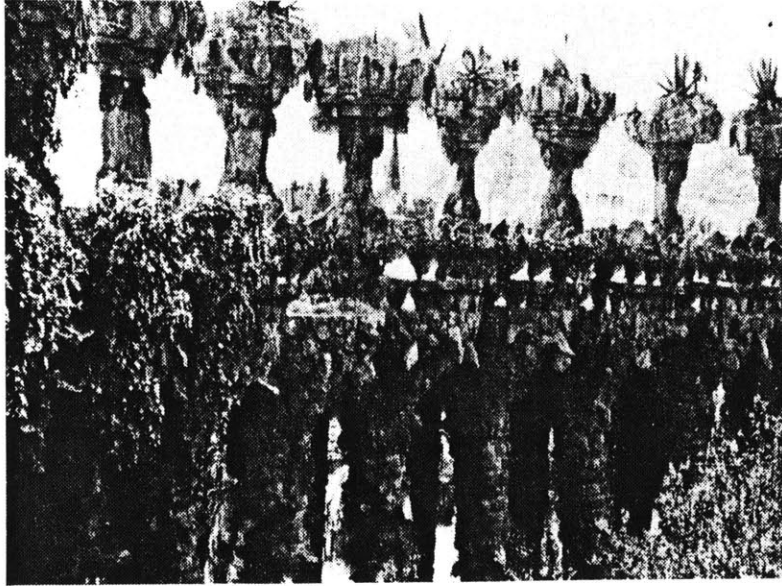
The ground forms appear to be like rocks, monolithic, upward extensions of the earth. They tend to be bulky, heavy, muscular pieces of stone or masonry that work directly against the force of gravity. The arcades of medieval Europe are ground related in form. They are solid, permanent, and seem inseparable from the ground and the buildings which contain them. They massive colonnades are frequently arched and the roofs are solid. They define a very

contained space within their bounds and tend to isolate the pedestrian from the street or square outside.

As the Renaissance arrived, arcades became more open and spacious. Heights increased and more slender, classically inspired columns lined the outside edge. The space under the arcade became more directly tied to the space outside.

Ground form: Portico at Park Gruell by Gandhi.

50.



An arcade in Milan.



51.



52.
Penn Station,
New York.



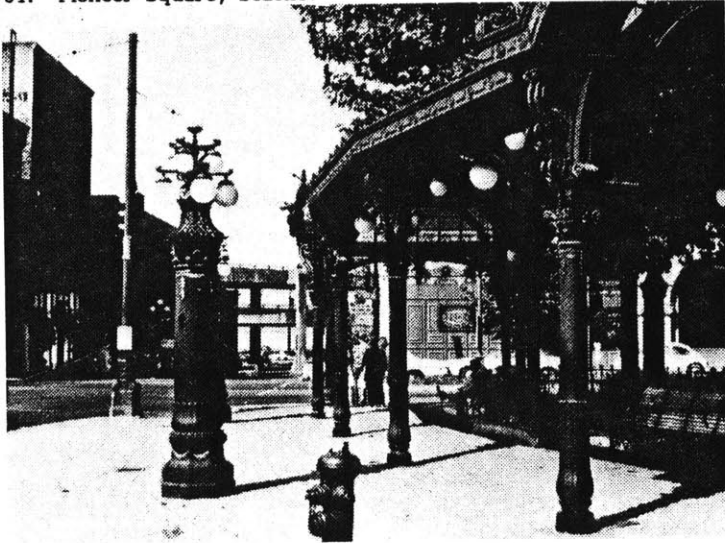
53.
New York
Botanical Gardens.

Like the branches of a tree, tree forms are relatively lightweight, spanning space and reaching toward the sky. They seem to defy gravity rather than labor against it. Usually composed of collections of thin members, they tend to be made of steel, wood or other materials which perform fairly well in tension. The late nineteenth and early twentieth century brought a fascination with wrought iron and steel construction. This meant the coming of many lightweight tree forms in architecture.

Since they are frequently a collection of pieces which have been assembled, the implication is that they can also be disassembled and taken away. So, this type of arcade seems less permanent than the ground related type.

