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AN EVALUATION OF THE PLANNING AND DESIGN
OF A PEDESTRIAN SHOPPING MALL IN TRENTON,
NEW JERSEY CENTRAL BUSINESS DISTRICT

by

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CONTENTS

Chapter 1	
Introduction.....	1
Chapter 2	
Historical Background / The Evolution of the Pedestrian Shopping Mall.....	4
Chapter 3	
Typical Pedestrian Way in the Downtown Area.....	12
Chapter 4	
Pedestrian Activity.....	17
Chapter 5	
Major Concerns of Pedestrian Shopping Mall Design in CBD.....	19
Chapter 6	
Case Study: Background of Development of Pedestrian Shopping Mall in Trenton, New Jersey.....	31
Chapter 7	
Evaluation of the Trenton Pedestrian Shopping Mall.....	53
Chapter 8	
Conclusions and Recommendations.....	82
Acknowledgments.....	88
Bibliography.....	89
Appendices.....	91
Appendix A: Physical Evaluation.....	92

Appendix B:	Questionnaires.....	95
	For Businessmen.....	96
	For Consumers.....	97
Appendix C:	Frequency Distribution	
	Analysis.....	98
	Part A: For Businessmen.....	99
	Part B: For Customers.....	101
Appendix D:	Cross Tabulation Analysis.....	104
	Part A: For Businessmen.....	105
	Part B: For Customers.....	109

CHAPTER I

INTRODUCTION

The central business districts of most cities give ample evidence of the need for downtown revitalization. Falling retail sales, unstable tax bases, stagnant real estate values, and increasing competition from regional shopping centers are common problems.

Physically, downtown retail shopping districts express their economic plight. Street facades are marred by a jungle of wires, neon signs and unrelated store fronts. The street floors look out on a jumble of concrete and asphalt -- a constant source of fumes, noise, and conflict due to the onrushing automobile.

City planners and merchants are becoming aware of what critics and shoppers have long been concerned with: the shortcomings of city shopping areas which make them hard, unpleasant places to shop in.

The pedestrian shopping mall has been created as merchants in the central business districts began to realize the need to improve their retail position so as to meet the changing needs of shoppers. The effective use of the pedestrian mall on a small scale in regional shopping centers has led many civic leaders, merchants, and designers to believe that it would also be a valid part of the redevelopment scheme for their downtown area.

The mall concept stands as one promising approach. Streets are being changed from vehicular traffic to pedestrian use. Buildings already on the mall often need little or no modification. Additional paving can be unified and landscaped, street furnishings and other embellishments added.

This study will be concerned with the various factors which are involved in planning and developing a pedestrian shopping mall. First, it will define criteria to be considered in planning and designing the pedestrian shopping mall, and then it will use these standards in an evaluation of the existing mall in Trenton, New Jersey. The study was conducted in the following manner:

- I. Investigation of the background of pedestrian shopping malls.
 - a. Evolution of pedestrian shopping malls.
 - b. Classification of such shopping malls in urban areas today.
 - c. Description of their pedestrian activity.
 - d. Consideration of their major concerns.
- II. Evaluation of the pedestrian shopping mall in Trenton, New Jersey, as a case study.
 - a. Description of the development of pedestrian shopping malls.
 - b. Evaluation of the existing conditions from the stand point of physical design and the well-being

of businessmen and consumers.

c. Conclusions and Recommendations.

To facilitate understanding of the various discussions in this report, some terms must be defined.

A pedestrian mall is a street designed for foot traffic, from which all but emergency, utility, and service vehicles are excluded. It may extend the full length of a shopping street or be interrupted by cross streets left open to vehicular traffic.

The central business district is usually the major business district of a city and is sometimes called the downtown area. City planners and other professionals have come to abbreviate the term central business district by employing the letters CBD or by using the phrase "core area".

CHAPTER II

HISTORICAL BACKGROUND / THE EVOLUTION OF THE PEDESTRIAN SHOPPING MALL

In studying the pedestrian shopping mall it is essential to review the evolution of the shopping process, market spaces, and the factors influencing their form.

As the plan of Miletus, Greece, whose principle was credited to a lawyer named Hippodamus indicates, the Greek town had the "agora", located in the heart of the city and surrounded by temples, public buildings and shops (Figure 1). The agora was the focal point of public activities such as political gatherings, legislative assemblies, and marketing, while the gridiron streets were used primarily for circulation to the agora.

Contrary to the situation in Greece, Roman towns and their civic centers were often separately integrated. The ground plan of the forum, which was the center of civic life, usually was rectangular, but occasionally, the forum was adapted to local conditions, and depended on already existing buildings.

Figure 2 shows the forum of Pompeii was surrounded on all sides by public buildings. The temple of Jupiter dominated the whole rectangular space which was closed to all vehicular traffic. The whole complex became a completely closed space, axial, dominated by the temple, and kept

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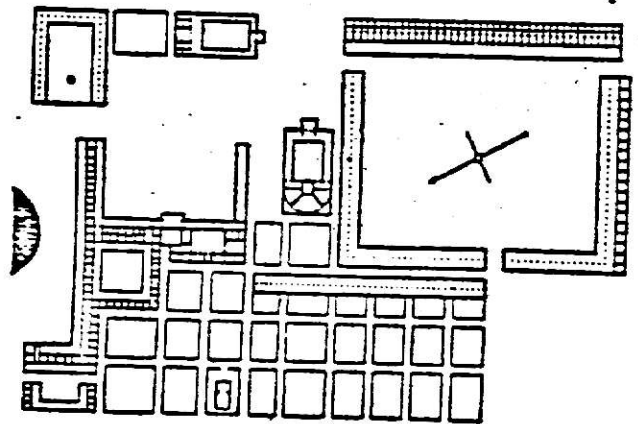
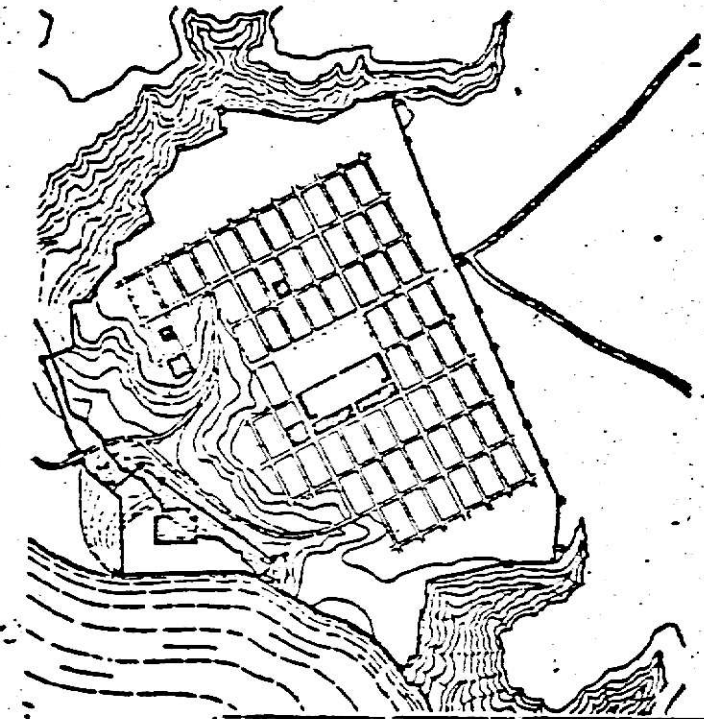


Fig. 1 Milletus, Greece

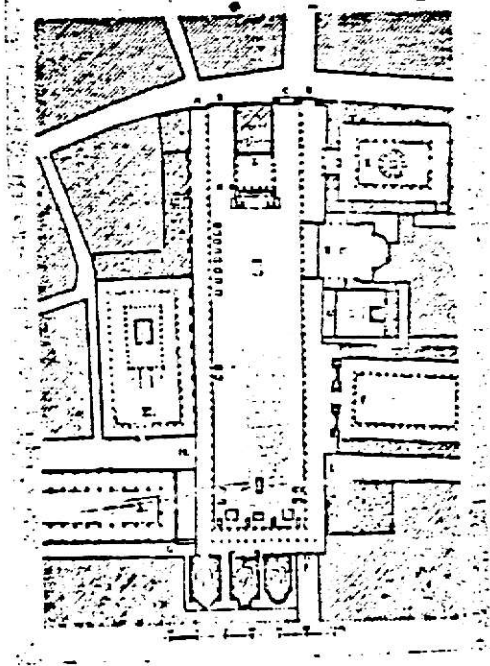


Fig. 2 Forum, Plan Pompeii

together by porticos.

In the Medieval City, the market square was the city's center. All street patterns were concentrated toward that square. The city hall and guild halls were found here. The cathedral, the merchants and craftsmen's stalls, and stores surrounded it. The result was that "the open center area became in turn the market place, the fair ground, and the entertainment center for the citizenry."¹

In the ideal cities of the Renaissance, which are seen in the star-shaped plans designed by Leon Battista Alberti, and the circular setting designed by Brarte, streets radiate from a central point, usually proposed as the location for a church, palace, or plaza. During this age, the urban plaza, one of the elements of excellent urban design, was achieved in many places.

In America, New England, and Midwest towns show evidence of the basic square concept which the settlers brought with them from Europe. It persisted here well into the nineteenth century.

The event which radically changed the organization and character of cities in the United States was the Industrial Revolution. Thousands of factories were built in the midst

¹ Victor Gruen and Larry Smith, Shopping Towns USA, (New York: Reinhold Publishing Corporation, 1960).

of towns and cities. The industrial slum became the new pattern of the city.

The people who lived in the cities soon found it intolerable, so that those who could afford it began to move to the suburbs. The exodus increased its tempo with the advent of the interurban elevated and subway trains, and outbound streets became routes, with the emergence of the automobile.²

As the automobile became a means of private mass transportation, the final urban explosion began. The dispersal of population followed no pattern whatever. The forms of shopping areas were dictated by the automobile, with strip developments along major traffic routes.

In the decade between 1940 and 1950 the suburbs surrounding cities increased 35 percent, and the rate of growth between 1950 and 1960 jumped to 50 percent.³ This expansion was generated basically by the natural increase in total population but also by people from the large central cities who moved to the urban fringes. Retail enterprise to serve the sprawling residential suburbs gathered in scattered clusters. The corner grocery store was transformed into the neighborhood shopping center. Convenient parking, without

² Ibid.

³ Ibid.

charge, was a novel and refreshing experience for the housewife. Nourished by the volume of new population, the shopping center became popular.

Shopping centers can be divided into three general categories:

1. The Neighborhood Center is the area for the sale of convenience goods and personal service. It serves a population of between 7,500 and 20,000 persons. The average size is 40,000 square feet, but it may range between 30,000 and 75,000 square feet of gross floor area. The site ranges from 4 to 10 acres in area.⁴
2. "Another shopping area" is the Community Center. In addition to convenience goods and personal services, it provides the soft lines, for example, wearing apparel, and also hard lines, such as hardware and appliances. It serves a population of between 20,000 and 100,000. The average size is 150,000 square feet of gross floor area, with a range between 100,000 and 300,000 square feet, requiring a site between 10 and 30 acres in size.⁵
3. The largest type of shopping center is the Regional

⁴ Ibid.

⁵ Ibid.

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Center. It serves a population ranging from 100,000 to 250,000 people. The average size is about 400,000 square feet of gross floor area. Sometimes it may range as high as 1,000,000 square feet. The site ranges from 40 acres to 100 acres. This type of center needs at least 70,000 families to support it.

The planned regional shopping centers are recent developments representing a more intelligent approach in provision of goods for the increasingly important suburban market. This type of shopping center has been described as follows:⁶

1. A site that is suited to the type of center which market analysis has justified: located for easy access from the trade area and arranged properly for retail selling.
2. A building composition that is an architectural unit and not a miscellaneous assemblage of stores.
3. An on-site parking arrangement that allows for ample entrance and exit and for minimum customer walking distance between the parked car and the store building.
4. A service facility which separates the delivery of

⁶ Urban Land Institute, Community Builders Council, Community Builders Handbook, Washington, D.C.. 1948.

goods from customer circulation and makes the public unaware of that service.

5. A tenant grouping that provides for greatest possible merchandising interplay among stores.
6. Agreeable surroundings that lend an atmosphere for shopping in comfort, convenience, and safety, and provide weather protection, separation of foot from vehicular traffic, landscaping, quality in design, control of sign type and placement, characteristics not usually associated with commercial districts.

One of the first regional shopping centers in the USA was the Country Club Plaza in Kansas City, Missouri, which was developed in the late 1920's.

Central business districts had experienced little change except for deterioration during this period of suburban growth and the rise of the planned regional shopping center. One notable exception, however, was Rockefeller Center Plaza in New York City. This plaza was begun in 1931 and while it is not considered to be a pedestrian shopping street, it contains many of the features and activities desirable on any given pedestrian shopping mall.

Another mall created during this period was on Oliver Street in Los Angeles. This shopping mall was created by the conversion of a short segment of street.

In 1938, plans were filed for a similar type of development in Daytona Beach, Florida.

In 1946, Rye, New York, developed plans for a 3-stage conversion of the entire downtown into a series of shopping malls.⁷

In the late 1950's, cities throughout the country began to recognize physical deterioration and obsolescence within their CBDs. Cities, both large and small, developed plans for the redevelopment of their central business districts.

In the mid-fifties numerous cities in the United States began to experiment with the idea of converting existing streets into shopping malls. The first of several recent conversions was made in Kalamazoo, Michigan, in 1959.

⁷ "The Impact of the Mall on Downtown — Part II", Downtown Idea Exchange, (Feb., 1959).

CHAPTER III

TYPICAL PEDESTRIAN WAY IN THE DOWNTOWN AREA

The most fashionable idea in urban design in the last few years has been to use an alluring device called separation of pedestrian and vehicular traffic. We may say that shopping malls, overpasses, and underpasses in the downtown area are a typical pattern of a pedestrian way.

Every "downtown" plan knows the role of the pedestrian and the importance of pedestrian activity. Most plans call for special amenities such as pedestrian malls, underpasses, plazas, and arcades. Treatment of the subject has been generally subjective, based on planner's intuitions and accepted planning theory.⁸

1. Horizontal Segregation:

Horizontal segregation has been incorporated in many recent shopping centers, especially in the form of shopping malls. In a form of mall, the street may be narrowed or configured to prevent the entrance of vehicles or to provide more walking space. In horizontally segregated shopping centers, people feel freedom of movement throughout the whole width of the street, and there is a pleasant atmosphere generally created by fountains, benches, sculpture, trees, etc.

⁸ R.L. Morris, "The Pedestrian, Downtown and the Planner," Journal of the American Institute of Planners, Aug., 1962.

2. Vertical Segregation:

There are several solutions for vertical segregation in the redeveloped downtown shopping centers: Pedestrians above with vehicles at ground level; vehicles above with pedestrians below ground-level; and multi-levels.

A. Pedestrians above: In larger towns, where it is difficult to cut off traffic from some streets, or where heavy pedestrian flow crosses vehicular routes, this type of segregation has been used in the form of pedestrian bridges, decks, and platforms.

Figure 3 shows a diagram of pedestrians above in the shopping center. The ground floor is utilized for service buildings and for parking. There is a vertical connection from the parking yard to the shopping area. Escalators, elevators and lifts have been used for this purpose.

B. Vehicles above: This is the opposite situation to that of "A". Figure 4 shows parking and servicing. Bridges could link the two blocks together to make a continuous service road around the scheme. There seems to be a limit to using this solution, however, because the central area is primarily for pedestrian use. People and buildings require sunlight and air for visual enjoyment. Vehicles placed in overhead view conflict with the forms of buildings and generally result in a disturbing environment.

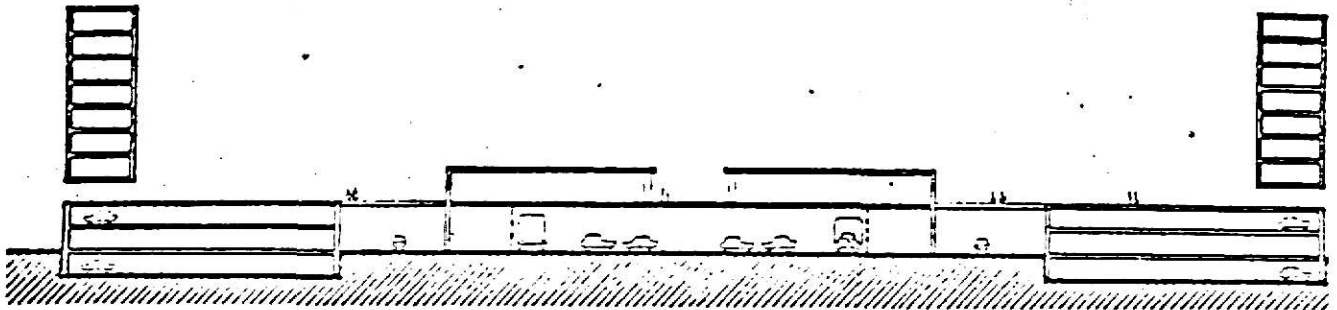


Fig. 3

Vertical segregation: Pedestrian above
From F. Gibbert, Town Design, p. 130

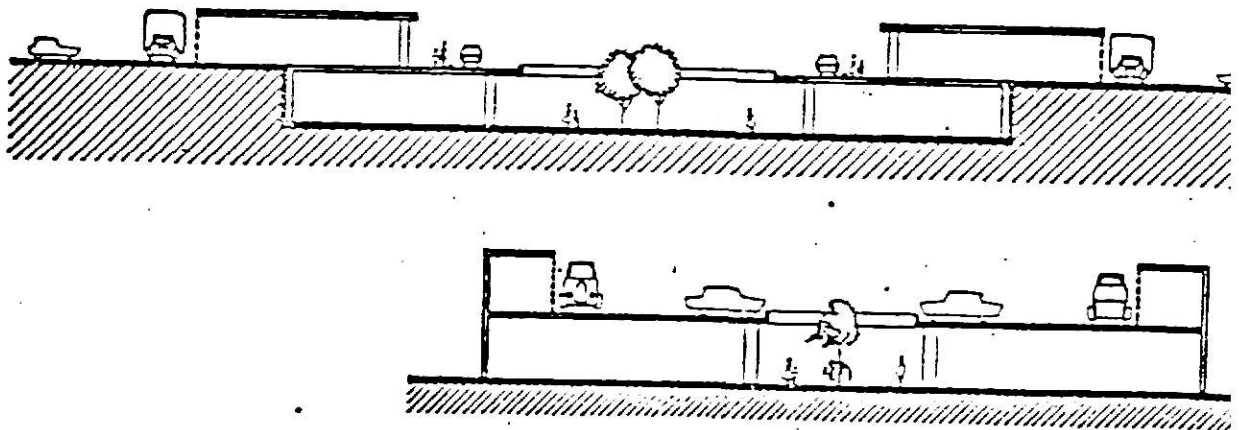


Fig. 4

Vertical Segregation: Vehicles above
From F. Gibberd, Town Design, p. 126

C. Multi-levels:: Segregation by multi-levels is the most characteristic solution for a pedestrian mall in modern cities. The underground railway, the surface transit system of buses and trains, the pedestrian, the commuter railway system, and the automobile on both expressway and arterial streets enter the center city at the same location. We see this type of segregation in many schemes such as those for Liverpool, Hook Town Center, and Philadelphia. (see Figure 5)

3. Sidewalk with a High-rise Tower::

As the pattern of a pedestrian way in the modern city was described above in terms of man-vehicle conflicts, here it might be classified in terms of man-building relations. Here, the sidewalk which is beside tremendously tall buildings is a typical pattern of city pedestrian ways.

