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Street Life and the Pedestrian: Notes on the Design of Urban Open Space

William John Lenyk

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Notes on the Design of Urban Open Space

by
William John Lenyk

an abstract of thesis
submitted in partial fulfillment
of the requirements for the
degree

Master of Architecture

Graduate School of Syracuse University
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December, 1977

Approved Kermit J. Lee Jr. 12/16/77

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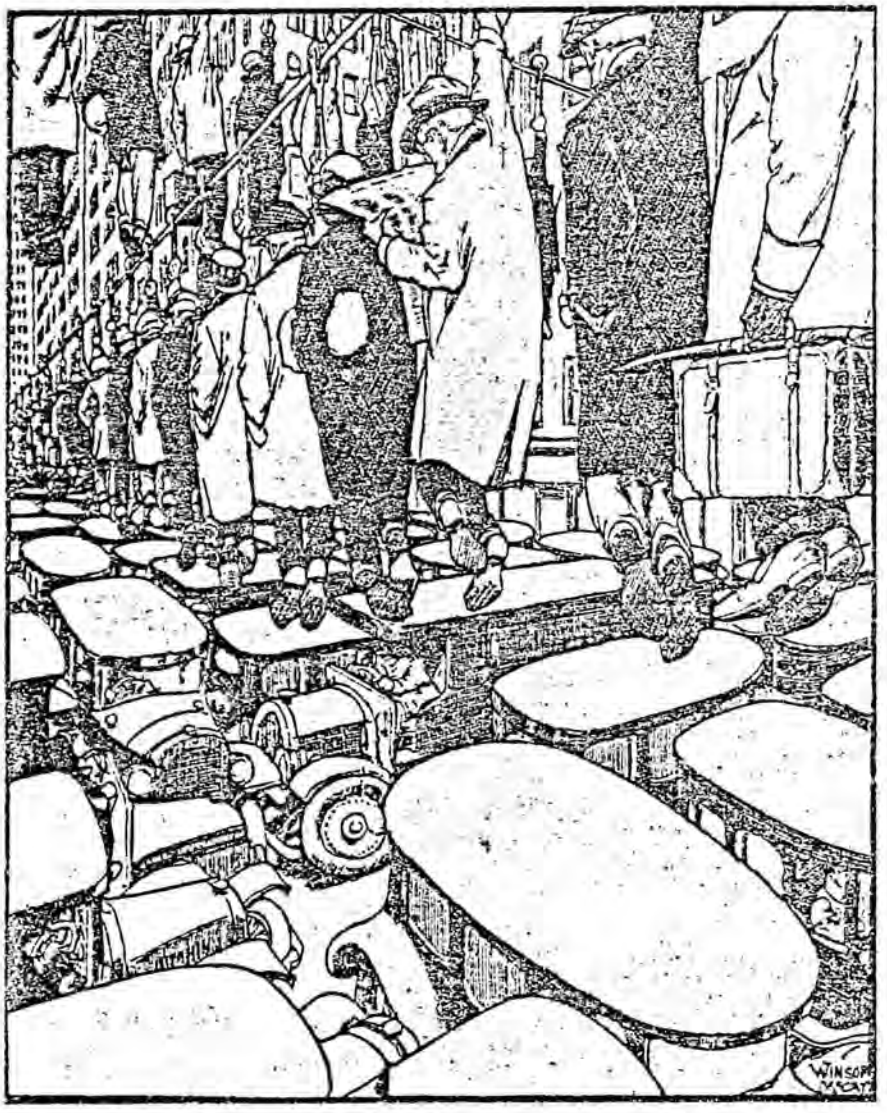

From the New York Tribune, 5 April 1925

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ABSTRACT

The deterioration of our urban cores remain an unsolved reality. This results in a loss of an active street life and disregard for pedestrian needs. Yet the street is the principal ordering device of the city and the pedestrian its most important user.

Resolving this conflict introduces three sets of issues: first, examining the relationship and disposition of physical elements, namely public (open) and private (enclosed) space; second, the movement system hierarchy enlarged to accommodate the pedestrian; and third, instigating a tru ly public setting for human interaction.

A general premise here is that city cores are worth maintaining. What will be proposed is that pedestrian precincts might provide a legitimate interpretation and translation of a growing sentiment centering on people's needs in the urban framework. If this is true, their physical design is more important than the buildings they connect. The growing interest in their application and the lack of a reliable body of knowledge concerning their physical design warrants examination by architects.

This thesis will develop a physical statement which is coherent with the working philosophies and theoretical foundation of the pedestrian's needs in the city.

Remember when?

Remember the exhilirating and righteous fervor of a war on poverty, a rebuilding of our cities, a great society?

Remember the bitter fustrations, the nickname for urban renewal, the newly built city cores with even less life? After all, all that money, all that pretty architecture, and we haven't won yet. They're still moving out to Sherwood Lane and Pleasantview Drive, they haven't finished Bruckner Boulevard, and the city is still synonomous with 'our urban problem.'

The past two decades can be extremely sobering, especially if you ascribe to the old "problem definition--possible alternatives--selection/implementation--problem resolution" syndrome. Colin Rowe notes this apparently irresistable reduction of the immediate environment to "an impending cataclysm--instant millenium" with a little human co-operation ingrained in architecture.[1] And so we wait for the new Jerusalem. Perhaps we clamor at times. The "URBAN CRISIS' goes on. The city survives.

In part (only Mumford would attempt all), this high input--low net output situation is attributable to an existing attitude on urban open space. This attitude springs from two components: first, a historical evolution that stretches

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1. Collin Rowe, "Collage City", Architectural Review, August, 1975, pp. 65-90.

through this century into the last, perhaps further; second, a continual accommodation of industrialization and reliance on communication and transportation innovations.

The physical manifestations of this attitude, (i.e. most elements of our contemporary city) are being challenged by an emerging, reawakened sensibility to open space. This new "contender" has a historical foundation, (though rather sporadic, reactionary and apprehensive to rapid rates of change) but with a primary focus on the pedestrian and street life. The collision of these views and their eventual resolution is one aspect of this thesis.

The crisis of the city is the crisis of the loss of street life, the disregard for the pedestrian. The street is the city and the most important user is the pedestrian. The street is the principal ordering device of the city. To believe in street life is to believe in the city, for the imitators have mimicked the rest fairly well. To provide an enjoyable street life then is to provide a desirable city.

The design of the street itself demands serious attention. Enter the Architect. They are increasingly returning to their proper role, designing city spaces again rather than preferring the preoccupation of styling isolated buildings. Enter urban design. Creating an adequate, even conducive setting for people to confront people, not only buildings, is a major goal of this renewed sensibility. Not only is the focus on collections of

buildings, but more importantly, on the relationship of movement systems to the building types.

This notion fosters at least three sets of issues: first, the relationship and disposition of physical elements; second, the movement system hierarchy enlarged to accommodate the pedestrian; and third, instigating a truly public social setting for human interaction.

There have been a variety of strategies posed to address these issues. This thesis focuses on streets, and in particular, pedestrian malls in commercial districts.

A general premise here is that the city, rather than dispersal, dissolvement or vigorous development of subcenters, is worth maintaining. It has the potential of providing certain amenities that other clusters cannot provide, in particular an active street life. Pedestrian malls can be viewed as a point of departure for an extensive re-examination of the city and its purpose. This is not to say that cities are on the verge of catastrophe and the pedestrian mall will reward with instant millenium. What will be proposed is that pedestrian malls might provide a legitimate interpretation and translation of a growing sentiment centering on peoples needs in the urban framework. If this is true, their physical design is more important than the buildings they connect. The growing interest in their application and the lack of a reliable body of knowledge concerning their physical design warrants research by architects.

The Open Space Chapter provides a historical overview of the various concepts of urban open space. This chapter adopts a framework that highlights the critical transition triggered by industrialization, irreparably altering the fact if not the perception of open space.

The Pedestrian Space Chapter delineates the issues that surface in going from the prevalent attitudes towards pedestrian space. The urban street, due to its tru·ly public nature and intrinsic importance to the city, is the focus of these energies.

The Pedestrian Mall Chapter introduces the mall as a specific strategy that has the potential to alter the street for the benefit of pedestrians and to germinate an active street life. There is a major focus on the social, legal, economic and political impact of pedestrianization to the city itself.

The case study uses the central business district of Syracuse, New York. There are certain advantages for its selection. Not only proximity, but social and physical composition offer several 'typical' characteristics, lending itself in many cases as a prototype. Also, several groups in the past and quite recently have voiced interest in pedestrianization of certain portions of the urban core.

This thesis will attempt to develop a physical statement which is coherent with the working philosophies and

theoretical foundation of the pedestrians' needs in the city. This entails exploring the relationship between social organization and physical development. Part of this relationship is the process employed to transform theory to practice. In this process, the working philosophy (eg. social-economic-political organization) poses choices which are then addressed by physical solutions. These solutions, whether appropriate or not, will affect other subsequent physical elements and the original intentions and theory.

"Street Life!"

These two words evoke a variety of images, places and experiences that act as a subterfuge for grouping people's attitudes, perceptions and expectations of the city. Whether those words conjure up images of squalor, broken glass and congestion or the gala festivities of a mardi-gras, the street acts as the primary contextual setting and ordering device for the social as well as physical framework of the city. Street life plays a major role in the city and, thus, the street itself, requires careful and preferential design treatment. Applying this approach, a framework for accepting successful or unsuccessful attachments or buildings must develop.

This thesis springs from a re-emerging awareness of open space in the public realm. Contrary to much of the prevalent planning theory and political-economic goals of the past fifty years,[1] this reawakened sensibility to the design of open space is manifest in the physical realm with a proliferation of vest pocket parks, pedestrian zones, street furniture and

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1. On the one hand, there are the theories of Le Corbusier and C.I.A.M. dealing with zoned activities, vertical housing clusters freeing the landscape and the accommodation of the auto. Coupled with the federal governments methodical drive of instigating an extensive interstate highway system and the virulent economic competition for land, skyrocketing land values, creating financial imbalance and high turnover with respect to surrounding land, contributed to a fragmented and diffuse urban configuration with a weak delineation of open space.

art, and in the social realm with an interest in open-air farmers' market, block parties and cultural and art festivities in the street. This sensitivity to open space and the resulting conflicts with incorporating these notions into our existing urban patterns reflect the changing perceptions of open space in history. In order to properly understand the context for this conflict, this chapter will attempt to highlight the various perceptions of urban spatial organization within the western world.

It is loosely grouped into three parts that correspond not only to a chronological historical order, but earmark major perceptual transitions of urban form. These three broad categories are:

a). the early concepts of open space or pre-industrial;

b). the transitional or Nineteenth Century concepts;

c). the emerging or Twentieth Century concepts.

The first section covers a rather protracted time span from ancient Greece to the close of the 18th centry. Though it is a period with a wide variety of attitudes about city form, as a whole, it is unencumbered by the full impact of

industrialization.[2] Also, urban form is an expression of existing social systems.

> By virtue of its relationship with all other social systems (Political, learning, economy, religion), the urban system asserted itself as one of communication and information. In other words, the citizen in the process of inhabiting his city is integrated into the structure of a given society at a specific moment in time, and every plan that might exist corresponds implicitly to that structure which it both institutes and controls.[3]

Even during the Baroque period, with the destruction of a sense of social intimacy in favor of broad vistas with radial avenues and vantage points, the planning principles and esthetics reflect the established political power and the developments of contemporary science, math and socio-cultural values.

The second section deals with the Nineteenth Century. Straddling industrialization, the period is caught by the exhilarating magic of machines and motive power while enjoying a spatial organization not yet fully decimated by the heavy demands of this revolution. The city presents a myriad of

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2. Even though between 1765 and 1774 Watt developed the steam engine and in 1785 Cartwright invented the mechanical loom, it was not until 1806 that the first large cotton mill opened in Manchester. Refer to the Chronological Chart in Francoise Choay's book.

3. Francoise Choay, The Modern City: Planning in the 19th. Century (New York, 1969), pg. 7.

dualities epitomized by Max Weber's geimeinshaft-gesellschaft dichotomy. The emergence of social sciences[4] represent the increasing detachment the city dweller exhibits for his urban environment, analyzing the city with an assumed cold objectivity. Social order and demographic concentrations are increasingly directed by primarily economic reasons. The informative and communicative role of the urban environment is continually supplanted by abstract forms of communication - the telegraph and newspaper (as well as railroad).

The third section deals with the 20th Century where the various perceptions of the city, its ills and prescribed cures are crystalized in specific theories and detailed procedures for implementation. Various events such as two world wars and extensive utilization of the auto invite these eager social and physical planners to apply their models to the city. The explosive unrest of the sixties and the reflective and cautious attitudes of the seventies is the response to those first fifty years.

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4. Urban sociology in the 19th Century mushroomed with works of social reformers like Edwin Chadwick or of Great Britian's Royal Investigations Commissions and Select Committees, social research of ideologists like Frederic Le Play, Engles; polemical synthesis in Die Lage der arbeitenden Klasse and social novelists such as Gaskell, Dickens, Zola or Eugene Sue.

Early Concepts of Open Space

Greece developed an attitude for the sense of finite, the necessity to harmonize with nature and the application of a human scale. The Greeks had a definite size for their cities in order to be comprehensible and workable. "Aristotle described the ideal size of a city, or polis, noting that less than 10,000 people are too few to constitute a viable political entity and more than 20,000 are too unwieldy"[5]. The temple of Sunion at the headlands of Attica and the Greek temple of Segesta, Sicily exemplify the sense of human measure in the landscape. The Greeks' perception of space is embodied in the Athenian Acropolis, the Athenian agora and Greek colonial towns.

Though the Parthenon is the usual focus of attention, the collection of buildings of the Acropolis shows a sensitive sequence or series of masses articulating space with careful consideration to the relationship of foreground objects to views and vistas. The Agora employs buildings as facades to define an enclosed urban space. The asymetrical composition is tied together through the application of cohesive design elements for the buildings. The Greek colonial towns exhibited the gridiron layout, expounded by Hippodamus and others, and finite quality for visual and political operation. The

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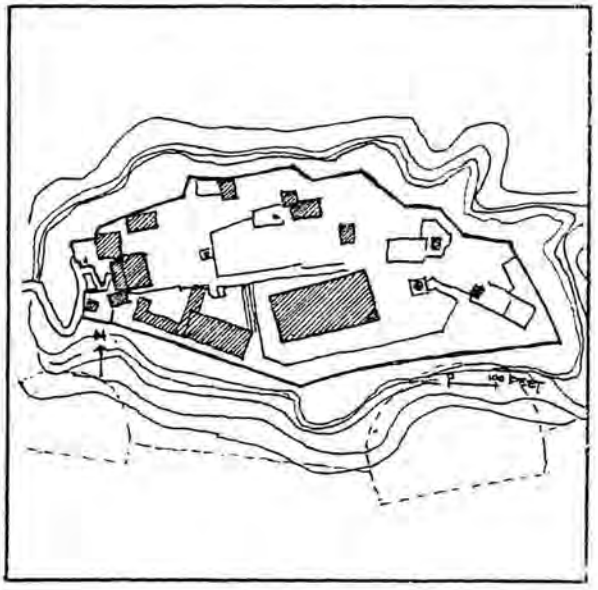
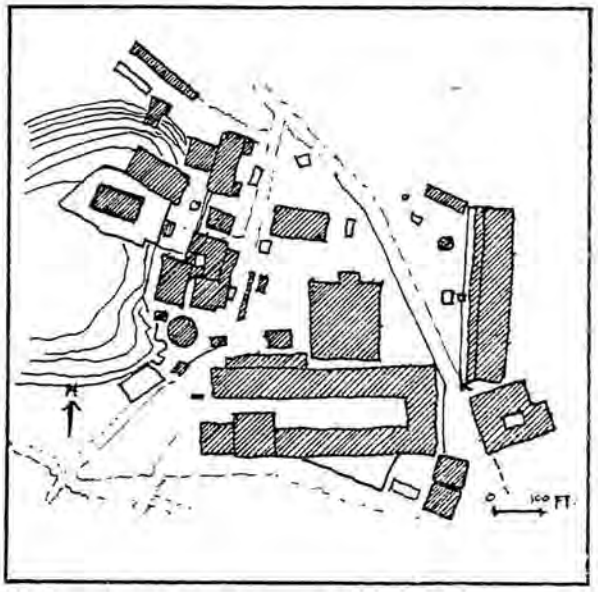
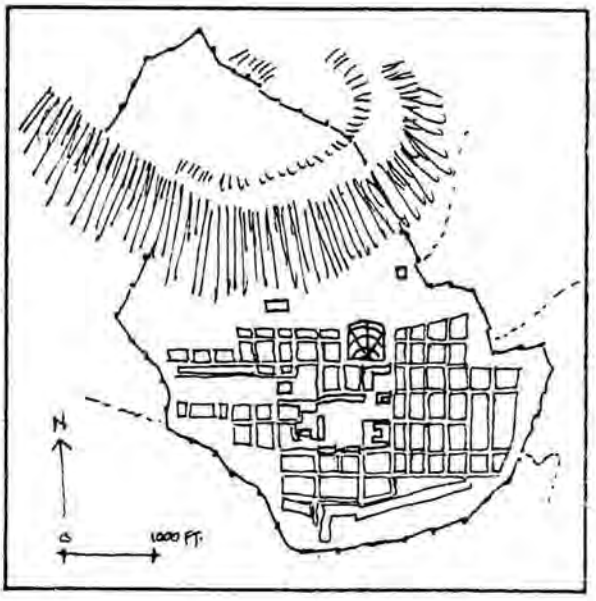
5. Paul D. Spreiregen, A.I.A., Urban Design: The Architecture of Towns and Cities, (New York, 1965), pg. 3.



Second Century A.D.
Acropolis of Athens



Second Century A.D.
Athenian agora



Third Century B.C.
Greek colonial
town of Priene

spatial definition arises not directly from the gridiron, but rather the repetitive application of a module size housing block, adding up to the whole. The size of the town was usually limited by the supplies of the surrounding countryside.

The Romans were primarily motivated by political power and organization. The scale used is a set of proportions that harmoniously relate the various parts of a building together but not necessarily to the human measure. The module size for the city is the street system with the patterns offering expedient operation of a military government. The Romans also employ the notion of a major and minor street (two main streets at right angles, "cardo" and decumanus").[6] Even the public spaces, the theater, arena and market were subordinate elements to an overall street system. Perhaps the Republican Forum, the Imperial Forum and Hadrians Villa summarize the Roman's perception of open space.

The Republican Forum is a collection of buildings viewed as individual objects along a common narrow space, each with elaborate detailing vieing for ones attention. While in the Imperial Forum buildings are made subordinate to the space created. Employing the colonnade as organizer, the square, rectilinear, and semicircular plaza's formed,

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6. Spreiregen, pg. 6.

act as a setting for a key focal building. The colonnade functioned as both transition and link to form distinct places within a larger setting. Hadrian's Villa is a culmination of arranging complex groups of buildings responding to both a formal order and the unique characteristics of the site. While the major court spaces were located to fit the topography, the linkages of small openings or chambers allowed for the necessary bending of the architecual axes without destroying the formal sequence or procession. By passing from a large space to a smaller one and then into another large one, the irregular bending looses its distracting effect.[7]

As noted earlier, the urban spatial system, especially in the medieval town, bore a strong relationship with the other social systems to clearly articulate an urban dweller's position in society.

> For example, in a given German town, the urban core is related to church, feudal system and corporate artisanship. Every urban plan was a direct projection of the objectives of clergy, feudal lord or merchant guild.[8]

A definite concept of town in contrast to countryside is formed in the minds of the inhabitants through a series of social forces including the growth of guilds and increasing

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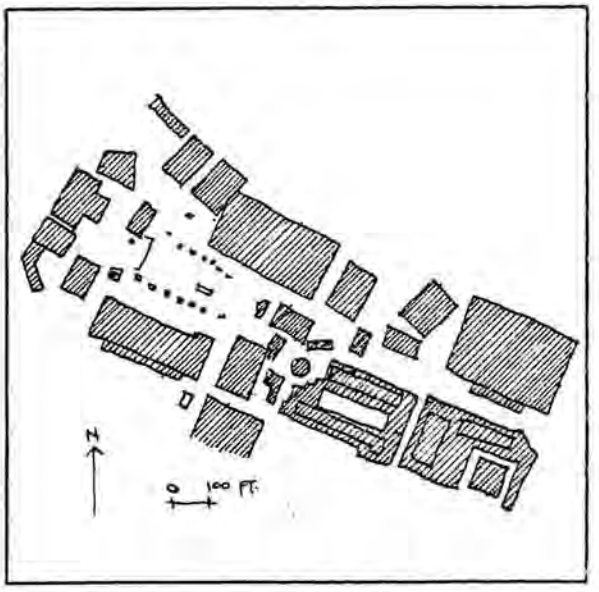
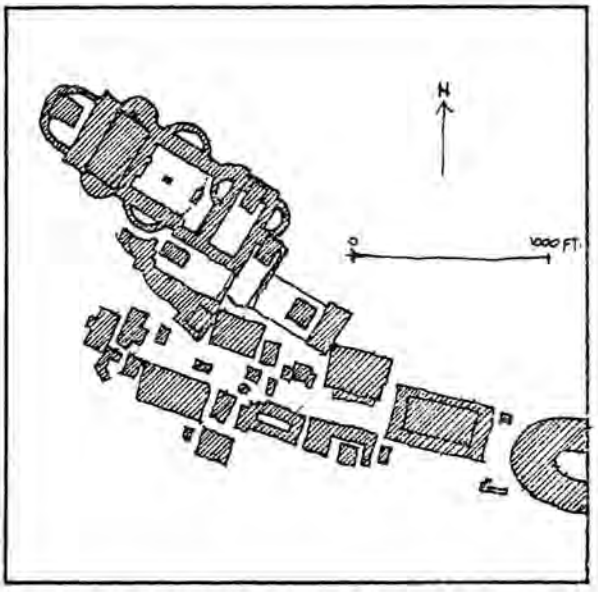
7. For further discussion on Hadrian's Villa refer to Collin Rowe's article "Collage City" in Architectural Review, Ag: 75, pgs. 65-90.

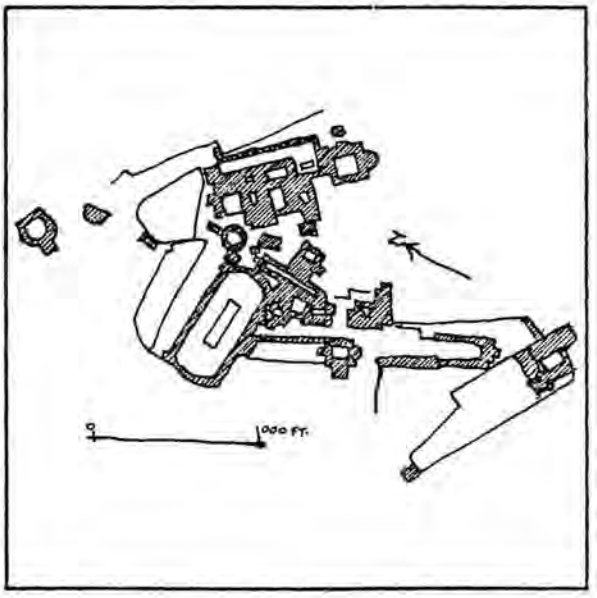
8. Choay, pg. 7.



509-27 B.C.
Republican Forum



27 B.C.-476 A.D.
Republican and
Imperial Forums



117 A.D.-138 A.D.
Hadrian's Villa

financial independence, expansion of its fortifications, and a stronger sense of home rule.[9]

The morphology of the medieval square includes a variety of structural shapes and visual appearance linked specifically with the origins of the particular town. Medieval towns have generally four different beginnings: from existing Roman camps; around existing castles, monasteries and churches; out of strategic geographic areas (crossroads, etc.); or as new communities.[10] This in turn generated squares that were of the following type: the market square as an encroachment of the main thoroughfare; the market square as a lateral extension of the main thoroughfare; the square at the town gate; the square as the center of the town; the parvis; and grouped squares.[11] Town building was extremely prolific during the medieval period and offers a variety of unique expressions in spatial organizations with tightly knit structures and a strong economic and social identity with the open square.

During the Renaissance, the city still plays a communitive and informational role, but with a perspective quite apart from the more introverted medieval town. The city is an

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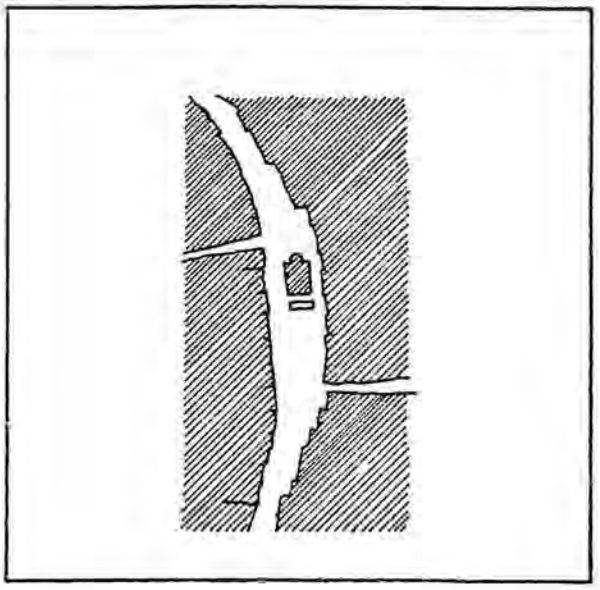
9. Paul Zucker, Town and Square, From the Agora to the Village Green, (New York, 1959), pg. 66.

10. Zucker, pg. 67.

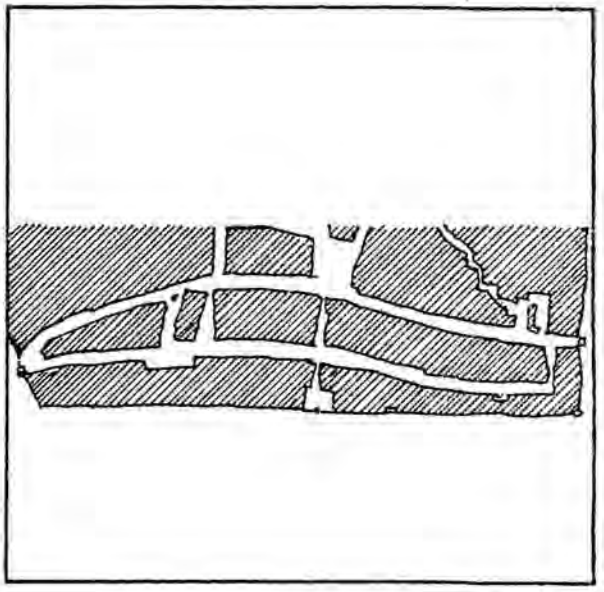
11. Zucker, pg. 75.

THE MARKET SQUARE

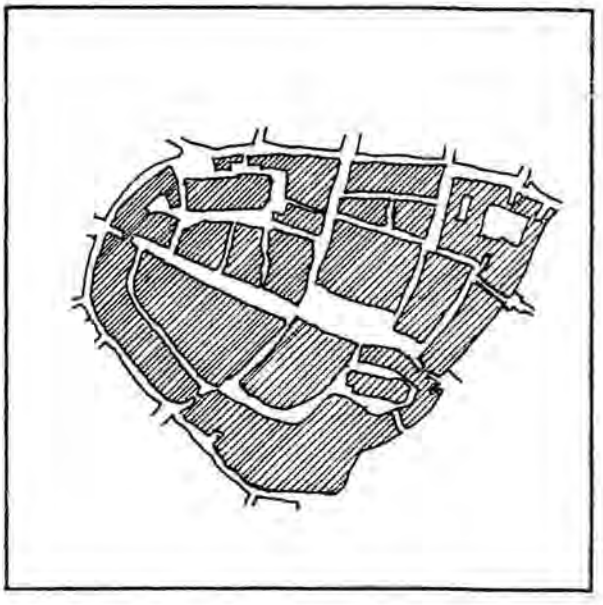
originating from
an encroachment of
the street

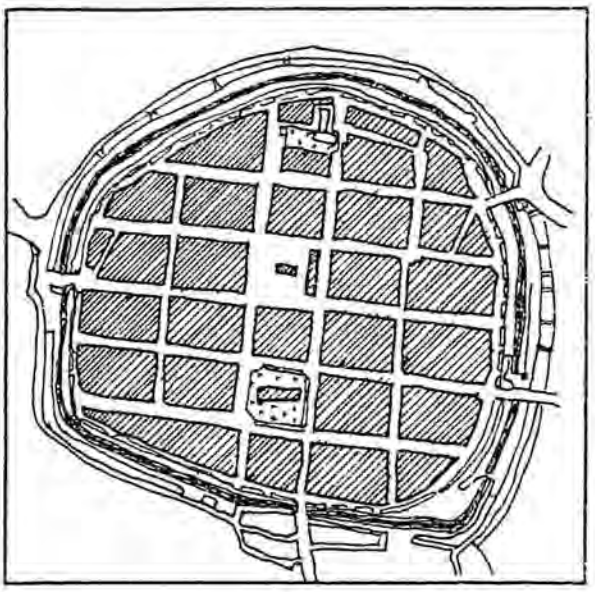


as a lateral
expansion
Reutlingen plan

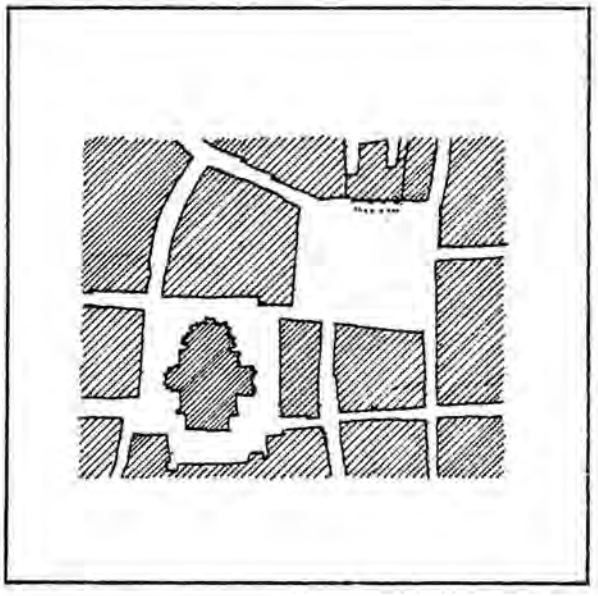


at the town gate
Munich plan

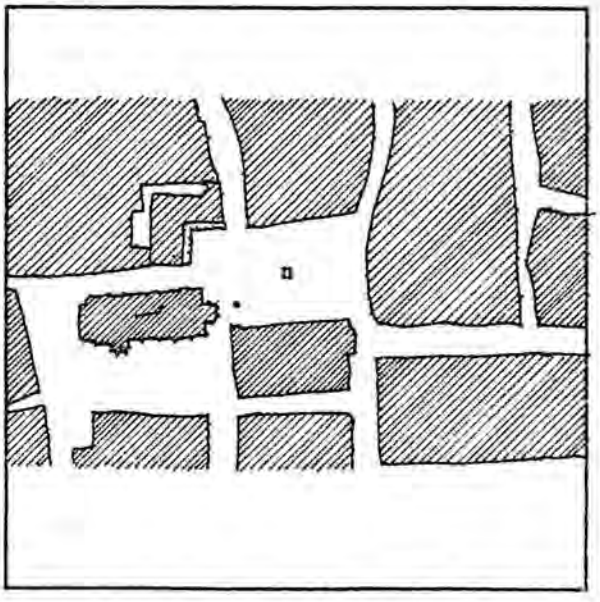




The square
at the center
of the town
Neubrandenburg plan



The parvis
Rostock plan



Crouped squres
Braunschweig plan

instrument of political power that extends beyond mere civic administration and the elaborate fortifications are more than simple defense, but rather an expression of ambitious territoriality of emerging political systems. A wave of theoretical thinking and aesthetic consideration, inspired by a revival of Vitruvian theory, coupled with these wider political aspirations, generates a new historical identity for the urban community.[12] Community cohesion arises not from local guilds, but from the thought of a common heritage and common historical function. The city is the setting for political (i.e. historical) events and its form expresses and symbolizes historical and cultural values.

This new cultural and social perspective imparts the spatial organization of the city, and in turn is reinforced by it. The elaborate fortifications imply a new relationship and strong articulation between the enclosed form of the city and the surrounding countryside. From the science of war, the historic - symbolic importance of city in Alberti's writings and Brunelleschi's new approach to construction technique and management, the city emerges as

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12. Giulio C. Argan, The Renaissance City, (New York, 1969) contends that there are three major cultural factors that combined to determine the Renaissance concept of the city: first, political-military; second, doctrinal and theoretical; third, historical-artistic. pgs. 18-30.

a singular, unified concept.[13] The necessities of war offer star-shaped configurations of ideal layouts with internal disposition of building type and monuments to convey a specific symbolic and social order readily conceived and executed by a single individual or group.

Perhaps the most persuasive characteristic that ties the various theories and plans of the Renaissance is the desire for a three-dimensional distinctness and geometric purity that corresponded to structural clarity.