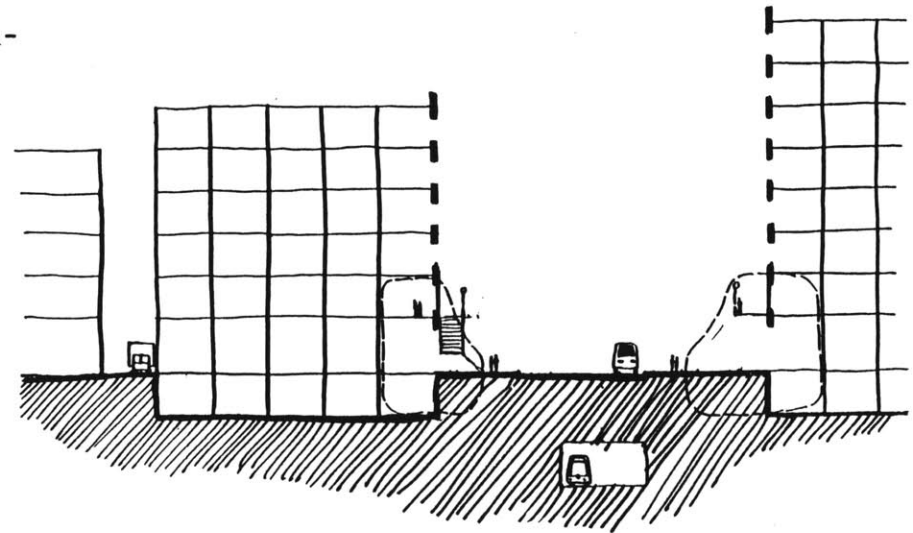
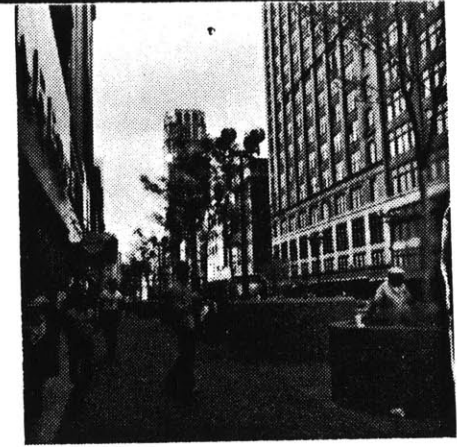
An important attribute of these thin membered arcades and shelters is that they tend to filter space rather than form a solid barrier. A person will feel a continual relationship with the outside space--the street or square--rather than being completely isolated inside the arcade, as one tends to feel after entering the more solid type of arcade.

54. Pioneer Square, Seattle.



The four-block area of the Woodward Avenue shopping district is perceived as a large, singular space. This grand scale perception of the district as a whole is positive, but the space lacks a smaller, more human scale. Activities and stores on either side of the street contribute to the liveliness of the street as a whole.

The arcade structure should give definition to a pedestrian scaled environment along the building edge while allowing shoppers to be a part of the activity of the street as a whole. A shopper needs to be aware of stores on both sides of the street, and feel free to cross back and forth as one thing or another catches the eye. A relatively transparent arcade will encourage this freedom.



What I am proposing for Woodward Avenue is a combination of ground and tree forms. Heavy masonry forms the lower portions of the arcade providing a solid base on which kiosks can build. A thin steel space frame springs upward from this, spanning the space of the arcade. It acts as weather protection and supports the second-level walk.

Stone suspension bridges make a pleasing combination of ground and tree forms for support and spanning.

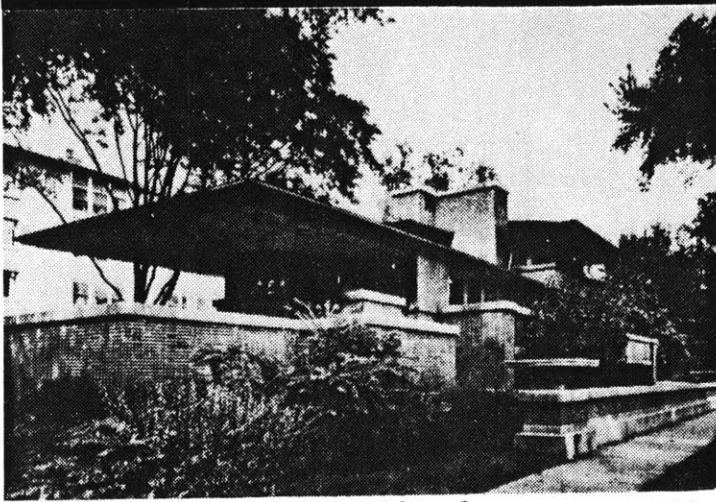


55.

The Brooklyn Bridge.