As figure 6 indicates, we may feel as if we are in a completely canyon-like space with a sky ceiling as we walk along the sidewalk. Sometimes it may be very boring for us to walk here for several blocks, or sometimes it may be enjoyable and comfortable. We should design exterior space, created by surrounding buildings, in terms of continuity, rhythm and accent.. The sidewalks of many "downtowns", today, evidence a great lack of aesthetics and vitality.

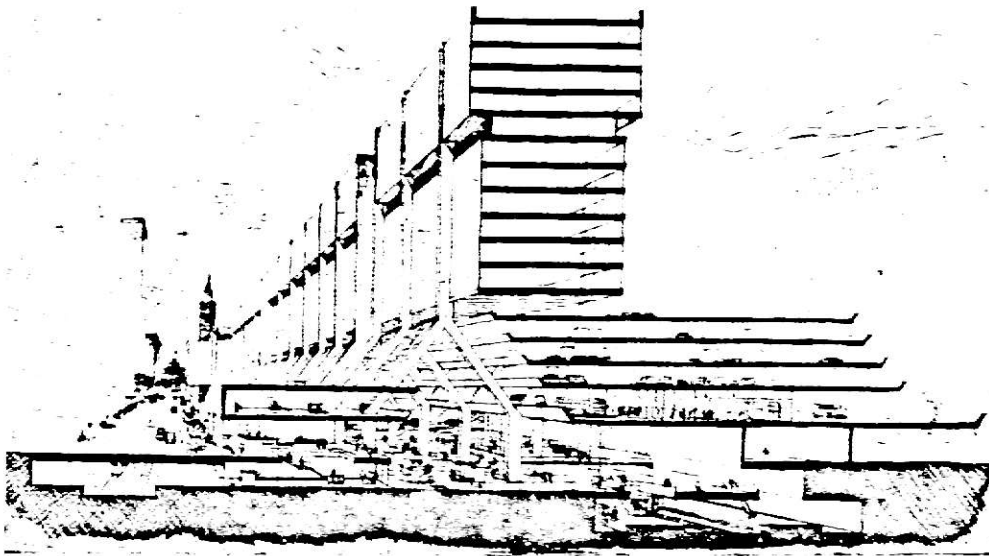


Fig. 5
Vertical Segregation
Philadelphia, U.S.A.

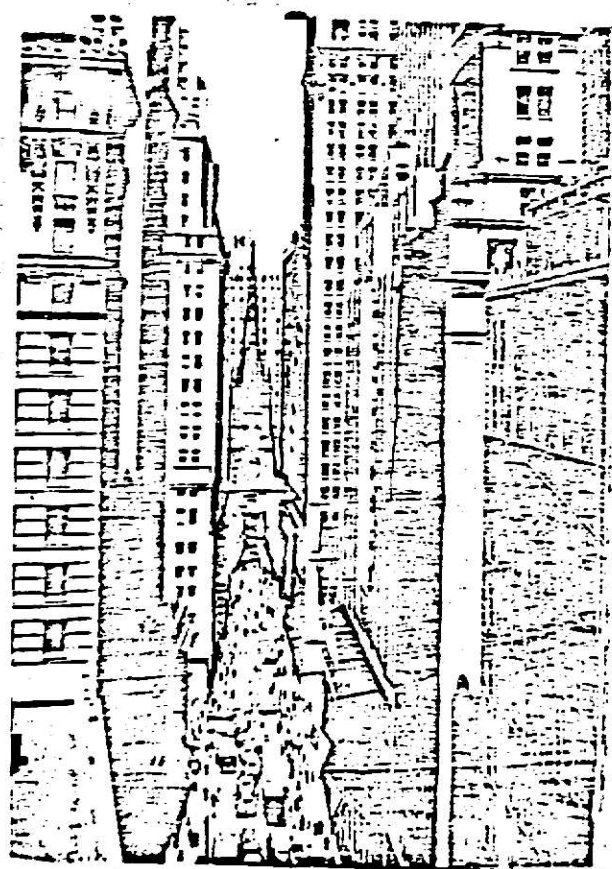


Fig. 6
Canyon-like Street
Wall Street
New York, U.S.A.

CHAPTER IV

PEDESTRIAN ACTIVITY

The downtown area presents a total pedestrian activity of its own --- business walks, shopping walks, and health and pleasure walks.

A. The business walk is characterized as people walking from the terminal (bus stop, parking lot) to their office or school. This walk with a business or school purpose can be rather dominant in the pedestrian activity of the city. It tends to be somewhat longer than other types of walks. According to R. L. Morris, the average length of this type of walk in Washington, D. C. is 2800 feet.⁹

B. The shopping walk can be conveniently broken down into two categories: That of the primary-purpose shopper and that of the person (taking lunch, banking, visiting a doctor, etc.) who incidentally shops. Obviously, psychology plays an important role here as it does in the health and pleasure walkways. Many people will walk great distances unhesitatingly if they think they are closer than they actually are. As shopping can sometimes be categorized as being for recreation or business, the various kinds of walks --- business, shopping, and recreation ---- often overlap each other downtown. There is at present a concern

⁹ Ibid. p. 154

for the pedestrian way which has multi-purpose uses. Rockefeller Plaza would be a good example of a place which is used for sightseeing, as well as for business and shopping.

The lunch walk makes up a substantial amount of the noon-hour pedestrian traffic per day downtown, yet relatively little can be done in the way of designing for it. According to Morris' report, 70 to 80% of downtown employees of Washington, D.C. leave the building for lunch and shopping.¹⁰

C. The health and pleasure walks can be casual strolls to enjoy the fresh air and check on the visual offerings along the way, or it can be to exercise or release tensions. It is not usually characterized as mainly having a health or pleasure purpose. Both of these are normally considered synotaneous or synonomous. This is typified by thousands of Parisians and tourists on the Champs Elysees as simple detours in the walk back to the office from lunch. Designing for this type of pedestrian activity requires an artistic touch and a "feeling" for traffic flow.

While continuous streets for this type of pedestrian activity have been provided in the new town concept, there exist large gaps which may impair pedestrian movement in many downtowns (i.e. with few attractions and conflicts where automobiles cross the sidewalk).

¹⁰ Ibid. p. 155

CHAPTER V

MAJOR CONCERNS OF PEDESTRIAN SHOPPING MALL DESIGN IN CBD

The basic objective of the pedestrian shopping mall is to establish a place for people to shop in the downtown area. This involves elimination of conflicts between people and vehicles, developing comfortable, attractive open spaces, walks and sitting areas. Improving the appearance of "downtown" with trees, new building fronts and better lighting can attract people and serve them better while they are in the downtown area.

While all these things are valuable in their own right, they also contribute the following benefits:

(1) Traffic separation:

Danger, noise, fumes, and confusion created by vehicular traffic cause tension and feelings of anxiety, which distract the shopper from the business of shopping. Heavy automobile traffic within the district can prevent attainment of a climate conducive to shopping enjoyment.¹¹

With congestion relieved and vehicle-pedestrian conflict eliminated, the pedestrian has freedom of movement, from which the retailers also benefit.

¹¹ Victor Gruen and Larry Smith, Shopping Towns USA, (New York: Reinhold Publishing Corp., 1960).

(2) Unification of the CBD::

The new mall would serve as a unifying element drawing stores on opposite sides of the street together, rather than separating them by vehicular traffic. Walking distances between shops on opposite sides of the street would be decreased, thus encouraging cross shopping and longer stays within the retail district.

The mall shopping district acting as the unifying force, could then compete more successfully with suburban shopping centers.

(3) Human Scale and Increased Amenities:

The pedestrian shopping mall can create a more human atmosphere in the central business district. It can be designed especially for the pedestrian. Such a shopping mall in the CBD can be effectively used for special events, promotions, displays, art festivals and other public functions. Elements catering to the pedestrian can flourish.

(4) Aesthetic Improvement::

A pedestrian shopping mall should allow for aesthetic improvement, partly through controlling signs and shop facades. Paving can be redone for pedestrian convenience. Street furniture can be improved in quality, quantity and placement. Plant materials would lend life and color.

(5) Climate Control::

The mall can accommodate trees, shelters, radiant

heaters, and other climate control devices, for use in summer and winter. Thus improving the shopping area.

The objectives of pedestrian shopping mall design obviously are to maximize pedestrian activity through convenience, safety, and attractiveness. Its design should be concerned with six factors: Pedestrian-vehicle separation and coordination, the sidewalk itself, the transition from automobile scale to pedestrian scale, the pedestrian way system, visual interruptions, and elements within the pedestrian shopping mall.

(A) Pedestrian-vehicle separation and coordination:

Proposals for the pedestrian mall include overpasses and underpasses, tunnels and other separate accesses for vehicular servicing apart from pedestrians and vehicles. Pedestrian-vehicular coordination proposes partial separation or a limited mixture of pedestrians and vehicles, and for special vehicles, primarily for pedestrian use. This pedestrian-vehicular coordination can be accomplished through signals and signs at conflict points.

Our task for designing proposals is not only to consider the safety of pedestrians, but to find out elements which would make their walks comfortable and enjoyable, and even exciting.

(B) Sidewalks:

Sidewalks should be designed in terms of size, its

relation to scale, color, form and texture of buildings, and to other sidewalks. Design solutions should include covering and shading by trees and sidewalk arcades, with wider sidewalks for kiosks, displays, and free-standing shops.

For the city, at present, we may have to consider the relationship between buildings and sidewalks in terms of height of buildings and sidewalk treatment, because the landscape of the street is bounded, not by the right-of-way, but by the buildings that are on it.

(C) Transition from automobile scale to pedestrian scale:

This is primarily concerned with the speed of movement—high, low, and foot.

It will be our concern to create a space-order which is based on changing speed in terms of a continuity as well as rhythm. Continuity and rhythm are developed by the size, form and arrangement of buildings, tree groupings, and space between these.

(D) Pedestrian way network:

An organized system of pedestrian ways typically includes parking, sidewalks, shopping squares, landmarks, and buildings concerned with pedestrian activity. It may have a parking system on a regional scale. Since walking may be thought of as a flow of experience or a continuity of individual extensions into space in time, the major concern is to consider pedestrian ways as individual entities within this area.

According to Halprin, the design of urban spaces for pedestrian use should be thought of in terms of the person in motion, and the environment through which he passes should be designed to fulfill specific functions.¹²

Design, therefore, should be planned to facilitate the character of sidewalk activities, and location of squares. Terminals and shops should offer a choice of routes for the pedestrian -- in time, familiarity, objectivity, convenience, safety, and attractiveness. A key problem is to consider each environmental element for the pedestrian --- parking, sidewalk squares, shops, and buildings as a whole.

(E) Visual Interruptions:

Visual interruptions cut off the indefinite distant view and at the same time emphasize street use by giving it a hint of enclosure and unity.

Visual interruptions within the street space should not be dead ends, but "corners". A visual street interruption is a natural "eyecatcher" and its own character has much to do with the impression made by the entire scene. Actual physical barriers would be semi-enclosed in lengths that the eye can assimilate, where attention can be focused on goods for sale, while maintaining free movement throughout the mall.

Various methods of achieving visual interruptions are

¹² Halprin, Lawrence, Cities, New York: Reinhold Publishing Corp., 1963

exemplified by the following: (a) introducing canopies --- marquees and covered crosswalks. Advantages arise functionally, from protection provided from the weather; and visually by breaking the space into smaller units without restricting movement. (b) using perpendicular visual interruption. These contribute the desired space articulation at eye level yet offer relatively free pedestrian movement.

(F) Elements within the pedestrian mall:

In the urban space, the detail and design of objects in the street are as important for a city's aesthetics as are the buildings themselves.

All elements within a mall should perform a meaningful function in an appropriate location, and in proper relationship to each other and the street space. These objects, in addition to performing their specific functions, can create unity and continuity along the mall.

The following list of suggested items for use within the pedestrian shopping mall have been classified by the function they serve.

The Floor

The floor is a very immediate and personal kind of experience for the pedestrian. It can be patterned, textured, colored, or thrown like a rich rug underfoot. In addition, the materials of floors strongly influence comfort, as well as beauty. The textures of pavings can guide the activities

and movements of pedestrians. They can channel one's direction, or prevent encroaching on specific areas, or slow one down. New materials, patterns, and variations in level can be introduced. The following list gives some possibilities:

Granite Blocks	Pebbles	Cobble Stones
Precast Pavers	Bricks	Concrete
Cut Stones	Asphalt	Terrazzo
Various Combinations of the above		

Lights

The chief justification for public lighting has been to provide enough visual information for pedestrians to use the city at night with safety. Certain pedestrian points --- crosswalks, bus stops --- can often be better identified. Linear patterns of equally spaced light sources of equal intensity do not provide accent. The designer should analyze the space in terms of user needs and add these personalized improvements.

Scale and design of pedestrian lighting are intimately related to human needs and directly influence emotions and actions. Warmth of light and a personalized atmosphere are essential. The use of indirect lighting or possibly low-wattage units close together can be considered.

Sign System:

When planning sign system components, the designer needs to understand factors:

- (1) Surroundings --- he should be concerned with the gestual

sign, shape or idiosyncrasy of the typography and the ordering device. This is composed of panel modules which can be assembled in varying combinations, organized and positioned by a support matrix. In addition, the display system itself should have inherent flexibility, for change and expansion.

Finally, the matrix system with plug-in panels impose discipline where a number of competing messages must be accommodated simultaneously within a limited space.

(2) Lettering --- The size and shape of letter form, line, width, and spacing between lines influence the understanding of the message.

Litter System

The system adopted for collecting litter will be successful only to the extent that the containers are used by the shoppers. Therefore the designer must first determine the best receptacle locations, and second, the appropriate size and shape for the receptacle.

Placement --- Enough trash receptacles should be provided to make them both immediately visible and available. Units should be near major path intersections. They should be placed near benches and in rest and recreations areas.

Container --- The desired container volume can be secured with an infinite number of valid shapes varying from geometric to quite plastic. A suitable configuration might result

from consideration of performance criteria. Shape would be influenced by such factors as means of litter removal, installation technique, degree of weather protection and odor containment desired, and choice of material.

Public Phone System:

Public telephones should be packaged to contain the necessary components plus optional features geared to the functional, aesthetic, and severity-of-use needs of the location. The unit may be a complete booth shelter, or it may be a protective and acoustic screen enclosing various components.

Phone-shelf units can be integrated with other street furniture or into convenience centers such as bus shelters. They are a successful example of urban furnishing that is derived from analysis of environmental and functional needs.

Utilitarian Facilities:

Certain elements are required for the proper functioning of the city. They have become its symbols. Because of their function or for purposes of easy recognition, their design must remain standard. These include

Fire hydrants	Traffic lights	Firealarm boxes
Mail boxes	Traffic signs	Public signs

Other similar facilities may be redesigned and integrated into the mall scheme:

Catch basins	Manhole covers	Street lights
Bollards		

Functional Amenities:

These elements, though seldom included on the conventional shopping street, may be included for the convenience of the pedestrian. Items which should be included are:

Benches	Drinking fountains	Kiosks
Bus Stop & Shelter	Outdoor displays	Phone booths
Sidewalk cafes	Taxi-ports	Tots play area

Other elements now included on shopping streets could be redesigned to achieve a more pedestrian scale or more tasteful appearance:

Signs and symbols	Street lights	Trash receptacles
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Decorative Elements:

Included in this category are items that function for pedestrian observation and pleasure:

Flags	Chimes	Flower displays
Pools	Fountains	Sculpture
Seasonal decorations	Spot illumination	Color unification
Container plants	Trees and shrubs	Supergraphics

Space Enclosing Elements:

These elements include the three dimensional objects that serve as visual interruptions and space enclosures.

Included within this category are:

Structural screens	Trees	Shrubs
Buildings	Kiosks	Canvas Canopies
Marquees	Arcades	Umbrellas
Pedestrian overpasses		

Focal Points and Activity Nodes:

The importance of punctuation and landmarks in the cityscape has been revealed in studies by Kepes and Lynch. Key public buildings can act as magnets for pedestrian traffic and if placed at the end of a mall can attract people along its entire length. Direct access to mass transit terminals is an important source of pedestrian traffic.