> Peculiarly, the yearning of the Renaissance for the clearest possible visual articulation of volume and space was realized in two contrasting ways: within the street, this articulation referred primarily to volume; the individual structures were independent and isolated. Thus the street itself is conceived as an agglomeration of heterogeneous buildings and not as an artistic unit. But the square, on the other hand, is unified, its single elements tied together by all possible architectural means, and here it is the space which is articulated.[14]

The street is still considered a sequence of volumes or individual homes while the square, already conceived as a space during the Medieval period, is reinforced as such with the extensive use of arcades to increase unity to the facades and introduce a regular rhythm. In addition, monuments, fountains, etc. are employed to articulate the actual

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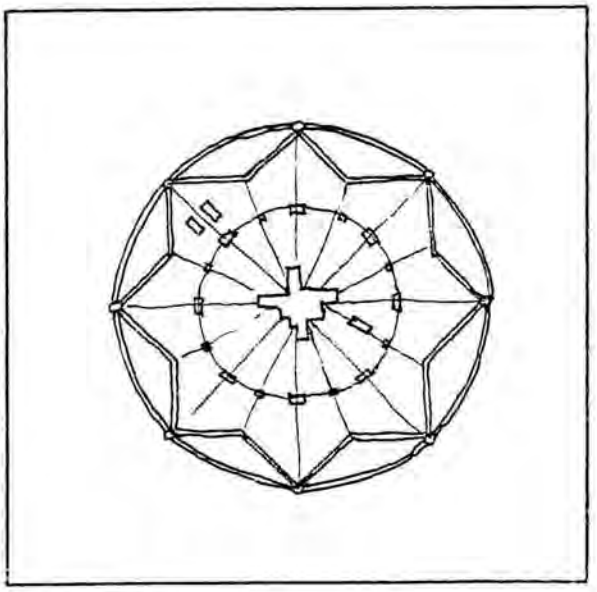
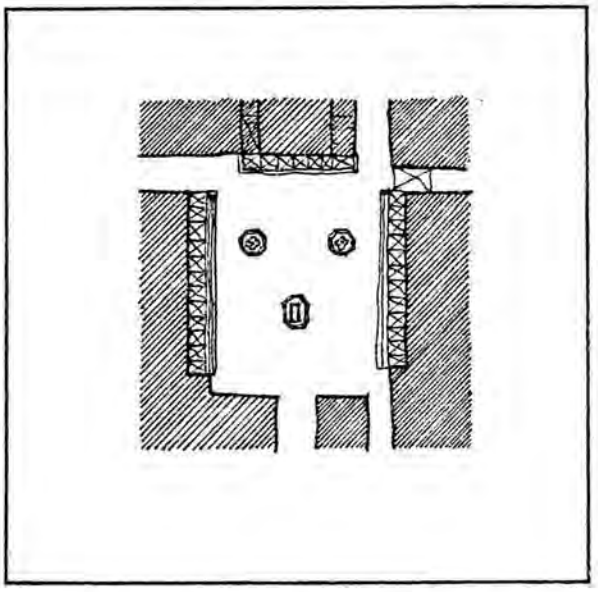
13. Coupled with the practicalities of defenses, Alberti's theoretical writings were meant primarily to conceive the forms of buildings, summon up the "monuments" that represented the historical and ideological symbolism of the city which could now be realized as a whole, executed within a reasonable time because of Brunelbeschi's new construction and management techniques.

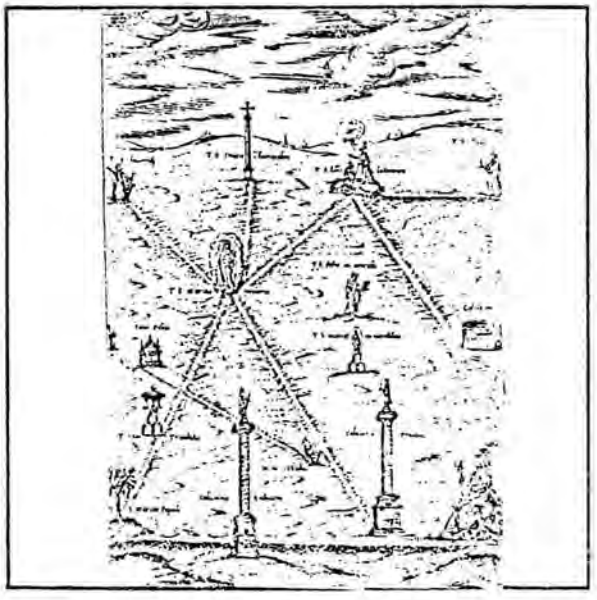
14. Zucker, pg. 141.



Filarete's plan
for an ideal city



Plan of Piazza
Di SS. Annunziata
Renaissance square
by Brunelleschi



Bordino's engraving
for Sixtus V. Example
of movement system as
a design-orienting element

organization of the square.

The period often termed Baroque actually represents two aesthetic tendencies: one derived on the more plastic forms of Michelangelo, and the other based on the more classicist attitude of Palladio and the Vitruvian Academy.[15] While the repetitive arcade intensified the static balance of the Renaissance square, it is now employed in Italy to accelerate the visual movement toward a background structure and often in reverse from that structure to some vista. This so called Roman baroque and its various national variations "showed the desire to mold space as a free-flowing continuium with a gradually increasing emphasis on visual arrests-fermatas."[16] The space is perceived as a sequence of different vistas with the extended view related to the foreground elements, with the purpose of surprising and astonishing the spectator. In contrast, the classicistic approach is much more formal with clear-cut horizontal and vertical planes and the overiding domination of the axis. The axis organizes the environment and the square is merely an extension or final stop, losing its quality of primary stimuli of space consciousness. This also sets the tone for replacement of the square with the street as the primary

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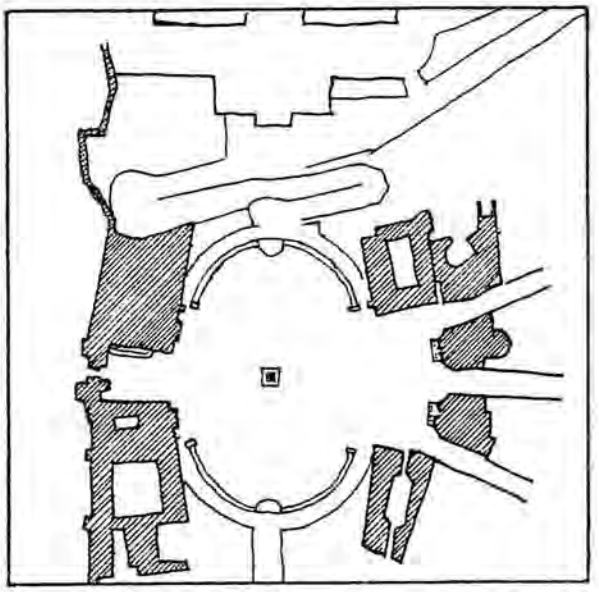
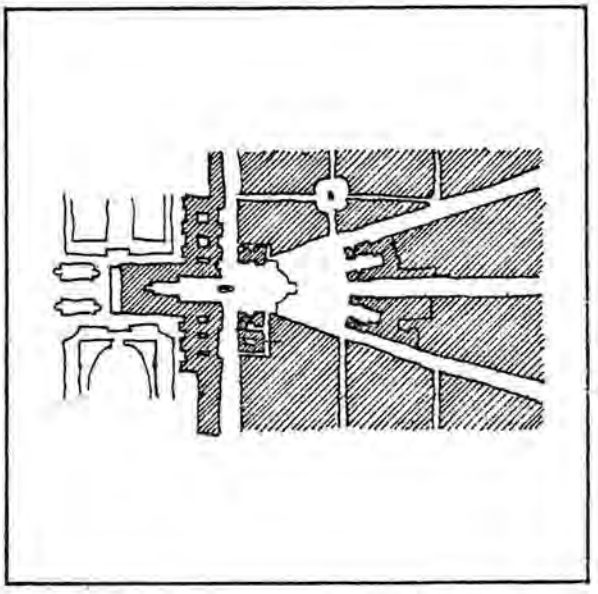
15. Zucker, pg. 144.

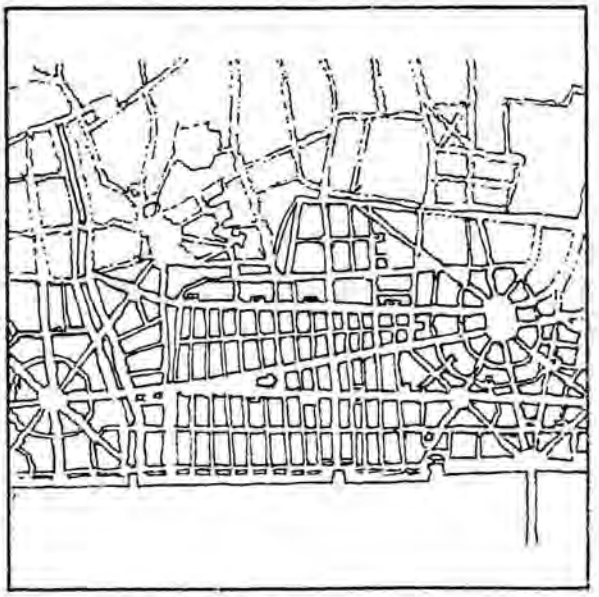
16. Zucker, pg. 233.



Piazza del Popolo



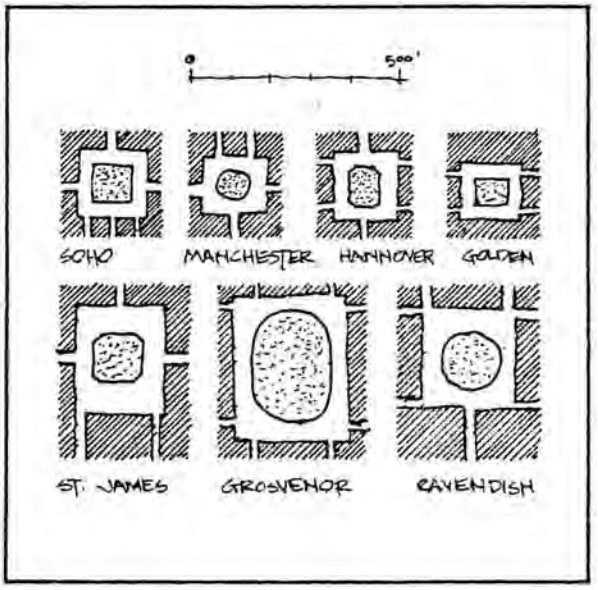
Place d'Armes at
Versailles



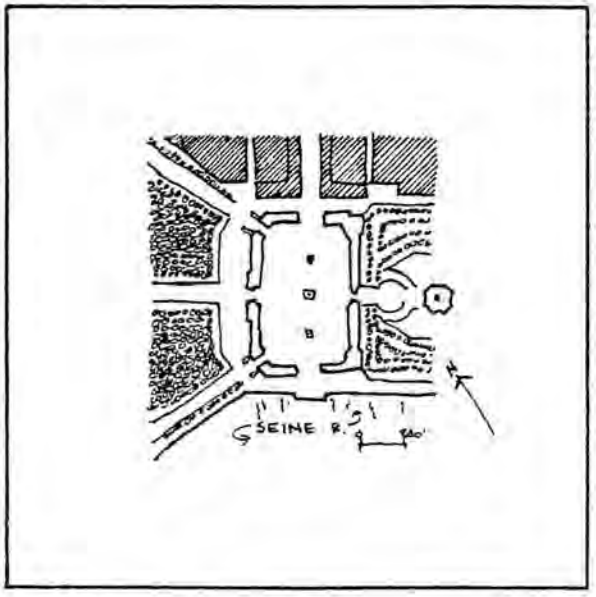
(unbuilt, 1666)
Wren's plan for
rebuilding London

planning tool of the nineteenth century.

Concurrent at this time, the penetration of landscape and nature makes its way into the city. The Italian terrace garden revealed the intimacy and ingenuity of limited size and space. The English, with latent romantic medieval notions of nature, brought the landscape in its "natural form" to contrast with the crisp forms of the city. Extensive plantings and greens predominated in the residential squares, becoming a private realm for the local residents and isolating the square from the rest of the city. For the French, the gardens were strictly formal, distinctly controlled, and to a great degree, merely replaced stone for vegetation to further their grand design schemes.



18th century
squares in London



Place de la Concord

Nineteenth Century Perceptions

Though many of the spatial perceptions and resulting design theories of the late eighteenth century flourished into the nineteenth century, (namely the Baroque and neo-classical ceremonial form, the British residential pattern, and the colonial checkerboard schema),[17] some of the most influential theories on contemporary perceptions emerge from this period in a response to the chaotic upheaval urban centers experienced as a result of the Industrial Revolution. This industrialization brought about radical transformations of social organization and was accompanied by an unprecedented urbanization that overloaded many cities' abilities to accommodate such rapid change. The city organization is increasingly derived from economic causes because of: first, virulence of economic drive; second, the rapid influx of people from the countryside; and third, the continual replacement and perfection of abstract forms of communication for the spatial forms of the city.[18]

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17. For example the Baroque could be seen in L'Enfant's Washington, Antonini's projects for Milan and Berthault's for the Pincio in Rome. The British residential pattern was evidenced in London's Bloomsbury district and Regent's Park, an out growth of the particular status of land tenure in some English cities. The colonial checkerboard was the predominant pattern outside Europe found in African military bases (eg. Orleansville), the cities of Latin America, Australia and in future expansion plans of North American cities such as the north expansion of New York City. For a detailed discussion refer to Francoise Choay's book.

18. Choay, pg. 9.

> This process, both qualitative and quantitative, is the basis of a new relationship with respect to the urban complex, following the loss of partial conscious control and of implicit sub-conscious control, those actually experiencing the urban phenomenon come to consider it as something alien. They no longer felt inside the process and determined by it; they remained outside, observing the transformation with the eye of the spectator.[19]

It is in this mood that extensive sociological description of the industrial city appear. It is in this mood that the city is subjected to critical examination. It is in this mood that "critical planning"[20] emerges, evolving about an object that has been removed from its context by analysis, loosing much of the three-dimensional richness of earlier perceptions, echoing a constant undercurrent of a gemenshaft-gessellshaft dichotomy. Franscoise Choay has loosely grouped critical planning into three forms: regularization, pre-urbanism and urbanism.

Regularization

Regularization is a term borrowed from Haussmann and refers to that type of planning whose primary purpose is to regularize an apparently "chaotic city" through a pure schematic layout focussing primarily on infrastructure (including street system). With this goal in mind, the physical

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19. Choay, pg. 9.

20. This is a term coined by Choay to reflect the planning theories that arose in direct response to the pressures of the "industrial city" and the new detached approach to analysis.

interpretation was often expressed in the neoclassical forms and landscape, emphasis on the street axis as grand avenue, projecting an apparent image of sanitation, economic potential and visual unity. In fact, Haussmann's projects were quite dull compared to the dynamism of the Italian Baroque, but the primary objectives, often attributed inaccurately solely to military movement, were economic speculation and an efficient circulation system to bolster that economic drive. Haussmann himself claimed that his major objective was to give unity and transform Paris into an operative whole the "huge consumer market, the immense workshop"[21] of the Parisian agglomerate. His planning theory lies in the dual concept of a circulatory and respiratory system.[22]

Haussmann's circulatory system consists of a network of arterial and tributory roads in a heirarchy that is organized around a plaza, no longer a specific "place" but a traffic node. Often associated with the notion of Freifläche, the respiratory system is a sanitation effort through the creation of voids or areas not meant to be filled in. Instead some amounts of landscaping were applied for their hygenic effect. Haussmann's Paris and the

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21. Choay, pg. 16.

22. Choay, pg. 19.

Ringstrasse for Vienna exemplify this perception of open space.

Concurrent with this regularization theory and especially related to the notion of respiratory system, the urban park movement from Paxton to Olmstead also attempts to regularize the city through extensive networks of greenway. Olmstead's greenway system for Boston[23] and Burnham's plans for Minneapolis[24] exemplify this approach.

From the process of regularization emerges three major perceptions. First, the city is conceived as an object. The city is attributed with a specific identity, an awareness of urban history is evidenced by the creation of a commission to protect historical moments in Paris. Second, borrowing from the natural sciences, a new analytical method of describing the city develops with key words such as "classification" and "system". Also biological images like circulation, nucleus and cell are applied. Thirdly, two specific objectives supercede all other perceptions and priorities - traffic and hygiene.[25]

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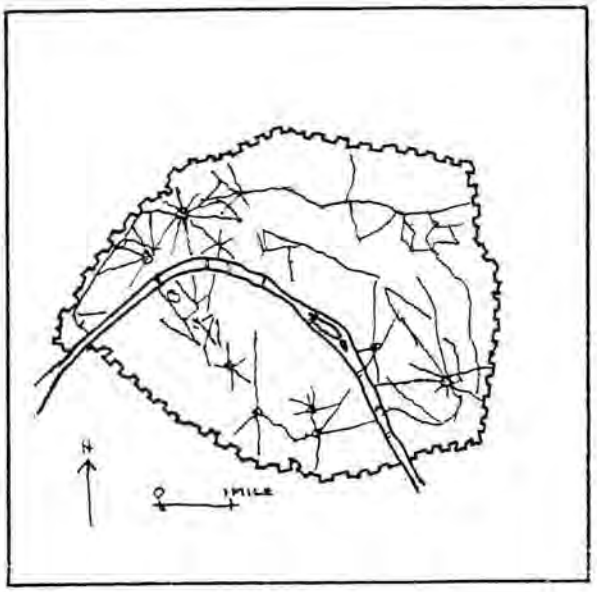
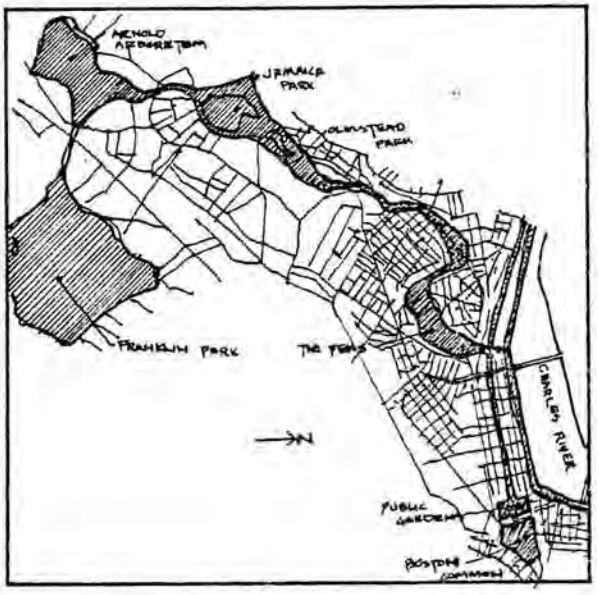
23. August Heckscher, Open Spaces, The Life of American Cities, (New York, 1977), discusses Olmstead's notion of an interconnected park system first initiated along Boston's Charles and Muddy Rivers, tieing in existing parks, originating in the downtown and ringing in a large portion of the city, referred to as an "Emerald Necklace."

24. Heckscher, pp. 20-24.

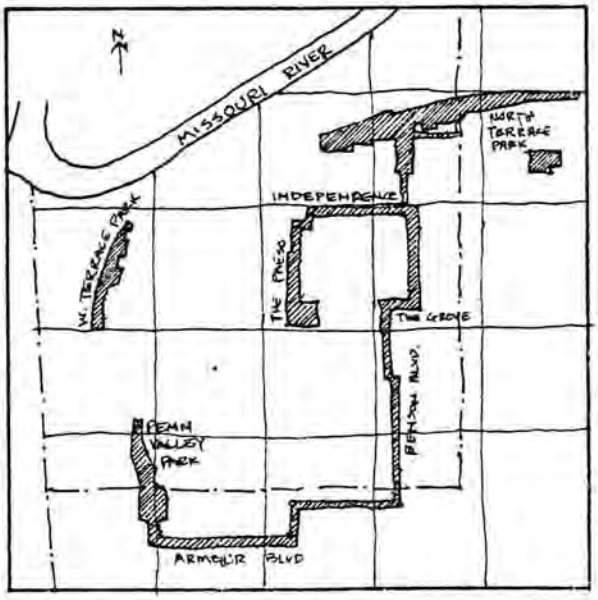
25. Choay, pg. 27.



Haussmann's plan
for Paris



Olmsted's park
system for Boston



George Kessler's
park system
for Kansas City, Mo.

While regularization attempts to organize the city, there is also movement from the city, creating new agglomerations that were reduced in size and function and therefore retrogressive in their planning tendency since they offered a reduced pattern of behavior in relation to the city. These accretions are represented by the wealthy and middle-class residential communities (escape) and the worker's colonies (captive).

Pre- Urbanism

While regularization is viewed as a process for discerning a potential order out of 'urban disorder,' and urbanism a process that radically challenged that 'hidden order' in favor of a completely new one, a purely theoretical form of planning dealing with restructuring of society with resultant forms of utopian cities, bridges these diametrically opposed views. Two models emerge: one inspired by a vision of social progress, the other by a vision of a cultural community. Francoise Choay has coined the terms 'progressivist' and 'culturalist' to label these two planning models.

The 'progressivist' model emerges from the socialist writings of Robert Owen, Charles Fourier and Etienne Cabet and the specific spatial organizations they articulated. In part, these writers were also influenced by Ledoux's book, Architecture, published in 1804. While condemning the

destructive social aspects of industrialization, they described imaginary cities where the machine liberates and transforms man's environment.[26] Other socialists, such as Marx (who also labeled these writers as Utopian Socialists), offered no replacement model for the industrial city, claiming that social reorganization must precede any physical one.

Urban spatial organization focuses on physical hygiene and the functional classification of building type grouped for reasons of productivity and efficiency. Physical hygiene is achieved through a dispersion of the solids, opening and connecting the voids with excessive amounts of vegetation. Functional separation leads to various configurations and assemblages of zoned activity with the separation of housing from place of work most prominent. Rather than mere accommodation of economic forces (regularization), the "progressivist" approach assumes a faith in man and reason, a conception of the universal drama archetype and an ability to discern and establish an environmental framework for his behavior. Unfortunately, the major spatial contribution is the erosion of the distinct boundary and duality of city or urbanity and countryside with the over abundance of open space.

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26. For a more detailed account of their architecture see Dolores Hayden, Seven American Utopias, (Mass., 1976) and the unpublished paper, New Towns, by Lenyk, Chilton and Reinburg.

The "culturalist" model is inspired and expands on the reawakened interest in history similar to the late eighteenth century. Like the "progressivist" model, the "culturalist" writers critized the existing urban context but also condemned the escape to new utopian visions. Rather, historians such as Michelet, Burkhardt and Fustel de Coulanges compared the social continuity and compact cultural communities of the medieval town and Renaissance Rome to the existing discontinuity. They describe a cultural dichotomy of the organic pre-industrial era to the mechanical industrial town or as Max Weber termed it, Gemeinschaft - Gesellschaft.[27] William Morris and John Ruskin provide the models for this nostalgic revival. The major spatial perception that emerges is described in Morris' News from Nowhere[28] where London has shrunk in size and a clear distinction between city and countryside is re-established.

Urbanism

The term "urbanism" actually represents here, those spatial perceptions that clarified and crystalized the two pre-urbanism models, offering a method of application for the early twentieth century city. The progressivist model

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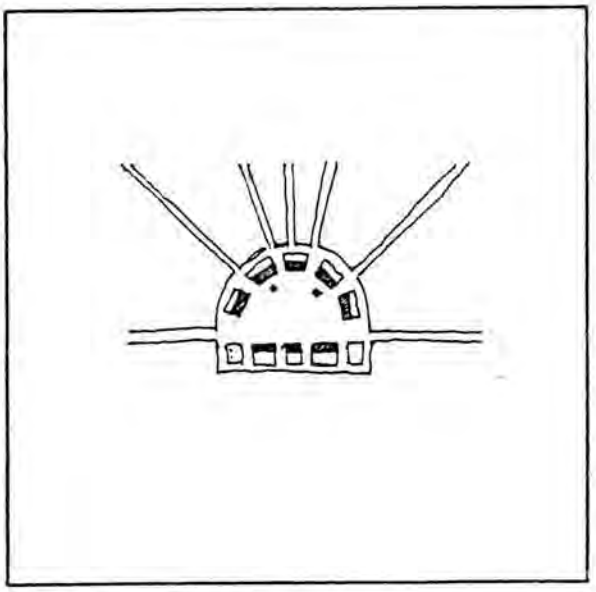
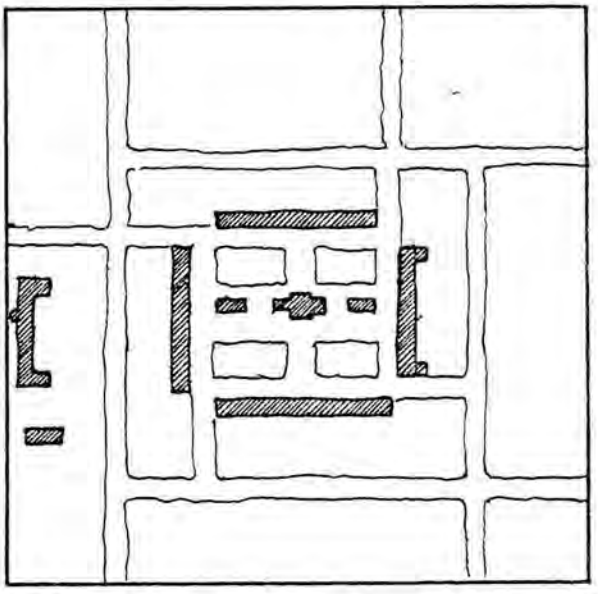
27. Choay, pg. 102.

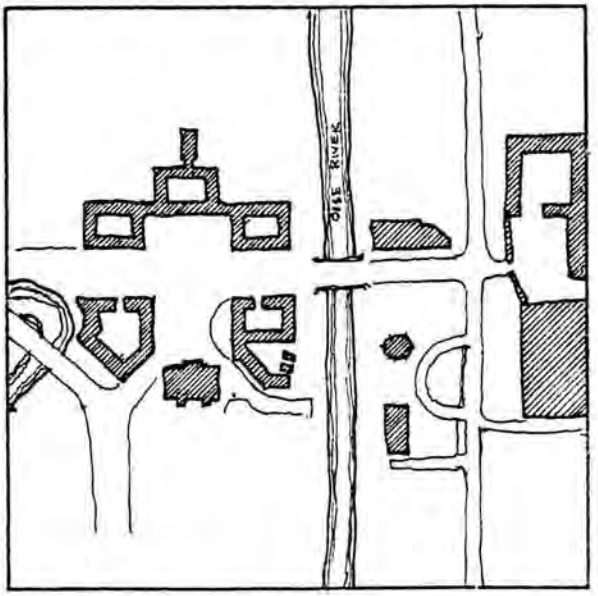
28. William Morris, News from Nowhere.



One of Ledoux's plans for Chaux



Robert Owen's plan for an Owenite village



Jean Baptiste Godin's <u>Familistère</u> or Social Palace

is elaborated in Arturo Soria y Mata's proposal for a linear city (La cuidad lineal)[29] and culminates in Tony Garnier's[30] proposal, cité industrielle.

For Soria, rapid urban transit is the basis for his linear city scheme. As George Collins notes, Soria was "the first person in modern times to evolve a planning method based primarily on the transportation of physical objects and the transmission of public utilities."[31] Organized along longitudinal traffic flow, space is conceived as standardized, open and functional.

Garnier's approach involved articulating certain city functions by clustering them into specific related zones separating them by location and circulation patterns.[32] The industrial facilities are spread out along a river, near power and transport while the city proper is located on a plateau above it. The city itself is broken down into two parts: public and residential. These areas are broken down into even finer zones; administrative services, assembly halls, museum collections, and sports and spectacle facilities

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29. George R. Collins and Carlos Flores, eds., Arturo Sorria y la Cuidad Lineal, (Madrid: Revista de Occidente, 1968).

30. Dora Wiebenson, Tony Garnier: The Cité Industrielle, (New York, 1969).

31. Collins, pg. 16.

32. Wiebenson, pg. 11.

for the public core while the residential realm is composed of rectangular blocks (orthogonal street network) running in an east-west elongation along the periphery. All these zones were to be discontinuous, expandable and separated by zones of vegetation.

The "culturalist" model is characterized by the writings of Camillio Sitte. Though Sitte is not as involved in the social - political aspect of his pre-urbanism counterparts, he does illustrate physical interpretations sympathetic to these ideals. While aesthetics is the motivating principle, his spatial organization focuses on open space, its enclosure and boundries. The buildings serve only to mold the street and plaza to achieve intimate enclosures, human scale and pedestrian walkways. The spatial model that surfaces contains the following features: continuity in constructed elements, enclosure, diversity, asymetry, irregularity and connecting elements which are significant in themselves.[33]

These two models offer two distinct approaches for the perception of space in the Twentieth Century. The "progressivist" model is elaborated on by the Bauhaus, Le Corbusier and the rationalist architects of C.I.A.M. along with certain revolutionary authors in the Soviet Union such as Peter Kropotkin. The "culturalist" model, as presented

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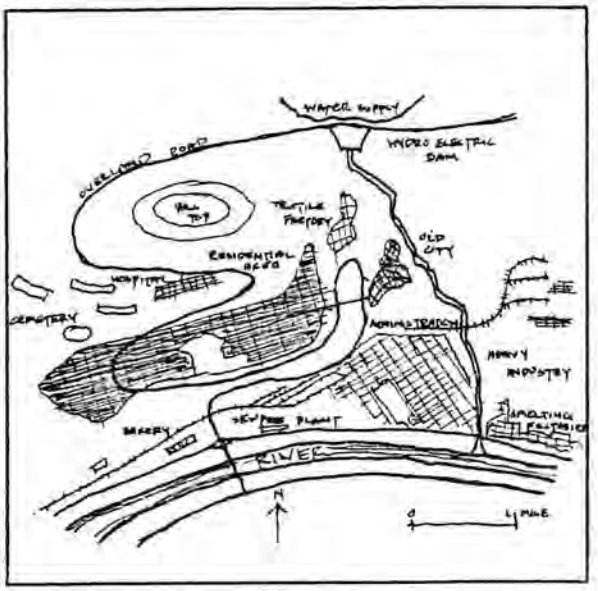
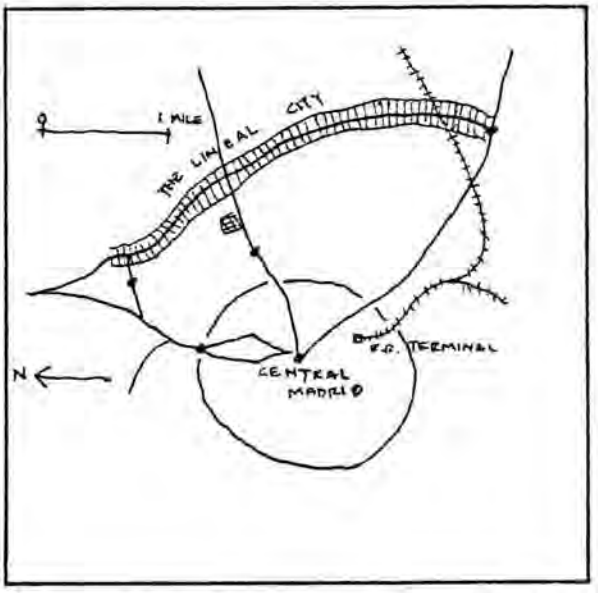
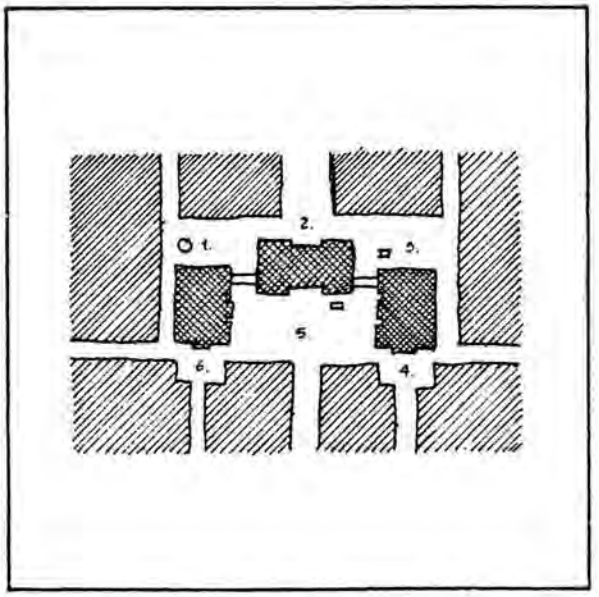
33. Choay, pg. 105.



Tony Garnier's
Cité Industrielle



Soria y Mata's
Ciudad Lineal



A proposal by
Camillo Sitte

by Sitte, influences Patrick Geddes and Sir Raymond Unwin in England and Karl Henrici and others in Germany. The Garden City movement, propogated by Howard, is influenced by both models. Howard's scheme shares the progressivist objective of bringing the country into the city, zoning various functions and tieing it all together with a circulation network. But it also is sympathetic to the "culturalist" approach in its precise limitation of space and population, condemnation of standardization and encouragement of variety and continuity of buildings and space.