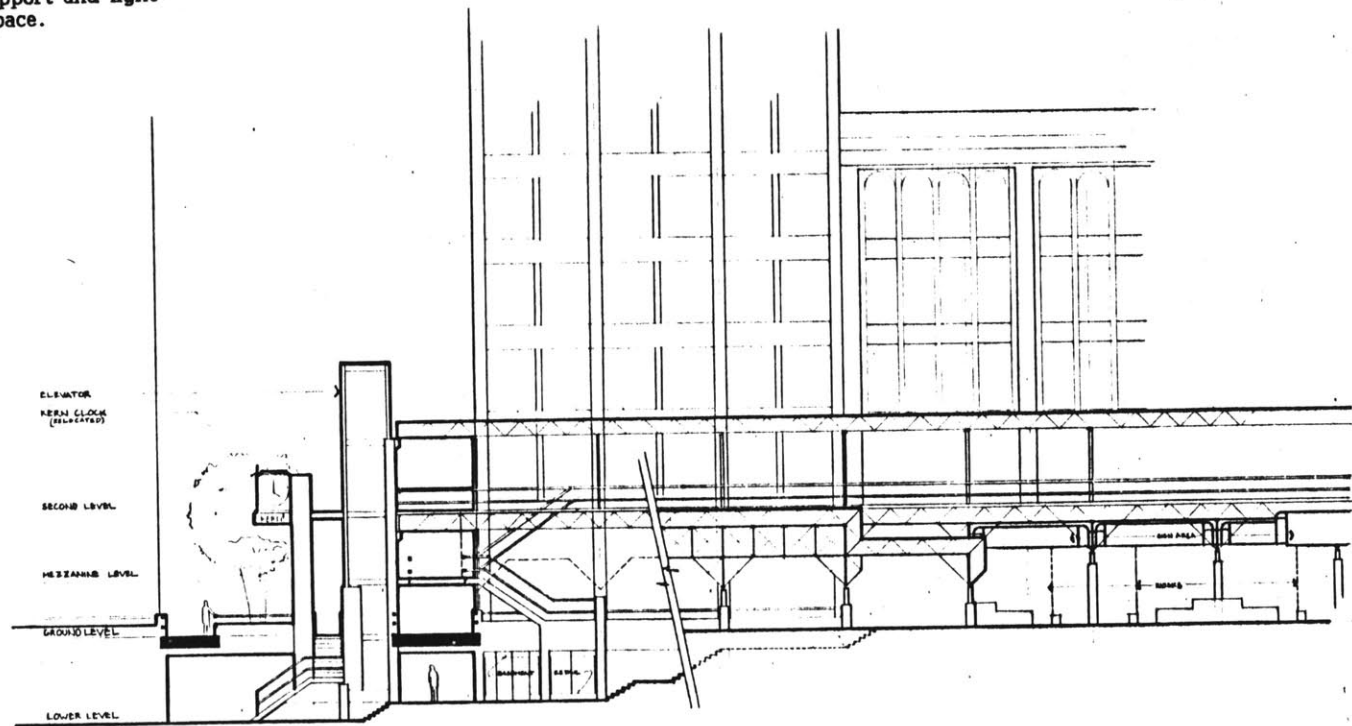


56.