Large department stores also serve as magnets to pedestrian traffic and ideally are dispersed along a mall with various specialty shops in between.

From an aesthetic standpoint, landmark focal points are important in giving the mall its own identity and should be appropriately placed.

Activity nodes devoted to public displays, promotion or entertainment should be located with consideration of pedestrian movement, and attraction. (In other words, people should walk or gather when and where the designer feels it is best in relation to the shopping process.)

Climate Control Elements:

The pedestrian shopping mall in its role as a corridor between stores should provide shoppers a degree of protection from adverse weather. Street orientation in relation to sun and wind should be studied in an effort to provide a constant level of comfort throughout the year. Seasonal variations could be controlled with adjustable elements. The following

list represents a list of climate control devices that might be incorporated into a mall design:

Sunshade screens	Trees	Water & sprays
Windscreens	Canopies	Covered walkways
Radiant heaters	Arbors	

CASE STUDY:: BACKGROUND OF DEVELOPMENT OF PEDESTRIAN SHOPPING
MALL IN TRENTON, NEW JERSEY

Trenton is on the east bank of the Delaware River, 30 miles northeast of Philadelphia and 58 miles southwest of New York City. Incorporated in 1792, the city is the capitol of New Jersey and has long been known as a major manufacturing center on the East Coast. Occupying an area of 7.5 square miles,¹³ it had a 1970 population of 104,600.¹⁴ The CBD area in Trenton, has an area of only one square mile,¹⁵ within 20 city blocks. It extends roughly from the State Capitol Complex on the West to the City Hall on the East.

Up until the 1950's, Trenton's downtown area was the major commercial center in an extensive regional retail trade area. Today, Trenton's central business district is only one of several major shopping centers in the region.

Trenton's current situation has been affected by the following trends:

POPULATION

Table 1. indicates the general population growth of

¹³ Freehold Paul J. Sollami, 1970 Direct's Report, Mercer County Economic Development Commission, Trenton, N.J. 1970.

¹⁴ Arthur J. Holland, Mayor, A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec. 1972.

¹⁵ Update '73: The Department of Planning and Development Focuses on Implementation, Trenton Magazine, Sept. 1973.

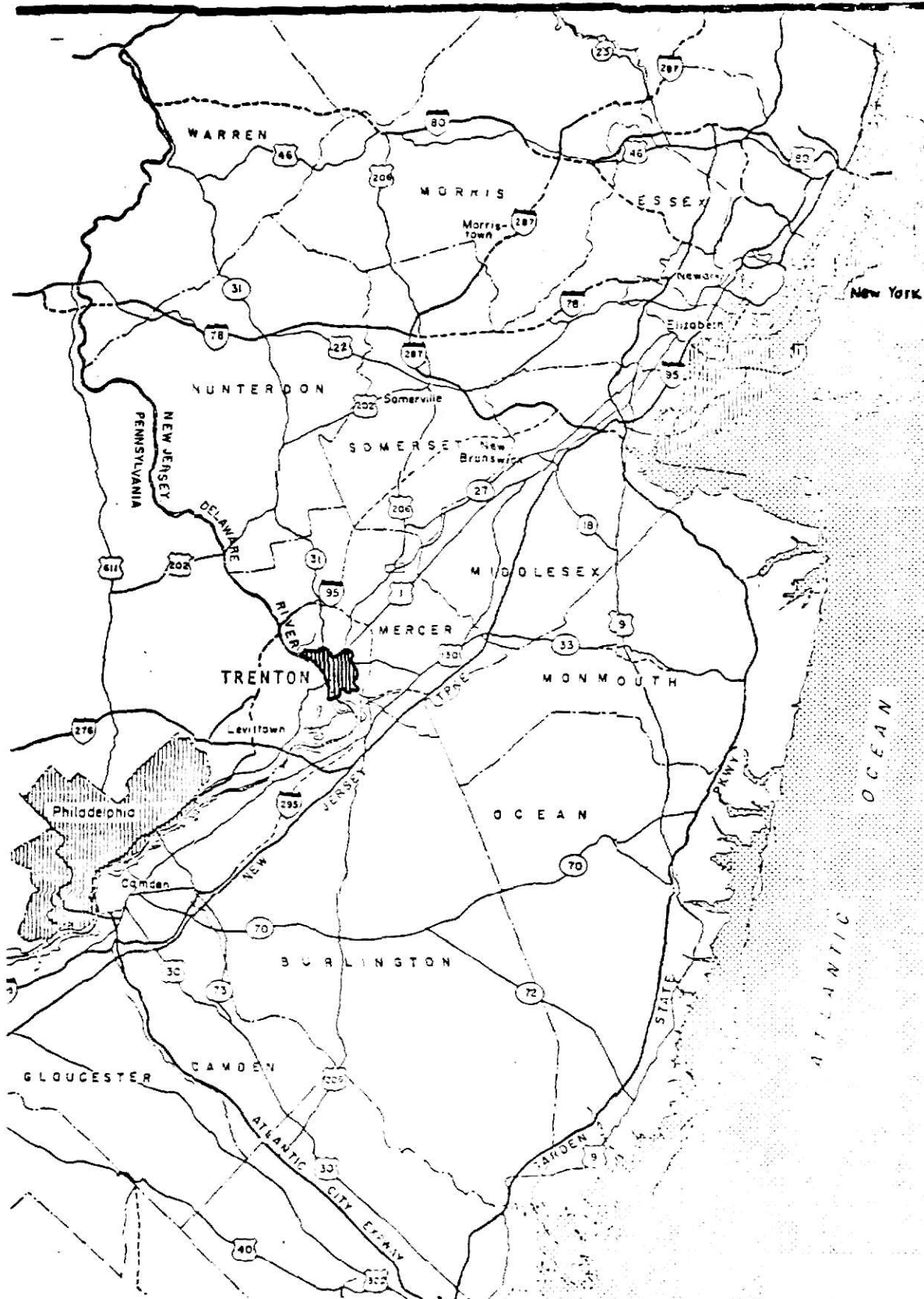


Fig. 7 Regional location of Trenton, New Jersey.

0 5 10 15

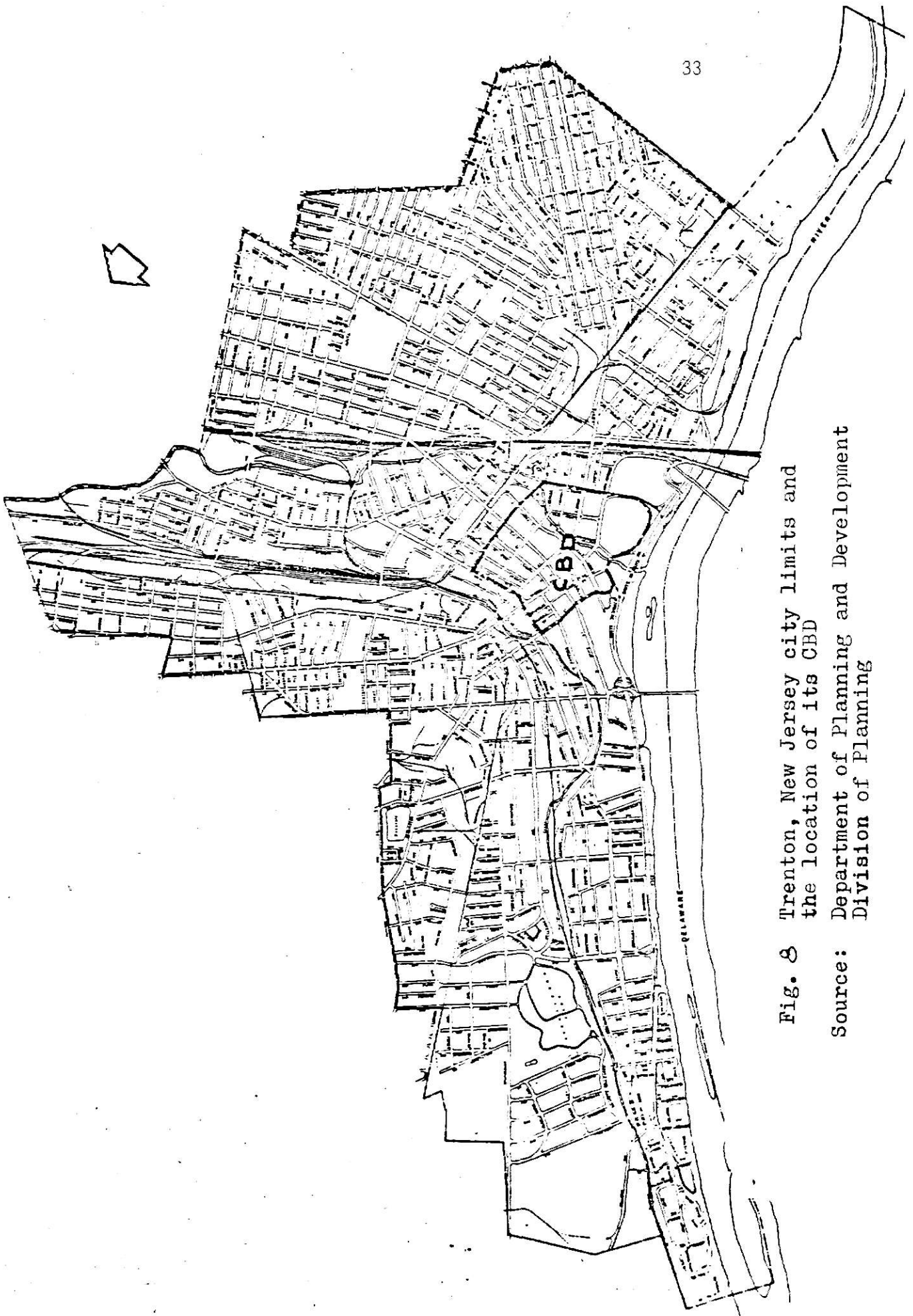


Fig. 8 Trenton, New Jersey city limits and
the location of its CBD
Source: Department of Planning and Development
Division of Planning

Trenton as compared with that of Mercer County (SMSA) from the year 1950 to 1970. It will be noted that Trenton's population experienced a 9.1% decline from 114,200 to 104,600 between 1960 and 1970, compared to a 12% rise in the population of Mercer County.

Table 1. Comparative population increases and decreases in percents for Trenton and Mercer County 1950 - 1970

Period	City of Trenton		Mercer County	
	Population	Percent Change	Population	Percent Change
1950	128,000	—	229,100	—
1960	114,200	-12.0	266,400	14.0
1970	104,600	-9.1	303,900	12.0

Source: A Comprehensive Planning Process For Trenton, City of Trenton, New Jersey, Dec. 1972.

"A very important consideration in studying Trenton's population since 1950 is its racial composition. During the 10 years between 1950 and 1960, 25,001 whites moved out of Trenton while 11,159 non-whites moved in. Between 1960 and 1970 it is estimated that about 28,800 whites moved out while more than 16,800 non-whites moved into Trenton. Thus, in 1970, it is estimated that there are 59,500 whites and 42,700 non-whites in Trenton."¹⁶

¹⁶ York Planning Corp., Mercer County, N.J. Comprehensive Planning: Population Projections, Mercer County Planning Board, Trenton, N.J., 1970.

According to census figures, in 1970, there were 64,305 whites and 39,671 non-whites actually living in Trenton.¹⁷

As indicated in Table 2, the black population in Trenton increased from 11.4% to 37.9% of the total between 1950 and 1970. This gave Trenton a population which was 37.9% black as compared with 5.1% black for the rest of Mercer County.¹⁸

Table 2. Minority population, Trenton, New Jersey
1950 - 1970

Period	Percent of Population	
	Black	Puerto Rican
1950	11.4%	---
1960	22.6%	1.6%
1970	37.9%	2.75%

Source: A Comprehensive Planning Process For Trenton, City of Trenton, New Jersey, Dec. 1972.

The composition of the population has also had important effects upon the growth of Trenton and its CBD trade area. As indicated in tables 3 and 4, Trenton's population showed a marked increase in age groups 0-19 years and over 65 years, while age groups for the county remained relatively stable.¹⁹

¹⁷ 1970 Census Report PHC (1) -217 Table p-1

¹⁸ Ibid. Table p-1

¹⁹ Arthur J. Holland, Mayor, A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec., 1972.

Table 3. Population by Age, Trenton, New Jersey.
1950 - 1970

Age	1950	1960	1970
0-19	26.9%	31.5%	34.7%
20-64	64.8%	57.0%	53.1%
65 over	8.3%	11.5%	12.2%

Source: A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec. 1972

Table 4. Population by Age, Mercer County, New Jersey.
1950 - 1970

Age	1950	1960	1970
0-19	29.0%	34.1%	35.3%
20-64	63.2%	56.3%	55.0%
65 over	7.8%	9.6%	9.7%

Source: A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec. 1972

Income

In 1950, the median income for Trenton residents was \$3,204, and the median income for residents of the balance of Mercer County was \$3,276.²⁰ By 1960 the median income for families and unrelated individuals residing in Trenton had risen to \$4,779, but the median income for the rest of Mercer

²⁰ 1950 Census of Population and Housing for Trenton, Table 1. and Table 45.

County had risen to \$6,170, an increase of 29.1%.²¹ Finally, by 1970, the median income for Trenton had risen to \$8,726, but, again, the median for the rest of Mercer County had risen to \$11,165, a 28% increase above Trenton.²² In addition, by 1970, 12.7% of the families were below poverty level compared to 6.4% for the total county.²³

Economic Base

Trenton's employment and economic base is in a state of transition. Service and government employment is increasing and should in the near future account for more jobs than manufacturing. This represents a trend toward a service oriented economy. Most of the new jobs will be white collar, which should increase the demand for office space in downtown Trenton during the decade.

As shown in table 5, Trenton's employment base has changed since 1950. At that time manufacturing jobs dominated economic activity. By 1960, manufacturing activity started to decline, with the highest rate of decline occurring during 1960 and 1970; whereas Mercer County showed an increase in manufacturing employment.

²¹ U.S. Census of population and Housing, Census Tracts, Trenton SMSA, 1960, Table p-1.

²² 1970 Census, op.cit.., Table p-4

²³ Arthur J. Holland, Mayor, A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec. 1972

Service and government jobs have doubled and now compose the largest employment category in Trenton, exceeding manufacturing. Retail and wholesale activity, representing the third highest ranking employment category in Trenton declined by 25.9% over the last decade, while increasing by 19.7% for the overall S.M.S.A. during the same period.²⁴

Table 5. Employment Trends, Trenton and Mercer County
1950 - 1970

Employment Indicator	Number of Jobs Trenton			Number of Jobs Mercer County (SMSA)		
	1950	1960	1970	1950	1960	1970
Manufacturing	29,701	25,094	15,509	45,792	35,088	39,477
N.J.. State Gov't.	7,392	10,923	16,793	7,502	11,051	17,406
Retail & Wholesale Trade	11,335	12,680	9,391	14,761	16,558	19,825
Other Serv.	10,539	13,727	14,910	13,910	18,553	27,549
Total Employ- ment	58,967	62,424	56,603	81,965	81,250	104,257

Source: N.J. Covered Employment Trends, 1950, 1960, 1970.
N.J. Department of Labor & Industry.
N.J. Civil Service -- RSH & PIN. Dept., Locations of
State Workers.

"The U.S. Census for 1970 indicates that of the city resident labor force, 3,941 worked in the city center and

²⁴ Ibid.

16,586 worked within the remainder of the city, making a total of 20,527 Trentonians (66% of the Trenton work force) employed within the city boundaries. From the remainder of Mercer County 4,686 worked in the city center and 20,624 were employed within the remainder of the city, totaling 25,310 commuters employed in Trenton in 1970."²⁵ This shows that more suburban residents within Mercer County are employed in Trenton than there are Trentonians working within the city.

In 1964 the State of New Jersey had just under 12,000 employees in downtown Trenton. At present, the State of New Jersey is estimated to have in excess of 16,000 employees in downtown Trenton, the majority of whom are office workers.²⁶

Land Use

Before 1957, residential, retail, and commercial, office, light and heavy industry were to be found within the Central Business District. The main retail area was situated on State, Broad, and Warren Streets. Numerous residences were on West State Street and in the Mercer-Jackson area. A few office buildings and the widely scattered industrial tract occupied the remaining land.

Today, the CBD is evolving toward service oriented

²⁵ Ibid.

²⁶ Gladstone Associates, Phase I Preliminary Report Trenton Mall Property, Gladstone Assoc. Economic Consultants, Washington, D.C. 1971.

activities. The major developments in land use have been the growth of office space, especially public office space, and associated parking facilities. For example, the former Arnold Constable building (108,000 square feet) which represents almost one-fifth of total CBD space is currently being utilized as office space.²⁷

The retail core has not grown nor changed location. Many of the row houses along State Street have been converted into small offices; and former industrial sites have been changed into parking lots or put to other commercial use, and some lots remain vacant.

In 1971, downtown Trenton had an inventory of 2.25 million square feet of private and public office space. One million square feet were in the private sector, and 1.25 million were in the public sector.²⁸ The State of New Jersey was the major user of office space in downtown Trenton, utilizing over 1,000,000 square feet of owned and leased space.²⁹

Retail Sale

In 1958 Trenton's CBD retail sales, as table 6 indicates

²⁷ A Comprehensive Planning Process For Trenton, City of Trenton, N.J. Dec. 1972

²⁸ Gladstone Associates; Phase I Preliminary Report Trenton Mall Property, Gladstone Assoc. Washington, D.C. 1971

²⁹ Ibid.

accounted for \$97,000,000 or 21% of metropolitan sales, but that figure had declined by 1967 to \$88,000,000 and represented only 15% of metropolitan sales. The most important factors impairing the CBD were the congestion in downtown Trenton, its obsolete physical plants, crime and a declining population base, as well as strong regional suburban competition.