Emerging Twentieth Century Perceptions

The models that emerge from the nineteenth century provide the framework and tone for the spatial concepts of the twentieth century. The city is observed as a singular object. Its spatial organization is raised to a "science" with an air of clinical observation, employing conceptual tools in terms of classification and biological metaphors. The rapid changes due to industrialization causes a new relationship between the city dweller and his city. The resultant spatial organization is generally viewed as inadequate, chaotic or some other negative perception.[34] Proposals for reorganization are attempts to cope with those rapid changes. The social, economic and technical forces of the twentieth century will accelerate these changes, requiring even greater analysis of the organization of the city. Patrick Geddes offers a descriptive and rather accurate view of changes occuring in the city, coining the term "connurbation" in 1915. This term describes "the waves of population inflow to large cities, followed by overcrowding and slum formation, and then the wave of backflow--the whole process resulting in amorphous sprawl, waste, and unnecessary obsolescence."[35]

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34. Through much of America's history there exists a pervasive widespread view that is generally negative and apprehensive of the city. For further discussion refer to Morton and Lucia White's book, The Intellectual versus the City, (Cambridge, 1962).

35. Spreiregen, pg. 37.

The social, economic and political forces dilute the spatial compactness of the Twentieth Century city. The new perception of motion and space in the plastic arts reflect the new perception of space in the city - no longer bounded and static - capable of being sensed only in motion. The technical advancements of the auto becomes the tool, while the penetration of the highway into the city becomes the setting. This horizontal spread is accompanied by a vertical expansion through the use of the elevator and new iron framing techniques. This rapid physical separation in time (auto's speed) and space (detachment of skyscraper) from the ground plane reflects the increasing social isolation of the urban dweller. This new vision is graphically depicted in Antonio Sant'Elia's future city, La Citta Nuova,[36] where motion is the basis and every element reflects vertical or horizontal circulation.

Some of the major perceptions of urban space that emerge from these forces offer three general approaches: a nostalgic neo-classical revival as embodied in the City Beautiful Movement; reorganizing the city as embodied in the "progressivist" principles of Le Corbusier and C.I.A.M. and the abandonment of cities and substitutions of new organizations as embodied in the new communities movement.

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36. Spreirgen, pg. 33.

There are other perceptions, but these offer three broad categories of divergent views that are quite inclusive. For example, Wright's proposal for "Broadacres" reflects the distrust of the city similiar to that of the new communities movement.

In an effort to give coherence to an American desire for urban spaciousness, the City Beautiful movement supplied economic forces with necessary street widening and rebuilding while providing an elegant, ableit foreign and revivalist, design esthetic that initiated a country wide program of civic improvement. A great portion of the success of this movement is "that a school of design seemingly to be purely aesthetic was so perfectly in keeping with the dominant mood of the business community. The chance for freedom of movement and for the display of conspicuous wealth had been granted an aesthetic sanction consoling to the new imperialist."[37] The major elements in organizing the city were: first, a system of main arteries; second, a network of parks; and third, clusters of new focal buildings.[38] Perhaps the greatest harm of this movement came not from the revivalist facades and classical arrangements decried Louis Sullivan, but rather the introduction to American cities

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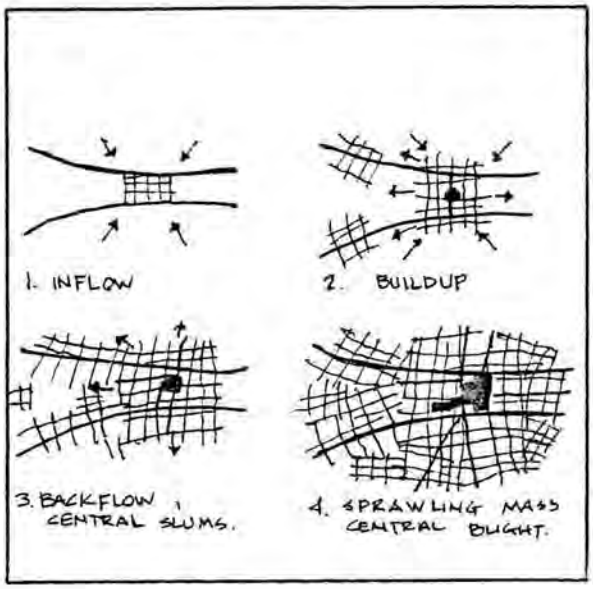
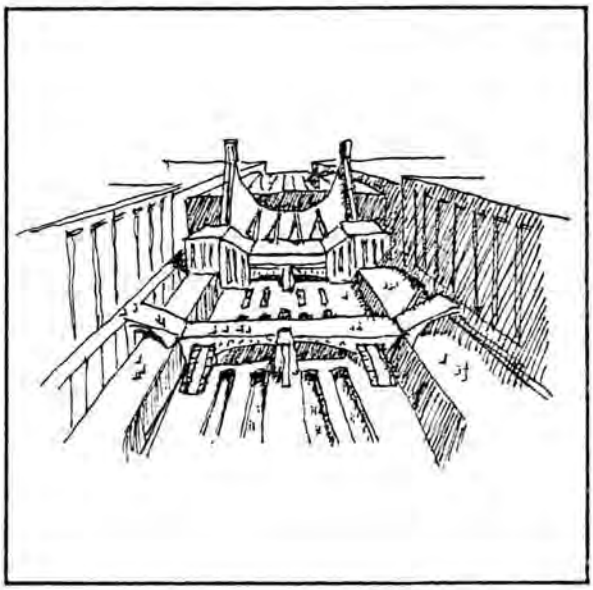
37. Heckscher, pg. 20.

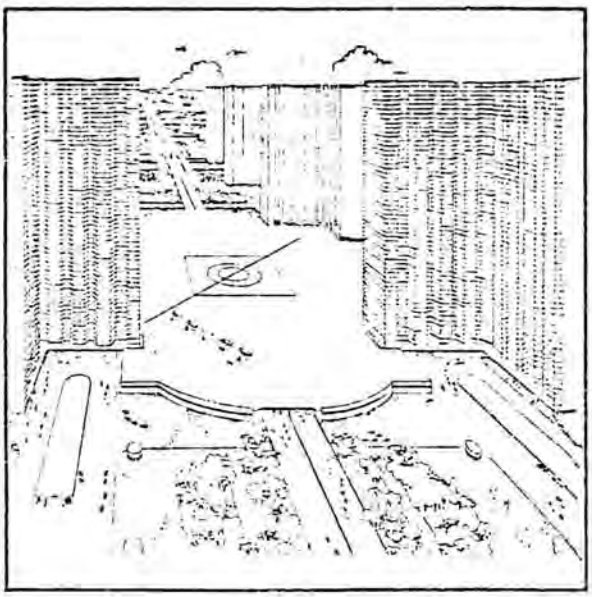
38. Spreiregen, pg. 38.



Patrick Geddes
explanation
of "connurbation"



A view of
Antonio Sant'Elia's
La Cittá Nuova



A view of the
City for Three Million
proposed by Le Corbusier

of monumental scale, where men confront buildings rather than each other. The broad vistas created a situation ripe for the encroachment of the automobile. The generous pedestrian space of Park Avenue was quickly lost to the needs of the auto.

Initially the new communities' movement was an attempt to upgrade the residential communities in the rapidly expanding areas around American cities. But in England, building on the ideas of Howard, entire new satellite towns were planned to relieve the congestion of the built-up urban areas. Its reemergence in America is a result of the unrest in the 1960's with an aggressive Democratic administration.[39] The major impetus is the perception that existing urban centers became too complex and congested and the ideal alternative is to create microcosms or satellite, rather than just urban extensions, with the entire complement of urban functions. Besides recognizing limitations to urban growth, the new communities movement has instigated study on spatial and social organizations of entire towns.[40]

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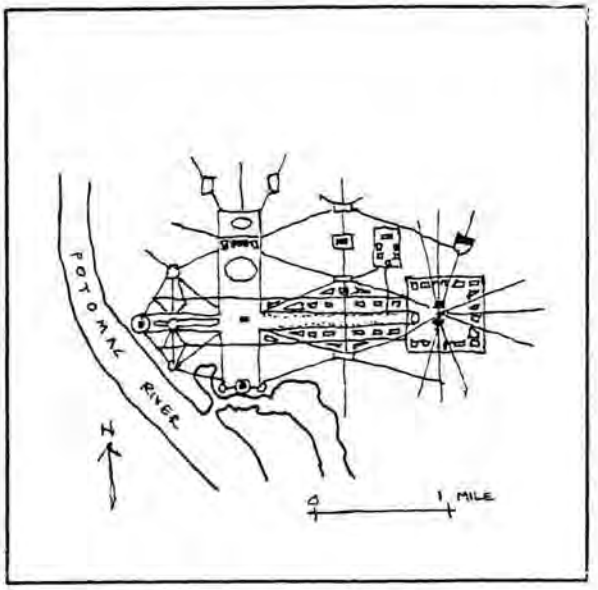
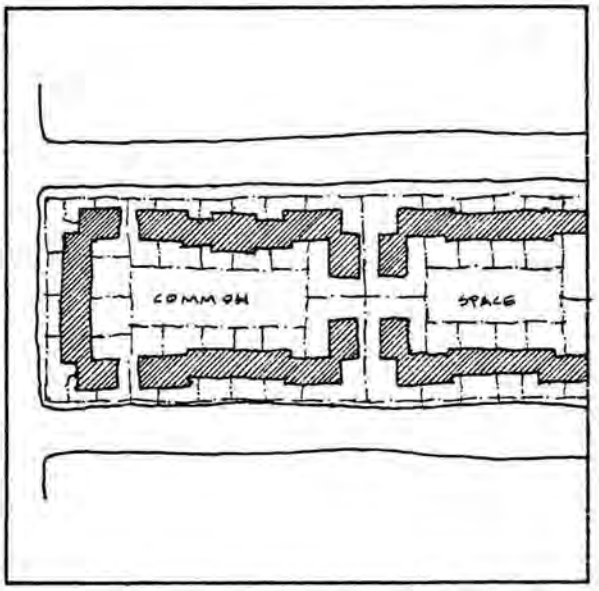
39. For further discussion of new town legislation refer to William Lenyk's New Towns as an Instrument of Public Policy, (unpublished paper, 1976).

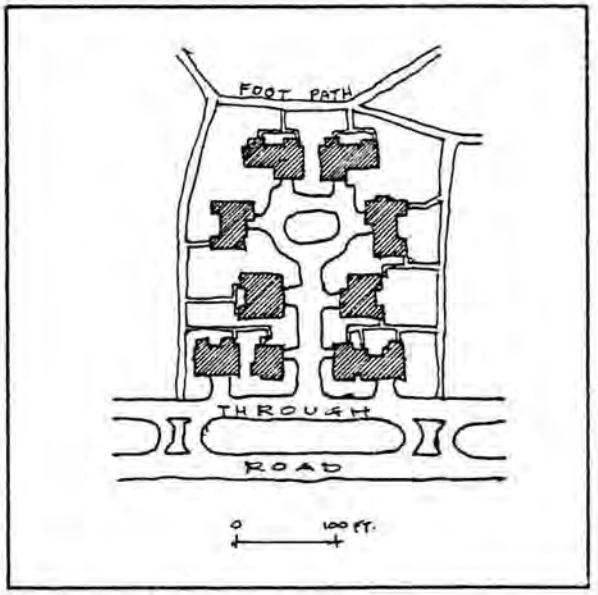
40. For an extensive reading list, refer to the Council of Planning Librarians Selected Bibliography on New Town Planning and Development, January, 1973.



1901
McMillan Commission plan
for central Washington



Stein and Wright 1926
Common space achieved
from the Sunnyside scheme



Stein and Wright 1929
Units clustered around
cul-de-sac at Radburn, N.J.

The various approaches of the "progressivist" model inspired perhaps the most notable concepts of the Twentieth Century city. Usually there is an incrementation and classification of space according to functions, all related and carefully articulated by a circulation system. This systematic method of spatial organization is exemplified by Le Corbusier's C.I.A.M. grid -- "a graphic file system for recording pertinent information in an urban study and for explaining a plan. The grid had four component sections: work, residence, circulation and leisure."[41]

This importance of circulation is evident in much of the analysis done on spatial organization: Louis Kahn's circulation diagrams for Philadelphia as key determinants of urban form; Kenzo Tange's plan for Tokyo expansion into the bay on suspension bridges with circulation a key to its operation; the M.A.R.S. proposal (the English C.I.A.M. organization) for the expansion of London. But in Le Corbusier's early organization of space in his Plan Voison, and even to some extent in his later work at Chandigarh, the solid massing of the buildings are not strong enough to define the outside space adequately. Couple this with his attempt to lift the building from the ground plane, along with separation and elevation of vehicular circulation to free the

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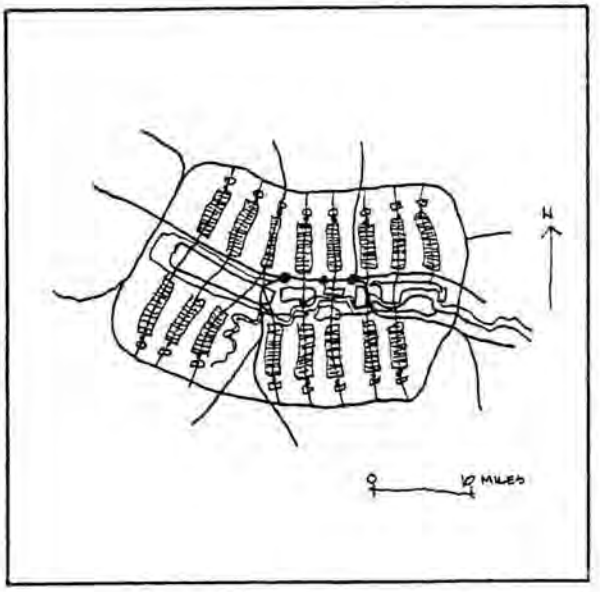
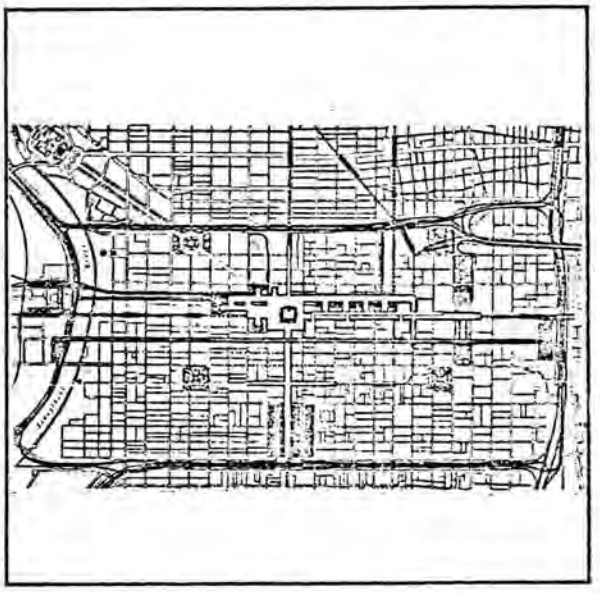
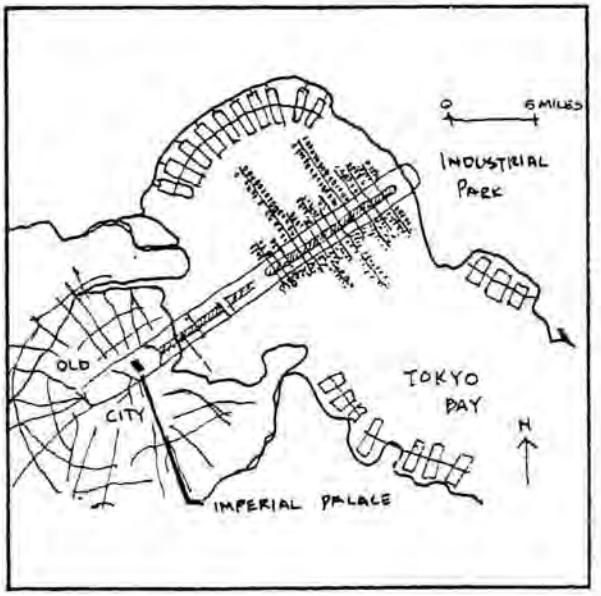
41. Spreiregen, pg. 46.



1938 MARS plan for London



Bacon's
Philadelphia Plan



Kenzo Tange's
plan for Tokyo

landscape for omidirectional pedestrian movement, we have no particular direction to go and no particular activity to do. This literally gave license to many planners and architects less talented to execute large scale urban removal and provide spatially isolated substitutes.

This emphasis on circulation is apparent in our contemporary perception of open space from the extensive amount of research devoted to the subject, from Doxiadus' Ekistics[42] to the Access Tree, and the resultant manifestations (i.e. Manhatten has more paved vehicular space than building space).

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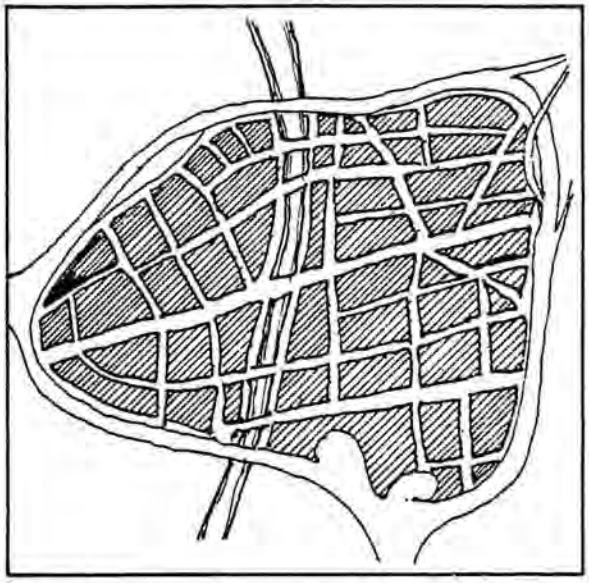
42. Constantinos A. Doxiadis, Ekistics, (New York, 1968).

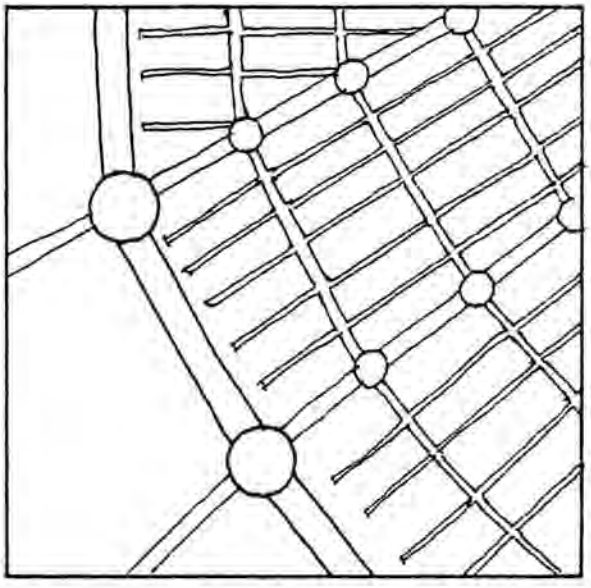
The deterioration and often unconscious manipulation of urban open space, which is basically public in nature, is perhaps the critical indicator and surely most visible display of the status of our downtowns. The pedestrian, who by rights, should be the ultimate benefactor, has been left with little comfort or quality of life. It is the collision of this emerging perception of the pedestrians' needs with the prevalent attitudes towards open space that is the general issue of this thesis. The types of resolution that will result from these conflicts will set the tone and character of our urban centers--literally the purpose for future human settlements.

The previous chapter presented some of the evolving concepts of open space and resultant configurations of urban form. Three major issues that must be successfully addressed by the emerging awareness of open space can be labled:

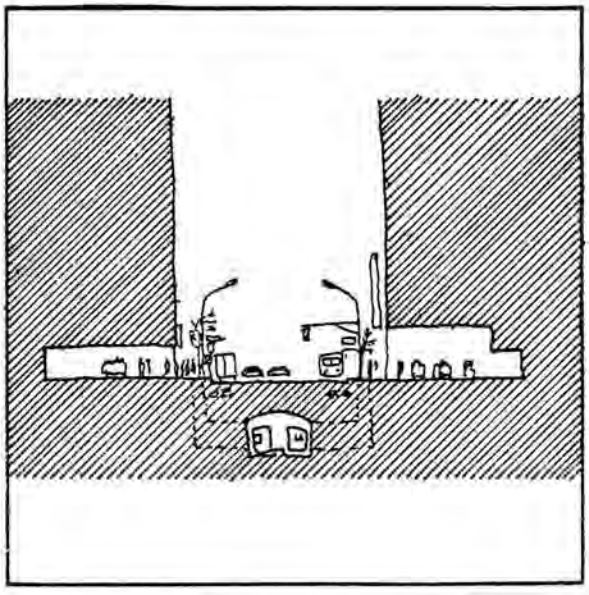
> First, perception of a negotiated spatial order or overall description of open space patterns in the city. This includes subset problems such as territorial possession, political power, laws as social contract and space use as identity.
>
> Second, identification of a circulation hierarchy. This includes methods focussing on rationalization and cognition.
>
> Third, identification of socio-cultural values related to the use of public space. This includes



Freifläche



Articulation of
movement system



Hiroba

interpreting the locational differences in the meaning of 'urbanity', the use and meaning of different urban public spaces and the car as a privatization of public space.

To address these particular issues this chapter presents three major concepts. They are:

1. 'Freiflache' or open space;
2. Articulation of movement system;
3. 'Hiroba' or activity generator.

Along with representing a host of subset deficiencies in the urban context, these three broad categories connote scale perceptions from the total city scale, to a circulatory scale, to that of the intimate personal scale respectively. The resolution of these issues will contribute greatly to that condition we term urbanity, what gives the city that crisp, delightful distinction from the countryside, or in most cases, the suburbs. The major contention of this chapter is that the three issues presented and the subsequent alternatives that arise represent on both conceptual and physical levels the deficiencies of the urban environment in its ability to impart an adequate informative nature enhancing a more successful quality of life.

Freifläche

The notion of "Freifläche" or open space has been used by many planners in describing the city.[1] Haussmann meant by it those spaces that were left open mainly for the negative reason that they are not to be filled in, having more value left open. For our purposes, it will take meaning on two levels.

The first is the interlocking duality and juxtaposition of the solid and void or figure-ground relationship. Though there does exist a great deal of "open space" in the typical American city, so much so that they can be viewed as loosely packed, the notion of Freifläche connotes not so much any particular quantity but rather the specific morphological relationships of the solids to the voids. It is similar to that delicate balance, yet tension, of oriental asymetries, the thesis-antithesis of an idea, the pressure and expansion of funnelled movement. Open space only takes on meaning and hopefully positive qualities through its contextual relation to the solids. Colin Rowe offers important insights on the collision of entire set pieces of figure-ground groupings through time in "Collage City".[2]

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1. Special importance has been given to the relationship of figure-ground studies. The tight clustering of the small town of Halen (figure) in juxtaposition of the surrounding wooded landscape (ground) outside Basel in Switzerland emphasizes this in a literal and contemporary framework. Refer also to Sven Hesselgren, Man's Perception of Man-made Environment, (Sweden, 1975).

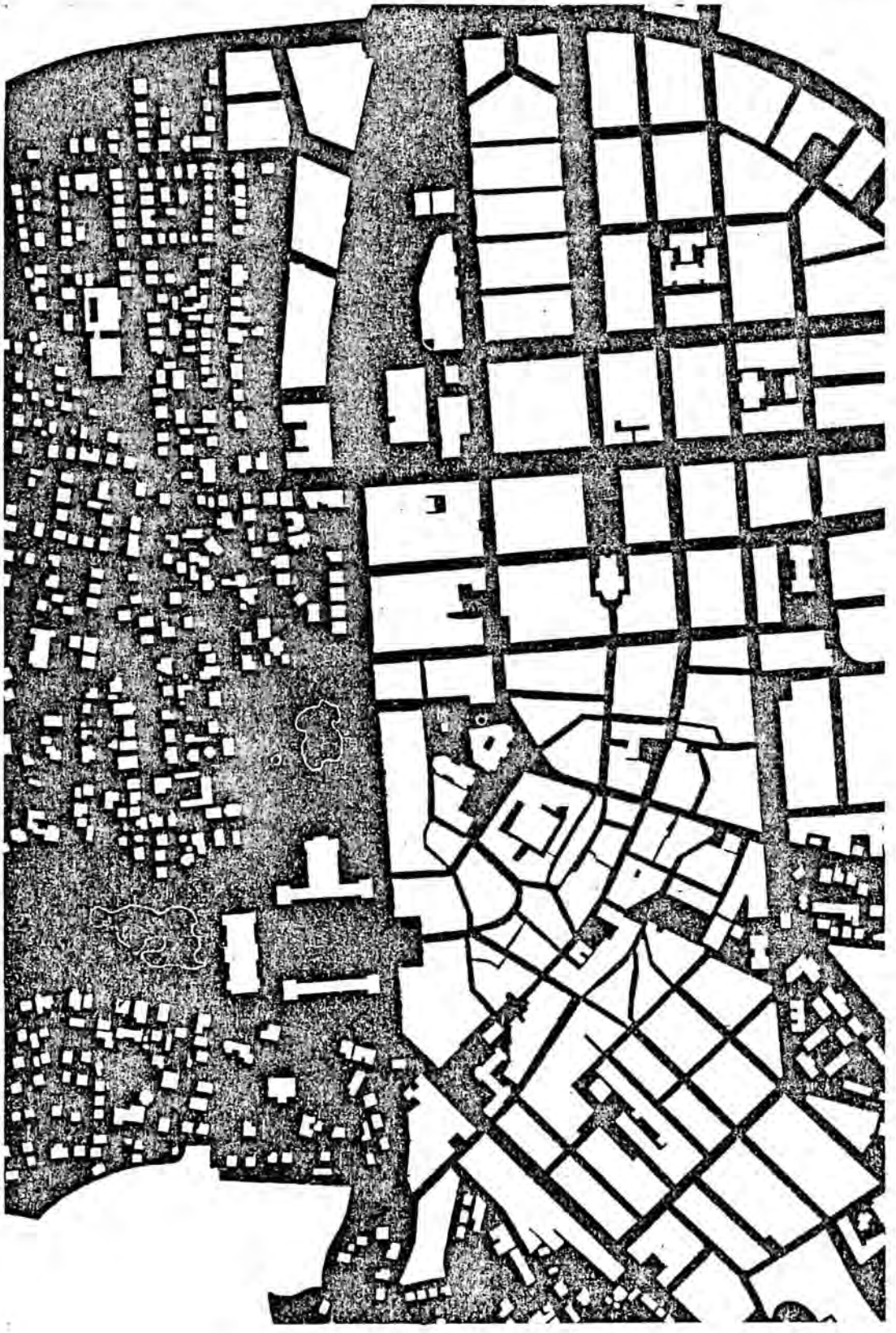
2. Collin Rowe, "Collage City," Architectural Review, August, 1975, pp. 65-90.

It is not our purpose here to examine all the ramifications nor intentions of figure-ground studies, but rather to note its apparent importance in achieving a certain quality of life in cities. Achieving successful Freifläche or open space rests on understanding its relationship to the solids that define its boundaries and its logic for specific continuity from one space to another. This perhaps appears obvious, but the consistent disregard for any such consideration in city designs or individual buildings reflect either ignorance or lack of attaching any significant importance to this notion.

Besides the conceptual aspect linked to figure-ground, Freifläche connotes a physical quality in response to an internal configuration. Haussman's respiratory system in tandem with his circulatory system, imparts the concern and importance of hygiene. Not only providing open space, but attaching a specific type became a major thrust in the nineteenth century greenway systems of Olmsted and Burnham and much later, Bacon in Philadelphia. The concern for health and hygiene and the subsequent introduction of nature into the city is an integral, though easily misapplied, element of the Freifläche concept.

FREIFLÄCHE

Weisbaden plan.



Another physical duality includes the dynamic interaction of circulation and the needs for shelter that surface from Howard Saalman's analysis of Medieval cities. Given a certain amount of space, the struggle between private (enclosed) space and public (open) space for a fixed amount of space was a primary factor in determining the form of Medieval cities.

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2. Howard Saalman, Medieval Cities, (New York, 1968), pg. 36.

Articulation of Movement System

There has been extensive research, literature and brain-power expended on the topic of movement systems in general and transportation in particular. The stubborn deficiencies that refuse to be solved attest to the complexity of this area. I will not propose yet another apocalyptic vision of the future city, but merely note the deficiencies of movement systems in relation to this open space notion. By 'deficiencies' I refer to the 'muddled' perceptions most movement systems exhibit to the urban traveler. The reciprocal and hopefully positive view would be one in which the system is highly articulated in its boundaries, function and use to readily reveal to its user an understandable reference system, internally and externally consistent. As stated earlier, this would allow the physical realm to reinstate its informative role in the city.

Movement systems can be viewed as deficient on a conceptual and physical level. The conceptual deals with the cognitive ability of the city to act as a tool for interpreting it.[3] The physical realm deals with the usurpation of the auto of the entire system.

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3. Kevin Lynch has triggered a host of research on the way we navigate through a city, finding many to be less memorable than others. Early work on imageability can be found in his book, The Image of the City, (Mass., 1960), with newer work done by such researchers as William Ittleson and Howard Proshansky.

Even in ancient Rome, with the use of a major and minor axes, the importance of a road hierarchy has been apparent. The contemporary city offers a variety of roads that represent roughly scales of distance and speed. This includes the highway, tributary, collector and cul-de-sac. A large scale that would include the former might be the airstrip, rail lines, macadam roads and sidewalks on the horizontal plane while a host of various elevators in the vertical. In this larger scale, macadam roads have commanded the greatest attention and within that hierarchy, internal combustion, rubberwheeled vehicles have superceded all other forms of transport. There exists a pervasive reliance on the auto for almost all forms of transport while it is my contention that it has reached and surpassed that point of diminishing returns of further application.[4] The auto inclusiveness is evidenced through: first, the methodical conversion of multimodal systems to unimodal systems (note the continual substitution of rail and electric trollies for trucks and busses;[5] second, the expansion and near completion of inter-city

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4. The cost of personal auto mobility ranks fourth in personal consumption expenditures, behind food, housing, and other services, but ahead of clothing, furniture, medical care and recreation. But it dominates oil consumption with 31% over any other sector and causes about 44% of all accidental deaths. Refer to the United States Department of Transportation, National Transportation and Trends, (Washington, January, 1977).

5. Ibid., pg. 85. In the percentage of 1975 U.S. passenger-miles, the auto dominated with 92%.

and intra-state highway networks;[6] and third, the pervasive accommodation and intergration of the auto into the cultural mode;[7] (three obvious ones include: the substitution for other forms of social contact through the anonymous 'drive-in' syndrome; the hermetrically sealed vehicles on 'the strip'; the Jack Kerouac notion of 'on the road' coupled with the expanding market of recreational vehicles that are extentions of the home).

The deficiency rests in trying to make the auto a flexible vehicle for every type of movement rather than offering a richer variety of modes that could more satisfactorily correspond to road type and situation. Because of the actual physical limitations of the auto and logistics of movement systems,[8] providing various modes to correspond to scales of distance and speed generate new potentials in articulating the entire system.

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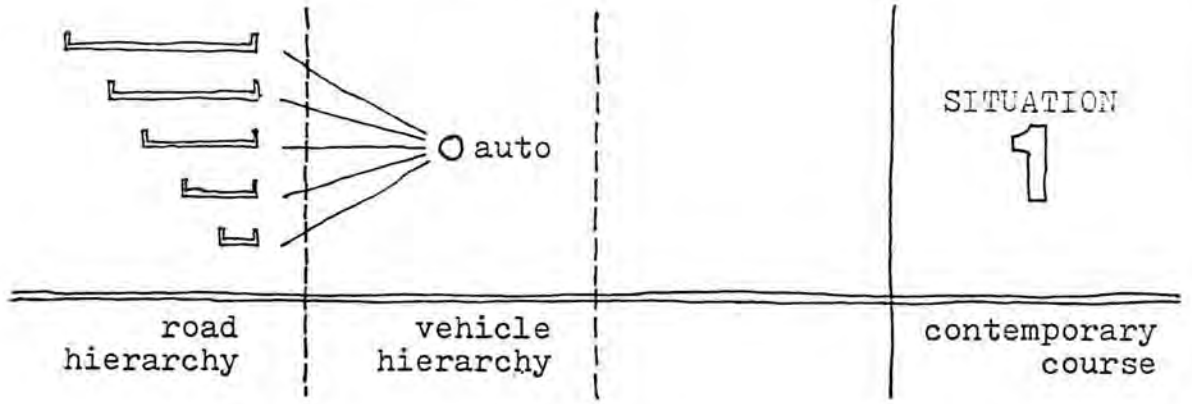
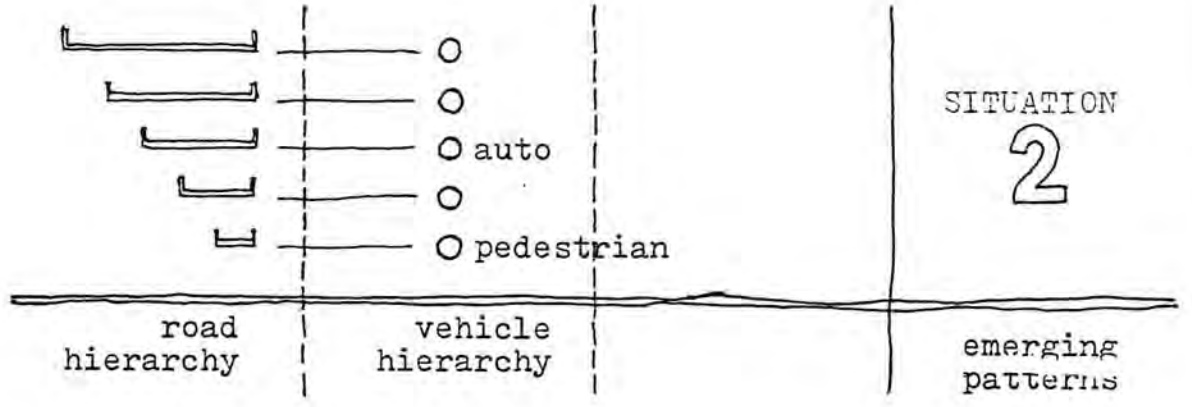
6. Ibid., pg. 131. Note that "nearly nine-tenths of the total interstate passenger-miles and almost a fifth of the interstate freight ton-miles move on the Nations highway system."