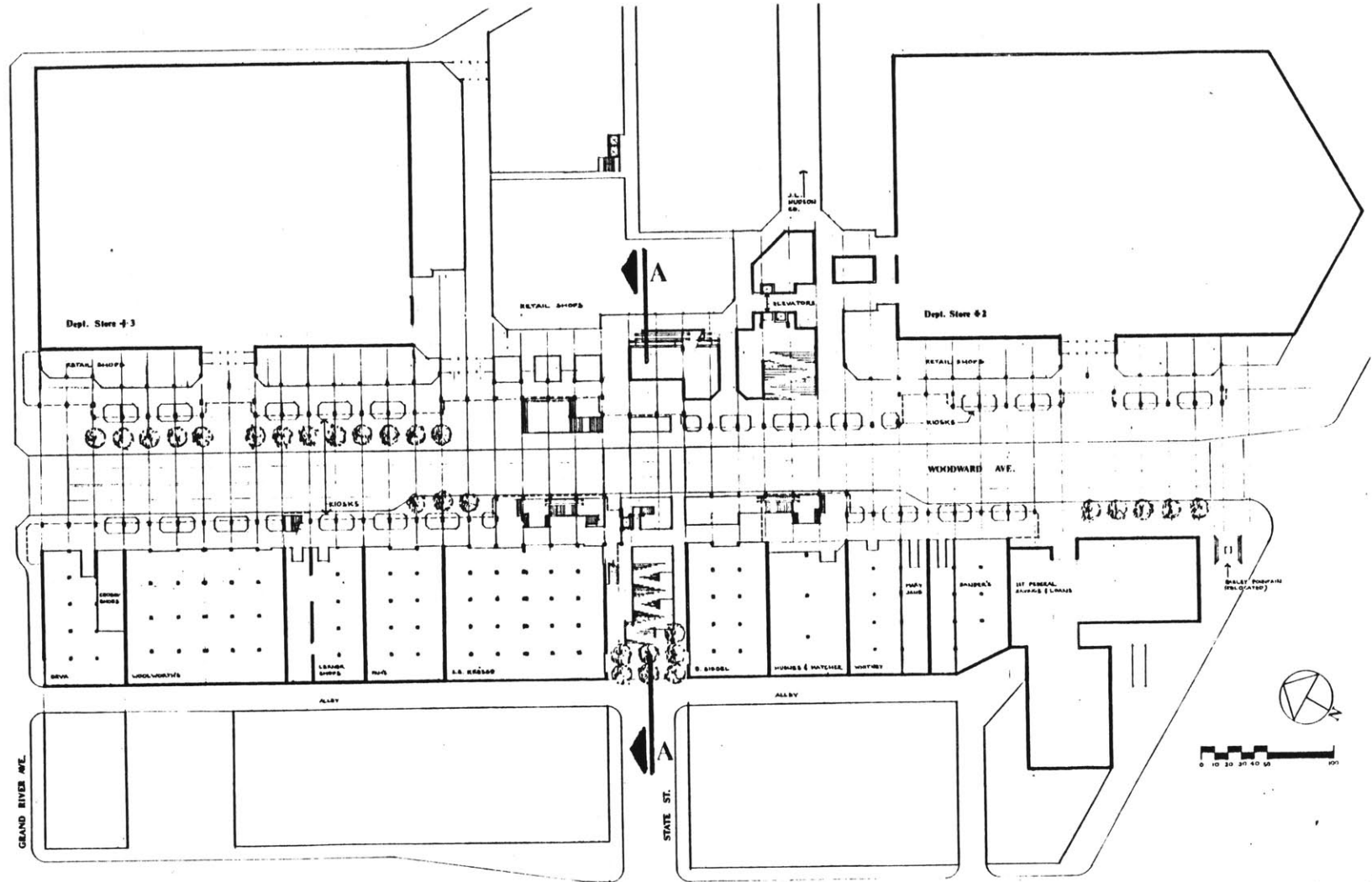


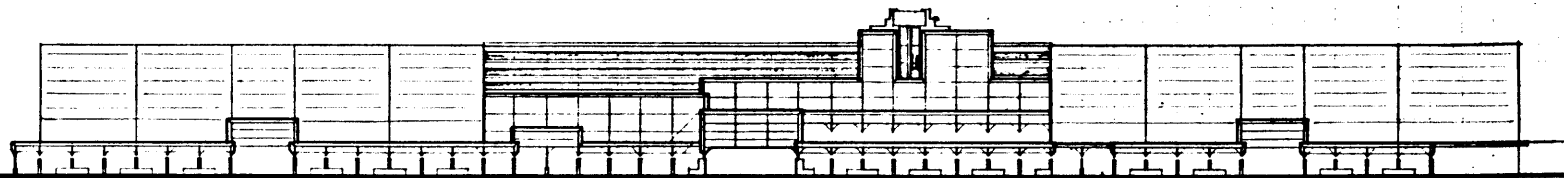
Roble House by Frank Lloyd Wright: A play of ground form for support and lighter elements for spanning space.

57.