Table 6. Central Business District Retail Sales As a Share of City of Trenton and SMSA retail Sales 1958 - 1967

Year	CBD	City	SMSA	CBD as Share of City	CBD as Share of SMSA
1958	\$97,210	\$284,974	\$471,418	34%	20.6%
1963	\$91,914	\$242,680	\$546,207	37.9%	16.8%
1967	\$88,970	\$241,793	\$587,301	36.8%	15.3%

Source: Bureau of Census and Gladstone Associates

Social Condition

The population remaining in Trenton tends to be older. And those migrating into the city tend to be poor and Black or Puerto-Rican. These latter groups are at the bottom of the socio-economic scale. The widening gap between lower income groups and the upper middle income groups, causes a sense of frustration, which is coupled with the problems of racism, increasing crime, and drug abuse. In 1971, Trenton was the scene of 16 of Mercer County's 18 murders.³⁰ In that same

³⁰ N.J. State Police Records Bureau, 1973

year, Trenton had five drug arrests per 1,000 population, while the rest of Mercer County had only 3.7 per 1,000, 29% fewer than in Trenton.³¹

Transportation and Parking

Trenton is very well served by regional routes. Sixteen miles south east of the city is the New Jersey Turnpike, which in 1972 carried some 300,000 vehicles per day.³² Trenton has not had the benefit of a direct highspeed, high capacity route between itself and the Turnpike. Traffic has had to utilize indirect, overloaded roads such as Routes 1 and 206 to make the connection.

In addition, Trenton is served by two types of regional mass transit: the Amtrak Passenger Railroad (formerly the Penn-Central), and six intercity bus lines. Today, the railroad has an important function, that of permitting high-speed passenger movement. Trenton occupies an unusual location, being within commuting distance of two major cities, New York and Philadelphia. As these major population centers continue to decentralize, the existence of the rapid rail service is important.

The mass transit in Mercer County has been operated as a

³¹ Ibid.

³² A Comprehensive Planning Process for Trenton, City of Trenton, N.J. Dec. 1972

private enterprise by the Capital Transit Company. The scheduled service is provided along 12 separate routes, all of which converge on downtown Trenton (7 routes run down State Street).³³ Daily bus ridership accounts for about 6 percent of all trips made within the Metropolitan area, or approximately 18,000 bus fares daily.³⁴ The authority operates 76 standard size buses, with an additional 5 in reserve, providing 2 buses per route, per hour during peak periods.³⁵

Trenton CBD area is the primary traffic generator within Trenton. "About 25,000 employees, including state, county, and local government workers commute into this densely developed 20-block area. A relatively small percentage of these people use public transit to make the trip, and as a result some 15,000 vehicles enter the area each day."³⁶

An essential part of the transportation system is provisional parking space for vehicles. In the City's central business district approximately 11,000 cars are parked each working day.³⁷ Table 7 illustrates the distribution of parking

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

³⁷ Ibid.

space now available.

Table 7. Parking Space (Demand vs. Existing)

700	Temporary off-street parking (State)
1,200	On-street parking
1,500	Municipal parking spaces
2,800	State parking spaces
5,000	Private parking spaces
<hr/>	
11,200	Total existing parking spaces
2,800	Present shortage
<hr/>	
14,000	Total Existing Demand

Source: A Comprehensive Planning Process for Trenton, City of Trenton, N.J. Dec. 1972

The map and table 8 show parking areas currently or potentially open to the public within two blocks of the Trenton Commons. It also indicates the available space, hours of operation, and current rates.

Table 8. Parking Spaces within two Blocks of Trenton Commons

Parking Lot	Hrs. Open	Free Hrs.	Spaces	Charges		
1. City of Trenton	weekend & evening	weekend & evening	104	Free		
2. Arnold Constable	weekend & evening	weekend & evening	450	Free		
3. Trenton* a. Parking	8:00-7:00	After 7&W	371	.25	.20	1.00

Table 8 con.

Parking Lot	Hrs. Open	Free Hrs.	Spaces	Charges		
4. Trenton* Parking A.	24 hrs.	----	571	.25	.20	1.50
5. Trenton* Parking A.	8:00-7:00	----	370	.25	.20	1.00
6. Trenton* Parking A.	8:00-5:00	W&After 5	75	.25	.20	1.00
7. Trenton* Parking A.	8:00-6:00	W&After 6	90	.25	.20	1.00
8. Broad St. Bank	9:00-5:00	After 5&Sun.	31	.50		.75
9. Hanover P.	8:00-6:00	Sun.	180	.60	.30	1.15
10. Yen's P.	8:00-5:00	----	45	.50	.25	2.00
11. NJ National Bank	9:00-6:00	After 6&W	75	Monthly or Bank use		
12. National St. Bank	9:00-3:00	----	20	Bank use only		
13. Stacy Garage	8:00-5:00	----	150	1.00		1.75
14. Capital P.	8:00-10:00	----	135	.50	.25	1.25
15. T.S.F.S.	8:00-5:00	After 5&Sun.	34	.50		3.00
Total Parking Spaces			2,701	First Time Hour	After Per	Max Day
* Trenton Parking Authority						

Source: Department of Planning and Development Memorandum.

Simple logistics demonstrate that parking is not fully adequate, nor is it suppotive of any growth.



Fig. 9. Location of Parking space within two blocks of Trenton Commons and Traffic Pattern

Conclusion

Trenton is facing problems similar to those of many cities of its size. As the data show it is suffering a net loss of population and jobs, while the number of jobs and people residing in the rest of Mercer County has increased. It is obvious that the growth trend has shifted out of the central city into the suburbs.

Essentially, Trenton was almost completely developed well before World War II. The vacant land for new growth, new industry, and housing was available only in small parcels. On the other hand, there was abundant vacant land in the suburbs. Consequently, most of Trenton's housing stock has aged nearly thirty years, while newer housing continues to go up in the surrounding suburban ring. Industries moving into the area, faced with a largely suburban labor force and need for space, are likely to choose a suburban location rather than a cramped urban site.

Downtown Trenton is no longer the retail shopping center --- it is an older shopping center in a cluster of new shopping centers. The center city has become the residence of the poor, the black, and the aged. The downtown trade area has become less able to support a large amount of new retail space.

The Central Business District of Trenton has increased in an office oriented manner, with specialized retail shops and services for the occupants of downtown offices. New apartments

are being built for a limited clientele from the metropolitan area.

Development of Trenton Pedestrian Shopping Mall

Trenton is like hundreds of other cities of its size in the U.S. --- Obsolescence, changing habits of shoppers, traffic congestion, parking space shortages, and suburban competition are all contributing factors. The effects are evidenced by a decline in the retail sales volume of the central business district, a decline in the relative market share of the CBD in comparison with the suburbs, an increase in vacancies in downtown buildings (including street-level space) and a consequential erosion of property values and the city tax base.

In an attempt to revitalize the downtown business, an agreement to investigate the feasibility of the idea of the Trenton Commons was reached between the Department of Planning and Development, the Heart of Trenton Businessmen's Association (H.O.T.), the Trenton-Mercer Chamber of Commerce, the U.S. Department of Housing and Urban Development, and the Trenton Parking Authority. The architecture was designed by the urban planning firm of Lee Harris Pomeroy Associates. Assisted by the York Planning Corporation, economic consultants, Wilber Smith and Associates, transportation planners determined that an open pedestrian mall coupled with a one-way traffic loop system represented the best possibility for revitalizing the CBD.

According to their analysis and study, many factors indicate that Trenton CBD can be revitalized by a program such as the Commons. First, there is an unusually large daytime population, consisting of some 27,500 employees.³⁸ Second, Trenton's central business district is both a shopping goods and general service center for many nearby residents. Today there are over 12,000 people living within a 15 minute walk of the CBD. When the urban renewal projects currently under construction near Center City reach completion the same area should contain over 20,000 residents.³⁹

Trenton also stands to benefit from general population growth in the sizeable metropolitan area in which it is centrally located. While the resident population of the City is relatively stable, the surrounding suburban towns are projected to experience rapid growth which will add to the potential core market by some 25,000 population by 1980.⁴⁰

Having determined that a pedestrian mall in downtown Trenton would constitute the most viable method of revitalization for the CBD in early 1972, the Department of Planning and

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Trenton, New Jersey, Commons Major Feasibility Considerations, York Planning Corp., Dec. 1971

Development assisted in the drafting of the legislation for such projects. These efforts were rewarded in August, 1972, when Governor Cahill signed into law "An Act authorizing municipalities to undertake, develop, construct, operate and finance, as local improvement, pedestrian malls" (NJS 40:56-65 et seq).

This legislation cleared the way for the design of the Commons by the firm of Lee Harris Pomeroy and Associates. Pomeroy was assisted in this project by Trenton Engineering Company, a local firm, which was contracted to survey the State and Broad Street areas, where the most intensive retail development in the city is, and McKee Berger Mansueto Inc., a New York firm, hired to work in co-operation with the architect in providing cost estimating and time scheduling services.

In order to utilize the Federal funds that are available to the city, the mall was redesigned in two phases. Phase I, is a pedestrian mall on two blocks of State Street (from Warren St. to Montgomery St.) and includes the sidewalk and lighting improvement along Broad Street from Lafayette to Hanover Streets.⁴¹

Phase II, will consider the extension of the pedestrian

⁴¹ Update '73 the Department of Planning and Development Focuses on Implementation, Trenton Magazine, Sept. 1973

mall both east and west on State Street, so that City Hall and State Capitol may be linked by a vehicle-free, open-air, pedestrian thoroughfare.⁴²

"In July, 1973, the Department of Housing and Urban Development awarded a \$400,000 grant to the City under the Open Space Land Program for the construction of the Commons. These funds were matched by \$400,000 received from the State of New Jersey for the sale of land to be used for highway construction, and combined with \$1,000,000 from an existing conventional urban renewal program in the center city to provide the necessary 1.8 million for the Phase I construction.⁴³

In May, 1973, the design of Phase I, was completed. The underlying principle of the Commons is the rerouting of traffic to create this shopping street and improve traffic circulation and accessibility to the downtown. The physical improvements on the mall include the installation of a brick surface across the existing street and sidewalk areas, with the elimination of curbs wherever possible to facilitate unobstructed pedestrian circulation. The Commons is organized by four canopy-covered activity nodes, one on each end of each block, with two interior open piazzas created in the areas between them. The canopies,

⁴² Ibid.

⁴³ Fact Sheet for Trenton Commons, Department of Planning and Development, City of Trenton, N.J.

which are grouped with trees, shelter a variety of street furniture suitable for sitting, eating, display, and merchandising. Cylindrical information kiosks fifteen feet tall illuminated internally, serve as informative landmarks at each of the five intersections of the mall, identifying it for motorists and pedestrians alike. In all, the physical improvements consist of nearly half a million bricks, over 45 canopy structures, 60 trees, 6 information kiosks, seating accommodations at tables for 100 people, and an extensive lighting and sound system.⁴⁴

44 Ibid.

CHAPTER VII

EVALUATION OF THE TRENTON PEDESTRIAN SHOPPING MALL

The purpose of this study is to obtain data concerning the physical appearance of the Trenton Pedestrian Shopping Mall, and what benefits businessmen and consumers have obtained from it -- in general how it affects the Trenton Central Business District. The study attempts to measure the impact of Trenton Mall from information that can now be collected and analysed. Although many planners and merchants have believed that a pedestrian shopping mall would be a stimulus to economic growth for a downtown area, we do not know the relationship between the physical design and the success of its business activities. We tend to assume that the better the physical design the more people will want to shop downtown. This study tests that assumption as it reveals current conditions in Trenton, New Jersey.

Evaluation of Physical Design

The evaluation of physical appearance was made from on-site surveys. In order to select workable measurement criteria, six categories were used from the major concerns of pedestrian shopping mall design in CBD discussed in Chapter 5 of this report. The Trenton Pedestrian Shopping Mall was divided into eight sectors for study (see fig. 11). The qualities of each sector were measured on a three-point rating scale, with "3" indicating a high rating, "2" a fair



Plate 1



Plate 2



Plate 3



Plate 4



Plate 5



Plate 6



Plate 7



Plate 8



Plate 9



Plate 10

rating, "1" a poor rating, and "0" lack of any design (see appendix A). The categories required for an average value rating are listed below. The total average rating of six categories is 1.472.

Categories Evaluated

- A. Pedestrian-Vehicle Separation and Coordination
- B. Sidewalk
- C. Transition from automobile scale to pedestrian scale
- D. Pedestrian way network
- E. Visual Interruption
- F. Elements within the pedestrian mall
 - (1) Floor
 - (2) Lights
 - (3) Sign system
 - (4) Litter system
 - (5) Public phone system
 - (6) Utility facilities
 - (7) Functional amenities
 - (8) Decorative elements
 - (9) Space enclosing elements
 - (10) Focal points and activity nodes
 - (11) Climate control elements

A. Pedestrian-Vehicle Separation and Coordination

Criteria Description	Rating Value
(a) Separating avenues for vehicular service from pedestrians and vehicles	
(b) Partial separation of pedestrians and vehicles; using signals and signs at conflict points.	3

B. Sidewalk

Criteria Description	Rating Value
(a) Design in terms of size, usage, scale color, and texture of buildings; use of covering and shading by trees and sidewalk arcades, kiosks, displays, and freestanding shops.	1.625
(b) Pedestrian linkage to other sidewalks.	

C. Transition from automobile scale to pedestrian scale

Criteria Description	Rating Value
(a) Creating a space-order in terms of continuity and rhythm; developing it by the size, form, and arrangement of buildings, tree groups, and space between these.	1.625

D. Pedestrian way network

Criteria Description	Rating Value
(a) An organized system of pedestrian ways --- parking, sidewalks, shopping squares, landmarks, and buildings as a whole in terms of physical and visual impact.	1.625
(b) The location of squares, terminals and shops offer a choice of routes through factors of time, familiarity, objectivity, convenience, safety, and attractiveness.	

E. Visual interruptions

Criteria Description	Rating Value
(a) The result of introducing canopies, marquees, and covered crosswalks.	0.625
(b) The use of perpendicular visual interruptions.	

F. Elements within the pedestrian mall(1) The Floor

Criteria Description	Rating Value
(a) The choice of materials, pattern, texture, and color for guiding the activities and movements of pedestrians.	1

(2) Lights

Criteria Description	Rating Value
(a) Providing enough visual information for pedestrians to use the city at night with safety.	1.500
(b) Identifying crosswalks and bus stops.	

(3) Sign System

Criteria Description	Rating Value
(a) Surroundings -- to organize and positioned idiosyncrasy of typography and ordering device.	1.125
(b) Lettering -- the size and shape of letter form, line, width, and spacing between lines.	

(4) Litter System

Criteria Description	Rating Value
(a) Providing trash receptacles at visible and easily available places.	
(b) Choosing appropriate size and shape for receptacles -- so as to facilitate litter removal, ease of installation, weather protection, and odor containment.	3

(5) Public phone system

Criteria Description	Rating Value
(a) Setting up a complete booth shelter or a protective and accoustic screen enclosing various components.	
(b) Integrating the phone and its shelf units with other street furniture and convenience centers.	0.625

(6) Utilitarian Facilities

Criteria Description	Rating Value
(a) The design of 10 elements (see appendix A) for easy recognition.	2.5625

(7) Functional Amenities

Criteria Description	Rating Value
(a) The design of 12 elements (see appendix A) is for the convenience of the pedestrian and for achieving a more pedestrian scale or a more tasteful appearance.	1.219

(8) Decorative elements

Criteria Description	Rating Value
(a) The design of 12 elements (see appendix A) is for pedestrian observation and pleasure.	1.025

(9) Space enclosing elements

Criteria Description	Rating Value
(a) Three dimensional objects serving as space enclosure.	1.125

(10) Focal points and activity nodes

Criteria Description	Rating Value
(a) Large department stores can act as magnets for pedestrian traffic when dispersed along a mall.	
(b) Landmark focal points give the mall its own identity and should be appropriately placed.	1.875
(c) Activity nodes devoted to public displays and promotion of entertainment should be located so as to attract pedestrians.	

(11) Climate control elements

Criteria Description	Rating Value
(a) Providing shoppers some protection from adverse weather.	0

Evaluation from Businessmen's and Consumers' Viewpoints

The questionnaire and personal interviews were used to determine the impressions of various businessmen and consumers and to determine their reactions to the pedestrian shopping mall in Trenton, New Jersey.

The questionnaire consisted of two parts: Part A, for businessmen along the mall, seeking information regarding design concept, benefits, and cooperation; part B, for consumers shopping in the mall.

Drafting A Questionnaire:

In the process of framing the questionnaire, the following factors were given considerable attention:

Part A:

- (1) Pedestrian shopping activities.
- (2) The sales volume since the mall was built.
- (3) The cooperation of businessmen in the project.

Part B:

- (1) Shopping attitudes of consumers in the mall.
- (2) Their impression of the design for pedestrian shopping.
- (3) The accessibility of the mall and its parking facilities.

The Respondents

For part A survey, people in charge of the stores, were surveyed by door-to-door interviews along the mall. The overall response by businessmen contacted was fair, about 40

of the 60 stores along the mall answering questions.

The reasons generally given for refusal to answer questions were:

- (1) Several large department stores (Nevius-Voorhees', Dunham's) declared that it was against company policy to answer any questions about the business.
- (2) Others did not see the practical application of the research.
- (3) Still others were afraid of political involvement.

For Part B of the survey, the people chosen for interviews were:

- (1) shoppers at the store,
- (2) those walking through the mall,
- (3) those sitting on benches in the mall,
- (4) and those waiting for a bus.

Since many public and private offices surround the downtown area, many people shop or relax in the mall area during the weekday lunch hour, from 11:30 AM to 2:00 PM. A few are shoppers carrying packages they have purchased during the weekend. Most of the stores in the downtown area are closed in the evening and on Sunday, with the exception of one movie theater. The whole city looked quite empty after 6:00 PM. Most interviews were conducted during the weekday lunch time and on weekends.