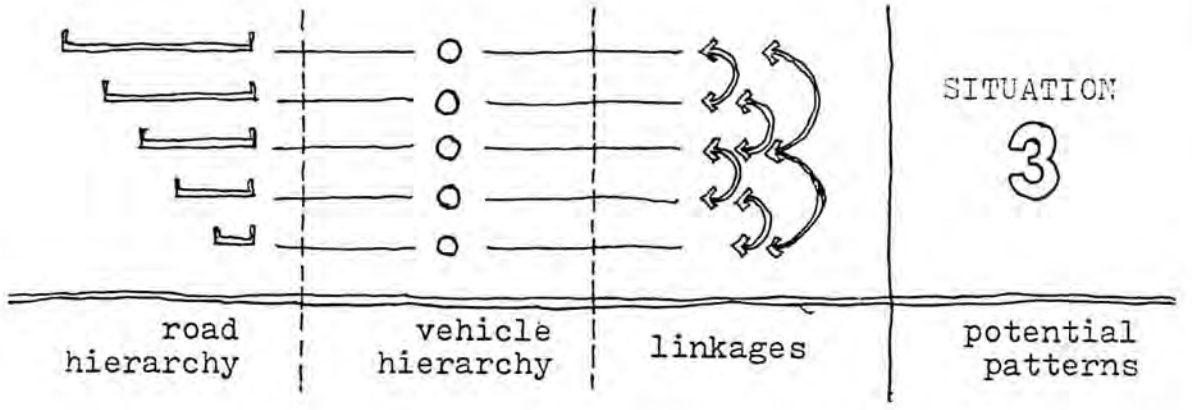
7. Ibid. pg. 86. "Not only is the overwhelming majority of movement of people being accomplished by the automobile in the United States, but there is also a strong indication that no practical alternatives now exist for many of these trips."

8. This is explained more fully in the latter portion of this chapter. For the research into this area, refer to Boris Pushkarev, Urban Space for Pedestrians, (Mass., 1975).

ARTICULATION OF MOVEMENT SYSTEM

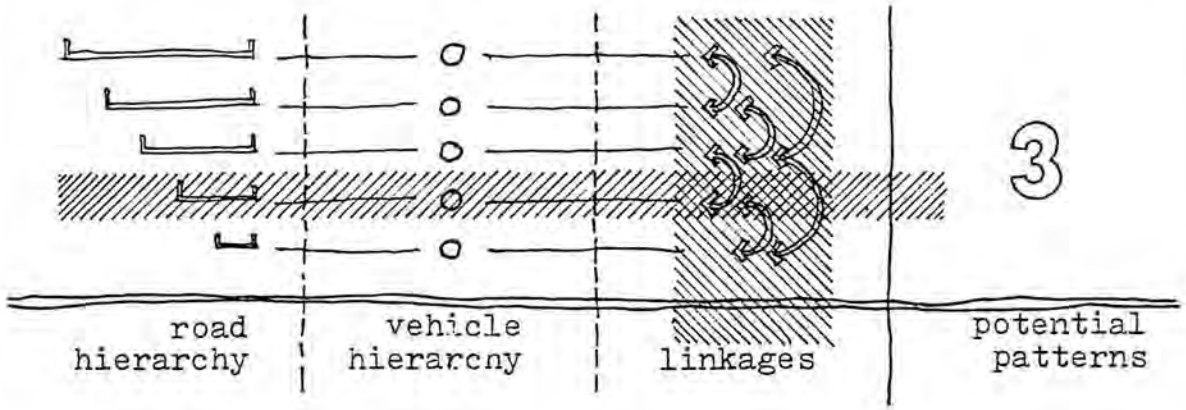


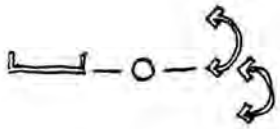




Initially, this reintroduces the pedestrian and his accompanying context as a portion of the system. The pedestrian, rather than the auto, becomes the smallest increment or mode of transport while completing the bottom end of the hierarchy. The pedestrian, rather than the auto, as common denominator, reintroduces an intimate scale that has long been lost in American cities. The logical extension then, is the articulation of pedestrian circulation space at the pedestrian mode, altering auto-oriented roads to the necessary scale. But this is only our initial concern.

Given a system with a hierarchy of roads and associated modes of transport reflecting legitimate scales of distance and speed, two new potentials emerge between transport mode and context, optimizing their qualities within their specific realm. This can be seen partially in the auto and parkway. The two act together, exclude dissimilar characteristics and achieve a relative amount of success. You would not expect to see a pedestrian, benches and light (all provided by the auto), nor a traffic light every hundred yards interrupting the rapid flow of movement on a parkway. Viewed in this perspective, the hierarchy can be optimized and highly articulated at any level, disgarding or adding new levels as the situation prescribes, without disrupting the entire system. This hinges on the second potential that emerges, namely the modal interchange. These linkages can





Given a strong relationship between the transport mode and the road type offers a flexible system in two ways:
first, greater maximization of a particular setting of a given mode-road;
second, ability to optimize, add or discard a particular segment without disrupting entire system.

Emphasis shifted to linkages. Potential for the modal interchanes to act as form determinates.

animate the collisions, transitions and processions from one mode to another, providing active focus or modes that celebrate the movement through the city. The entry and exit ramps of an expressway--decending, decelerating, the panoramic view of the city-scape shrinking as you enter the bowels of the city or gaining speed, you rise up and out of the ramp like a bird released and free of the confines of tall buildings--can become new rites of passage. Not only would this provide physically a more enjoyable and operable system, but conceptually arm the urban dweller with a cognitive tool for using his city.

The efficient operation of a city may be facilitated by a greater articulation of its movement system. Such a goal has been the major impetus of traffic engineers and planners for a long time and there is perhaps merit in striving for goals that can be readily measured and evaluated. But on the conceptual level, this notion of clear articulation can add to a cities livability through enrichment of its spirit or Zeitgeist. Triggered by Kevin Lynch in Image of the City and subsequent research in this area by others,[9] how an individual perceives his city is critical to his use and enjoyment of it and the physical environment will

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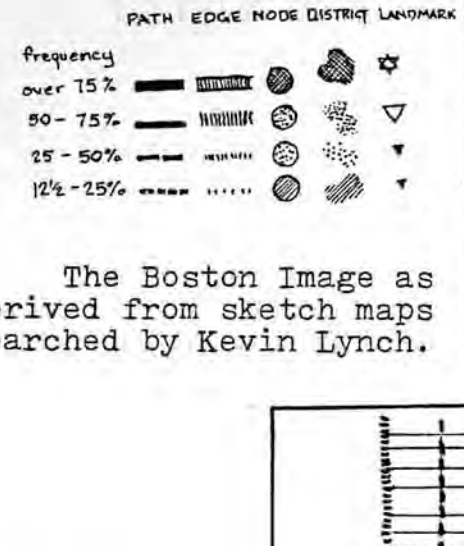
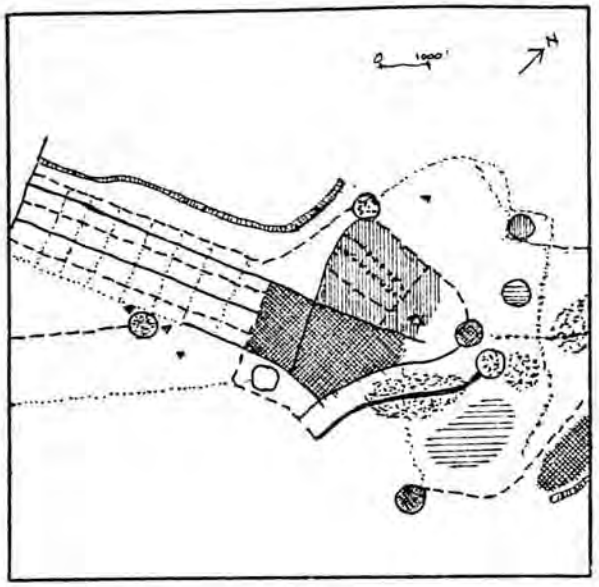
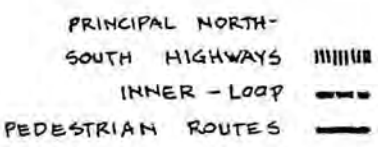
9. William Ittleson and Howard Proshansky, An Introduction to Environmental Psychology, (New York, 1974).

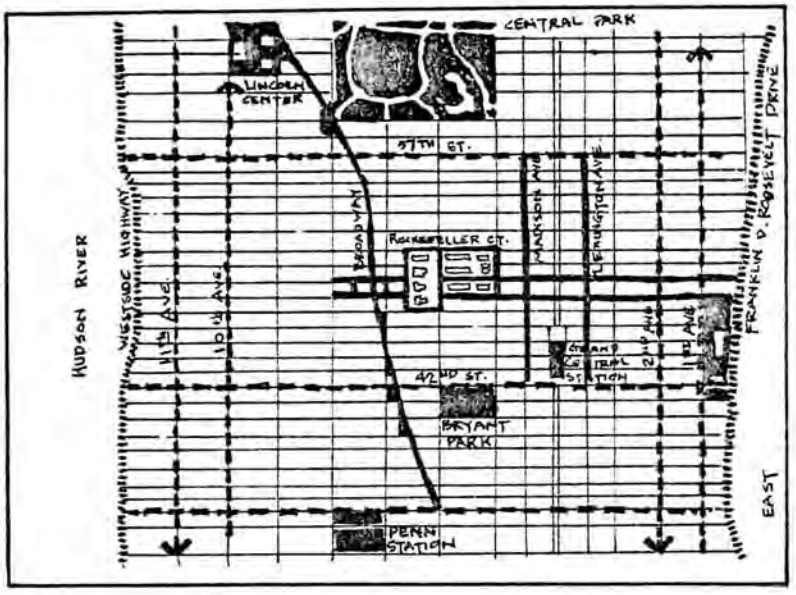
Articulation of the movement system as a tool for interpreting the city.





The Boston Image as derived from sketch maps researched by Kevin Lynch.





Van Ginkel's plan for Midtown New York.

Expressways are like RIVERS
These RIVERS frame the area to be served
RIVERS have HARBOURS
HARBOURS are the municipal parking towers

From the HARBOURS branch a system of CANALS that serve the interim
The CANALS are the Go Streets
From the CANALS branch cul-de-sac DOCKS
The DOCKS serve as entrance halls to buildings

Description of Louis Kahn's movement-plan for Philadelphia.

influence this perception. Articulation of the movement system, which could entail enrichment of the physical context of any particular component or level and introduce the pedestrian and his subsequent pedestrian environment, provides feasible approaches to satisfying three of the six basic requirements Ittleson and Proshansky[10] state to make a city livable.

First, orientation and ease of movement can be enhanced from a greater degree of imageability. Through clearer articulation of the movement system, an individual can more readily construct a 'cognitive map' inside his head, allowing easier navigation and use of the city. Similar to historical trails through Boston or the attempted greenway linkages of parks in Cleveland, enhancing the physical route of a particular use can unfold and clarify the multi-layered systems inherent in a city. The effectiveness of a city is quickly diminished when, armed with brightly colored and complicated bus schedules, an individual still arrives at the wrong place and wrong time with frayed nerves and patience. My contention is to have the physical organization of the city, rather than a cryptic schedule, provide the necessary clues on how to use that city.

Another requirement is environmental enrichment or "the aesthetic and stimulus qualities that contribute to the

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10. Ittleson, pg. 294.

satisfactions and pleasures of living in the city--its variety, beauty, 'aliveness', 'symbolic meaning'."[11] This is rather an elusive goal but could be achieved if we gave proper attention to the physical context of our modal linkages. Bus stations, parking lots and even airports cannot compare to the grandiose celebration of passage of our older train stations. They earmarked transitions and provided memorable experiences, preparing one for the next step. As for the journey itself, the transformations from parkways to highways clearly show the environmental deprivation that exists.[12] The misguided assumption that traffic engineers can substitute for landscape architects is apparent after an excursion along one of the older parkways leading into New York City. The intra-state highway network could have provided an exciting opportunity to experience America's fine landscape. Instead, the barren monotony of the New York State Thruway is the more common experience. Park Avenue is another example of this environmental deprivation through loss of its original clear articulation of use. Originally

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11. Ittleson, pg. 294.

12. The Bronx River Parkway was used as an amelioative device to create new public values along a dilapidated river edge while improving the general environment. Other examples of fine parkways include the Westchester County Parkway, Palisades Parkway and the Blue Ridge Parkway. For a further discussion, refer to Ian L. McHarg, Design With Nature, (New York, 1971), pp. 31-41.

a broad street with plenty of green and walkway space, the auto has methodically encroached upon it, serving neither auto nor pedestrian adequately.

The third requirement, "the role of the physical environment in facilitating or inhibiting social and civil interaction,"[13] demands a critical examination of the purpose of a street. Too often they are relegated to inefficient auto circulation space, providing no other amenities. Given clear articulation within a hierarchy of circulation levels, a street stands a better chance of becoming a "place", unique and distinguishable from the next. From this could spring the context for social interaction that once took place in the public realm of streets.

A possible sequence that emerges to germinate this attitude would be: first, emphasize a hierarchy of roads, whether altering existing roads with one-way signs, widening or narrowing, addition of through streets and new streets, that reflect scales of distance and speed for the efficient circulation of the city; second, introducing a variety of modes of transport[14] to this hierarchy, including the pedestrian; third, optimize each particular mode and context

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13. Ittleson, pg. 294.

14. Certain modes could be extremely compatible such as a localized shuttle and pedestrians or a rail rapid transit along a highway right-of-way.

level while celebrating the modal interchanges as unique instances. Similar approaches have been proposed in New York City and Philadelphia. The Van Ginkel Associates' proposal[15] attempted to relieve congestion through a new imposed hierarchy for Manhattan streets that introduced pedestrian streets and diverted through traffic to the peripheral. Louis Kahn's proposal for Philadelphia[16] shows the power of providing a proper attitude and image for the reorganization, relating the autos to ships and the garages as harbors that created a ring around the core. Bacon's Market Street East Project[17] reintroduces the greenway concept to tie the Philadelphia core together.

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15. Van Ginkel Associates, "Movement in Midtown," Architect's Year Book XIV, The Inner City, (London, 1974), pp. 54-67.

16. Eleanor Smith Morris, "New Urban Design Concepts, Greenways and Movement Structures--The Philadelphia Plan," Architects' Year Book, The Pedestrian in the City, (London, 1965), pp. 27-40.

17. Morris, pg. 28. Also see Edmund N. Bacon, Design of Cities, (New York, 1967), pp. 243-271.

Activity Generator or Hiroba

In an agricultural area such as rural New York, one cannot help noticing the proliferation of fences and gates throughout the countryside. The defensive tendencies of assigning each parcel a specific use and guarding it dearly, whether a private farm, public park or urban cluster of buildings, intensifies that last bastion of a free and truely public realm, namely the street. Allowing free movement and easy access to any individual, the street offers the basic ingredients for public forum and community interaction. Instead, it has been delegated a role primarily as a circulation road for the auto. This type of setting offers few amenities for an enjoyable street life. The affluent have sought or created private settings for social interaction, leaving the less fortunate on the curbs or doorsteps of an inhospitable environment. Introducing well designed pedestrian space has the potential for reestablishing street life in a contemporary framework with a vitality greater in its scope than any semi-public space.[18] The barriers that prevent this include strong physical and social stigmas.

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18. Semi-public refers here to limited access spaces that are owned and operated by private interests for a certain portion of the public such as the lobby of a Hyatt-Regency Hotel.

Within the social realm, two major obstacles revolve around a pervasive American attitude relating to specific purpose orientation and 'lolling' or 'loitering'. The scurrying and detachment of urban crowds often represent the necessity of individuals to be about their business, completing his or her task, goal or purpose with little fanfare.

> In many social institutions, a particular main involvement will be seen as an intrinsic part of the social occasion in which the situation occurs, and will be defined as preferential if not obligatory.
> ...The main involvement sustained by an individual within a social situation can express his apparent purpose in being present; an obligation to have an appropriate main involvement is an obligation to have a particular purpose.[19]

Often there are situations when minor involvements are required because the main one does not justify complete absorbtion. Regardless of the degree and combination, a certain amount of detachment seems necessary.

> The problem of maintaining an appropriate main involvement has special bearing on street behavior. The act of purposefully going about one's business, of looking as though one is coming from some place or going to some place involves a dominating objective that leaves the actual focus of attention free for other things; one's destination, and therefore one's dominate involvement, lie outside the situation. Where the subordinate main involvements that can result become intense, as in a heated quarrel or a warm caress, the individual may be seen by others as delinquent in the regard that he owes the gathering at large.[20]

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19. Erving Goffman, Behavior in Public Spaces, Notes on the Social Organization of Gatherings, (Ontario, 1963), pg. 51.

20. Goffman, pg. 56.

The reciprocal of this attitude would be the contemporary 'hanging out' with no particular purpose, an action that as yet, holds little acceptable behavior among Americans.

> Being present in a public place without an orientation to apparent goals outside the situation is sometimes called lolling, when position is fixed, and loitering, when some involvement is entailed. Either can be deemed sufficiently improper to merit legal action. On many of our streets, especially at certain hours, the police will question anyone who appears to be doing nothing and ask him to 'move along'.[21]

This attitude not only perpetuates the notion of going about one's business, but encourages the use of the street as only a circulatory system and not the context of casual and spontaneous encounters. A London court ruled that an individual has a right to walk on the street but no legal right merely to stand on it. But in societies in which cafe life is institutionalized, there is a greater amount of lolling permitted. Even in our society certain instances are tolerated where lolling groups are open to any passing distraction, ready to focus their attention for that particular moment in time. They may be found on slum corners, outside barber shops and candy stores in small towns,[22] on the streets of clothing manufacturing districts in warm weather

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21. Goffman, pg. 57.

22. See, for example, J. West Plainville, U.S.A., (New York, 1945), pp. 99-103, and H. Lewis, Backways of Kent, (North Carolina, 1955), pp. 68-72.

and courthouse lawns of small towns.[23]

The general discouragement of lolling is evident in the vigorous efforts of disguising or rationalizing ones activity with a veneer of acceptable behavior.

> When individuals want a 'break' in their work routine, they may remove themselves to a place where it is acceptable to smoke and there smoke in a pointed fashion. Certain minimal 'recreational' activities are also used as covers for disengagement, as in the case of 'fishing' off river banks where it is guaranteed that no fish will disturb one's reverie, or 'getting a tan' on the beach. As might be expected, when the context firmly provides a dominant involvement that is outside the situation, as when riding in a train or an airplane, gazing out the window, or reverie, or sleeping may be quite permissible. In short, the more the setting guarantees that the participant has not withdrawn from what he ought to be involved in, the more liberty it seems he will have to manifest what would otherwise be considered withdrawal in the situation.[24]

The single-purpose attitude permits little lolling and the street provides an insufficient amount of minor involvements to induce enough individuals to sustain any enduring social gathering. In order to transform a street space into a social 'place' will require altering public attitude or the physical environment--perhaps both.

Christopher Alexander has recognized this situation and defines the problem with regards to generating patterns

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23. See the papers on petty offenders by I. Deutscher: "The White Petty Offender in the Small City," "Social Problems, 1, (1953), pp. 70-73, "The Petty Offender: A Socialogical Alien," Journal of Criminal Law, Criminology and Police Science, (1954), pp. 592-595.

24. Goffman, pg. 58.

and guidelines for the design of multi-service centers for neighborhoods.[25] His findings can also apply to the street because of the public nature of both and similar inherent problems.

> When the building is to have a fairly open space area within it, the following conflict develops:
> 1. People will not come in and use the public space if they feel they are commiting themselves to use the building in some formal or regulated way.
> 2. People seek public space where they feel it is all right to be, without a specific reason.
> 3. If people are asked to move along or state their reason for being in a place they will no longer use it freely.
> 4. Having to enter a public space through doors, corridors, changes of level, and so on, tends to keep people away who are not entering with a specific goal in mind.[26]

While these insights applied to a specific building type, Alexander's resolution for the public spaces offers an example of the physical interpretations and implementation of these social problems. The suggestions can be summarized as follows:

> 1. Surface texture should be continuous with the sidewalk with no physical interruptions.
> 2. The space should be open at both ends, not a dead end so people will not feel 'committed' when entering to become involved--they can pass- through...
> 3. The 'path' should have opportunities or 'excuses' for involvement.[27]

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25. Christopher Alexander, "A Collection of Patterns Which Generate Multi-Service Centers", Architects' Year Book XIV, The Inner City, (London, 1974), pp. 141-180.

26. Alexander, pg. 153.

27. Alexander, pg. 150-154.

This study shows on one hand the existing appropriateness of the street for social gatherings and on the other, possible approaches for improving and insuring these encounters. A similar attitude has developed in the new building incentives in New York City with special provisions for through-street plazas and requirements to impart a quality of 'public space' in return for building concessions.[28]

These social stigmas generate physical barriers that in turn, reinforce the social attitudes. The development of zoning as a means separating certain incompatible activities has often shifted from protecting the general public from a harm to defacto justification for protecting land values.[29] A strong form determinant arose from the fragmentation of activities into increasingly specific uses. The planning of Twentieth Century cities fanatically reflects the exclusive notion of districts expounded by Garnier and CIAM with roots easily back to Medieval cities, to the point where a city has a Business District, a Shopping District, a Movie District, an Eating District and so on. The notion of districts only strengthens the 'single-purpose' objective in being in a

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28. For a description of building incentive schemes attempted in New York City, refer to Jonathan Barnett, Urban Design as Public Policy, (New York, 1974).

29. The exlusionary practices of local municipalities for racial discrimination can be further explained in Daniel Lauber, "Recent Cases in Exclusionary Zoning", Planning Advisory Service, report no. 293, June 1973 and Mary Brooks, "Exclusionary Zoning", Planning Advisory Service, report no. 254, February, 1970.

specific area for a specific purpose. Similar to the barbs made of a recent U.S. president lacking the ability to think and walk at the same time, districts tend to lose their advantage of similar association to the narrow band of activities they can offer. Thus, when one is tired of shopping for the moment, the only alternative is to leave the shopping district, usually for home. The rise in dinner-theater combinations offers a simple, yet specific example of Americans willingness to accept a little mixing and variety.

In order to properly reveal the social potential of the street, examining the 'street' and 'hiroba' of Japan will help. The literal Japanese meaning of 'hiroba' is 'open or wide space, or ground,'[30] but it has also, and more significantly, taken on a greater meaning for quality of life.

> The word 'hiroba' carries the connotations meaningful in describing the nature of the place of community life, of the occasion of the people's life in public. The usage of the term, especially in todays Japanese society, bears direct relation to urban design and community expression--not so much because it signifies a physical entity, but because it embodies identifiable socializing processes within the life of the city. "Hiroba' is defined by human activity--in viable urban space and time.[31]

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30. Shun Kanda, "The 'Street' and 'Hiroba' of Japan", Architects' Year Book XIV, The Inner City, (London, 1974), pg. 85.

31. Kanda, pg. 87.

Ancient Kyoto, or Heinankyo, had an extremely rigid geometric layout and ordered gridiron layout. The spatial form of the city had no direct counterpart to the western 'town square', 'agora' or 'piazza'. Religion was a private affair and the palace was a focus point but not public. Street life was therefore the setting of community life. 'Hiroba' was manifested in two distinct forms within ancient Kyoto's streets and later the contemporary framework. First was the festivals held in the street, fixed and permanent in nature, growing out of the more ancient eating and drinking parlours along the back alleys.

The major characteristic of the traditional Japanese festival is the fact that it is held in the streets. The form entails not only winding through wide major streets, but also through narrow alleys. All supportive facilities, decorations and details are portable, multi-use and improvisational. The result is an interiorizing of the street. The screens would be taken down and decorations hung in the doorways. The resulting space-time is 'provisional' in nature.

> The typical physical street is extended and an altogether different spatial entity can be perceived. A community space emerges. In this coexistive space-time, the 'hiroba' manifestly acquires form and meaning.[32]

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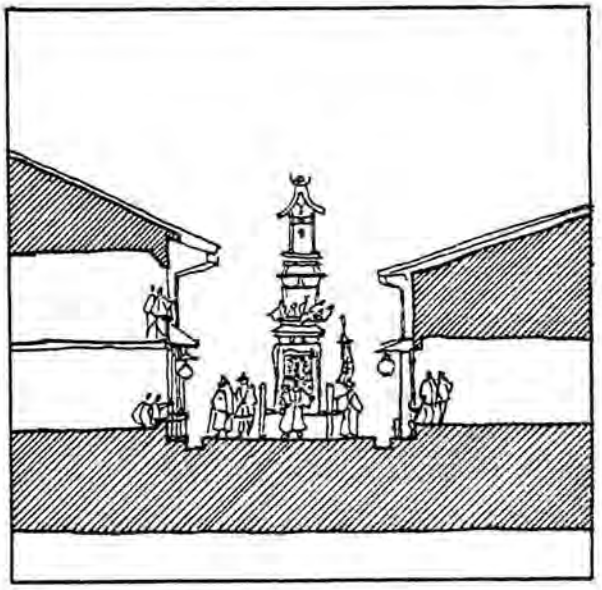
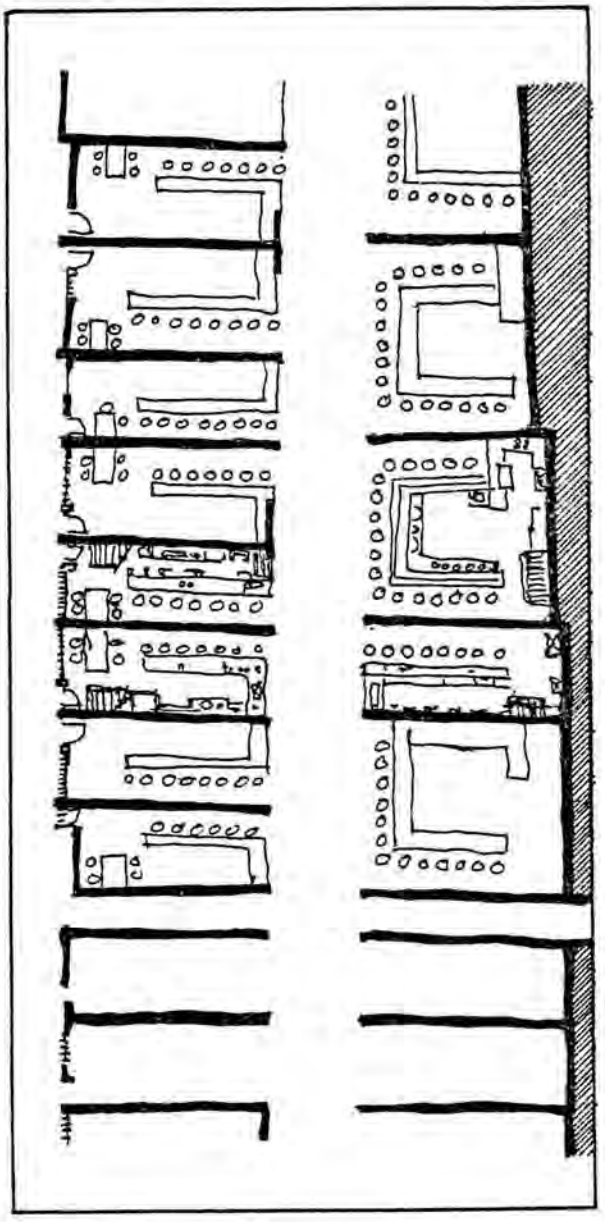
32. Kanda, pg. 88.

HIROBA

Interiorizing of
the street.



Japanese Festival



Japanese back alley
eating establishments.

The festival provides a main involvement or sufficient focus for individuals to engage in, melting a social privacy into community participation while opening a physical privacy, the home, to mix with the public street. The festival is a vehicle that allows the street to momentarily take on a more personal, intimate context.

> When we consider once more those factors that underlie the Japanese form of a 'hiroba': the coexistive nature of the event, the duality of street architecture, the transcient and evanescent characteristic of public activities, or the provisional quality of supportive physical elements, the concept of 'substitution' appears to be more than an accident.[33]

This provisional 'space-time' hiroba is exhibited in several Western similarities that were popularly revived in the 1960's and early 1970's. The 'open-air' farmers market and downtown 'flea-market' or crafts festivals have sporadic interest and investment in many American cities.[34] The provisional and spontaneous nature of 'instant events' gained recognition through groups such as the Archigram Group with light-weight flexible materials providing the context.[35]

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33. Kanda

34. Note the extensive financial commitment to Boston's old market area in relation to Syracuse's half-hearted attempt adjacent to the Syracuse Mall.

35. For further insight to this approach refer to Peter Cook et al., "Living City", Architects' Year Book, The Pedestrian in the City, (London, 1965), pg. 116.

The multi-media 'happenings' reflect this intense investment and focus of activity and energy to generate a specific, unique event out of an anonymous space and disaggregated individuals, providing, as it were, a specific catalyst to intensify a moment at the expense of duration.

From the notion of hiroba emerges a specific attitude towards space. As a physical entity, space is non-existent in the Japanese framework. The Japanese sense of space is an 'experimental' place. "It involves a connotation of time in that an event may serve to define a place and that it is of a subjective nature, whether they be tangible forms and visibly defined spaces or those created by movement and happenings."[36] This attitude is also coupled with a strong cultural concept of 'uchi' and 'soto', literally 'inner' and 'outer', respectively. Based on the crisp distinction of a strong self-sufficient family unit and the indistinguishable group identity of the public sector, there is a transposition to the spatial realm of what is interior is sacrosanct and private and what is exterior is public, reflecting a non-personal entity. The transition from one to another is a clearly delineated rite of passage, (social custom of removing shoes before entering a home). These 'soto' and 'uchi'

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36. Kanda, pg. 93.

dispositions converge at certain times to heighten the sense of 'hiroba' as in the transitory festival. But this distinction also raises a need for a context for more casual and regular encounters.

During the feudal times, the governing edict discouraged the location of stores along the main streets. Delegated to the back alleys, these vendors and merchants transformed the narrow thoroughfares into enduring displays of 'hiroba'.

> Unlike the modern restaurant behind glass walls in slick buildings, the unique character of these back-street diners breathe not so much with effective business transactions and service, but carry on a direct, face-to-face communication between the customer and the proprietor, and among those present. In the anonymous fabric of the city, sensitive scale and meaningful activity have created an invaluable form of public spatial expression.[37]

Opened to the alleyways, these eating and drinking establishments interiorize the street, dissolving that distinction of 'uchi' and 'soto', catering to the daily appetite of the masses while carving out an intimate oasis in the normally anonymous public realm. From this generated the public 'living room' of the tea parlours, responding to traditional social and cultural mores and behavior of Japan while providing that necessary public framework for the socializing process that is absent in the domestic life.

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37. Kanda, p. 91.

Two major considerations surface from this 'hiroba' perspective: first, the erosion of physical and social facades that separate 'uchi' and 'soto' at favorable moments in space and time; second, the substitutive ability that facilitates the coexistive nature of events and space, ie. the penetration and extension of exterior and interior, public and private, interiorizing the street and externaling the building. A prerequisite for this to occur is an existing physical context that is clearly articulated and accurately manifesting social and cultural delineations.