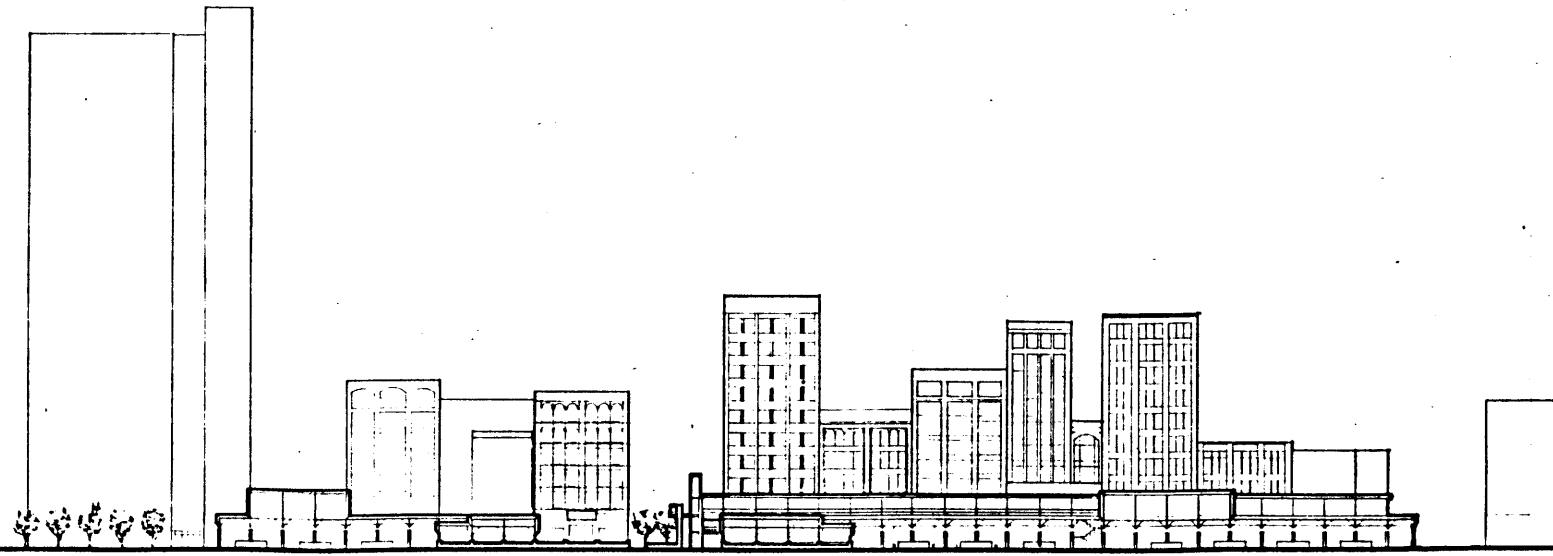


DESIGN SOLUTION



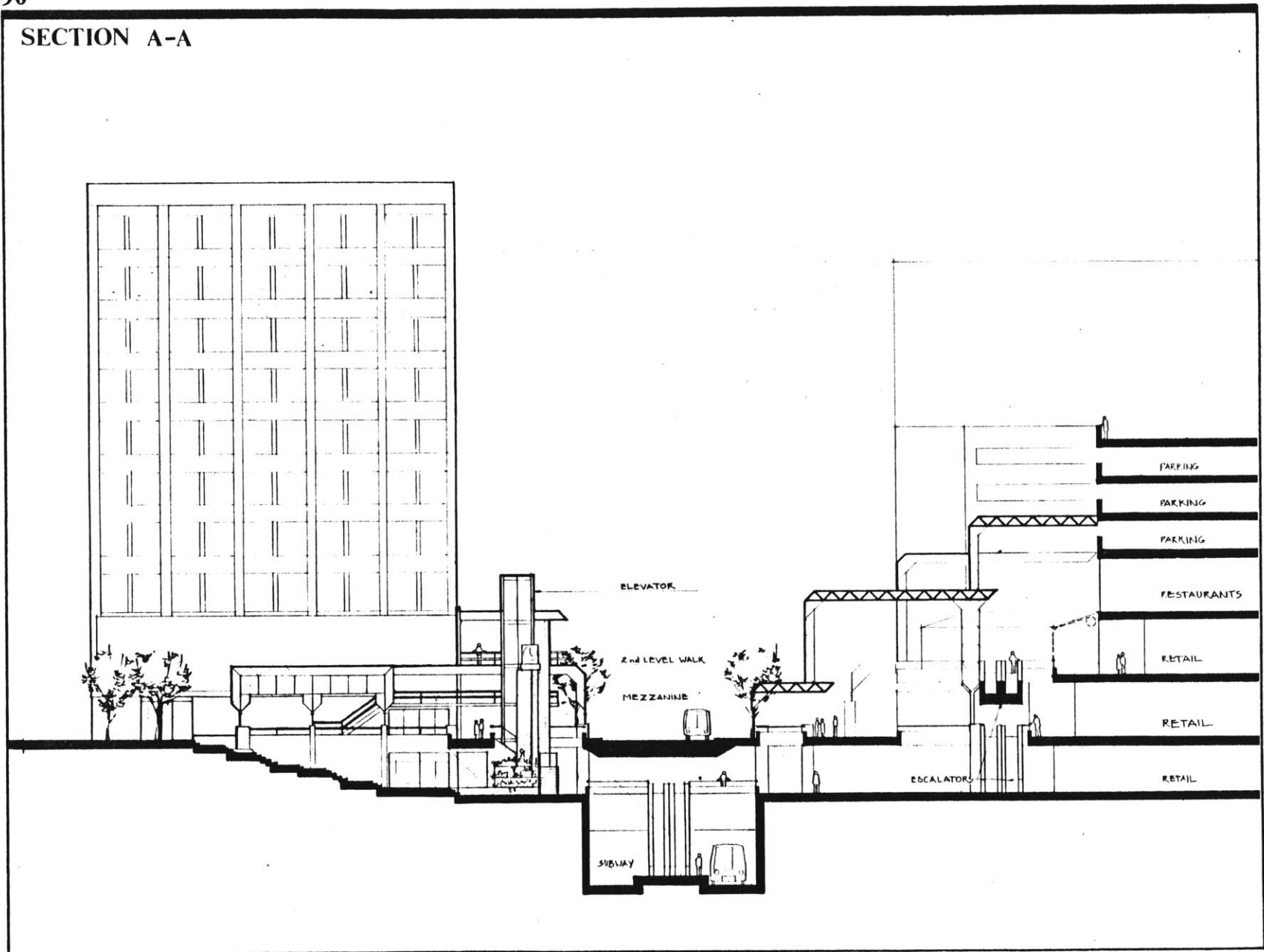


EAST ARCADE ELEV. AT CADILLAC SQ. MALL

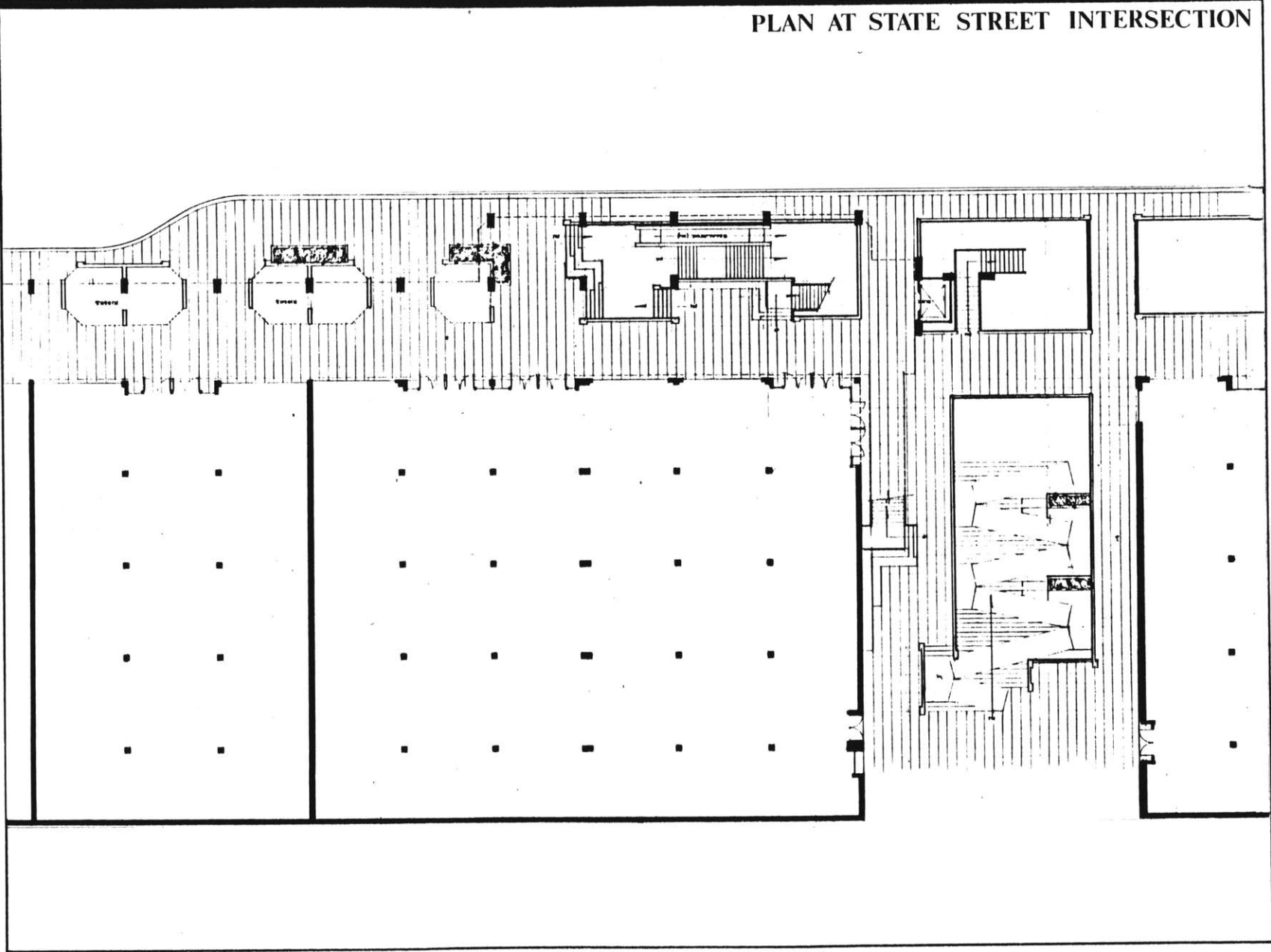


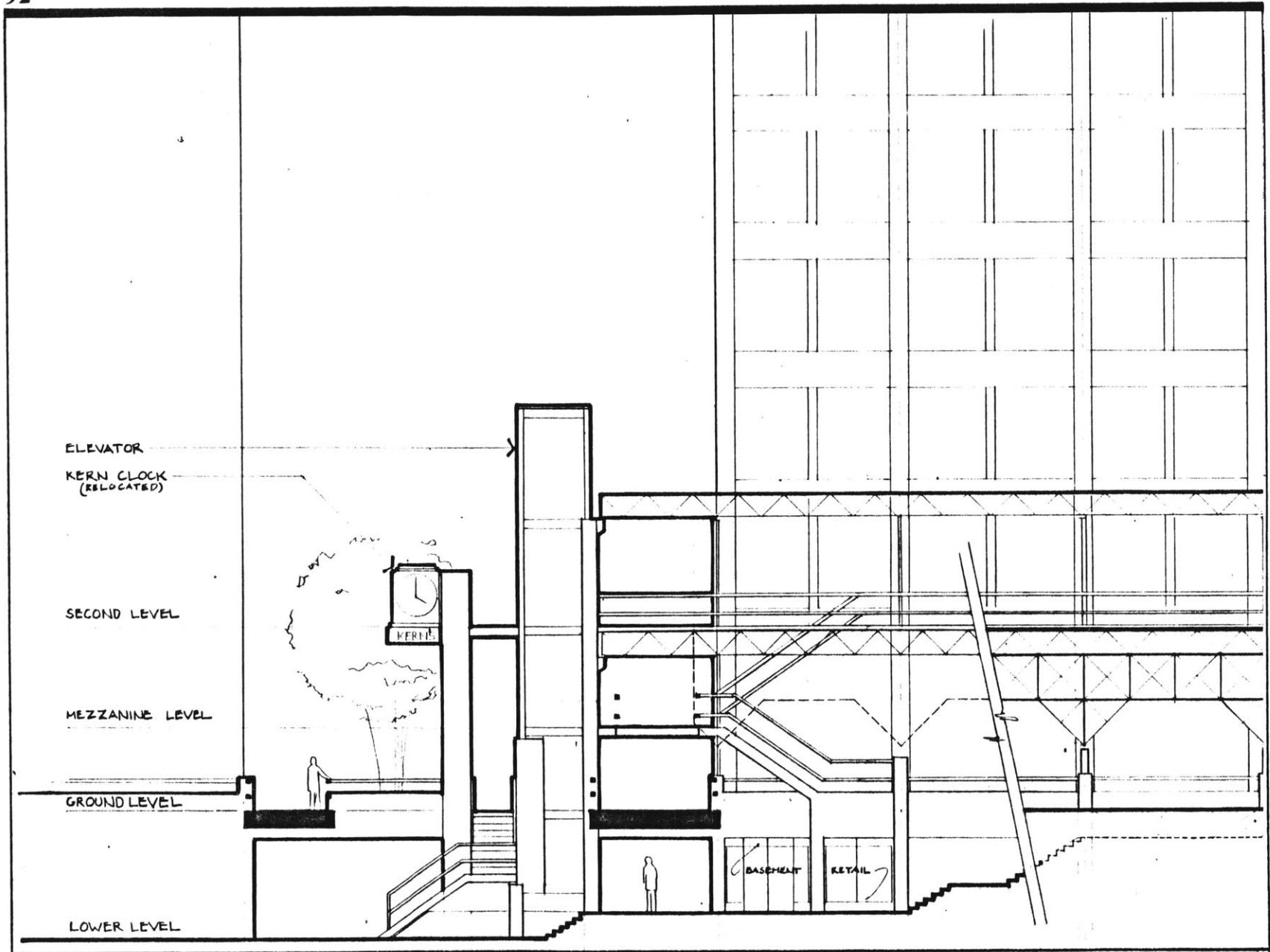
WEST ARCADE ELEVATION

SECTION A-A

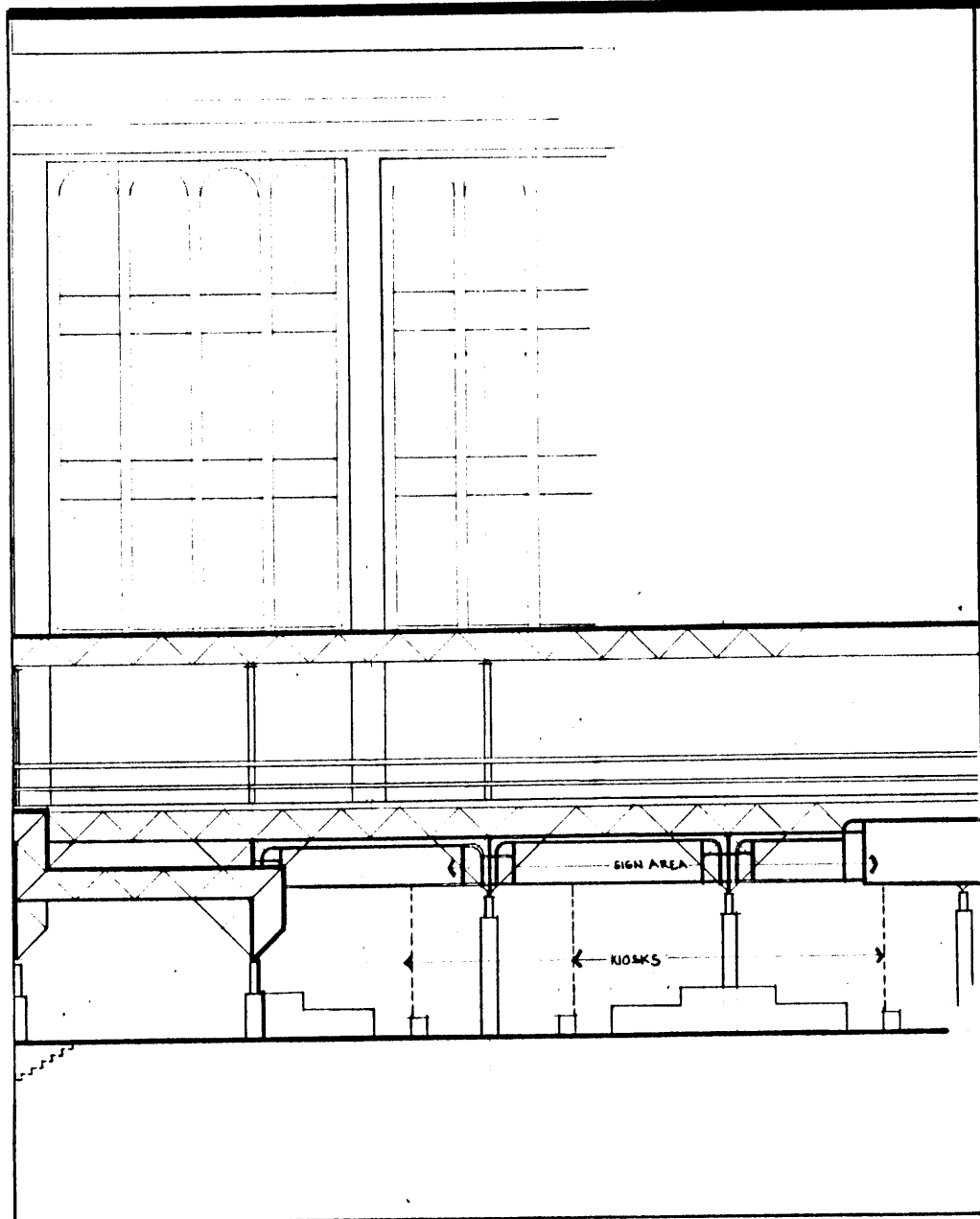


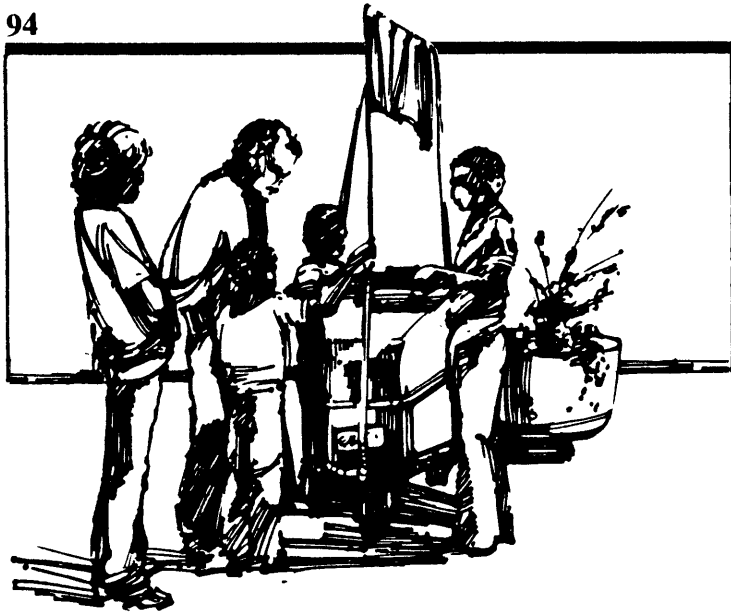
PLAN AT STATE STREET INTERSECTION





WEST ELEVATION AT STATE STREET





CONCLUSION