The response was fair also. The reasons for refusal to

be interviewed were:

- (1) They didn't have time to answer questions during their one hour lunch time.
- (2) They didn't like anything in downtown Trenton.
- (3) They didn't care about the city.

About 80 persons completed questionnaires within a three week survey period.

Analyzing the Data

To analyze the data, appropriate techniques for studying , summarizing, and drawing conclusions were used.

First, the information, which was collected through questionnaires and interviews, was to be interpreted and summarized.

Second, to develop the desired correlation among those questions, five questions were chosen for businessmen and ten for consumers from Parts A and B of questionnaires (see appendix B).

Part A --- for businessmen

- (1) Renovation of the store
- (2) Objections to changes
- (3) Good features in changes
- (4) Ability to attract people
- (5) Influence on sale volume

Part B --- for consumers

- (1) Living close to downtown
- (2) Using bus or car to reach downtown shopping area

- (3) Adequacy of parking
- (4) Difficulty in using buses to the downtown area
- (5) Frequent shopping downtown
- (6) Wide variety of stores for shopping
- (7) Kind of stores favored for shopping
- (8) Favorable attitudes toward the mall
- (9) Unfavorable impressions of the mall
- (10) Preference for shopping in Trenton Mall instead of other shopping centers

Third, in order to summarize the data into classes or categories, data were arranged to show the frequency of occurrence of values of objects in each class or category. (See appendix C).

Fourth, while the distribution of questions is interesting and informative, the key question usually focuses on the inter-relationship of question. In this study, each of the five and ten questions is potentially related to all of the others, and this interconnection can be shown in the following table:

Potential relationship among questions

Table 9: Part A -- for businessmen (10 combinations)

1 and 2	1 and 3	1 and 4	1 and 5	2 and 3	2 and 4
2 and 5	3 and 4	3 and 5	4 and 5		

Table 10: Part B -- for consumers (45 combinations)

1 and 2	1 and 3	1 and 4	1 and 5	1 and 6	1 and 7
1 and 8	1 and 9	1 and 10	2 and 3	2 and 4	2 and 5
2 and 6	2 and 7	2 and 8	2 and 9	2 and 10	3 and 4

3 and 5	3 and 6	3 and 7	3 and 8	3 and 9	3 and 10
4 and 5	4 and 6	4 and 7	4 and 8	4 and 9	4 and 10
5 and 6	5 and 7	5 and 8	5 and 9	5 and 10	6 and 7
6 and 8	6 and 9	6 and 10	7 and 8	7 and 9	7 and 10
8 and 9	8 and 10	9 and 10			

The graphic techniques for exploring these potential relationships, in the form of two-way frequency distributions, are shown in the Appendix D. (Cross Tabulation analysis)

Interpreting the Analysis of Cross Tabulation

The survey and analysis were undertaken in response to this study and an evaluation as to what might be contributing causes of the economic failure or success of the Trenton Pedestrian Mall in the businessmen's and consumers' opinion. The procedure used is: First, to look at some of the potential interrelations of the questions; second, to look at the interrelations found in the data; and third, to draw some conclusion about the policy implications of the findings.

A desirable intermediate between these questions for businessmen and consumers are:

For businessmen

If an owner renovates a store that is a part of the mall, this renovation enhances the image of the CBD. It may therefore eliminate all objections to it, and by attracting more people to the mall, it may increase sales (see fig. 11)

For consumers

The people who live close to downtown Trenton may use a bus or their cars to get downtown. This of course, requires

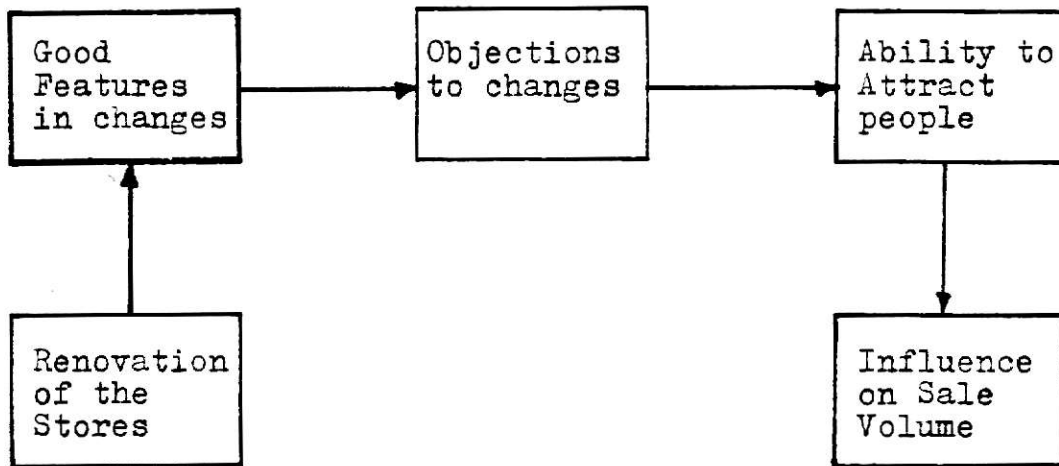


Figure 11. A desirable linkage for businessmen

A desirable linkage for Consumers

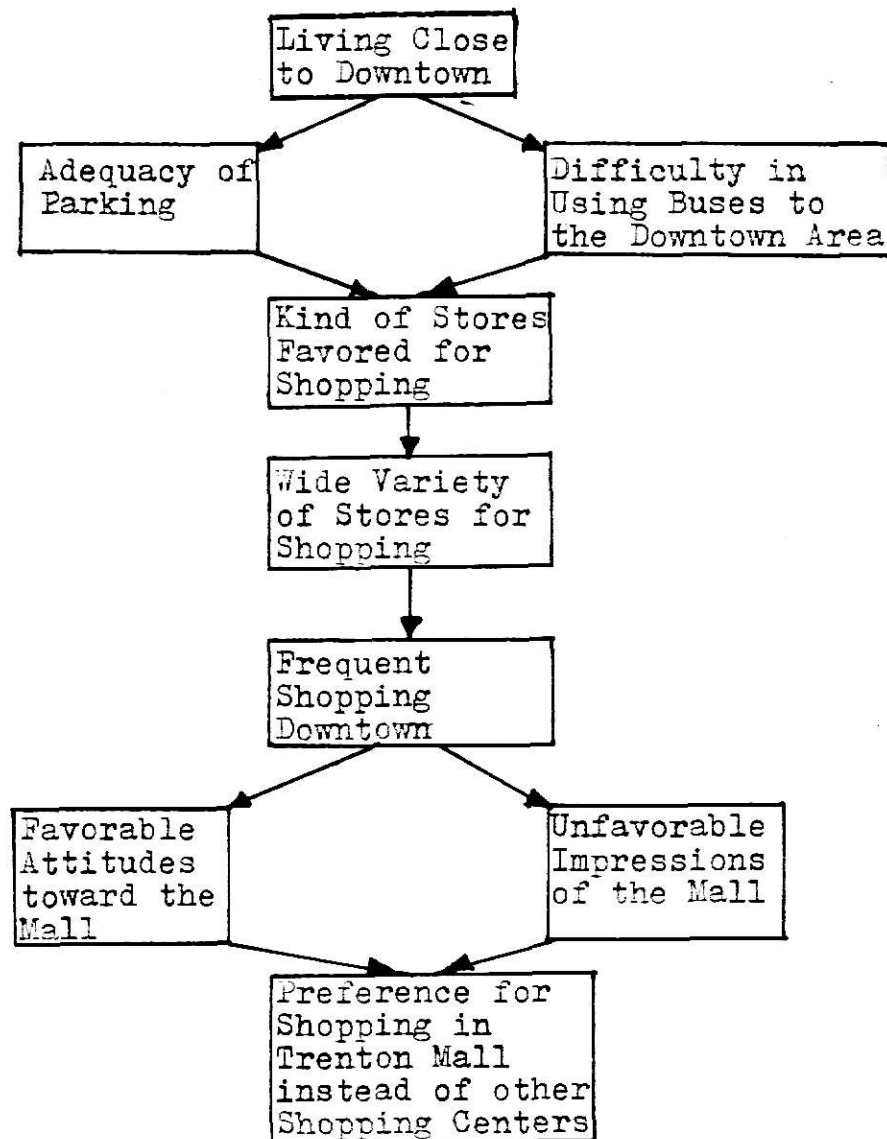


Figure 12. A desirable linkage for consumers

adequate parking space for cars around the mall or for shoppers who have no difficulty in using a bus to get downtown. Then people should be able to find desirable stores in which to shop in the mall. Shoppers should be made to feel that there is sufficient variety of stores for shopping, so that they will want to go downtown to shop often. Thus, those who like the Trenton Mall would, of course, prefer shopping there to shopping in another shopping center (see fig. 12).

The finding of cross tab analysis (see appendix D) provides the correlations among those questions. As table 9 and table 10 show there are 10 pairings and 45 pairings of questions related to each other. Table 11 and 12 list each of these possible pairings, and beside each potential relationship is written a judgment as to whether the relationship in the data reveals the link to be strong, weak, or lacking. These found relations listed in table 11 and 12 can be portrayed in fig. 13 and 14 as the linkage revealed through the analysis.

Table 11 Found Strength of Relations for businessmen

Potential relationship between factors	Judged strength of found relations
1 and 2 Renovation of the store and objections to changes	weak
1 and 3 Renovation of the store and good features in changes	none
1 and 4 Renovation of the store and ability to attract people	none

Table 11 con.

Potential relationship between factors		Judged strength of found relations
1 and 5	Renovation of the store and influence on sale volume	none
2 and 3	Objections to changes and good features in changes	strong
2 and 4	Objections to changes and ability to attract people	none
2 and 5	Objections to changes and influence on sale volume	none
3 and 4	Good features in changes and ability to attract people	strong
3 and 5	Good features in changes and influence on sale volume	strong
4 and 5	Ability to attract people and influence on sale volume	strong

Table 12 Found Strength of Relations for Customers

Potential relations between factors		Judged strength of found relations
1 and 2	Living close to downtown and using bus or car to reach downtown shopping area	strong
1 and 3	Living close to downtown and adequacy of parking	none
1 and 4	Living close to downtown and difficulty in using buses to the downtown area	none
1 and 5	Living close to downtown and frequent shopping downtown	none
1 and 6	Living close to downtown and wide variety of stores for shopping	none

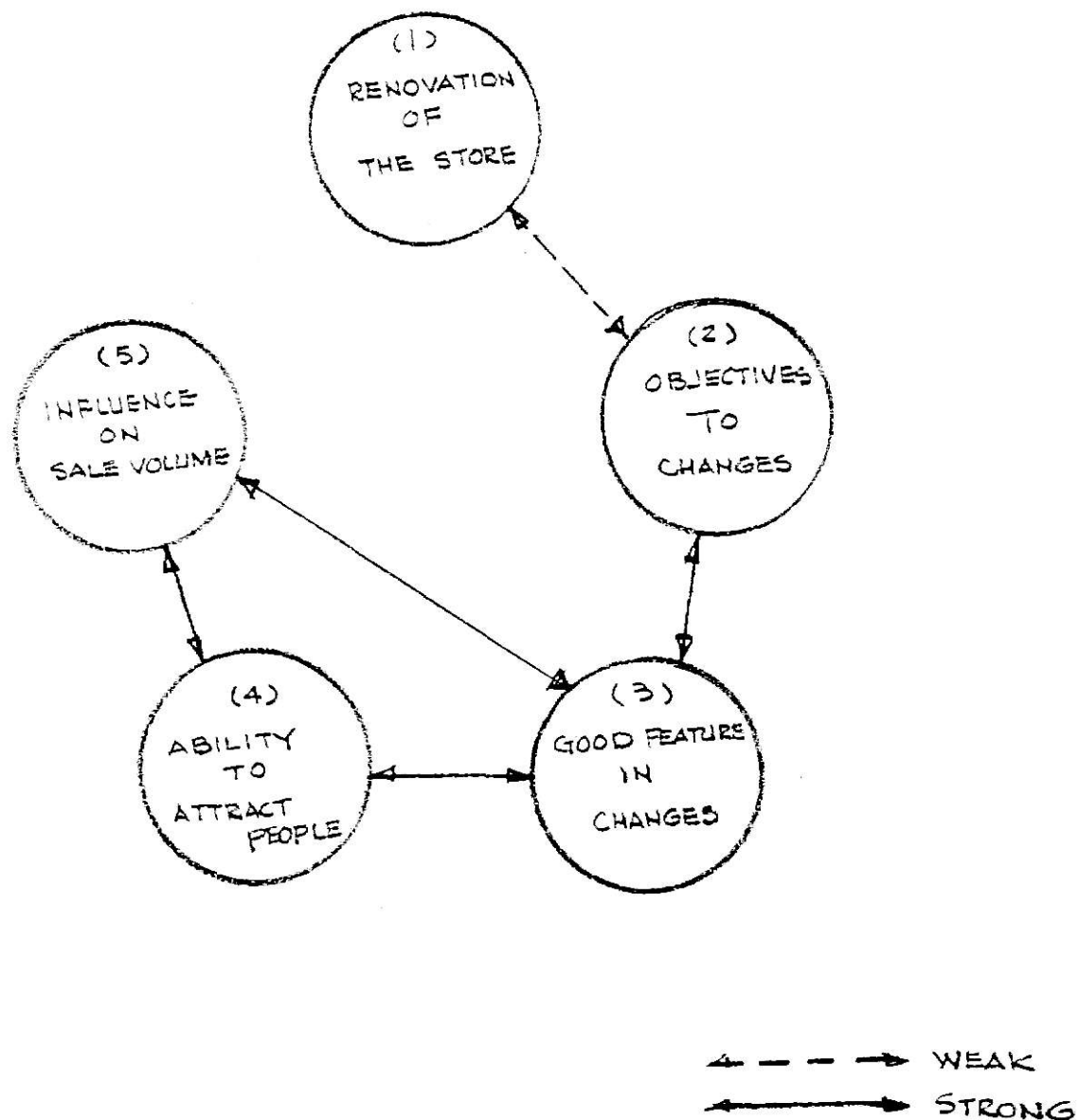


Figure 13. Graph of Found Relations for Businessmen

Table 12 con.

Potential relations between factors		Judged strength of found relations
1 and 7	Living close to downtown and kind of stores favored for shopping	none
1 and 8	Living close to downtown and favorable attitudes toward the mall	strong
1 and 9	Living close to downtown and unfavorable impressions of the mall	none
1 and 10	Living close to downtown and preference for shopping in Trenton Mall instead of other shopping centers	weak
2 and 3	Using bus or car to reach downtown shopping area and adequacy of parking	none
2 and 4	Using bus or car to reach downtown shopping area and difficulty in using buses to the downtown area	none
2 and 5	Using bus or car to reach downtown shopping area and frequent shopping downtown	strong
2 and 6	Using bus or car to reach downtown shopping area and wide variety of stores for shopping	none
2 and 7	Using bus or car to reach downtown shopping area and kind of stores favored for shopping	none
2 and 8	Using bus or car to reach downtown shopping area and favorable attitudes toward the mall	strong
2 and 9	Using bus or car to reach downtown shopping area and unfavorable impressions of the mall	none
2 and 10	Using bus or car to reach downtown shopping area and preference for shopping in Trenton Mall instead of other shopping centers	none

Potential relations between factors	Judged strength of found relations
3 and 4 Adequacy of parking and difficulty in using buses to the downtown area	none
3 and 5 Adequacy of parking and frequent shopping downtown	none
3 and 6 Adequacy of parking and wide variety of stores for shopping	none
3 and 7 Adequacy of parking and kind of stores favored for shopping	weak
3 and 8 Adequacy of parking and favorable attitudes toward the mall	none
3 and 9 Adequacy of parking and unfavorable impressions of the mall	weak
3 and 10 Adequacy of parking and preference for shopping in Trenton Mall instead of other shopping centers	strong
4 and 5 Difficulty in using buses to the downtown area and frequent shopping downtown	none
4 and 6 Difficulty in using buses to the downtown area and wide variety of stores for shopping	none
4 and 7 Difficulty in using buses to the downtown area and kind of stores favored for shopping	weak
4 and 8 Difficulty in using buses to the downtown area and favorable attitudes toward the mall	none
4 and 9 Difficulty in using buses to the downtown area and unfavorable impressions of the mall	weak

Potential relations between factors	Judged strength of found relations
4 and 10 Difficulty in using buses to the downtown area and preference for shopping in Trenton Mall instead of other shopping centers	strong
5 and 6 Frequent shopping downtown and wide variety of stores for shopping	weak
5 and 7 Frequent shopping downtown and kind of stores favored for shopping	none
5 and 8 Frequent shopping downtown and favorable attitudes toward the mall	strong
5 and 9 Frequent shopping downtown and unfavorable impressions of the mall	none
5 and 10 Frequent shopping downtown and preference for shopping in Trenton Mall instead of other shopping centers	weak
6 and 7 Wide variety of stores for shopping and kind of stores favored for shopping	none
6 and 8 Wide variety of stores for shopping and favorable attitudes toward the mall	strong
6 and 9 Wide variety of stores for shopping and unfavorable impressions of the mall	none
6 and 10 Wide variety of stores for shopping and preference for shopping in Trenton Mall instead of other shopping centers	none
7 and 8 Kind of stores favored for shopping and favorable attitudes toward the mall	none
7 and 9 Kind of stores favored for shopping and unfavorable impressions of the mall	none
7 and 10 Kind of stores favored for shopping and preference for shopping in Trenton Mall instead of other shopping centers	weak