Emerging Patterns

The proceeding views of the city; Freifläche, articulation of movement system and hiroba contribute to an emerging interpretation of urban centers where the pedestrian plays a prominent role. There is an apparent reversal of the traditional roles of movement system and activity space. Greater concern for movement articulation rather than activity segregation is analogous to the recent interest in the "access tree" rather than zoning maps among urban designers.[38] This direction fosters an emphasis on a variety of activities with continuity of a singular mode movement system rather than a continuity of activities (commercial districts, business district, etc.) and a variety of modes throughout the movement system. The attempt is threefold: first, to provide an enjoyable and appropriate circulation context for a particular mode of transport, (this involves limiting a specific portion or segment of the entire circulation system to a specific mode and optimizing the context for that particular mode); second, provide building settings that facilitate a variety of activities that could benefit from adjacency, discouraging the shallow single-purpose attitude

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38. Note the Emphasis on circulation and the general disposition of the diagrams in Peter Wolf, The Evolving City, (New York, 1974) and the Regional Plan Association, Urban Design Manhattan, (New York, 1969).

of districts; third, integrate advantagous segments of movement system with activity settings providing a journey through a sequence of places. This attitude is similar to several ongoing variations including multi-use buildings, megastructures and connected mixed use clusters.[39] The designs of Portman, Johnson and Gruen[40] demonstrate the successful deployment of mixed activities in close adjacency and to some degree, the adequate separation of internal circulation, but often are as introverted and detached from the surrounding context as smaller single-purpose structures. The narrow range of clientle they serve and operating hours often preclude a truely public nature to their major gathering spaces. The I.D.S. Center in Minneapolis is the only one of the three that makes any attempt to interact with the surrounding public realm on both the physical and social level. The Nicollet Mall in Minneapolis is a direct extension, providing a social setting during good weather and the IDS center during inclement weather and the skywalk system a direct linkage with an urban core pedestrian network.

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39. Though the specific definitions and choice for placing a particular project into any particular category may vary widely they all share the common characteristic of mimicking the city's functions in miniature.

40. Some example are Portman's Atlanta Hyatt Regency, Johnson's Minneapolis IDS Center and Greun's Rochester Midtown Plaza.

Given a mono-modal circulation system (ie. one in which there exists a specific mode or compatible modes for a given level of the road hierarchy), within a multi-functional and activities building content, an emphasis on the pedestrian rather than the auto as the common denominator will facilitate a "hiroba". If one chooses the auto as the base, the resulting configuration is similar to the familiar "strip" development and suburban mall, where accommodation of the auto ultimately limits the best operation of these facilities. If one chooses the pedestrian in conjunction with compatible modes (eg. high-density point source transport to facilitate and articulate modal boundaries and limits) the resulting configurations could be accommodated within the existing context of many urban cores ringed with an expressway system. These configurations would result in part from the inherent physical limitations and requirements of a person versus an auto.

There is a stiff competition for available open space and generally the auto has been winning. Exactly how much urban space is needed for the auto versus the pedestrian is the central topic of Boris Pushkarev's study.[41] An assumption that will remain valid even with the increase of

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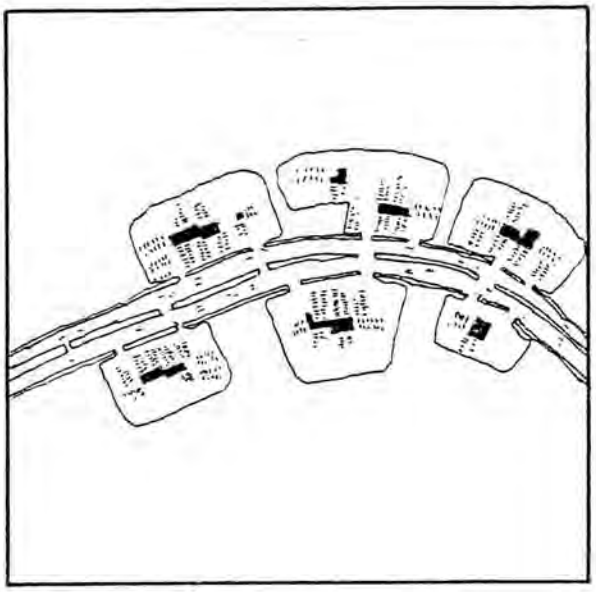
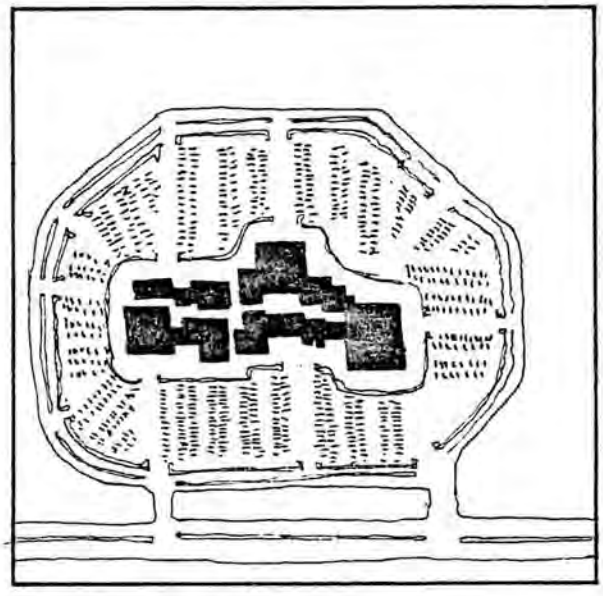
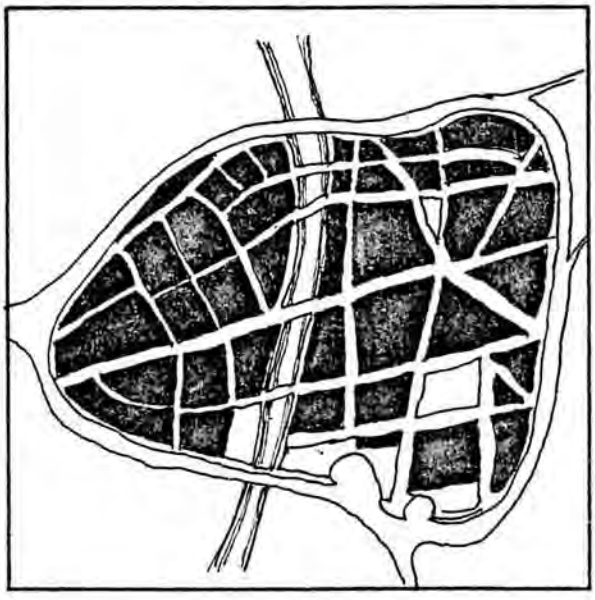
41. Boris Pushkarev, Urban Space for Pedestrians, (Mass., 1975).



The Strip

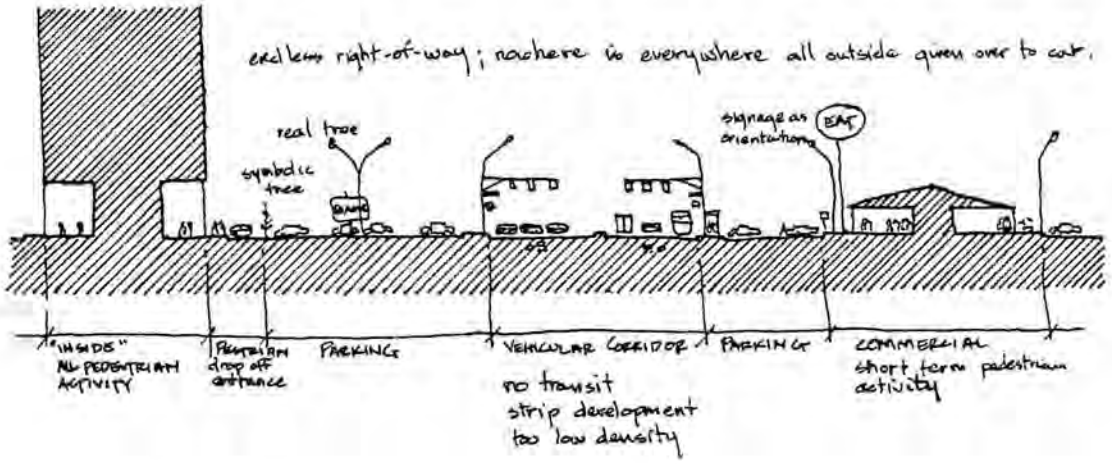


Suburban Mall

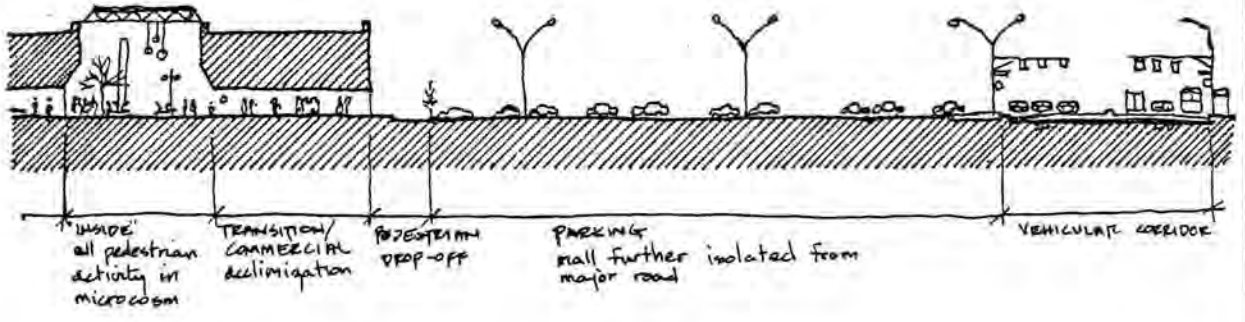


Urban Core

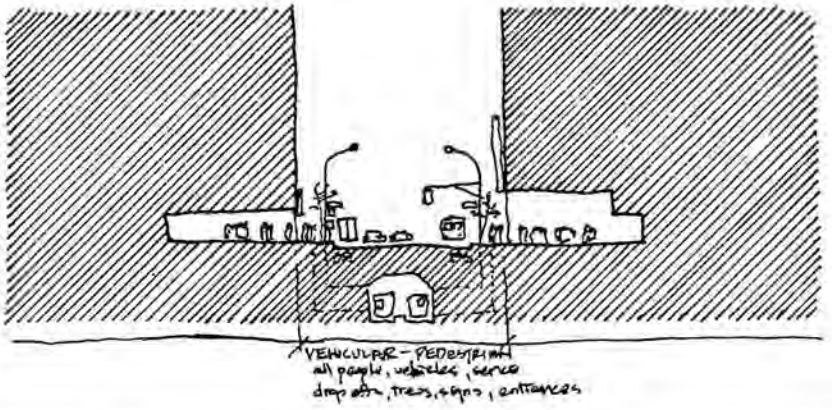
The Strip



Suburban Mall



Urban Core



electronic communication is that in a complex society, individuals rely on constant, direct and indirect contact with a variety of other people and to maintain that contact they must arrange themselves in rather compact settlements. It is also the potential for access and the ability to move goods in and out that makes most urban space useful. This is accomplished through reserving space for circulation which today is mostly auto[42] circulation. A major portion of the open space in cities is delegated to circulation. Adequately providing for the demands of circulation is fundamental to achieving any sense of hiroba in particular or quality of life in general in our urban centers. It is Pushkarev's contention that the misallocation of circulation space to the auto at the expense of other modes of transport (ie. the pedestrian) is the central problem. While Pushkarev approaches the problem by describing methods to calculate the specific amounts of space needed for the pedestrian, this thesis will eventually focus on a specific type of provision for the pedestrian in relation to a larger circulation hierarchy.

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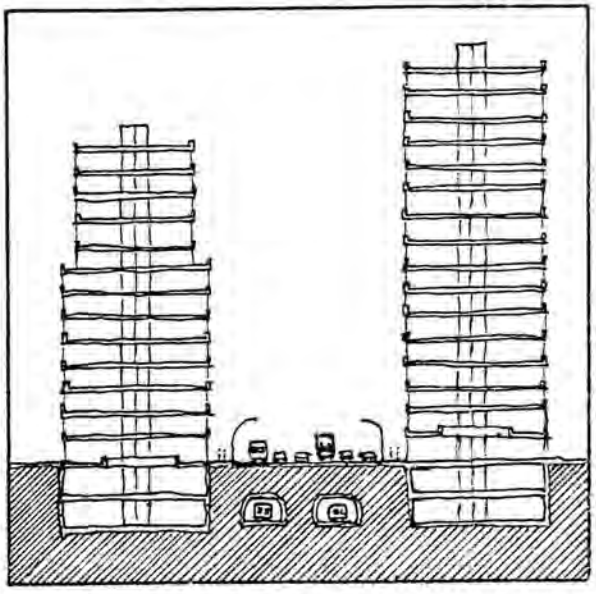
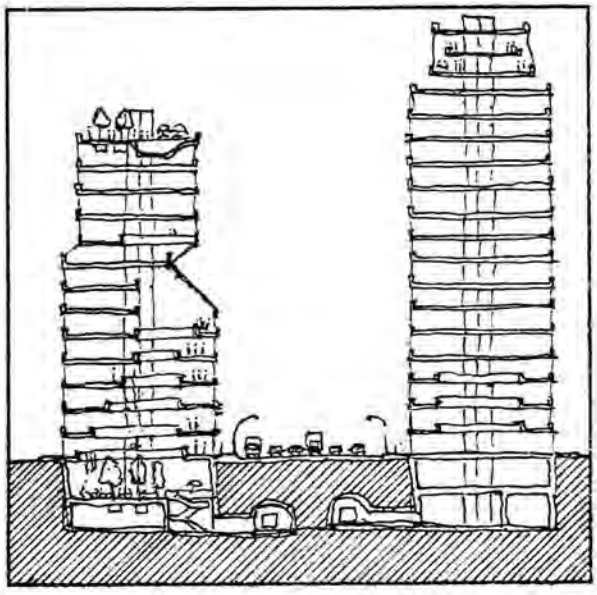
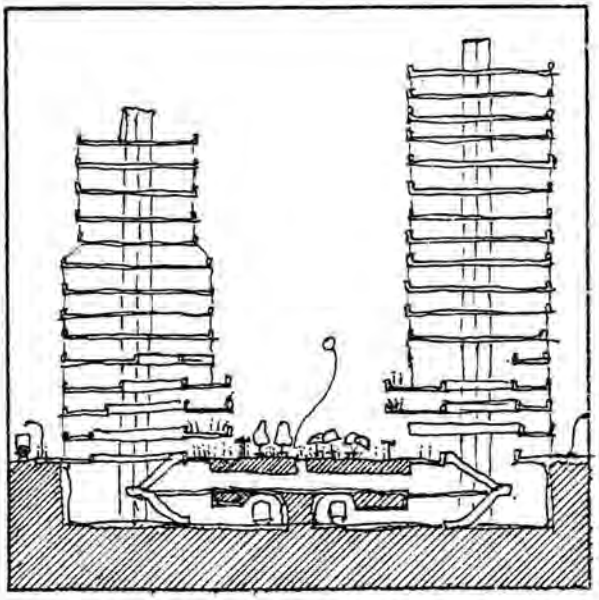
42. My reference to 'auto' includes trucks, vans, etc. that have internal combustion engines and use macadum roads to navigate. A strong effort by the Detroit auto manufacturing industry to dominate circulation appears to exist. One-tenth to one-sixth of the American labor force is auto-related.



Traditional
urban street
high congestion
low street life



Recent approaches
intense internal
microcosm
low street life



Potential Hiroba
integration of
building and street

Specific space demands for travel depend on the type of vehicle chosen and the speed at which it moves. If we assume that group vehicles require less ground space per person than individual vehicles and movement at slow speeds require less space than movement at high speed then urban streets with an indiscriminating grid pattern are inefficient for moving traffic. While there are varying functions and demands for various kinds of access, the urban street has traditionally tried to provide all things for all situations. With the exception of the freeway, congestion is usually countered with the widening of streets for more auto traffic. Congestion is seldom alleviated by this approach. This is where road hierarchy in conjunction with a modal hierarchy can be viewed as an attractive alternative.

Viewed in this perspective the freeway concept is an efficient response. Taking advantage of uninterrupted flow and higher speeds, the space can be "rented" to a greater number of users in a given time. Though vehicular pavement usually exceeds the area covered by buildings, "the freeways in the New York Region in 1970 carried 32% of all automobile travel, while freeway pavement, even including shoulders, accounted for only 6% of the total paved space."[43] Granted

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43. Pushkarev, pg. 11.

the visual impact is severe,[44] and new traffic was generated with increased access, the expressway is a legitimate response to the auto mode of transport. Access, speed and storage become difficult and serious problems for the auto in the city, demanding different configurations. This was evident from the initial introduction of the automobile with Eugene Henard's scheme of a rotary intersection[45] rather than the cross intersection and the rapid transformation of boulevards into major arteries for auto circulation. The auto doesn't really gobble up urban streets per se, it is that the auto and the urban street system are incompatable as a movement element.

A major problem that arises is the need for direct access to a building. This is imperative for the delivery of goods (though in certain situations tertiary systems have been developed) and is often accommodated by service alleys in urban concentrations. For direct auto access, the greater number of people that a given group of services or buildings attract, the more isolated the cluster has to be from other buildings because of the needs for auto storage. Retail space, which attracts the greatest number of people per

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44. This is in part due to the lack of design quality associated with their construction. Note the excessive tree line setback along most expressways regardless of contour or terrain.

45. Choay, pg. 20.

square foot of floor space[46] must often provide over twice the amount of parking space than indoor floor space. "It is clear that mobility by auto not only allows, but positively demands deconcentration of precisely those uses that can profit most from concentration."[47]

If we turn to high-density modes of transport coupled with spheres of pedestrian walking at given points to complete the journey for direct access, then those buildings and activities that generate large numbers of trips can be grouped together into a smaller area encouraging mutually supportive linkages among each other. To apply this type of movement system to alleviate certain urban problems, such as congestion, requires less rather than more urban space per person! This irony is a historical outgrowth since "these high density modes developed in a symbiotic relationship with a high-density environment. A mode that uses roughly 10 times less space than the auto also requires roughly 10 times greater population density in the surrounding area to be competitive."[48] This is not to suggest supplanting the auto totally. Rather it is an attempt to illustrate

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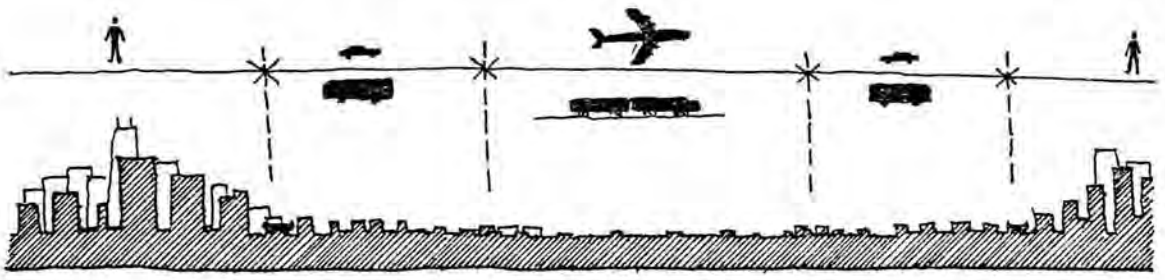
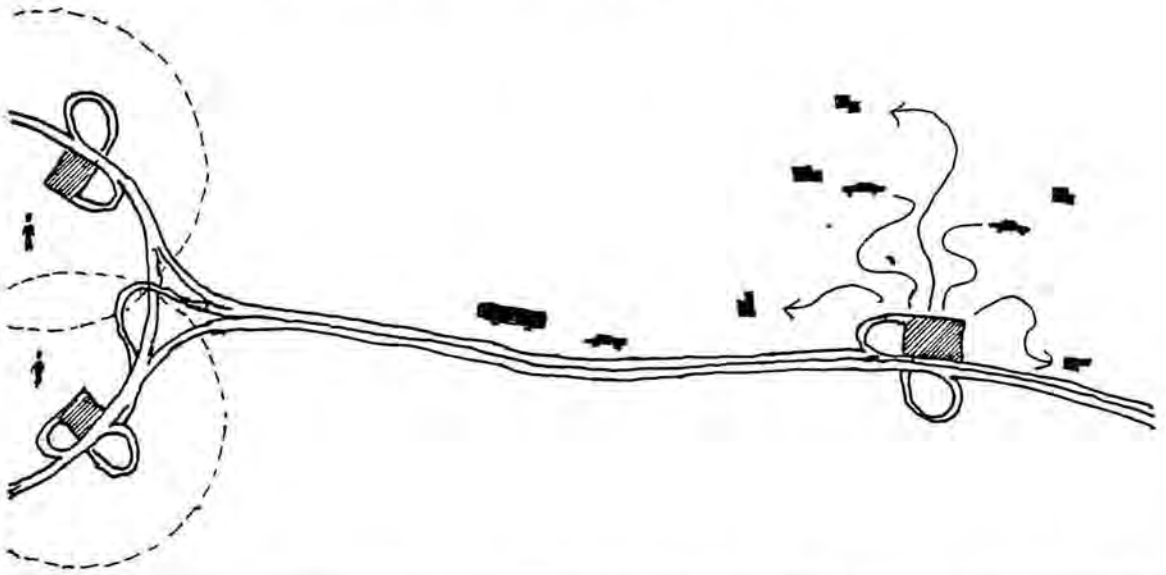
46. Pushkarev, pg. 14.

47. Pushkarev

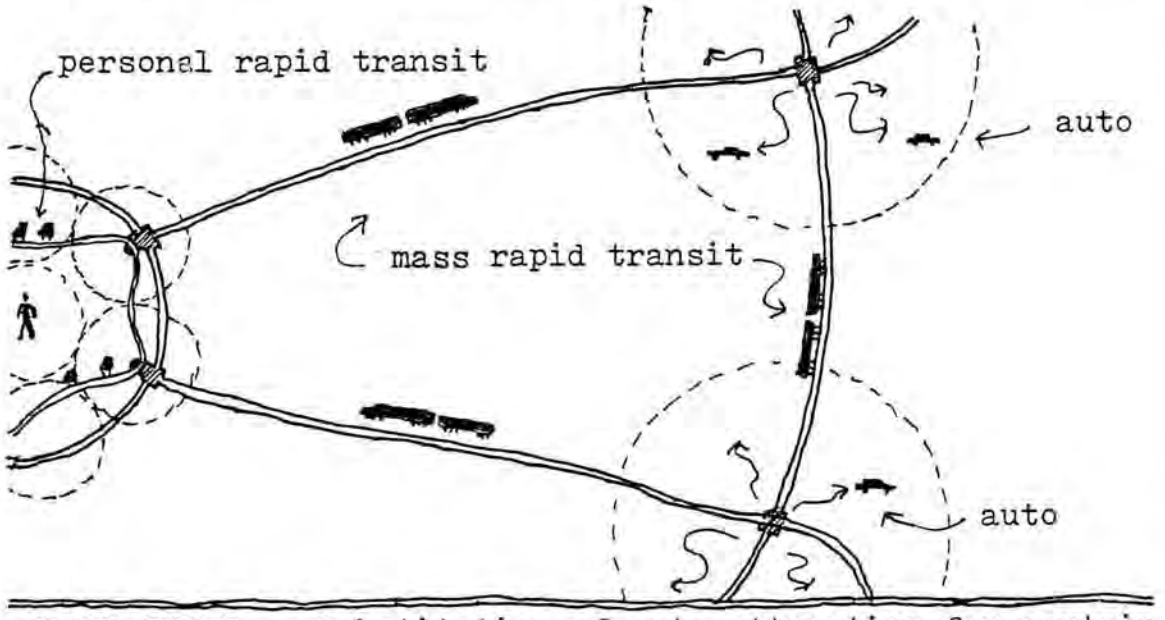
48. Pushkarev, pg. 11.



STAGE ONE---Association of mode to road type.



STAGE TWO--- Generation of high density nodes.



STAGE THREE--- Substitution of auto attractive for certain portions of trip by high-density modes.

the potentials of providing various modes of transport (including walking) that might accommodate more appropriately various demands. Mass transportation has had a difficult time competing with the auto, but walking might prove more attractive in certain situations.

The costs incurred from walking as a mode include time, physical effort and weather. Since physical effort and time are somewhat irreducible, one must respond to people's value structure while optimizing the qualities of walking. Weather protection can be provided and the pleasure of the trip enhanced by quality design, high accessibility and freedom of movement. Pushkarev's study[49] reveals that the effort of walking, rather than saving time, clearly emerges as the dominant motive for such things as paying high parking fees or more expensive busses that delivered one closer to their destination. But there are limits when walking will be chosen or where certain distances are reasonable or pleasurable. For example in New York City, when taxi's prices increased, ridership for short trips declined significantly.

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49. Pushkarev's study on walking reveals that the effort of walking itself was considered worse than the time spent.

> ...after a city wide, 47% taxi fare increase in New York in 1971, taxi trips of three-fifths of a mile (1.0 km.) declined by 62%, trips of four-fifths of a mile (1.3 km.) by 22%, indicating that to these percentage of taxi riders, paying an additional 25 to 30 cents per 1,000 feet (0.3 km.) of walking avoided appeared excessive.[50]

There are other factors involved that stimulates walking where "walking space, whether in sidewalks or in plazas on private property, in and of itself attracts pedestrians.[51] This is known as "induced travel", which occurs in response to improvements in transportation.

> ...given two Manhattan streets with the same building floor space, the one with the wider sidewalks has more pedestrians: 1,000 sq. ft. (93 m^2) more sidewalk results in an average of 3 more pedestrians at any moment during peak periods.[52]

The experimental closing of Madison Avenue to vehicles in 1971 illustrates that extra walking space actually induces more people outdoors. Even with the novelty reduced by the second week, there were twice the number of people on the avenue without an appreciable drop of pedestrians on Fifth Avenue. This induced travel in conjunction with proper physical amenities could overcome the reluctance to walking.

Olof-Lovemark claims that "pleasant pedestrian environments encourage up to 30% greater walking distance"[53].

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50. Pushkarev, pg. 69.

51. Pushkarev, pg. 74.

52. Pushkarev, pg. 79.

53. Pushkarev, pg. 74.

Pushkarev has found some limits to the average distance traveled to be somewhere around 1500 ft. Walking at 287 feet per minute, a five minute radius could be achieved. The central business district of many medium sized cities could be traversed about half way in this time interval. Given the fact that many of the city cores are ringed with an expressway and the access points could be the modal interchanges, establishing the central business district as a predominately pedestrian sphere is not totally unreasonable. With storage facilities around this perimeter ring (perhaps using the air rights of the expressway), a five minute walk into the core to complete one's journey could become competitive with the slow traffic and elusive parking spot of a total auto trip. Walking distances within these cores is often within tolerable distances. Improved physical design including weather protection could ameliorate the physical effort of the journey.

Since every journey begins and ends with walking, the suggestion is basically to extend the walking portion of a trip to include a larger sphere. Within high density areas such as urban cores, this is feasible, especially with supportive tertiary systems (eg. shuttle busses) for larger cores. Once this is introduced into the movement hierarchy, high density points at modal interchanges along the periphery (in this case the access points of the

inner expressway ring) would supercede the random access distribution that exists. With similar density modes at the other end of the journey, mass transportation could then stand a competitive chance with the auto. This suggested implementation procedure is a general approach to introducing various modal alternatives to the auto with the pedestrian and walking as the impetus. It is the development of these pedestrian zones in this envisioned hierarchy that is the focus of this thesis in general and pedestrian malls in particular as a subset.

If "street life" is the embodiment of a city's Zeitgeist, then "street purposes" should be the primary focus of our efforts. The recognition of the deficiencies that our urban streets exhibit is one half of the equation necessary to formulate appropriate responses. The development of effective strategies and later implementation approaches is the other elusive half.

By relinquishing increasing amounts of public spaces to auto circulation and storage, the degree of imp overishment of the urban environment was brought into focus rather early on by two rather divergent events: the development of the regional shopping center and the creation of Disneyland. Both exhibited characteristics of private ownership, profit motivation and location on large undisturbed sites on the urban fringe. While the shopping center responded to a new dispersed nature of trade and commerce, Disneyland attempted to respond to unfulfilled recreational needs. Both had to deal with access and circulation of large amounts of people that primarily arrived in private transportation. In both cases the approach sprang from the same fundamental principles: "pedestrian and vehicular circulation were to be totally separated, pedestrian movements concentrated in compact areas of intensive activities, cars stored at the periphery and, if need be, supplementary transportation from parking

to activity areas provided."[1] The landscaped arcades of the shopping malls alluded to the potential for amenities and scale in a pedestrian precinct. Even the success of Disneyland cannot be attributable solely to the romantic and nostolgic notions it generates. Edgardo Contini notes that "Disneyland succeeded in revamping spaces and recapturing visual experiences well scaled with man as pedestrian."[2] Charles W. Moore sensed its ability not so much to provide a credible model but to reflect the potentials lacking in our city centers.

> Disneyland must be regarded as the most important single piece of construction in the West in the past several decades ... (it) is enormously important and successful just because it re-creates all of the chances to respond to a public environment which Los Angeles particularly does not any longer have.[3]

But these unifunctional centers, spinoffs of individual components of the composite urban environment, cannot substitute entirely for the city. The issues, potentials and principles they generated have been applied in various forms to the urban core in an attempt to resurrect the street life, hiroba or environmental quality. This sequence of recognition of our recent past could be outlined as:

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1. Edgardo Contini, "Anatomy of a Mall", A.I.A. Journal February 1969, pg. 45.

2. Contini, pg. 45.

3. Charles W. Moore, A.I.A. Perspecta 9/10, 1965.

reevaluating priority of auto right-of-way in urban concentrations; revival of pedestrianization; re-examining the entire city infrastructure (ie. realizing that a single street type, a carryover of the nineteenth century, cannot perform all things at the same time); generating specific strategies (eg. zoning as an incentive design tool in New York City); emerging respect for design regardless of strategy (in the Barnett vein of urban design as public policy).

Throughout the past two decades there have been numerous attempts at revitilizing the urban core of American cities of all sizes with varying degrees of success. Those approaches that include pedestrian malls respond to many of the issues proposed in Chapter Three and offer some of the greatest potentials for a meaningful street life for pedestrians. This would warrant further exploration of pedestrian zones as a legitimate urban design element. For a variety of reasons pedestrian malls in commercial districts have enjoyed considerable attention and success in the last decade. Initially we should examine both components of the strategy, the pedestrian mall and the commercial district.

Primarily the pedestrian mall can be viewed as a subset element. It is the completion or final component in a larger movement system, the last realm in the public sector

before entering private buildings, an extended foyer. Since all trips in the city ultimately end up as pedestrians, the mall is an appropriate representative of the walking mode in a contemporary framework.

For a variety of reasons, various groups in a growing number of American cities are incorporating pedestrian malls as a strategy or tool for revitalizing urban cores.[4] From commercial concerns hoping to stem lagging sales, traffic engineers attempting to alleviate some of the congestion, to civic groups trying to beautify the decaying core and fringe neighborhoods, the 'mall' concept is being called upon as the workhorse of many revitalization schemes. The increasing importance placed on this approach for a wide variety of goals, the shallow insights often applied from precedents such as suburban shopping malls and the lack of extensive quality urban design warrant immediate attention to their physical design.

The mall ultimately, and perhaps more so than other movement systems because of its walking scale, is revealed through its physical design. It is where morphology is intrinsically important to success and the burden or challenge is imparted to the designer. The slower movement

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4. Refer to Appendix for a breakdown of cities incorporating some form of a pedestrian mall scheme. Over the past few years there has been a dramatic increase in new starts.

and intimate scale accentuates details by allowing more time for the traveler to be aware of his immediate surrounding. The physical design has repeatedly surfaced as an important consideration in the success of a mall by those interviewed in studies conducted on malls[5].

Existing malls exhibit a wide range of quality with no particular overriding factor (such as size, amount spent, or location) governing success. The extensive and diverse interest in this strategy commands a scale unmatched since the flurry of urban renewal and offers another opportunity to improve the quality of life in our urban cores.

The location of pedestrian malls in commercial districts as the initial step in a broader, overall reorganization program for the infrastructure has many advantages. Along with restaurants, commercial districts are one of the most dense pedestrian districts in a downtown[6]. In an area such as New York City, this pedestrian concentration leads to congestion that demands relief with space created by malls. In smaller cities, where the problem rests in a

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5. Adepoju Onibokun, "A Comprehensive Evaluation of Pedestrian Malls in the United States," The Appraisal Journal, April, 1975, notes in summary that "the magnitude of the project is not as important as its design and the philosophy of those directing its implimentation." pg. 206.

6. Pushkarev, pg. 54.

lack of people, this same concentration might sustain an enduring hiroba if enhanced by a mall.

Commercial districts also generate the greatest variety of pedestrians. In addition to those that work in the city, it attracts people from outside the core. It is a haven for older citizens who are retired[7] and young adults en route to home after school. For workers on break, it offers that needed distraction or time for that purchase that can't wait for the weekend.

For many people, the heart of their city lies not in their office towers or government centers, but rather in their commercial districts. Most 'main streets' are commercially dominated and the public transportation system focuses or originates on this commercial street. Politicians and planners in the 'new town' movement have used commercial districts as the 'heart' of their schemes. For the area within the city limits, the commercial areas still provide a substantial portion of the tax base, economically insuring importance.

The generic nature of commercial districts propogate pedestrian movement. Shopping, whether for a specific item or casual 'window shopping' is a popular preoccupation

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7. The Sociology Department (Susan Granai, Ph. D. candidate, under the direction of Robert Bogden and Rowan Rountree) at Syracuse University is presently conducting research work in the downtown area, mapping and identifying the habits of the marked abundance of retired people in the area.

of a consumer society and often appears as a substitute for the promenading or cafe loitering found in other cultures. Since shopping entails walking from one store to the next for the 'best purchase', it demands more travel time as a pedestrian.