The proposal presented here accommodates Cadillac Square Mall and other projects while retaining and reinforcing the integrity of the street. The basic framework of Woodward is enriched by arcades which, along with an array of kiosks and seating areas, allow for a new level of intense and diverse activity. At the intersection of Woodward and State, a multi-level activity space forms the focal point for the street, the shopping center, and the subway station. Here the shoppers' senses are stimulated by the bustle of people, the colors and sounds from the kiosks and shops, the smell of food, and the movement of subway trains below.

ILLUSTRATION SOURCES

Illustrations by Tim Blackburn, pp. 10, 13, 18, 40, 41, 42, 44, 45, 47, 58, 67, 69, 71, 80.

"Acknowledgements" illustration by John Tenniel.

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2. Joseph Scrofani, Saturday Review, 14 May 1977, p. 7.
3. The Buildings of Detroit, by W. Hawkins Ferry, fig. 84.
4. Ibid., fig. 16.
5. Ibid., fig. 17.
6. Yesterday's Detroit, by Frank Angelo, p. 96.
7. Woodward Avenue Improvement Program, by Rossetti/Sims Joint Venture, fig. SP-1.
8. Anthony Howarth, Fortune, January 1976, p. 135.
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14. F.D. Rich Company and The Taubman Company.
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36. Peter Blake: Complexity and Contradiction in Architecture, by Robert Venturi, p. 56.
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