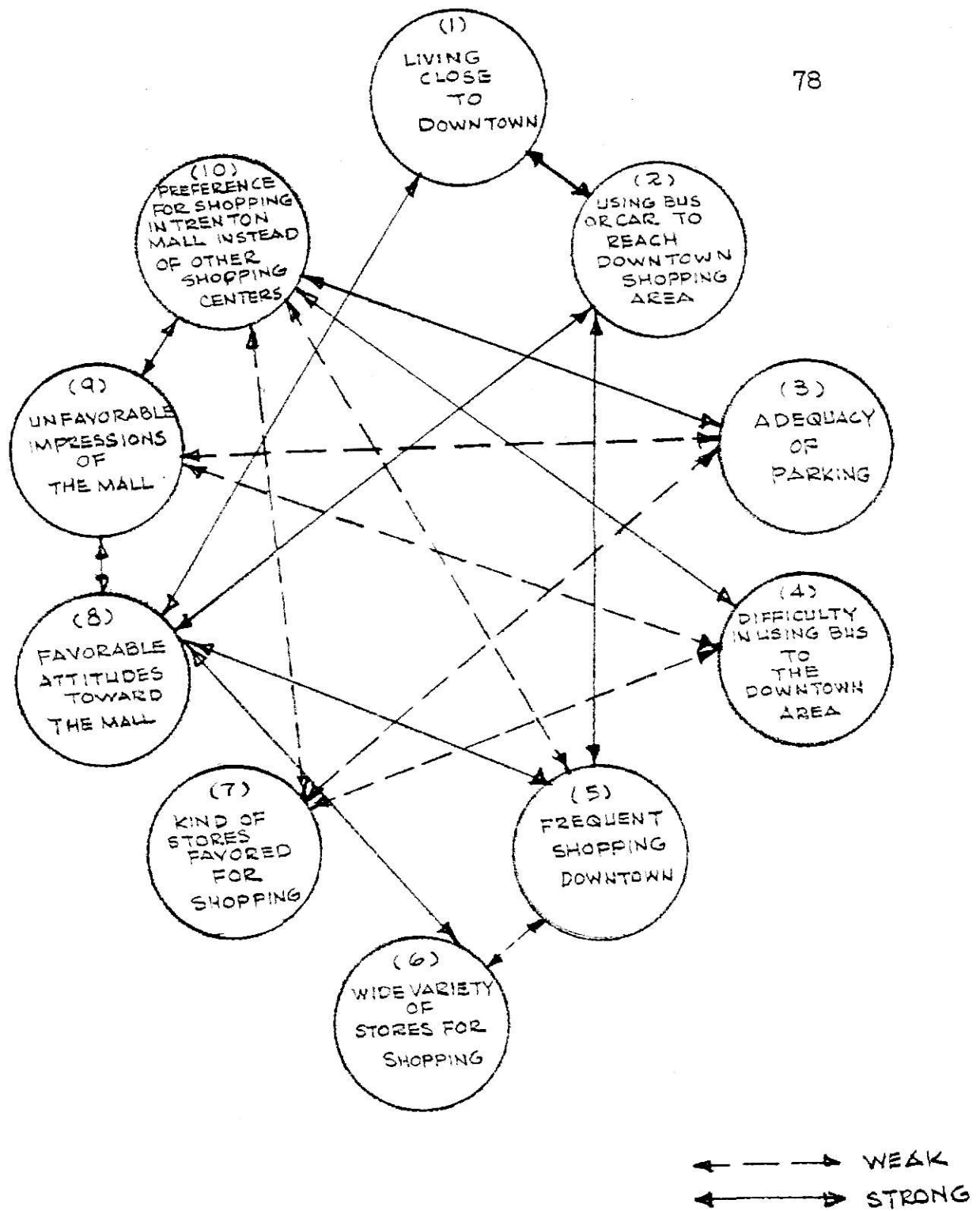


Figure 14. Graph of Found Relations for Customers

Potential relations between factors	Judged strength of found relations
8 and 9 Favorable attitudes toward the mall and unfavorable impressions of the mall	weak
8 and 10 Favorable attitudes toward the mall and preference for shopping in Trenton Mall instead of other shopping centers	none
9 and 10 Unfavorable impressions of the mall and preference for shopping in Trenton Mall instead of other shopping centers	strong

Figure 13, presents the businessmen's views. Several things affected sale volume increase, which indicates the economic success of the Trenton downtown area. Good features attracted people directly.

Figure 14, which presents the consumers' views, shows that several things affect people's preference for shopping in the Trenton Pedestrian Mall. Adequate parking and having no difficulty in getting a bus for downtown shopping affected the popularity of the Mall directly as did dislike of the Trenton Mall.

Result of Analysis

What kinds of overall observation can be made from the rating scale for physical design, the frequency distribution and cross tabulation analysis performed for this study?

Several generalizations are suggested by the results of this

analysis.

First, the physical appearance of Trenton Mall is poor and the average rating value is 1.472.

Second, from the businessmen's viewpoint:

(1) The frequency distribution analysis indicated that the Trenton Pedestrian Shopping Mall in CBD area proved an economic failure. Nearly 60% of the businessmen said that the sale volume had not increased since the mall was built. By the end of January 1975, they predicted that at least 10 of the businesses on the two block long mall would be closed or bankrupt.⁴⁵

(2) The street furniture within the mall, the elimination of curb-parking and a charge for parking space were severely criticized by the businessmen.

(3) The renovation of a store by the owner is not a key to sale volume increase in the business.

(4) The pedestrian shopping environment, which has a good rating, is the only good feature in the Trenton Mall. Good features increase sale volume in business.

(5) Six to eight percent of the businessmen along the mall were not enthusiastic about the renovation of their stores as part of the project.

Third, from the consumer's viewpoint:

(1) Most of the shoppers coming to the downtown shopping mall

⁴⁵ The Trenton Evening Times, Jan. 16, 1975

work in the downtown area and use their lunch hour to do some shopping.

(2) Because of the social problems in downtown Trenton and the development of regional shopping centers in recent years, about 80% of the shoppers prefer other shopping centers to the Trenton Pedestrian Mall.

(3) The Trenton Mall provides a place for people to sit and relax so that the people who work in downtown Trenton like the atmosphere of freedom from traffic.

(4) The variety of stores in a shopping area seems unrelated to the popularity of downtown shopping areas.

(5) The poor physical design of the Trenton mall has had a negative influence on shopping activity.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

This study is limited in scope and therefore may not answer all the questions of everyone who wishes to build a pedestrian shopping mall. However its analytical approach and suggestions for creating such a shopping center should help planners avoid costly mistakes in setting one up in their own city. The following conclusions have been developed from the study of the Trenton Mall.

(1) Such a downtown pedestrian mall needs to avoid pedestrian-vehicular conflict.

(2) Poor design in the physical layout and unwise choice of elements can reduce the effectiveness of such a mall.

(3) Store renovation within the mall obviously must be related to business activity there.

(4) Social problems in the downtown area will inevitably affect economic conditions there.

(5) Curb parking may be a major problem to be eliminated, since it increases the distance from parking areas to shopping zones.

RECOMMENDATIONS FOR THE TRENTON PEDESTRIAN SHOPPING MALL

Recommendations for this mall were developed through continuous checking with the analysis of problems presented and criteria discussed in previous chapters.

A. Pedestrian-Vehicle Separations and Coordination.

Since most Trenton merchants complained about curb parking in the mall, the existing pedestrian street could be developed for one-way traffic, for low speed buses and for taxi passbys, bus shelters, and taxi-ports along the street. Then shoppers can get off the bus or taxi in front of the store in which they want to shop. During the downtown office lunch hour (from 11:30 a.m. to 2 p.m.) this street should be used for pedestrians only.

B. Sidewalks

Flower displays and free-standing shops could replace the small white poles, which are not three-dimensional, along the pedestrian street. The relation between buildings, sidewalks and the total environment should be considered in terms of scale, color, form, and texture.

C. Transition from Automobile Scale to Pedestrian Scale

The existing street could use advantageously placed plantings, benches, fountains, and street sculpture to create a space order with continuity and rhythm.

D. Pedestrian Way Network

A pedestrian arcade could be constructed along the sidewalk from the parking area to the pedestrian shopping mall, so that pedestrian movement could be organized physically as well as visually.

E. Space Delineation

Overhead canopies could be built to run along the store fronts and cross the mall at regular intervals. They would not only help delineate the space but also would provide a degree of protection from adverse weather.

F. Elements within the Pedestrian Mall

(1) The Floor

Designs on the floor of the mall, in pleasing patterns and colors, could be used to direct shoppers to bus stops, stores, and shopping squares.

(2) Lights

Bright lights increase safety and security at night.

(3) Sign System

Hodge-podge signs could be replaced by signs that harmonize in lettering and design to guide shoppers to stores. Sign design should be coordinated with the mall design.

(4) Public Telephone System

Public telephone units can be redesigned to provide a protective and accoustical screen enclosing the various components.

(5) Functional Amenities:

Benches, kiosks, bus stops, shelters, outdoor

displays, and sidewalk cafes, could provide increased attractions for the mall.

(6) Space Enclosing Elements:

Trees, arcades, and kiosks also would add interest in the mall.

(7) Climate Control Elements:

Canopies along the store fronts would provide some protection from adverse weather.

(8) Police Protection

Extra police protection should be provided for the downtown shoppers.

(9) Parking Problems

Free parking -- for a stretch of at least two hours -- should be provided for shoppers. A parking garage nearby might well solve the parking problem in downtown Trenton.

(10) Promotional Projects

Activities that would draw shoppers to the area could include such projects as fashion shows, special holiday displays, and exhibits of arts and crafts. Other possibilities are musical events, parades and rallies, boat and car shows, children's activities, conventions.

COMPETITION FROM OTHER SHOPPING CENTERS

The pedestrian shopping mall in a downtown area often faces

stiff competition from outlying shopping centers. These centers may have attractions that the downtown area cannot provide including larger stores with a greater variety of things for sale. Regional shopping centers and enclosed malls may have advantages impossible for the typical CBD to achieve. For example, consider the Oxford Vally Mall, within a twelve minute drive across the Delaware River from Trenton, N.J. -- one of the nation's largest enclosed shopping malls.

Directly north of the city the Quakergridge shopping mall now plans a commercial complex of a million square feet.

Similar developments are being planned near other cities.

SOCIAL PROBLEMS

Social problems afflict mall development in most downtown areas. Most frequently encountered problems are vandalism and vagrancy -- which necessitate the deployment of extra police for foot patrols.

A project of the magnitude and complexity of a downtown shopping mall requires the cooperation of all property owners of the proposed mall.

CONCLUSION

The information assembled in this study should be helpful for any city contemplating CBD renovation.

The first step in planning, of course, should be a comprehensive Feasibility Study. This would include analyses

of public attitudes and opinions, transportation studies, economic analyses. Visits to other malls and urban renewal projects would be invaluable.

Acknowledgments

Many persons and organizations have been extremely helpful in furthering this study. I especially thank Professor C. Keithley who, over the last year, has advised me and given helpful criticism and suggestions for working out this report.

I thank the faculty members of my committee: Professor Ray Weisenburger, Professor Ronald Reid, and Professor Vernon Deines, head of the Dept. of Regional and Community Planning, who have made encouraging and helpful comments.

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My thanks also go to Helen Hostetter, emeritus professor of journalism at Kansas State University, for editing this report.

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APPENDIX "A"

PHYSICAL EVALUATION

	1	2	3	4	5	6	7	8	Total Average
(d) Mail Boxes	non-existent								
(e) Traffic signs	3	3	3	3	3	3	3	3	3
(f) Public signs	3	3	3	3	3	3	3	3	3
(g) Catch basins	2	2	2	2	2	2	2	2	2
(h) Manhole covers	2	2	2	2	2	2	2	2	2
(i) Street lights	1	1	1	1	2	2	2	2	1.5
(j) Bollards	non-existent								
(7) Functional Amenities									1.219
(a) Benches	1	1	2	1	0	1	0	0	0.75
(b) Drinking Fountains	non-existent								
(c) Kiosks	2	2	2	2	2	2	2	2	2
(d) Bus stop and Shelter	0	0	0	0	0	1	0	0	0.125
(e) Outdoor Display	1	1	1	1	0	1	0	0	0.625
(f) Phone booth	1	1	1	1	0	1	0	0	0.625
(g) Sidewalk Cafes	non-existent								
(h) Taxi-ports	non-existent								
(i) Tots play area	non-existent								
(j) Signs and symbols	1	1	1	2	1	1	1	1	1.125

APPENDIX "B"

QUESTIONNAIRE FOR BUSINESSMEN - PART A

QUESTIONNAIRE FOR CONSUMERS - PART B

APPENDIX "B"

QUESTIONNAIRE FOR BUSINESSMEN - PART A

1. What features of this mall do you feel are good?
(please list)
2. What are your criticisms of the construction of this mall? (please list)
3. Do you think the design of this shopping mall is good?
If not, what are your criticisms?
4. Do you feel that the construction of this mall has attracted people to the downtown area for shopping?
(a) yes (b) no
5. Have you noticed any sales volume increase since the mall was built?
(a) yes (b) no
6. In which of the following ranges do you estimate your percentage increase in sales to have been?
(a) 1-2% (b) 2-5% (c) 5-10% (d) 10-20% (e) Over 20%
7. Do you own, rent, or lease your store?
(a) own (b) rent (c) lease
8. Did you renovate the store as part of the mall project?
(a) yes (b) no
9. Do you feel that renovation, in itself, might have increased your sales volume?

QUESTIONNAIRE FOR CONSUMERS - PART B

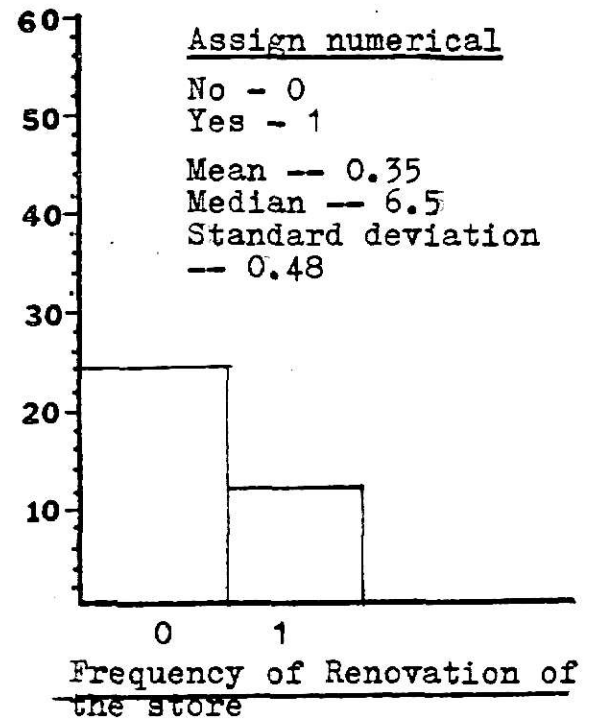
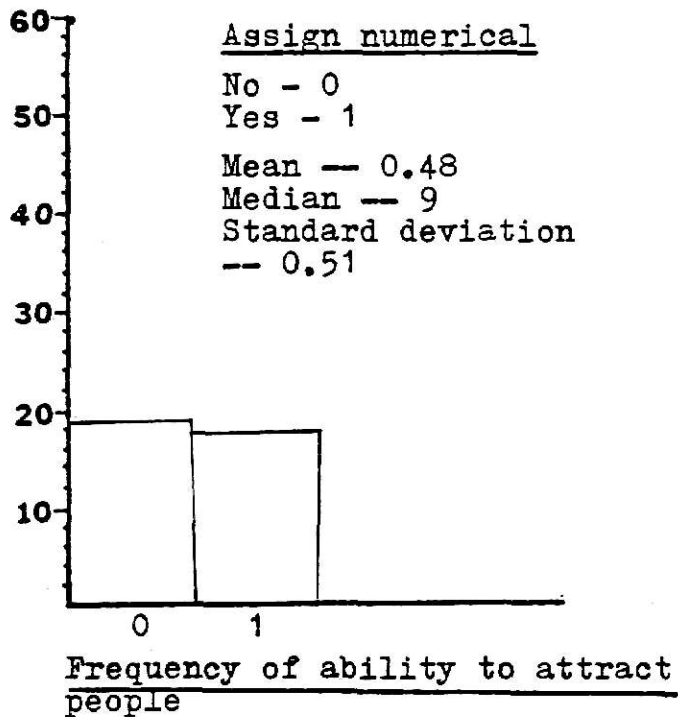
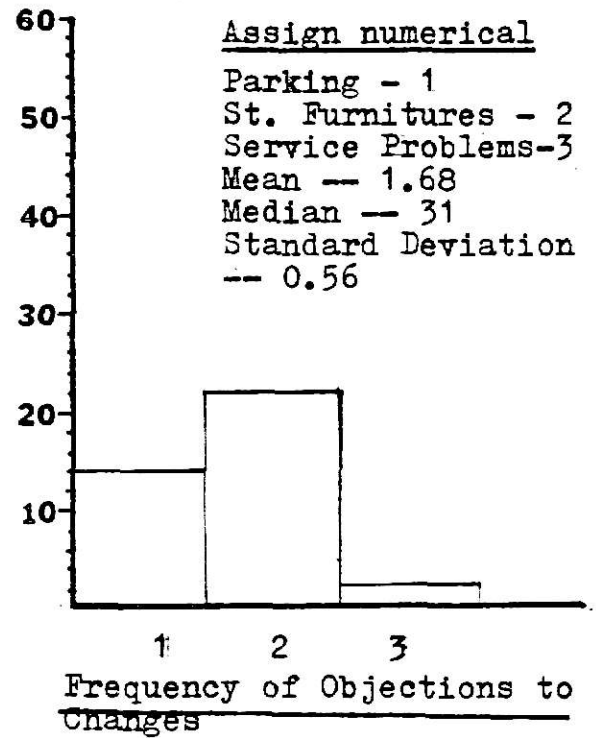
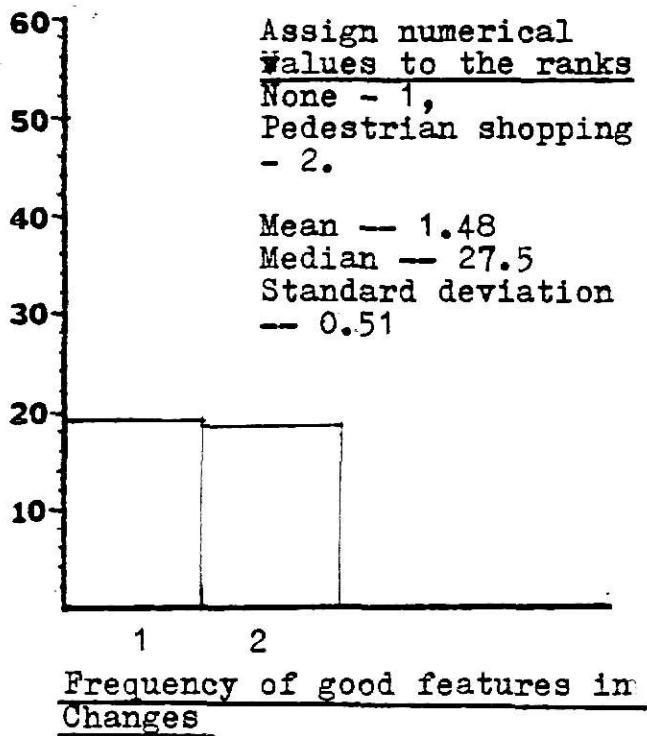
1. Do you live close to downtown Trenton? If not, where are you from?
2. Do you feel there is a wide variety of stores in Trenton Commons for your shopping?
(a) yes (b) no
3. Do you come to the downtown shopping area often?
(a) yes (b) no (c) Why?
4. What kind of stores in the Trenton Commons do you like best to shop in? (i. e. department store, specialty store, grocery, other)
5. What do you like about the mall shopping environment?
6. What do you dislike about the mall shopping environment?
7. Do you use the bus or a car to shop downtown?
(a) bus (b) car
8. Do you have any difficulty in utilizing a bus to go downtown from you home? Please specify what problems if any are encountered.
(a) yes (b) no
9. Are there adequate parking facilities in the mall area?
(a) yes (b) no
10. If the stores were open in the evening, would you want to shop at night? If not, why?
11. Is the Commons your favorite shopping center? If not, which one is your favorite?
(a) yes (b) no