As an impetus or generator for the transformation of movement system to activity space and the disintegration of the 'district' notion, commercial districts offer the greatest flexibility within existing constraints and greatest potential for multi-functional living and 'space as place' situation. With a progressive local political constituency, it is easier to incorporate office, entertainment and ultimately housing in this district than any of the others. Commercial districts are rather low on the zoning totem pole among these other uses and would pose less threats in variances or special permits than altering other districts. The planning and design of commercial space itself has always fostered the notion of a flexible commodity and convertibility that could facilitate renovation and incorporation of various uses.[8] There are precedents of limited versions that reflect this approach

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8. Lewis Mumford provides an excellent discussion on the flexibility and convertibility of commercial space in The City in History, (New York, 1961) pg. 434-439.

such as multi-use buildings and incorporation of community services in suburban malls.[9] The restoration and rehabilitation movement is beginning to show the economic feasibility of these alternate use conversions.[10]

The preceeding discussion delineates some of these two components, commercial districts and pedestrian malls, as legitimate areas of study in the larger system of transportation networks in cities in general and the pedestrian network in cities in particular. The rationale for the union of the two springs from the necessities of implementation - the staging, pitfalls and advances encountered in going from idea to physical fruition. The major objective is enhancing the quality of the pedestrian environment which is, in effect, a general upgrading of the quality of life for individuals in our cities. In order to achieve this, the initial application of pedestrian malls in commercial districts offers the greatest chance for success. It is important to generate and maintain initial visual success and momentum to secure the confidence and interest of the

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9. An early example (1960) of a multi-use building is Victor Gruen's Midtown Plaza in downtown Rochester, New York. The building includes underground parking, a bus station, a major enclosed mall with commercial space, an office tower with a hotel and restaurant on top.

10. Progressive Architecture, November, 1976 issue notes the increasing percentage of work in architect's offices dealing with restoration which reflects the increasing competitive status with new construction.

public sector and further private financing. This is more impetus than end result, extending pedestrian zones to complete the ringed core notion. For limited government funds, it can provide the appropriate focus for bolstering or encouraging new infusions of private monies into dilapidated areas. (For example, Syracuse planners are investigating using limited funds for upgrading pedestrian surfaces in the old warehouse area on the west side of the central business district, hoping to encourage private investors to renovate the buildings). In otherwords, this particular approach should be a point of departure into an extensive investigation and accommodation of pedestrian needs.

To be effective, pedestrian malls must respond to at least three levels of problems. First, as a part of a whole they should optimize an overall pedestrian network in the horizontal scale and provide flexible options for the entire circulation network in the vertical scale, offering combinations and junctures with other modes such as busses, auto, personal rapid transit and rail. Second, as the vehicle for the objectives stated in the pedestrian space chapter, malls should provide an approach for articulating an attitude about cities and the expected quality of life. In juxtaposition with competitive approaches such as the dissipation of cities or development of subcenters from elaborated suburban shopping malls, an urban pedestrian mall can provide a format for continued confidence in the city. Third, those

concerned with the urban core can use pedestrian malls as an additional strategy in their arsenal. But a distinction should be made between an expedient promotional gimmick for commercial concerns and a legitimate urban design strategy as expounded by Johnathan Barnett or Jacquelin Robertson. On the large scale, pedestrian malls should interface with other methods such as incentive zoning or air space development. On the smaller scale, pedestrian malls can address commercial problems more directly and immediately than other strategies, that often can only deal with future construction, because of its direct affect on linear frontage, an intrinsic commercial factor, and its flexibility of degree and scope in application.

The physical design of pedestrian areas not only affects the resulting social realm but is itself largely determined before hand by these considerations. It is imperative for the urban designer to be aware of these issues and incorporate them into the scheme to insure any hope for success. These areas include the social impact, economic impact, legal impact and political impact. When considering a pedestrian mall for a given area, these issues should be addressed from the outset in a feasibility study.

concerned with the urban core can use pedestrian malls as an additional strategy in their arsenal. But a distinction should be made between an expedient promotional gimmick for commercial concerns and a legitimate urban design strategy as expounded by Johnathan Barnett or Jacquelin Robertson. On the large scale, pedestrian malls should interface with other methods such as incentive zoning or air space development. On the smaller scale, pedestrian malls can address commercial problems more directly and immediately than other strategies, that often can only deal with future construction, because of its direct affect on linear frontage, an intrinsic commercial factor, and its flexibility of degree and scope in application.

The physical design of pedestrian areas not only affects the resulting social realm but is itself largely determined before hand by these considerations. It is imperative for the urban designer to be aware of these issues and incorporate them into the scheme to insure any hope for success. These areas include the social impact, economic impact, legal impact and political impact. When considering a pedestrian mall for a given area, these issues should be addressed from the outset in a feasibility study.

Social Impact

Though our urban areas have continued to grow and spread out, the quality of urbanity has increasingly diminished. By "urbanity" I borrow what Victor Gruen labels three interdependent conditions that form its essence:

1. The opportunity for direct human communications.
2. The opportunity for the free exchange of ideas and goods.
3. The enjoyment of human freedom as expressed by a nearly inexhaustible access to a multiplicity of choices.[11]

The human agglomerations that devour our countryside do not fulfill these conditions all at once. They are for the most part collections of unifunctional centers, encouraged by the mobility of the auto and government policies such as zoning regulations. Rather than free access, there is enforced mobility and limited use. Rather than direct human contacts, there is the phone, television and drive-in teller. The highest social unit above the family is perhaps a private group such as the country-club.

An alternative should be a multifunctional center.[12] The urban core still offers the greatest potential for a multifunctional center and fulfilling the conditions of "urbanity".

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11. Victor Gruen, Centers for the Urban Environment, (New York, 1973), pg. 85.

12. Refer to Victor Gruen's discussion on multifunctional centers as an appropriate response to a fully integrated social response to incrementalized sprawl, pg. 82-87.

The density and proximity of its various functions should facilitate such a state. But the "paste space", namely the street, is inadequate. The notion of pedestrian zones is offered as that element that will increase a sense of urbanity in the urban core.

To facilitate this sense of urbanity, pedestrian malls must address several factors. Though they may contribute to social interaction, proximity and functional centrality (important characteristics of the street) are only the first step in face-to-face interactions. Proshansky notes at least three factors that influence the possibility that meaningful contacts will occur: first, amount of time people spend in a given area; second, frequency, how often the occupant uses the area; third, facilitation, does the space encourage its use.[13]

Applying these factors, one can begin to distinguish between what Humphrey Osmond calls "sociofugal" or "sociopetal" spaces. According to Osmond, "sociofugal spaces repel interaction, thrusting people apart (while) sociopetal spaces, on the other hand, encourage interaction."[14] While a pedestrian mall could become a sociopetal public space, it cannot guarantee urbanity, but rather provide an arena for social interaction to occur.

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13. William H. Ittelson and Harold M. Proshansky, An Introduction to Environmental Psychology, (New York, 1974), pg. 140.

14. Ittelson, pg. 140.

Within the suburban sprawl and even in urban core areas, collections of buildings or functions have been labeled multifunctional centers. Often they exhibit sociopetal space characteristics, but in a permutated manner. For all the activity and human concentration of a Portmanesque Hyatt Regency, the sense of urbanity is rather contrived, limited to a specific moment (the annual convention) and clientel (the legionairres). Even if this explosive event happens in rapid succession throughout the year, providing the illusion of a sustained "hiroba", the whirlwind effect basically keeps the center separate from surrounding urban dwellers except for the sprinkle of coin from these travelers seeking the proper souvenir. Internally it works well since the micro-climate can maintain vitality and interest for the duration of stay of the transcient resident. The design and programming of a pedestrian mall should recognize the limited advantages of such contrived settings from the narrow spectrum of users to the questionable permanency of the setting.

Another flourishing type of a multi-functional center ultimately detrimental to the city is the extensive corporate building with a host of services included within its confines. Sheltering many of its users within hermetically sealed towers, entered and exited by autos through an underground garage, an attitude of mistrust and mystery of the street

life is perpetuated. As William H. Whyte notes of many of New York's offices and executives,

> ...it can be pointed out that many executives assume the worst because they don't have the slightest notion what's going on down below. Some corporations have been building what amounts to vertical office campuses, complete with cafeterias, dining rooms, recreation centers, and, in at least one, bedrooms for visiting executives. Self-sufficient enclaves might make some sense in suburbia, but in the city they provide the worst of both worlds. Save for the rush-hour journey, the executives of such corporations partake little of the city about them.[15]

This comprehensive attitude has permeated several levels of professions, from management to architecture, relating success to "total design" or complete, closed systems. This is similar to the static notion of a "master plan" that attempts to resolve the entire equation for that given moment. Instead, obsolescence is achieved, unable to accommodate the inevitable unknowns, inflexible to the changing demands over time. Mimicking the functions of an entire city not only lessen the cities vitality, but the imitation is inherently shallow and limited in its use. The pedestrian mall can negate this danger from the other direction, providing an open-ended, flexible framework for

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15. William H. Whyte, "The Best Street Life in the World: Why shmoozing, smooching, noshingling are getting better all the time," New York, July 15, 1974, pg. 31.

the attachment and appendages of various functions, providing a medium in which the aggregate and composition can be determined as the situation warrants.

As to the social impact from specific pedestrian malls in commercial districts, there are recurring themes surfacing from merchants and users. Pedestrian malls encounter many of the same social problems that similar revitilization efforts have faced but offer a much greater public resolution.

The merchants, along with all private landowners in a depressed urban core, are caught in what has been termed a "prisoner's dilemma". Generally, this refers to the risk of being the initial investor in improving your property, upgrading the value of surrounding property merely by your own improvements, while bearing the entire expense. Your neighbor gains without any investment while both stand to substantially increase the value of their property if both improve their respective lots or both lose by joint inaction, the potential of gain without investment and potential of limited gain from an investment by a failure of surrounding groups to follow with corresponding investments, renders a cautious and even desperate situation.

The pedestrian mall can negate or at least reduce this situation. Primarily pedestrianization is a public action in a predominately public realm, namely the street. Often a

public organization can secure the enormous front end costs and initial gamble better since mere profits are not the primary motivating force. Since a pedestrian mall initially comes under the logistics of planning and executing a circulation system, the public sector can provide the necessary impetus and contextual setting allowing private investors to break the "prisoner's dilemma".

A deeper apprehension shared by merchants and certain users is the general fear or distrust of "undesirables". This appears related to American's attitude to loitering and appropriate involvements as discussed in Chapter Three. The important aspect is the consistency with which this topic arises from any discussion on street life. William H. Whyte has noted in his research on New York City plaza's this pervasive fear.

> The principal reason so many places are inhospitable is the almost obessive fear of "undesirables" on the part of some businessmen. This is why they tell architects to put spikes on ledges. This is why benches are made short. If you made them long, a wino might sleep on them. This is why the Madison Avenue Mall was fought so bitterly by many merchants. Open it up and we'll be overrun by hippies, students, and other undesirables. Our time-lapse study of the two-week test closing in 1971 shows that the crowd was overwhelmingly an office-worker and shopper crowd. No matter. Merchants swore they saw hippies everywhere.[16]

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16. Whyte, pg. 30.

Perhaps "they" are a problem along 42nd Street between Seventh and Eighth Avenues, but there are few identified in other commercial and business districts. It is not so much their presence that is a problem, but a lack of a fuller mix of other people. Without defining what constitutes an "undesirable", Whyte suggests a simple solution to make spaces attractive for desirable people thereby enlarging the mix.

In a survey[17] conducted by the Downtown Research and Development Center on downtown malls, people asked what they disliked about malls replied most often in the category labeled "other" as "crime, an unsafe feeling" and third most often as "element of people and unsavory atmosphere." The survey notes, "although these factors were mentioned slightly more often in large cities, they were well-represented in cities of all sizes."[18]

Franklin D. Becker conducted two evaluation studies[19] of the Sacremento Mall. The first in 1972, a year after it was completed and again in 1973. The most important findings of this study that surfaced was the social-group stratification

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17. Laurence A. Alexander, ed., Public Attitudes Toward Downtown Malls, a national opinion research survey, (Downtown Research and Development Center, 1975).

18. Alexander, pg. 11.

19. Franklin D. Becker, "A Class-Conscious Evolution: Going Back to Sacremento's Pedestrian Mall," Landscape Architecture, October, 1973, pg. 448-457.

as to the purpose and use of the mall.

> Taken together, the analysis of these interviews supports the contention that working-class people use open public places as a setting for their social activities (middle-class persons use their homes), while middle-class persons use these public spaces more instrumentally, in this case for shopping.[20]

From this study and others, Becker proposes several design and policy recommendations that include the following attitude.

> People sometimes considered "undesirable" by others, particularly hippies and old-working-class men and alcoholics, are considered positively in the recommendations for two reasons: 1) these people are citizens and have a right to supportive public facilities, 2) as a pratical concern these people often have nowhere else to go and will remain in the area regardless of unsuitability of facilities.[21]

The study shows that various groups hold different expectations. The merchants view the mall as a rejuvenating device for their businesses; middle class shoppers are mainly interested in a convenient atmosphere to stop and rest between shopping; the working class and young persons approach the mall as a social-entertainment setting. The merchants and shoppers often find these goals as conflicting. Becker maintains that they are not. Through a rigorous approach to the physical design and arrangement, responding and interpreting social demands and conflicts that surface through

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20. Becker, pg. 455.

21. Becker, pg. 455.

continual reexamination, malls can not only improve the quality of life, but successfully accommodate a greater mix of social groups.

A pedestrian mall provides a public setting that is similar to large cities and college campuses in that a greater expectation of tolerance exists, providing a "haven" for what is often considered "undesirables" or "outcasts" by the general public. Rather than hope the disliked group will vanish, the designer should attempt to accommodate these groups while encouraging use by a wider range of groups to achieve an overall mix. This approach is difficult but the more common course of discouraging "undesirables" too often discourages all groups resulting in a zero net gain.

Legal Impact

While each pedestrian mall will generate its own particular legal hurdles, there are certain rights and limitations that will be common to all. The public nature of the street is at the base.

> The right to use streets for certain purposes, such as lawful walking in going from one place to another, is in truth a right and not a mere privilege. It is a common right inhering in all the public. A right to travel on streets exists, and streets are free and common to travelers, but use of streets for the operation of motor vehicles generally is regarded as a privilege and not a right.[22]

Two basic powers must exist or be secured to create and execute the mall: first, the state must grant the power or create the enabling legislation for a given municipality to regulate the use of its streets; second, the state must grant the given municipality the power to create assessment, improvement or taxing districts.

Initially, the municipality wishing to create a mall must have the necessary power to do so from the state.

> Indeed, municipal power to regulate the use of streets is a delegation of the police power of the state government, and in the exercise of police power over streets and their use, a municipal corporation can make all necessary

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22. Eugene McQuillan, The Law of Municipal Corporations, Third Edition, 1968 revised Vol. 7, (Callaghan and Co., Ill., 1968), pg. 70, §24.566. Also for case law refer to: Bell Brothers Trucking Comany v. Kelley, 277 Ky. 781, 127 S.W. 2d. 831, Indiana-House-Wives League v. Indianapolis, 204 Ind. 685, 185 N.E. 511. See §24.598 et seq., post.

> and desirable regulations which are reasonable and manifestly in the interest of public safety and convenience.[23]

Most important, by coming under the use of legitimate police power, the municipality does not have to pay or reimburse anyone for altering the use of a street for a pedestrian mall. This is different from say, eminent domain, where the state can secure rights to private lands through condemnation and just compensation. The right of a municipality to exercise police power conferred by the state, in creating a pedestrian mall was challenged in Gamma Realty, Inc. v City of Miami Beach.[24] The City of Miami, on request from local merchants and complaints that the economic strength of a commercial portion of Lincoln Road was faltering, exercised its use of police power to limit vehicular traffic, create a pedestrian mall and assess abutting property owners for the cost. Gamma Realty, inc. challenged the legality of both the creation of the mall and the assessment. The court upheld the cities right to do both.

There is substantial agreement and case law that a municipality can restrict vehicles from certain streets.

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23. McQuillan, pg. 202 §24.566. For case law refer to: California, Argues v. Sansalito, 126 Cal. App. 2d. 403, 272 P. 2d 50.

24. Gamma Realty, Inc. v. City of Miami Beach, 121 So. 2d. 183 (1960).

"Municipal ordinances excluding vehicles or certain classes of vehicles from certain streets may be made, and are valid where they are reasonable and justified."[25] But there are situations where such a prohibition can be an unreasonable use of the street and even constitute a compensable taking. In Metropolitan Atlanta Rapid Transit Authority et al. v David E. Datry, the Supreme Court of Georgia held that the "city was properly enjoined from prohibiting vehicular traffic until just and adequate compensation was first paid to property owners."[26]

The transit authority wished to build a transit station on a segment of a city street, converting the remaining portion into a pedestrian mall. Several abutting property owners complained that their right of access or easement of access was sufficiently impaired to constitute a taking. The court determined this to be the case.

> While city may, consistant with its police powers, prescribe that vehicles shall not pass over certain streets, nevertheless, exercise of this authority may occasion compensable taking, if access to adjoining property is prevented or impaired.[27]

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25. McQuillan, pg. 155 §24.616 For case law refer to: Florida, Town of Atlantic Beach v. Oosterhoudt, 127 Fla. 159, 172 So. 687.

26. Metropolitan Atlanta Rapid Transit Authority et.al. v. David E. Datry et. al., 229 S.E.2d. 905 (1975).

27. Ibid., pg. 905.

Rather than risk a court battle, it would seem advisable to coordinate adequate access with all abutting property owners before attempting a mall. A municipality can regulate the use of a street, but if the right of access is too severly restricted, the city might have to pay for it.

> Right of access, or easement of access, to public road is property right which arises from ownership of land contiguous to public road, and landowner cannot be deprived of this right without just and adequate compensation being first paid.[28]

It is interesting to note that the three dissenting Justices felt that the appellees had no absolute right to vehicular access across the easement to their abutting property.

> The termination of vehicular access to the abutting property will not in and of itself constitute a taking of the abutting property or the taking of an interest therein so long as there is reasonable access to such abutting property for the purposes for which it is being used.[29]

The second power that a municipality should secure is the ability to create assessment districts. With the virtual disappearance of federal money and programs, a local municipality needs other means of financing major public improvements. The rationale here is that those that stand to gain the most from such improvements should carry a major portion of the costs.

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28. Ibid.

29 Ibid., pg. 914.

The taxing power is within the power of the legislature and can be delegated to locale municipalities.

> ...the power to create such districts may be delegated to state agencies, as municipalities, and the constitutionality of the statutes authorizing the creation of such districts has been upheld. The act of a municipal council in establishing such a district is legislative in character and has its origin in the taxing power of the state.[30]

It is important to set specific procedures for establishing the limits or boundries of the district and the method of assessment. Generally, the tax should be consistent, non-discriminatory and reflect the expense and maintenance of the improvement. From those malls examined by the Downtown Idea Exchange, less legal hassles were encountered using a single method of assessment such as a simple foot-frontage rule (ie. a certain percentage levied for each linear foot of frontage abutting the mall).

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30. McQuillan, Vol. 14, §38.47, pg. 156.

Economic Impact

Without two main ingredients, money and legal powers, the planning and feasibility of a pedestrian mall will never get off the boards. Once the legal powers are secured, the financial incentive and expected source must materialize. In a commercial district, not only the economic costs and benefits of the merchants should be plotted, but all those that are potential users must be included. The economic impact should be a critical evaluation of the initial construction cost and future maintenance against the potential benefits to all parties, including spinoffs such as incentive for new construction growth or an active setting for community interaction. It is difficult to include social benefits in any cost/benefit analysis because of its reluctance to quantifiable measure, but it is still an important line item that should be reflected in any budget. The types of social benefits accrued have been outlined in Chapter Three, but the municipality itself should assign an actual economic value in relation to their own goals and value system. Perhaps a given percentage of the cost could be assigned to these social benefits.

In applying a pedestrian mall to a commercial district, a large percentage of the benefit is initially bestowed upon the merchants with abutting property to the mall. As with any municipal improvement, there is a general public good

generated, but those individuals directly affected should shoulder a greater share of the cost. From this rationale follows the creation of an assessment district.

To understand the rationale of why merchants would spend additional money for space that does not directly increase sale or storage areas, we should look at a parallel development of suburban shopping malls.

In a study of retail systems,[31] David Gosling traces the evolution of American suburban shopping centers, identifying three phases: from the open-air-arcaded center; to the one-story enclosed mall; to the two-story, shorter axis enclosed mall. From the open-air to enclosed mall marked a significant change that can offer a loose parallel to the urban core. For the developer, the costs incurred from the embellishment of the circulation space, unrentable floor area, increased the capital costs. For the tenant there is a corresponding increase of rents. This is similar to a municipality improving land it will not receive additional taxes for while the merchants are assessed for improvements of floor area that does not directly affect their product. The reason for economic viability for these spralling elaborations was the nature of the transformations. The

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31. David Gosling and Barry Maitland, Design and Planning of Retail Systems, (New York, 1976).

relationship between the store and the mall is dramatically altered. Instead of a gap between stores, the mall becomes the central, most densely used space. All the shops turn upon this space, creating a micro-environment where the store is merely an extension of the mall, the glass walls that separated vanish. The scale relationship of new costs incurred for the enclosed mall to old costs incurred of open-air arcade is substantially higher than those anticipated by pedestrianization in urban cores. The attractiveness of the setting for shoppers was great enough to offset this cost and spur on a glut of suburban shopping malls in the past decade.

The example should partially neutralize some of the commercial fear of the economic viability of indirect soft costs. The other is the emerging information from recent studies analyzing the annual sales of areas that have incorporated pedestrian malls. Out of twenty three malls surveyed,[32] the merchants generally felt positive about the affect of the mall on sales.

> With reference to business and retail sales in particular, 85% reported that there has been an increase in pedestrian traffic, along with a marked moderate

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32. Adepoju Onibokun, "A Comprehensive Evaluation of Pedestrian Malls in the United States," Appraisal Journal, April 1975 pg. 209.

> increase in retail sales, since the creation of the malls. Thirty-eight percent have achieved an annual retail increase of under 10%; 25% had an increase of between 10% and 20%; 12% reported sales increases of between 20% and 30%; and 20% of the malls registered increases over 30%. Only a small proportion (15%) reported that the mall had had little or no increase in retail sales.[33]

It is significant to note that in this study, no shopping areas reported a decline in total sales. However, with the rapid increase in numbers of new malls and often insufficient preparation, the economic viability is not a guaranteed success. Also, a measure of success is related to expectations, which can be financially high for businesses looking for the quick sales gimmick.

The major costs break down into initial construction cost and maintenance cost. From the information gathered by two surveys[34] the initial cost per linear foot of a mall varies widely with no specific relation to scale of project or size of city. The only significant finding was that "cities of 50,000 to 100,000 size show a lower mean ($606) and median ($390) cost per linear foot than cities of less

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33. Onibokun, pg. 209.

34. For selected parts of the data gathered by the studies done by Oniboken and Alexander, refer to the Appendix.

than 50,000 (mean: $893; median: $555) and more than 100,000 (mean: $1,533; median: $917).[35] As to maintenance costs per square foot, the size of the mall did not have a very significant bearing. However, "there was a substantial correlation between the population size of the cities and the maintenance costs per square foot."[36] The larger the city, the higher the maintenance costs. Onibokum attributes this to the quality of management and the susceptibility of larger cities to higher rates of vandalism, but this is not conclusive.

The economic benefits are significantly positive and diversified, these include increases in retail sales, land values, rentals, tax revenues, investments and lower vacancies. Onibokun notes some of the symptoms of improvement that were reported include

> ...increased rates of voluntary improvements to property (45%); acquisition of additional selling and storage space (54%); a reduction in the rates of store vacancies (55%); more young and old persons in downtown areas (79%); more out-of-towners among the consumer foot traffic (44%); noticable changes in shopping patterns in general (85%); a higher pace of

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35. Laurence A. Alexander, ed., Downtown Malls Annual Review (Downtown Research and Development Center, 1975), pg. 75.

36. Onibokun, pg. 207.

> normal business expansion, and an increase in community and variety activities and shows, such as car displays, boat shows, craft exhibits, festivals, community sales, and special events (80%).[37]

The application of the mall itself is an economic asset in its flexibility to correspond to scale and resources. Municipalities of varying populations have instigated malls of various size and expense. The value of the mall appears not to stem merely from the amount of money spent on the imbellishments. More importantly the "invisible costs" seem to capture a large portion of the budget. These include subsurface improvements to the infrastructure and the planning, design and engineering costs.

With municipalities perpetually on the periphery of economic stability, the financing mechanisms for a pedestrian mall have been rigorous and inventive. A city will not sell bonds for such an improvement unless a sound method of retiring those bonds exists. Federal money to finance urban core projects is scarce. Though many of the first malls were children of the urban renewal era, approximately twenty instigated and funded with urban renewal money,[38] a common method today of financing is the creation of an assessment district. Not only construction costs, but maintenance costs

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37. Onibokun, pg. 209.

38. Onibokun, pg. 205.

should be included in such an assessment.

There are other financial sources that should be explored. Community Development funds are generally limited, but federal regulations cite pedestrian malls as an eligible program. This money is an annual block grant with minimal restrictions. Securing these funds would temper complaints of using up precious tax revenues.

Another approach is to identify those sources that are often buried such as capital or operating budgets for city beautification and tree planting or unpledged funds such as meter revenues. Couple these with any repair or inspection work anticipated for the buried infrastructure (utility companies are always at that one) and the actual construction of the mall is the umbrella for an entire city overhaul.

A pedestrian mall may qualify as a beneficial partner under related programs. The Urban Mass Transportation Act (UMTA) has become a funding source for several "transit way" proposals--a pedestrian mall with limited public vehicular access, such as busses, along its route. Mass transportation and pedestrian malls have become mutually supportive linkages in many programs. The proposals for Syracuse itself come under U.M.T.A. funding.

The major economic factor is actually a political one--the relationship of the private sector and the public sector--and an equitable distribution of responsibilities (costs)

and benefits. Since the private sector lacks the legal power and the public sector often lacks the funds, both sides must recognize the potential benefits for a partnership for implementation.

> The city will gain stabilization or increase in tax benefits. The private sector will gain increased sales and profits. This being the case, there is justification for financial exposure on the part of each partner in this venture. Once this is accepted, the only questions remaining are the magnitude of financial input from each sector and how the private sector will position itself to pay.[39]

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39. Alexander, Downtown Malls, Annual Review, pg. 19.

Political Impact

The major political resolution necessary for fruition of a pedestrian mall is the coordination and commitment of all parties involved and affected. The public sector includes the formal political machine along with the informal bureaucratic agencies and departments and the public interest groups. The private sector includes organizations such as the Chamber of Commerce and special interest groups. The inclusion of all these groups throughout the decision-making process not only tempers major opposition and protects vested interests, but reflects the necessity of the pedestrian mall itself to be an element in a much greater process. A pedestrian mall cannot stand isolated as a panacea for all urban ills, nor can one political element expect to execute it exclusively.

In most cases, the mall is one part of an overall program of improvement. Several projects flow out of it such as infrastructure improvements, overall changes in traffic patterns and new off-street parking facilities. This requires extensive cooperation and commitment from a variety of groups.

It is important that a certain group maintain a leadership role, sustaining the necessary momentum, presenting alternatives, mediating differences and moving the project along, otherwise the package could be shelved with many

other twilighting dreams. As Thomas Uhl remarks about the planning of the pedestrian mall in Wooster, "the city administration shoots up trial balloons, some of which are burst by these groups, others of which are allowed to fly. All the way down the line on this project, we have endeavored to give leadership to our citizens, but at the same time permit them to have the type of plan that would most suit the needs of Wooster."[40] In this case, the local administration provides the momentum and included in the decision process the Retail Merchants of the Chamber of Commerce, the City Parking Commission, the City Shade Tree Commission and the City Urban Renewal Department. Along with the mall certain urban renewal was proposed. The loss of parking along the proposed mall and the relocation of certain merchants in the urban renewal area triggered an additional multiuse project of a parking deck with first floor retail space adjacent to the mall. The involvement of these various groups allowed the mall proposal to grow and transform into a unique and complimenting response to several needs.

Perhaps the critical challenge for political resolution is achieving the transformation from a commitment to a mere concept to a commitment to a physical reality. Once the

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40. Ulh, Thomas L., "Relationship of Citizens and Government in Decision-Making on Downtown Improvements," Downtown Malls, an Annual Review, pg. 49.

feasibility work and political compromise has ferreted out the possibilities, an actual commitment to design and implimentation must be achieved--the big plunge.

The major categories of mall types include the following: temporary; permanent; semi-mall; full-mall; transitway; spot mall; alley and side-street mall; mall with parking; part-time mall; enclosed mall. Selecting a particular type of mall is actually a point of departure, where the specific needs and requirements of the program will generate variations and unique alterations. The political impact initiates this transformation along with the socio-economic constraints. The resultant design hopefully represents these goals as an adequate physical interpretation.

A. Selection of Site.....Syracuse, N.Y.

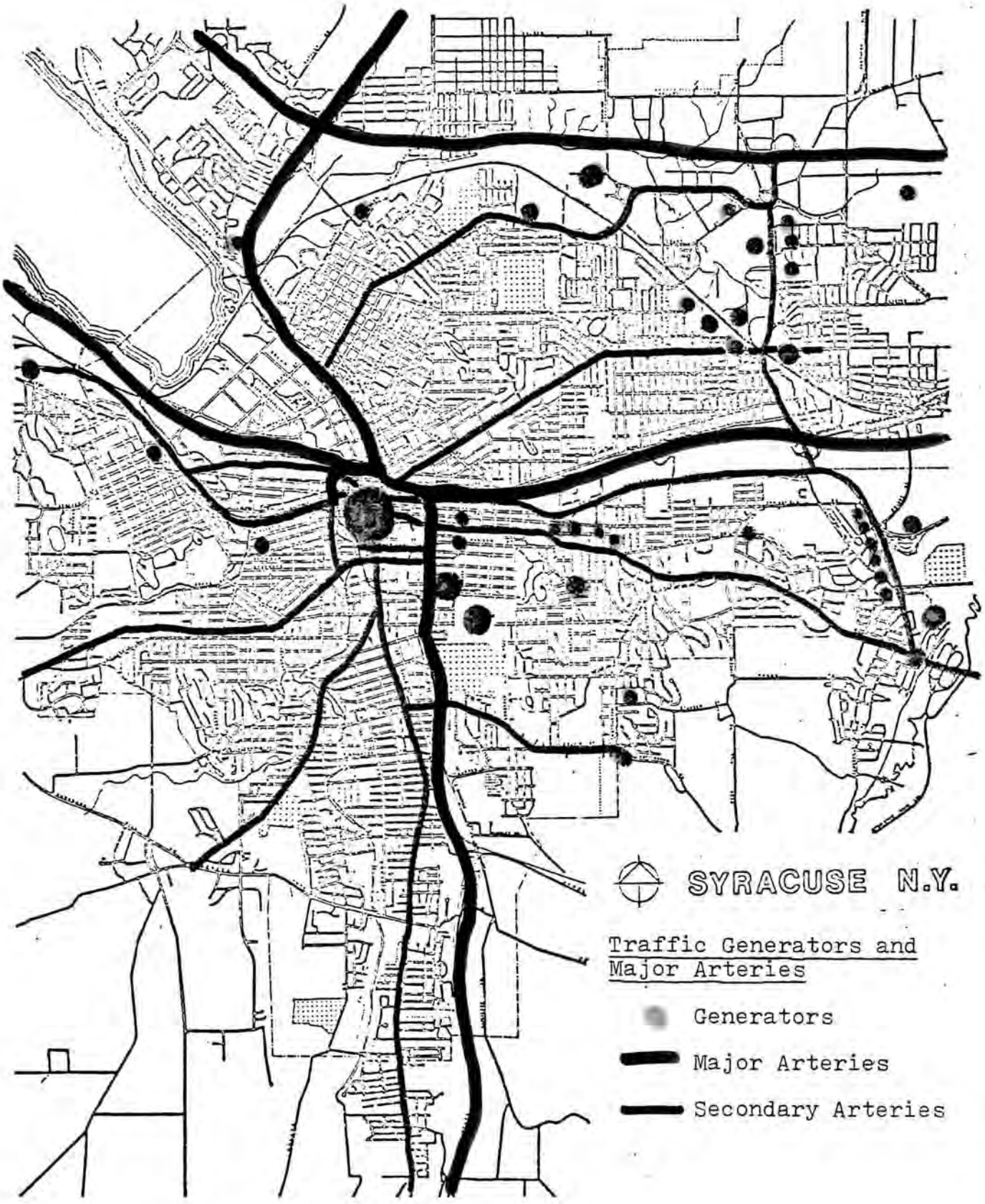
The case study uses the central business district of Syracuse, New York. There are certain advantages for its selection. Not only proximity, but social and physical composition offer several 'typical' characteristics, lending itself in many cases as a prototype. Also, several groups in the past and quite recently have voiced interest in pedestrianization of certain portions of the urban core.