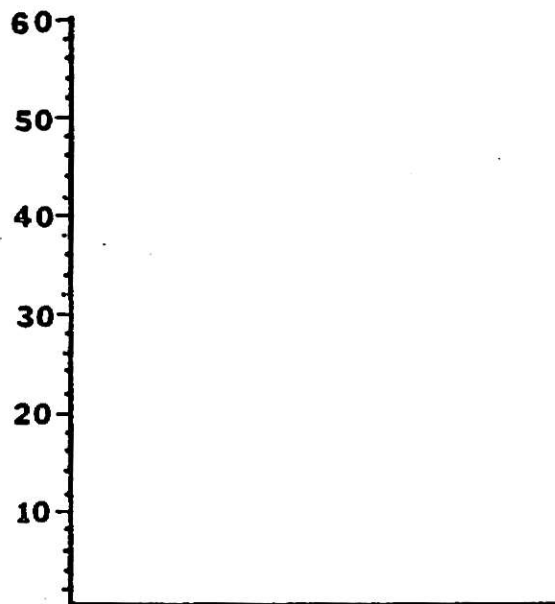
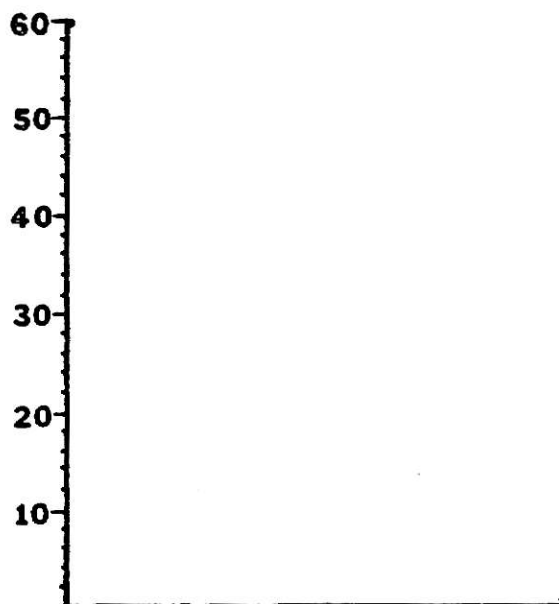
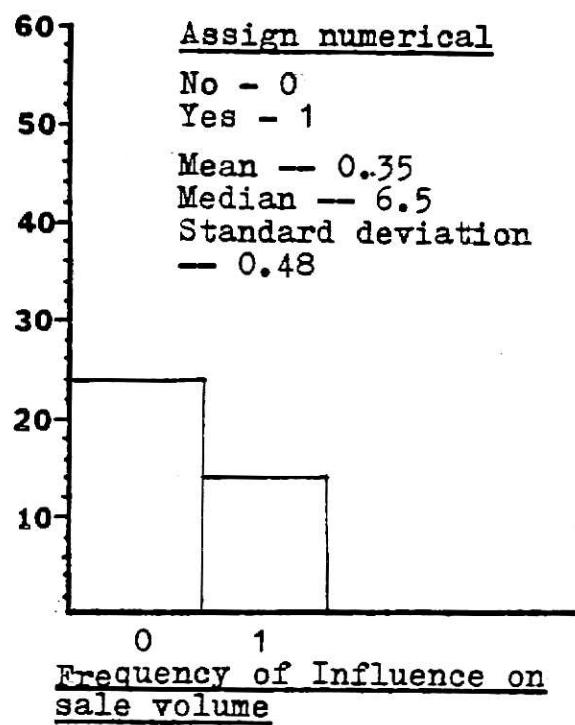
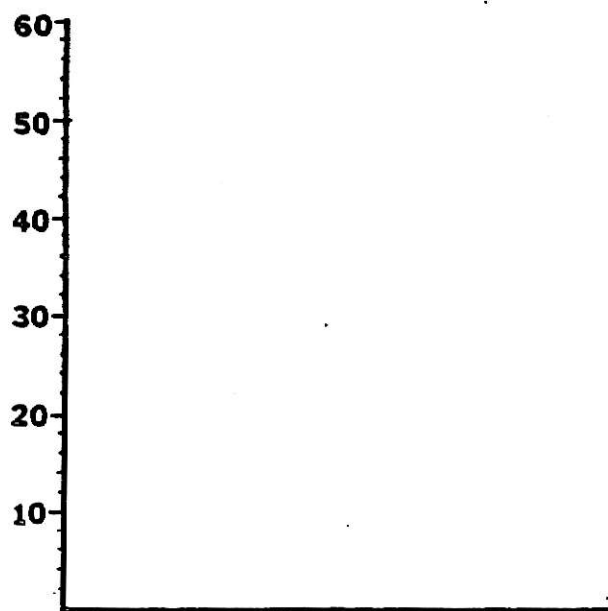
APPENDIX "C"

FREQUENCY DISTRIBUTION ANALYSIS

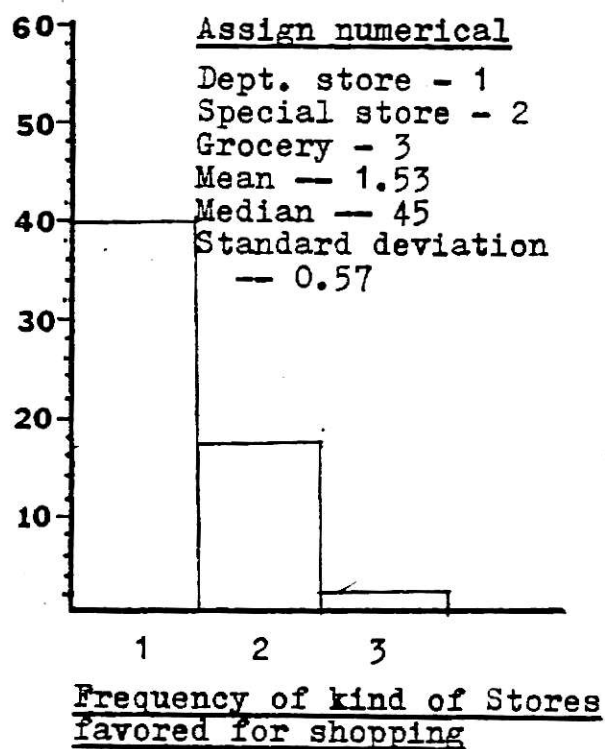
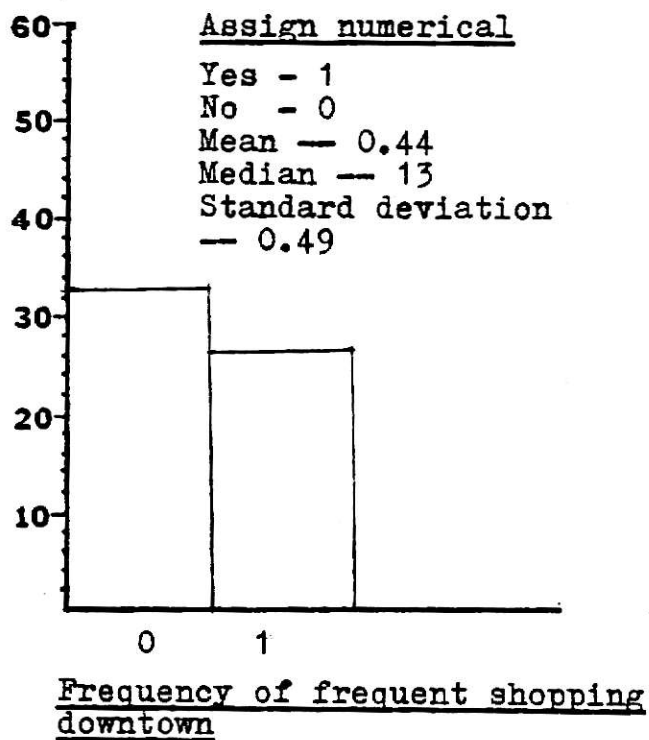
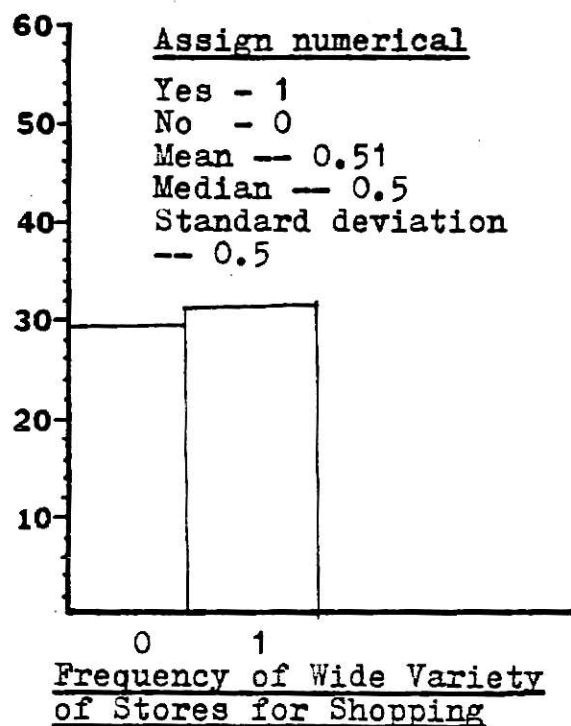
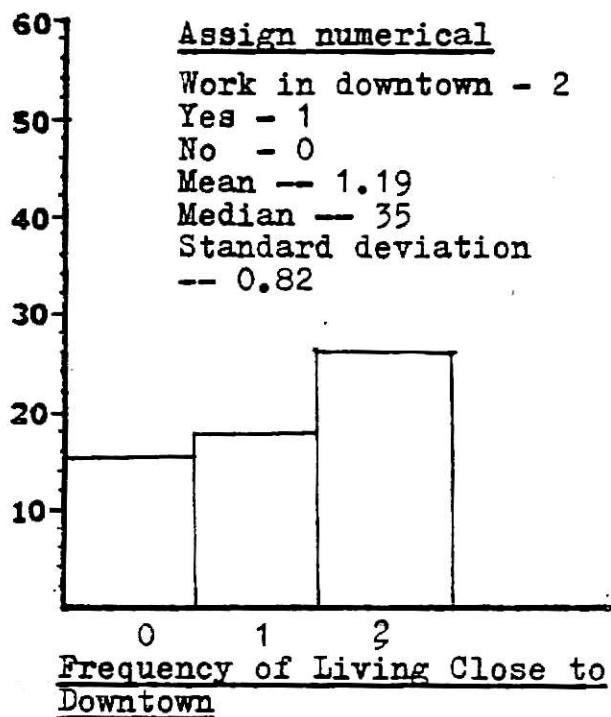
PART A - FOR BUSINESSMEN

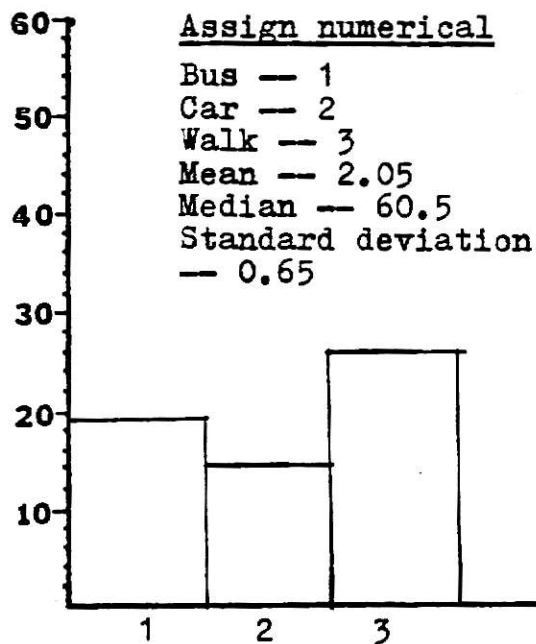
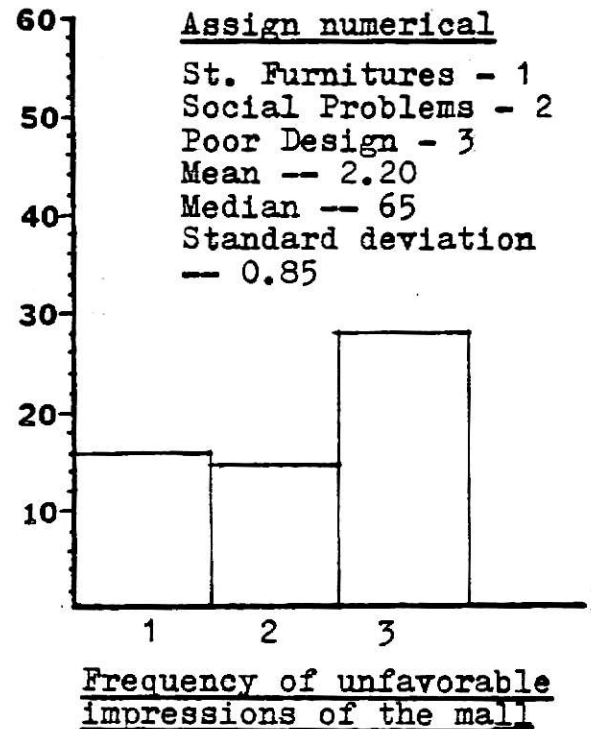
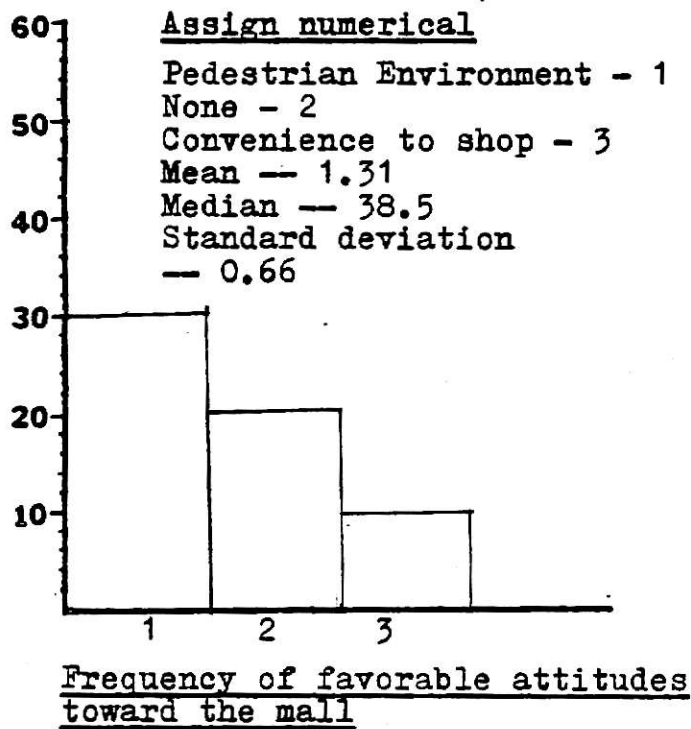
PART B - FOR CUSTOMERS

FREQUENCY DISTRIBUTION ANALYSIS --- Part A (For Businessmen)