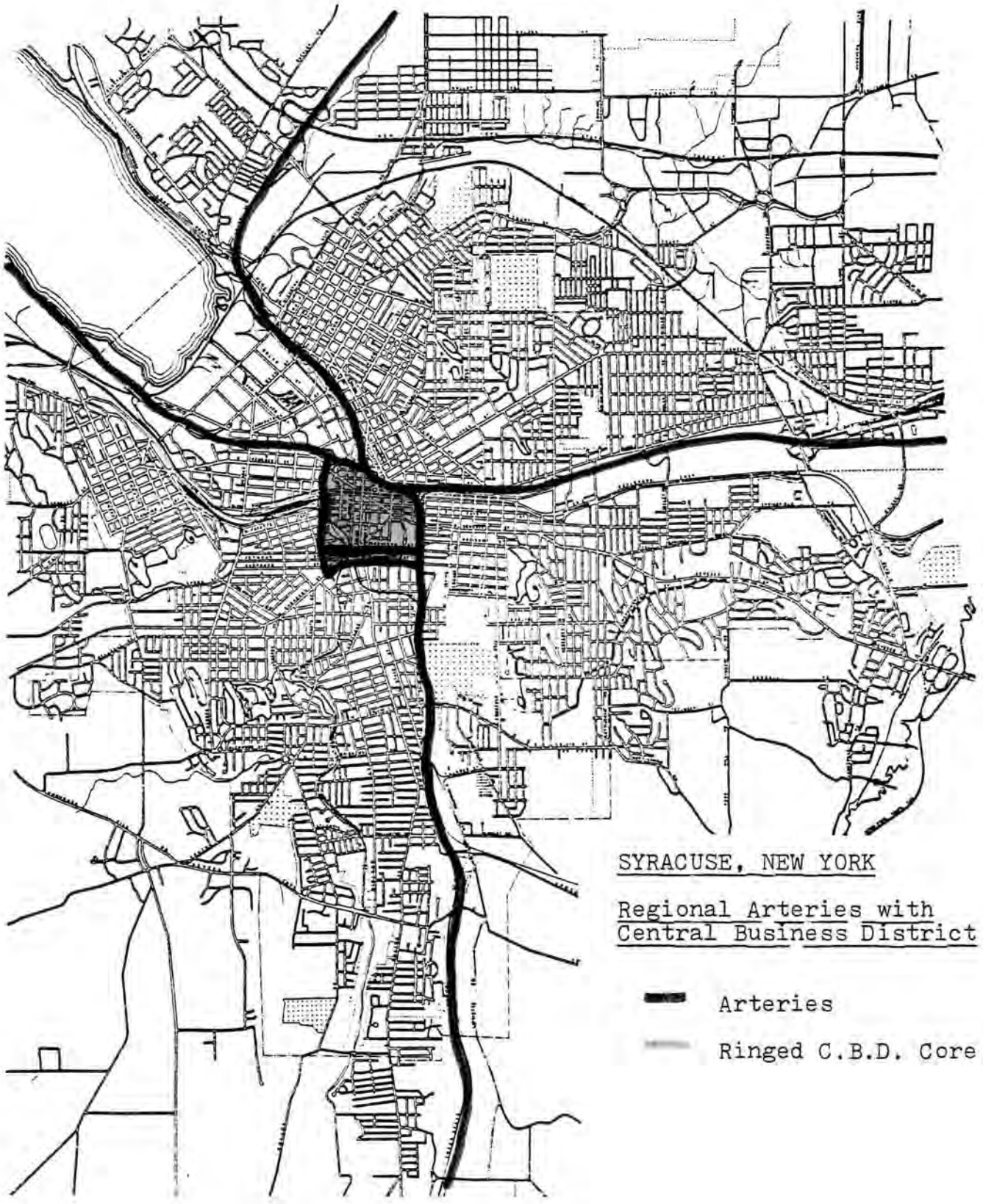
B.) Physical Analysis.....Basic Propositions

1. A physical core can be perceived that represents "Syracuse". For the suburban dweller this is perhaps more symbolic than real, but for many of the adjacent neighborhoods, it still provides many of the necessary services. At present, this core consists basically of the central business district. A pedestrian-dominated district can enhance this notion both physically and socially.

2. An articulated hierarchy of a movement system can and should substitute the the traditional activity district. (Business district, Community district, etc.) In other words, a partial reversal of roles of movement and activity.

3. Two-prong stategy as major emphasis of a pedestrian-dominated district.
    a. Enhancement of Modal/Nodal Interchanges, celebration of modal transfer points.
        1. Cluster/group modal transfer points (eg. Parking garages, taxi dropoffs and bus stops.)
        2. Locate clusters in stategic locations in movement system.
        3. Creation of an outdoor space. (street life) that can sustain a richer level of pedestrian activity.
    b. Alteration of proposed pedestrian corridors in such a way as to enhance and intensify the activity of immediate surroundings. (eg. strengthen notion of shopping along Salina street by division of street into intensive shopping aisles--similar to farmers' market or area in stores around counters.


SYRACUSE N.Y.
Traffic Generators and Major Arteries
Generators
Major Arteries
Secondary Arteries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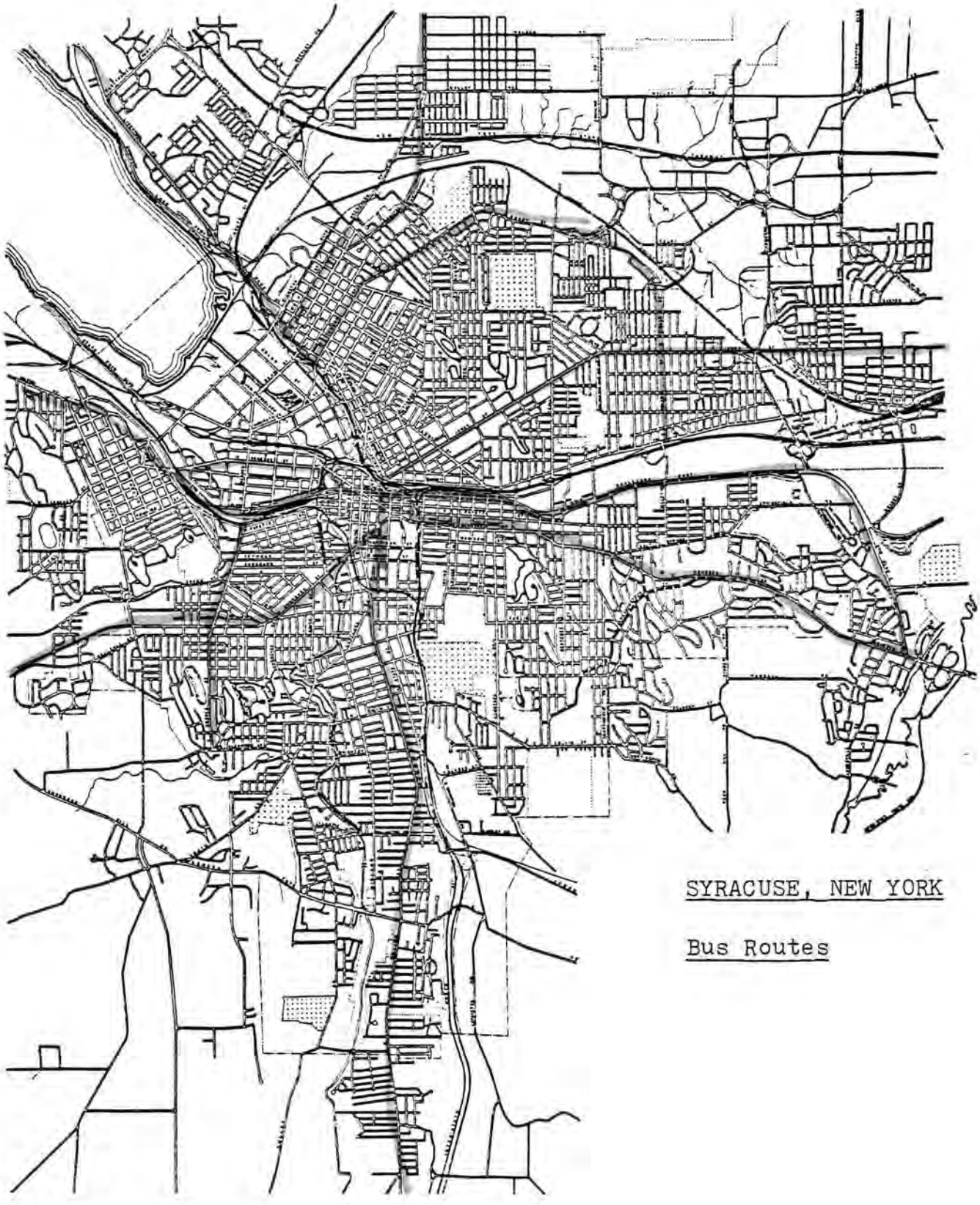

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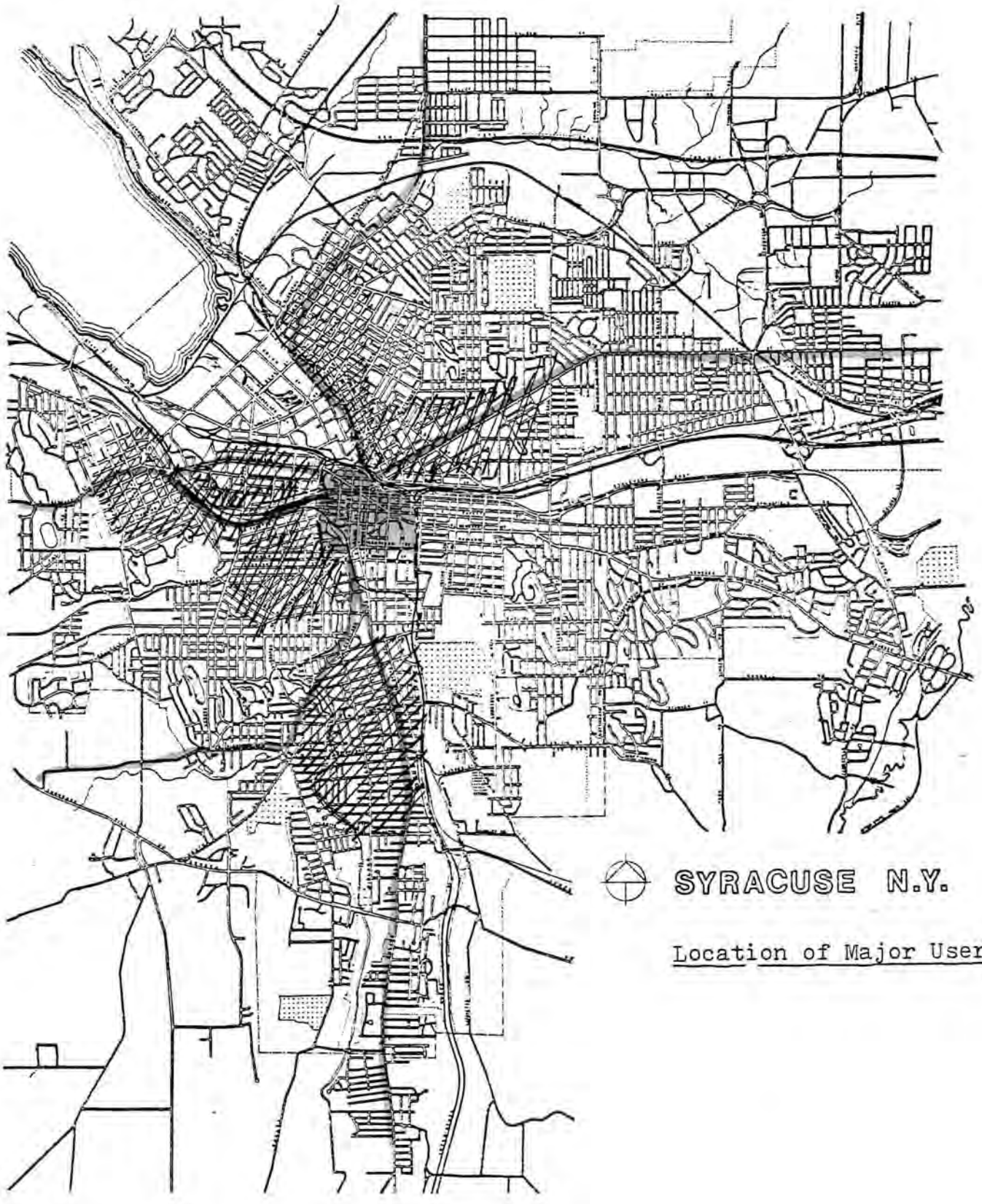
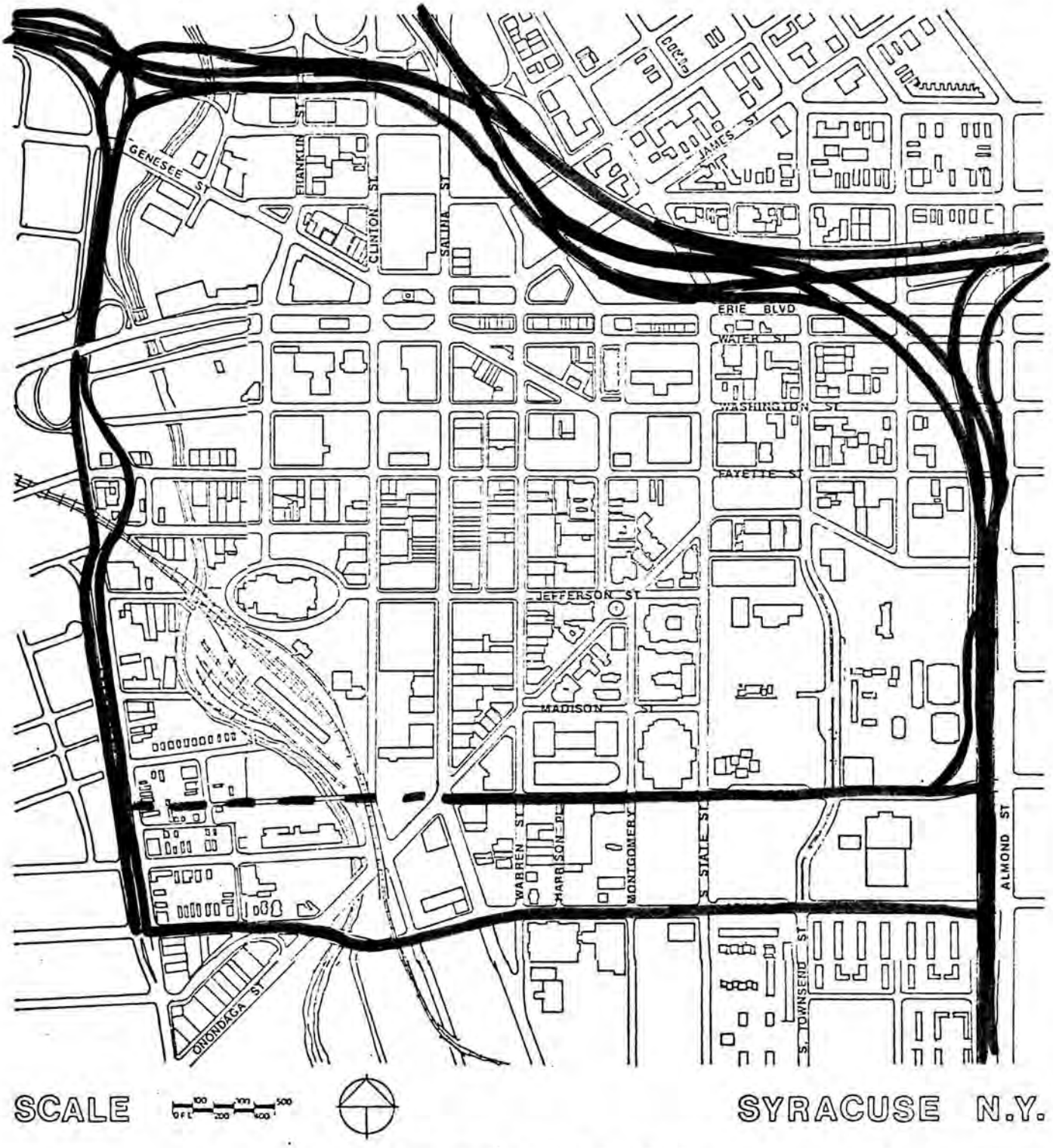
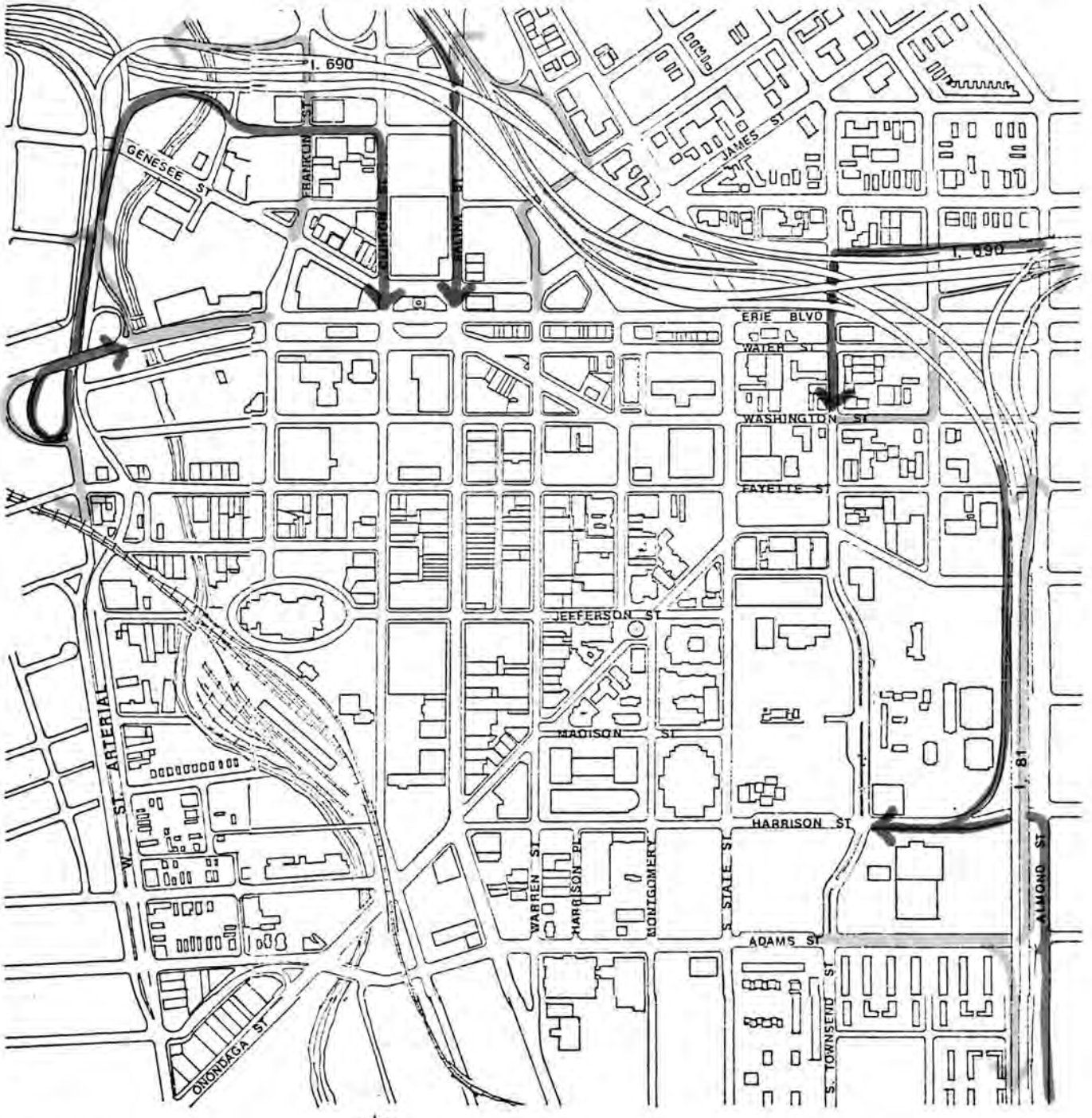


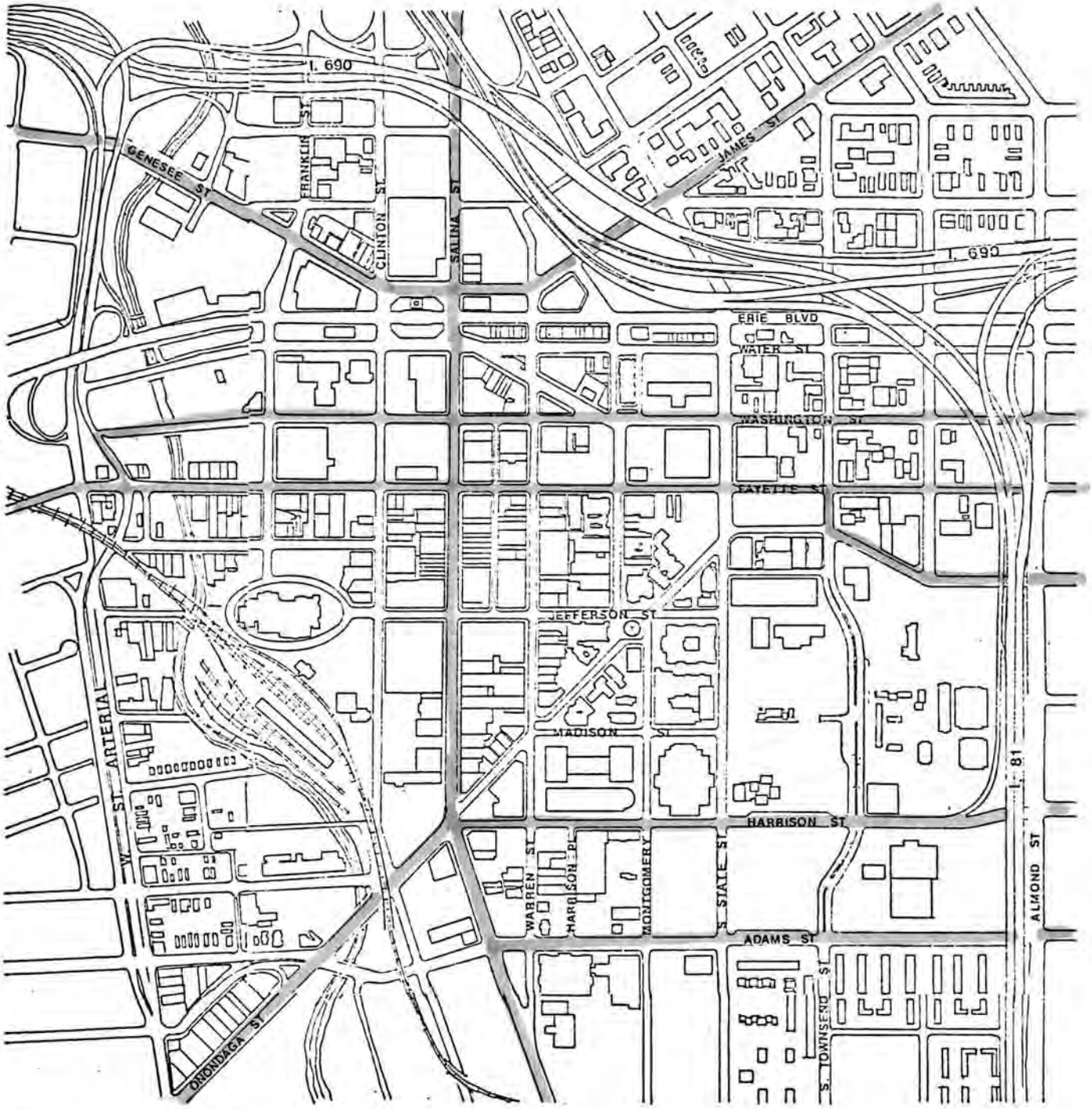
Location of Major Users



RING ROAD INSCRIBING CENTRAL CORE



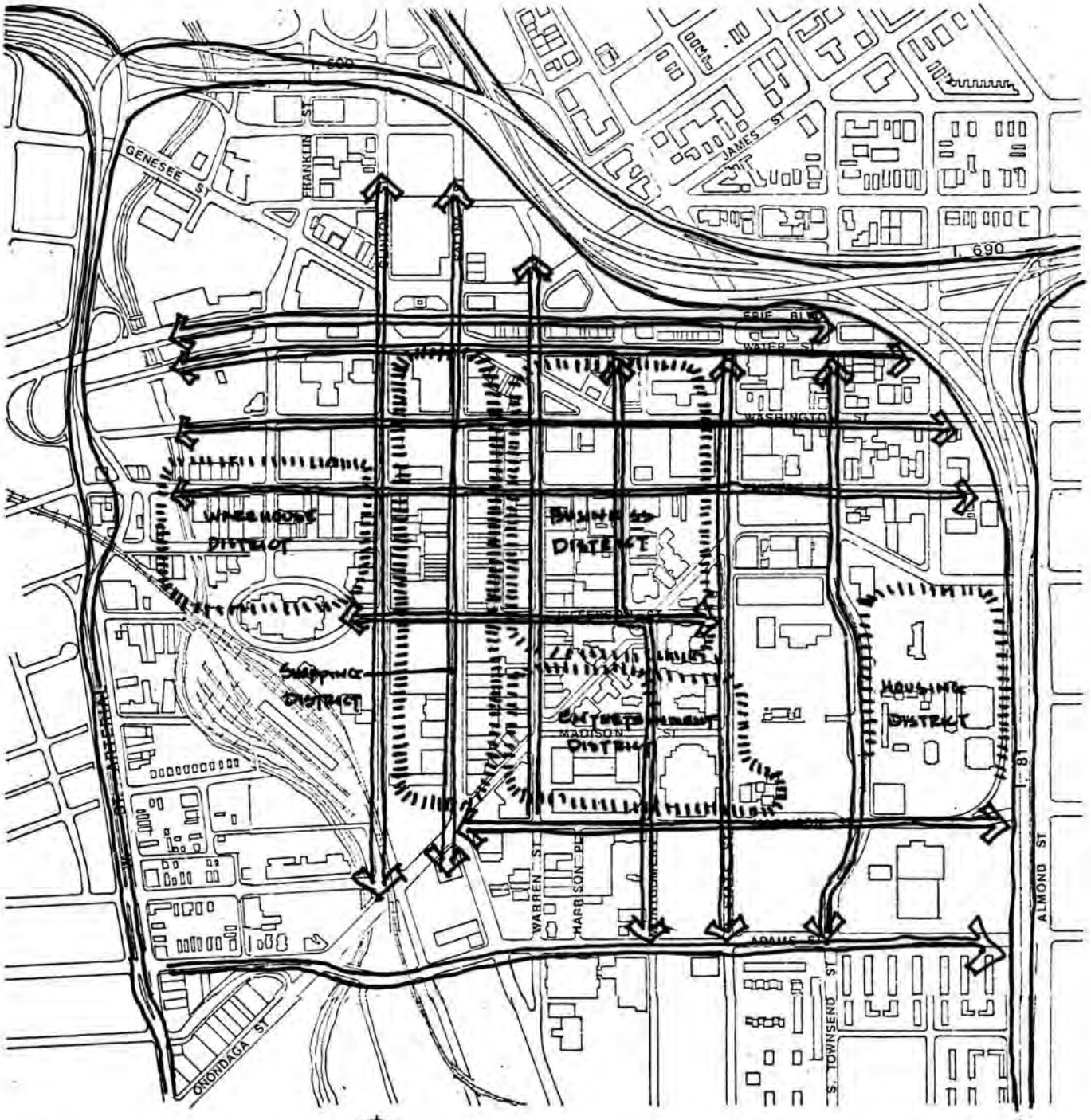
MAJOR VEHICULAR ACCESS AND EGRESS FROM CORE



SCALE

BUS ROUTES

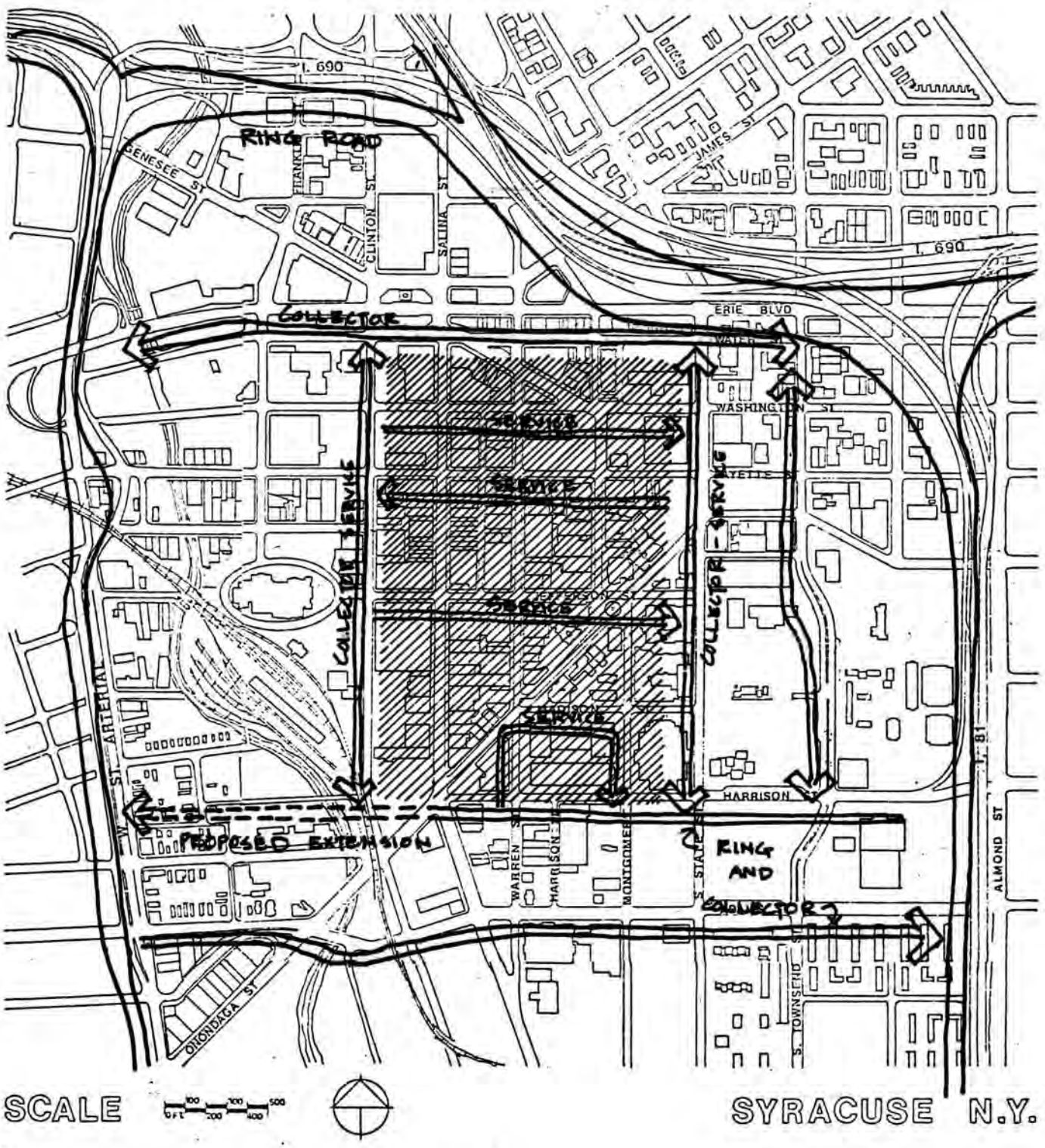
SYRACUSE N.Y.