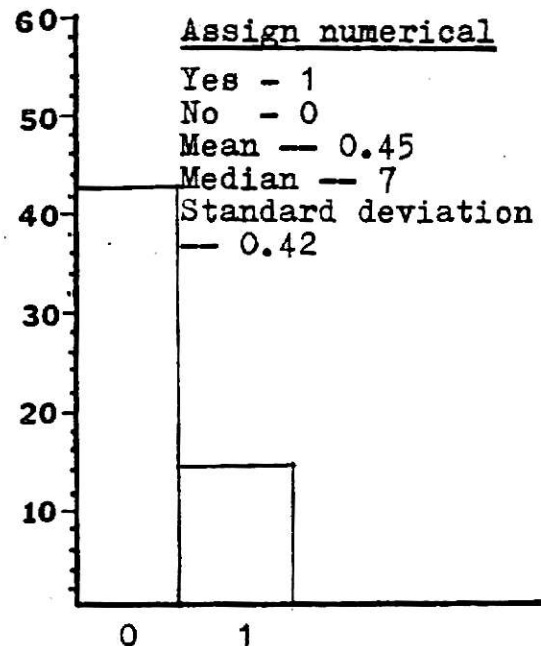


FREQUENCY DISTRIBUTION ANALYSIS --- Part B (For Consumers)

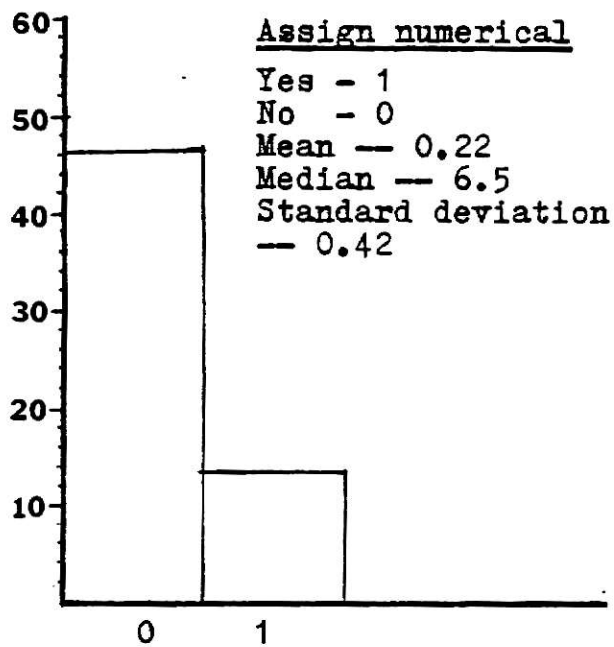




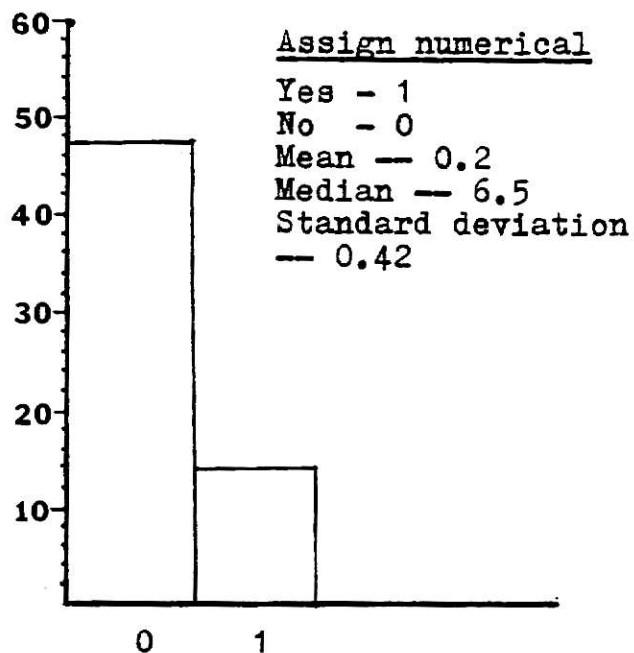
Frequency of Using Bus or Car to reach Downtown shopping area



Frequency of Difficulty in Using Buses to the Downtown area



Frequency of adequacy of Parking



Frequency of preference for shopping in Trenton Mall instead of other shopping centers

APPENDIX "D"

CROSS TABULATION ANALYSIS

PART A - FOR BUSINESSMEN

PART B - FOR CUSTOMERS

CROSS TABULATION ANALYSIS --- Part A (For Businessmen)

Renovation of the store and Objections to changes

Renovation of the store				
Yes	7	5	1	
No	14	9	1	
	Street Furnitures	Parking	Service Problems	

Objections to changes

Renovation of the store and Good Features in changes

Renovation of the store				
Yes	5	8		
No	14	10		
	None	Pedestrian Shopping		

Good Features in changes

Renovation of the store and ability to attract people

Renovation of the store				
Yes	8	5		
No	10	14		
	Yes	No		

Ability to attract people

Renovation of the store and influence on sale volume

Renovation of the store			
	Yes	5	8
	No	10	14
		Yes	No

Influence on sale volume

Objections to changes and Good features in changes

Objections to changes	Street Furnitures	7	14
	Parking	10	4
	Service Problems	2	0
		None	Pedestrian Shopping

Good features in changes

Objections to changes and Ability to attract people

Objections to changes	Street Furnitures	11	10
	Parking	5	9
	Service Problems	2	0
		Yes	No

Ability to attract people

Objections to changes and Influence on sale volume

Objections to changes	Street Furniture	10	11	
	Parking	4	10	
	Service Problems	1	1	
		Yes	No	

Influence on sale volume

Good Features in changes and Ability to attract people

Good Features in changes				
	None	1	18	
	Pedestrian Shopping	17	1	
		Yes	No	

Ability to attract people

Good Features in changes and Influence on sale volume

Good Features in changes				
	None	2	17	
	Pedestrian Shopping	13	5	
		Yes	No	

Influence on sale volume

Ability to attract people and Influence on sale volume

Ability to
attract people

Yes	15	3	
No	0	19	

Yes No

Influence on sale volume

CROSS TABULATION ANALYSIS --- Part B (For Customers)

Living close to Downtown and Using Bus or Car to reach
Downtown Shopping area.

Living Close to Downtown	Yes	12	7	0
	No	7	7	0
	Working in Downtown	0	0	26
		Bus	Car	Walk

Using Bus or Car to reach
Downtown Shopping area

Living close to Downtown and Adequacy parking

Living Close to Downtown	Yes	1	19	
	No	2	11	
	Working in Downtown	10	16	
		Yes	No	

Adequacy parking

Living Close to Downtown and Difficulty in using Buses to the
Downtown area

Living Close to Downtown	Yes	1	18	
	No	6	8	
	Working in Downtown	8	18	

Yes No
(no Bus service)

Difficulty in Using Buses to
the Downtown area

Living Close to Downtown and Frequent Shopping Downtown

Living
Close to
Downtown

Yes	6	12	
No	4	12	
Working in Downtown	17*	9	

Yes

No

Frequent Shopping Downtown

* Only during lunch time

Living Close to Downtown and Wide Variety of Stores for Shopping

Living
Close to
Downtown

Yes	7	11	
No	9	6	
Working in Downtown	14	11	

Yes

No

Wide Variety of Stores for
Shopping

Living Close to Downtown and Kind of Stores Favored for Shopping

Living
Close to
Downtown

Yes	10	7	1
No	11	3	1
Working in Downtown	19	7	0

Dept. Store

Special
Store

Grocery

Kind of Stores Favored for Shopping

Living Close to Downtown and Favorable Attitudes toward the Mall

Living
Close to
Downtown

Yes	7	12	0
No	9	4	0
Working in Downtown	14	3	9
	Pedestrian Environment	None	Convenience to shop during lunch time

Favorable Attitudes toward the Mall

Living Close to Downtown and Unfavorable Impressions of the Mall

Living
Close to
Downtown

Yes	2	6	10
No	5	4	6
Working in Downtown	9	5	12
	Street Furniture	Social Problems	Poor Design

Unfavorable Impressions of the Mall

Living Close to Downtown and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Living
Close to
Downtown

Yes	5	13	
No	5	10	
Working in Downtown	2	24	

Yes No

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Using Bus or Car to reach Downtown Shopping Area and Adequacy Parking

Using Bus
or Car to
reach Down-
town Shopping
Area

Bus	1	17	
Car	2	13	
Walk	10	16	
	Yes	No	

Adequacy Parking

Using Bus or Car to reach Downtown Shopping Area and Difficulty in Using Buses to the Downtown Area

Using Bus of
Car to reach
Downtown
Shopping Area

Bus	0	18	
Car	5	10	
Walk	9	17	
	Yes*	No	

Difficulty in Using Buses to the
Downtown Area
(* No bus service available)

Using Bus or Car to reach Downtown Shopping Area and Frequent Shopping Downtown

Using Bus or
Car to reach
Downtown
Shopping Area

Bus	11	7	
Car	1	13	
Walk	14	12	
	Yes	No	

Frequent Shopping Downtown

Using Bus or Car to reach Downtown Shopping Area and Wide Variety of Stores for Shopping

Using Bus or
Car to reach
Downtown
Shopping Area

Bus	11	8	
Car	7	9	
Walk	13	11	

Yes

No

Wide Variety of Stores for Shopping

Using Bus or Car to reach Downtown Shopping Area and Kind of Stores Favored for Shopping

Using Bus or
Car to reach
Downtown
Shopping Area

Bus	16	1	2
Car	6	8	0
Walk	18	8	0

Dept. Store

Special
Store

Grocery

Kind of Stores Favored for Shopping

Using Bus or Car to reach Downtown Shopping Area and Favorable Attitudes toward the Mall

Using Bus or
Car to reach
Downtown
Shopping Area

Bus	9	10	0
Car	7	7	0
Walk	14	3	9

Pedestrian
Environment

None

Convenience
For Shopping
during lunch
time

Favorable Attitudes toward the Mall

Using Bus or Car to reach Downtown Shopping area and Unfavorable Impressions of the mall

Using Bus or Car to reach Downtown Shopping area	Bus	4	5	10
	Car	3	5	6
	Walk	9	5	12
		Street Furniture	Social Problems	Poor Design

Unfavorable impressions of the mall

Using Bus or Car to reach Downtown Shopping area and Preference for shopping in Trenton Mall instead of other Shopping Centers

Using Bus or Car to reach Downtown Shopping area	Bus	9	10	
	Car	1	13	
	Walk	2	24	
		Yes	No	

Preference for shopping in Trenton Mall instead of other Shopping Centers

Adequacy Parking and Difficulty in Using Buses to the Downtown area

Adequacy Parking				
	Yes	4	9	
	No	10	36	
		Yes	No	

Difficulty in Using Buses to the Downtown area

Adequacy Parking and Frequent Shopping Downtown

Adequacy
Parking

Yes	5	8	
No	21	25	
	Yes	No	

Frequent Shopping Downtown

Adequacy Parking and Wide Variety of Stores for Shopping

Adequacy
Parking

Yes	9	4	
No	21	25	
	Yes	No	

Wide Variety of Stores for
Shopping

Adequacy Parking and Kind of Stores Favored for Shopping

Adequacy
Parking

Yes	10	3	0
No	30	14	2

Dept. Store Special Grocery

Kind of Stores Favored for Shopping

Adequacy Parking and Favorable Attitudes toward the mall

Adequacy Parking	Yes	8	1	4
	No	22	19	5
		Pedestrian Environment	None	Convenience for Shopping during lunch time

Favorable Attitudes toward the mall

Adequacy Parking and Unfavorable Impressions of the mall

Adequacy Parking	Yes	3	6	4
	No	13	9	24
		Street Furnitures	Social Problems	Poor Design

Unfavorable Impressions of the mall

Adequacy Parking and Preference for Shopping in Trenton Mall
instead of other Shopping Centers

Adequacy Parking	Yes 10	2	11
	No	10	36
		Yes	No

Preference for Shopping in Trenton
Mall instead of other Shopping
Centers

Difficulty in Using Buses to the Downtown area and Frequent Shopping Downtown

Difficulty in Using Buses to the Downtown area

Yes	4	10	
No	22	23	

Yes No

Frequent Shopping Downtown

Difficulty in Using Buses to the Downtown area and Kind of Store Favored for Shopping

Difficulty in Using Buses to the Downtown area

Yes	9	5	0
No	31	12	2

Dept. Store Special Store Grocery

Kind of Stores Favored for Shopping

Difficulty in Using Buses to the Downtown area and Wide Variety of Stores for Shopping

Difficulty in Using Buses to the Downtown area

Yes	9	5	
No	21	24	

Yes No

Wide Variety of Stores for Shopping

Difficulty in Using Buses to the Downtown Area and Favorable Attitudes toward the Mall

Difficulty in Using Buses to the Downtown Area				
	Yes	7	2	5
	No	23	18	4
		Pedestrian Environment	None	Convenience for Shopping during lunch time

Favorable Attitudes toward the Mall

Difficulty in Using Buses to the Downtown Area and Unfavorable Impressions of the Mall

Difficulty in Using Buses to the Downtown Area				
	Yes	6	4	4
	No	10	11	24
		Street Furniture	Social Problems	Poor Design

Unfavorable Impressions of the Mall

Difficulty in Using Buses to the Downtown Area and Preference for Shopping Trenton Mall instead of other Shopping Centers

Difficulty in Using Buses to the Downtown Area				
	Yes	1	13	
	No	11	34	
		Yes	No	

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Frequent Shopping Downtown and Wide Variety of Stores for Shopping

Frequent Shopping Downtown

Yes	16	10	
No	14	19	
	Yes	No	

Wide Variety of Stores for Shopping

Frequent Shopping Downtown and Kind of Stores Favored for Shopping

Frequent Shopping Downtown

Yes	20	4	2
No	20	13	0

Dept. Store Special Store Grocery

Kind of Stores Favored for Shopping

Frequent Shopping Downtown and Favorable Attitudes toward the Mall

Frequent Shopping Downtown

Yes	17	5	4
No	13	15	5

Pedestrian Environment

None

Convenience for Shopping during lunch time

Favorable Attitudes toward the Mall

Frequent Shopping Downtown and Unfavorable Impressions of the Mall

Frequent Shopping Downtown

Yes	9	2	15
No	7	13	13

Street Furniture

Social Problems

Poor Design

Unfavorable Impressions of the Mall

Frequent Shopping Downtown and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Frequent Shopping Downtown

Yes	8	18	
No	4	29	

Yes

No

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Wide Variety of Stores for Shopping and Kind of Stores Favored for Shopping

Wide Variety of Stores for Shopping

Yes	20	9	1
No	20	8	1

Dept. Store

Special Store

Grocery

Kind of Stores Favored for Shopping

Wide Variety of Stores for Shopping and Favorable Attitudes toward the Mall

Wide Variety of Stores for Shopping

Yes	21	4	5
No	9	16	4

Pedestrian Environment

None

Convenience for Shopping during lunch time

Favorable Attitudes toward the Mall

Wide Variety of Stores for Shopping and Unfavorable Impressions of the Mall

Wide Variety of Stores for Shopping

Yes	10	8	12
No	6	7	16

Street Furniture

Social Problems

Poor Design

Unfavorable Impressions of the Mall

Wide Variety of Stores for Shopping and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Wide Variety of Stores for Shopping

Yes	10	20	
No	2	27	

Yes

No

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Favorable Attitudes toward the Mall and Unfavorable Impressions of the Mall

Favorable Attitudes toward the Mall	Pedestrian Environment	6	5	19
	None	7	7	6
	Convenience for Shopping	3	3	3
		Street Furnitures	Social Problems	Poor Design
Unfavorable Impressions of the Mall				

Favorable Attitudes toward the Mall and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Favorable Attitudes toward the Mall	Pedestrian Environment	10	20	
	None	2	18	
	Convenience for Shopping	0	9	
		Yes	No	

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Unfavorable Impressions of the Mall and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Unfavorable Impressions of the Mall	Street Furnitures	3	13	
	Social Problems	2	13	
	Poor Design	7	21	
		Yes	No	

Preference for Shopping in Trenton Mall instead of other Shopping Centers

Kind of Stores Favored for Shopping and Favorable Attitudes toward the Mall

Kind of Stores Favored for Shopping	Dept. Store	22	13	5
	Special Store	7	6	4
	Grocery	1	1	0
		Pedestrian Environment	None	Convenience for Shopping during lunch time

Favorable Attitudes toward the Mall

Kind of Stores Favored for Shopping and Unfavorable Impressions of the Mall

Kind of Stores Favored for Shopping	Dept. Store	10	12	18
	Special Store	6	3	8
	Grocery	0	0	2
		Street Furnitures	Social Problems	Poor Design

Unfavorable Impressions of the Mall

Kind of Stores Favored for Shopping and Preference for Shopping in Trenton Mall instead of other Shopping Centers

Kind of Stores Favored for Shopping	Dept. Store	9	31	
	Special Store	1	16	
	Grocery	2	0	

Yes No

Preference for Shopping in Trenton Mall instead of other Shopping Centers

AN EVALUATION OF THE PLANNING AND DESIGN
OF A PEDESTRIAN SHOPPING MALL IN TRENTON,
NEW JERSEY CENTRAL BUSINESS DISTRICT

by

YUNG - CHIECH PAO

B.S., College of Chinese Culture, 1968

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND
COMMUNITY PLANNING

Department of Regional and
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KANSAS STATE UNIVERSITY
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ABSTRACT

The central business districts of most cities give ample evidence of need for downtown revitalization. Falling retail sales, unstable tax bases, stagnant real values, and increasing competition from regional shopping centers are common problems.

Planners and merchants have begun to realize the need to improve their retail position. The effective use of the pedestrian mall on a small scale in regional shopping centers has led many merchants and planners to believe that it should be part of the redevelopment scheme for their downtown area.

This study will be concerned with the various factors which are involved in planning and developing a pedestrian shopping mall. First, it will define criteria to be considered in planning and designing the pedestrian shopping mall, and then it will use these standards in an evaluation of the existing mall in Trenton, New Jersey. Second, personal interviews and questionnaires were used to assess the impressions of various businessmen and consumers and to determine their feelings and reactions to having a pedestrian shopping mall in Trenton, New Jersey. Third, the report will be a summary of findings and recommendations.