SCALE 0 FT 100 200 300 500

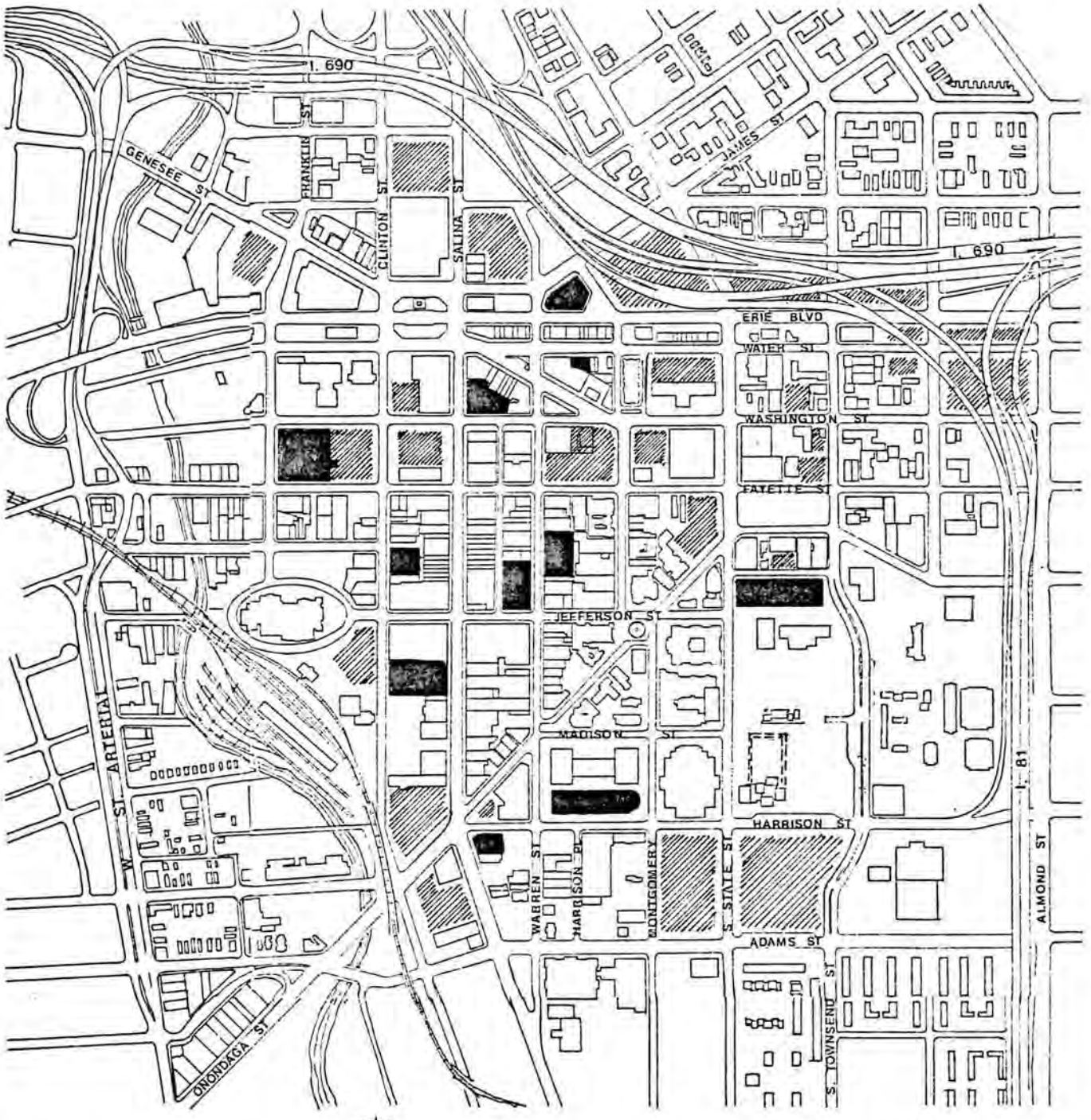
SYRACUSE N.Y.

EXISTING MOVEMENT SYSTEM WITH ACTIVITY DISTRICTS



PEDESTRIAN - DOMINATED CORE WITH

ARTICULATED VEHICULAR MOVEMENT SYSTEM



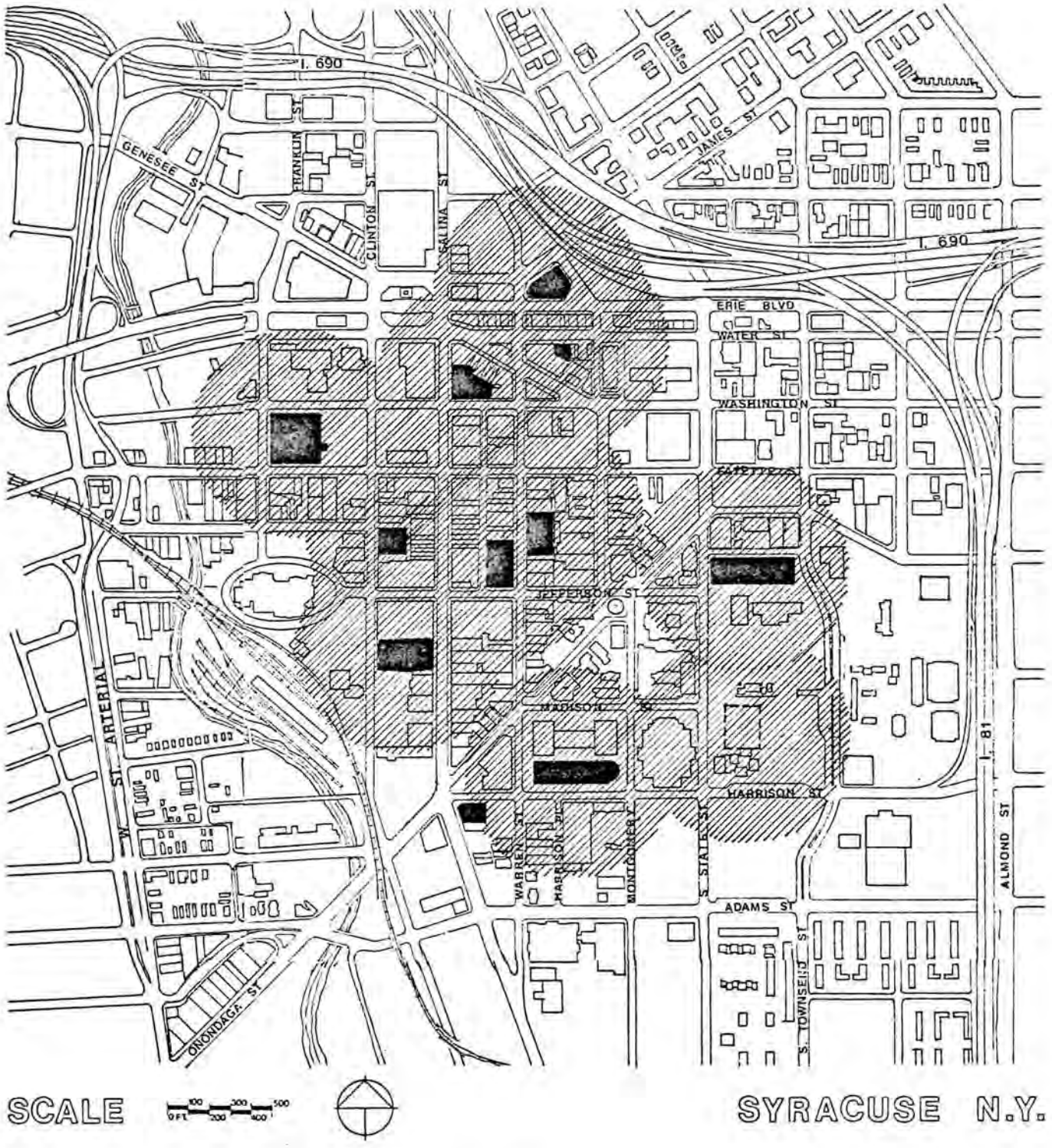
OFF-STREET PARKING

Potential Modal Interchanges

Parking Garage

Surface Parking

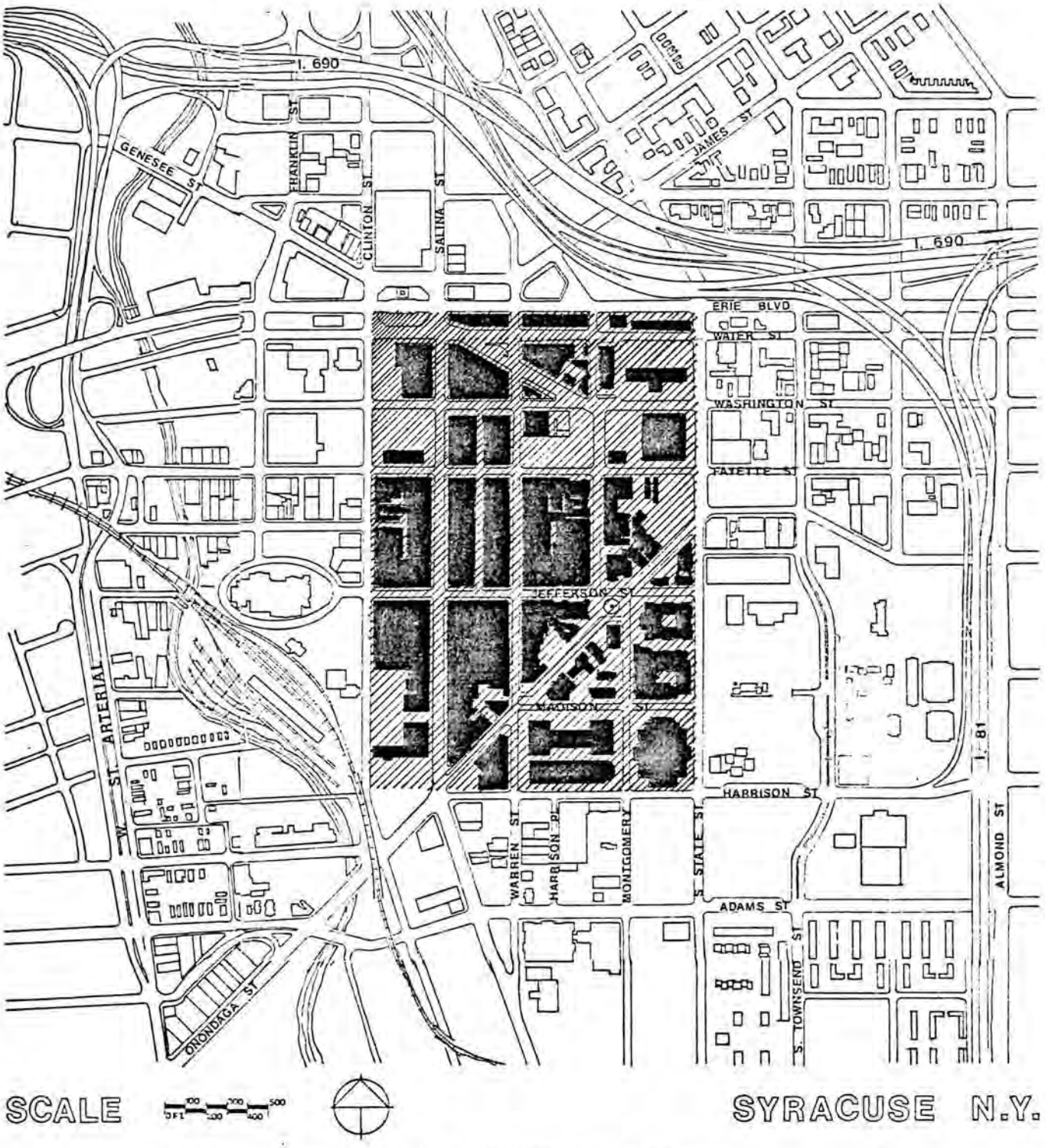
Underground Parking



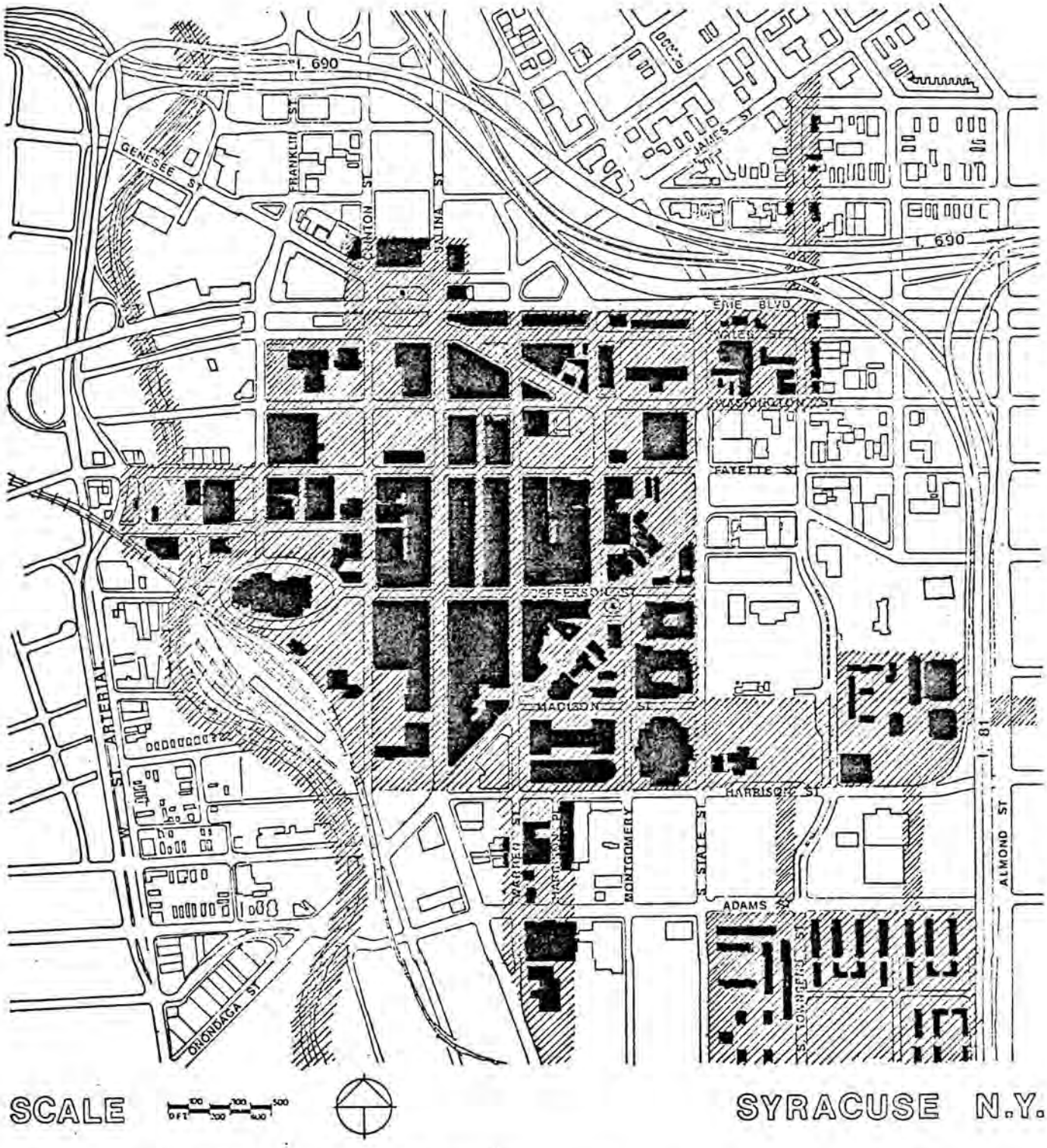
1½ MINUTE WALKING RADIUS

FROM PARKING GARAGES

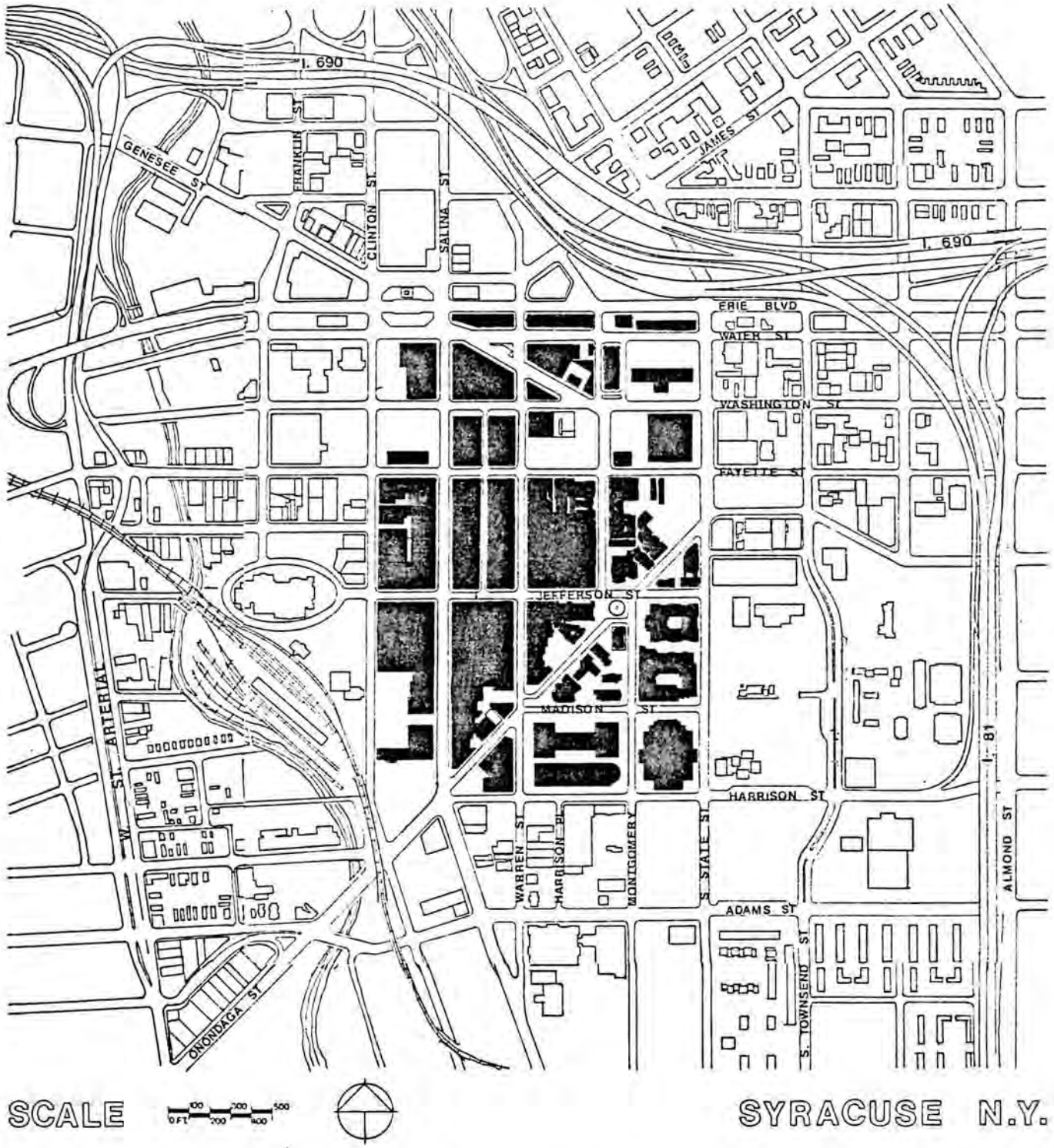
Potential Modal Interchanges



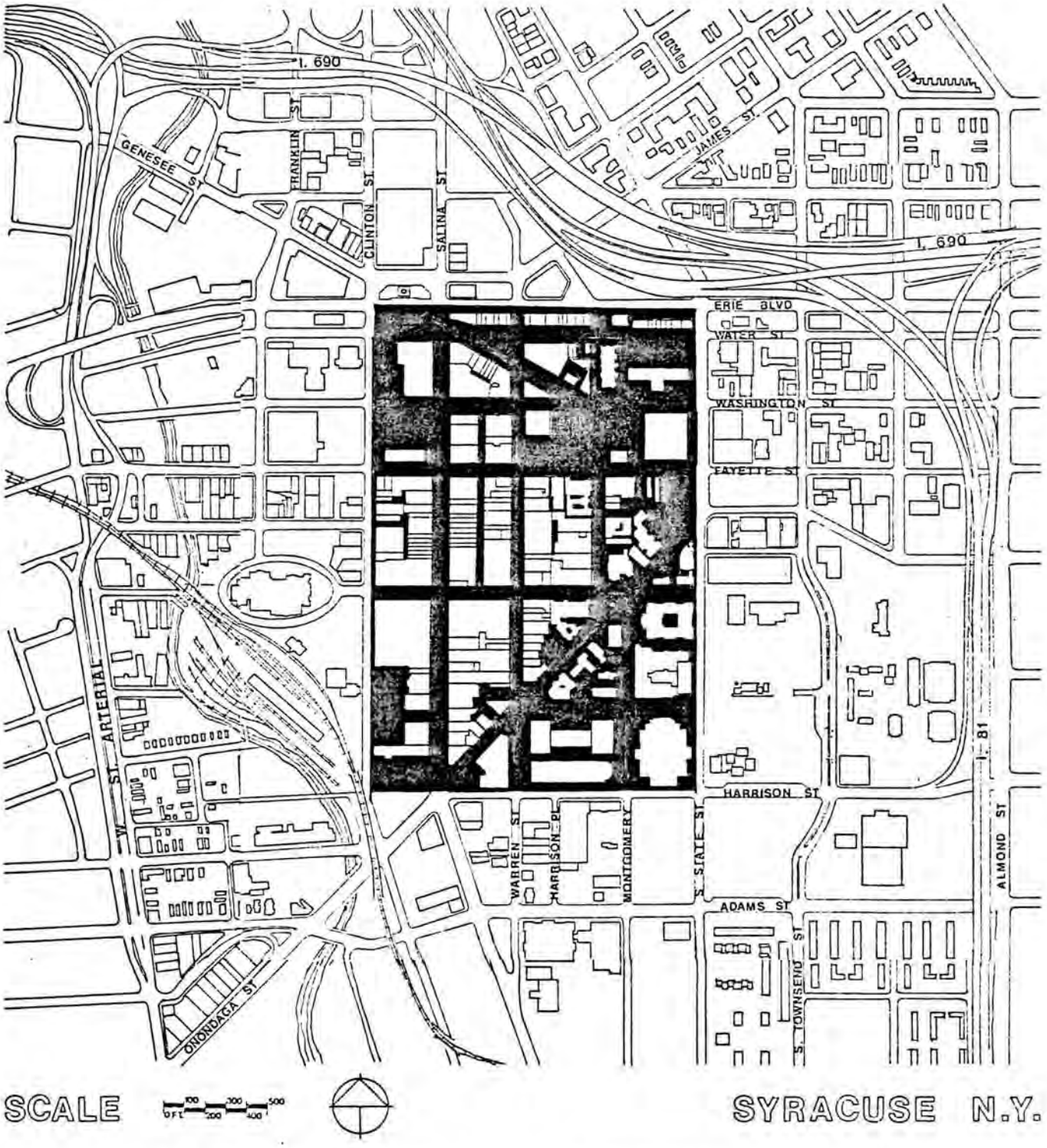
PROPOSED PEDESTRIAN-DOMINATED DISTRICT



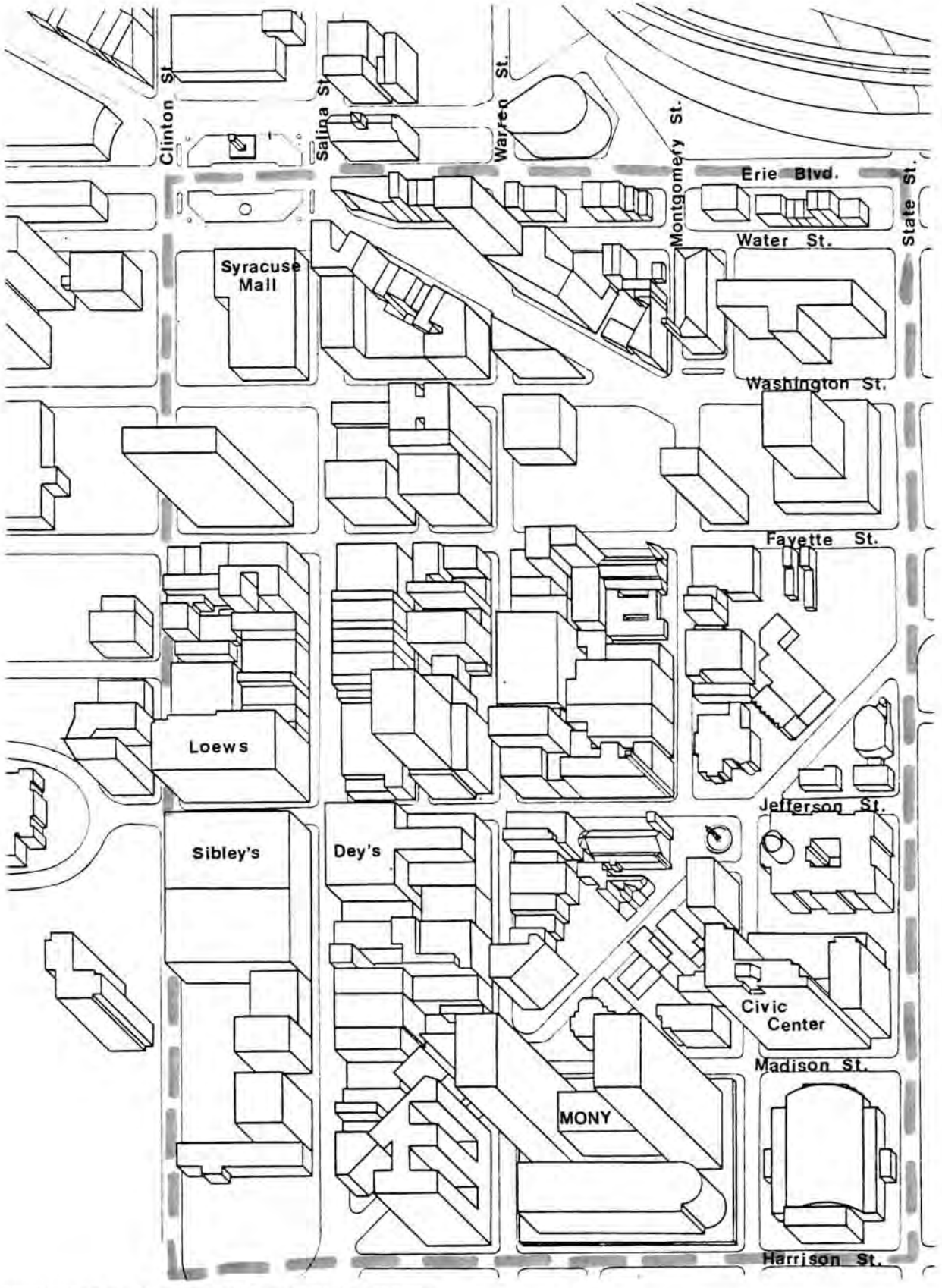
POSSIBLE EXPANSION OF PEDESTRIAN--DOMINATED DISTRICT



PROPOSED PEDESTRIAN DOMINATED DISTRICT



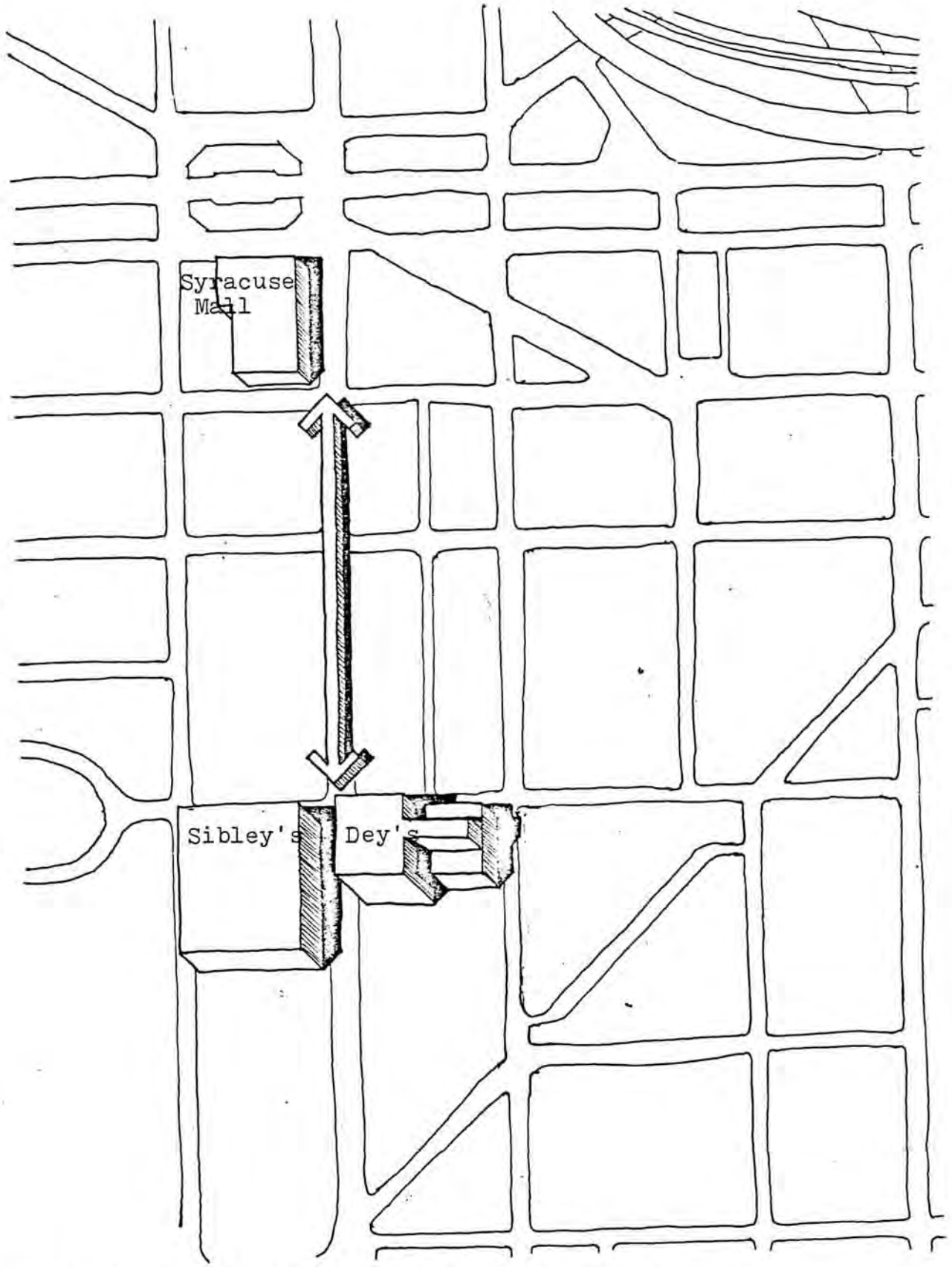
PROPOSED PEDESTRIAN-DOMINATED DISTRICT



PEDESTRIAN-DOMINATED DISTRICT

SCALE 100 200 300 400 500

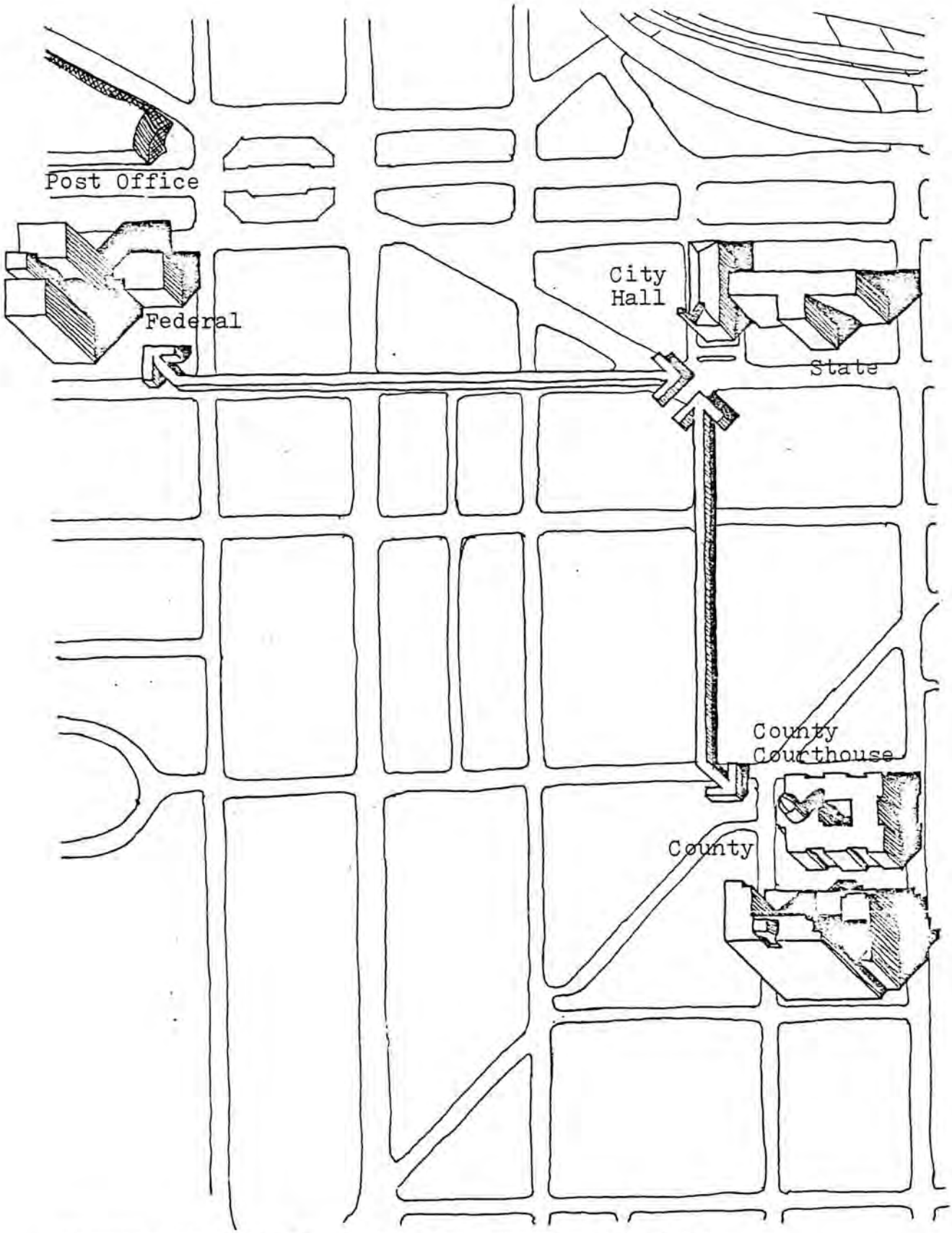
SYRACUSE N.Y.



TRAFFIC GENERATORS Major Commercial--Retail

SCALE 0 100 200 300 400 500 ft

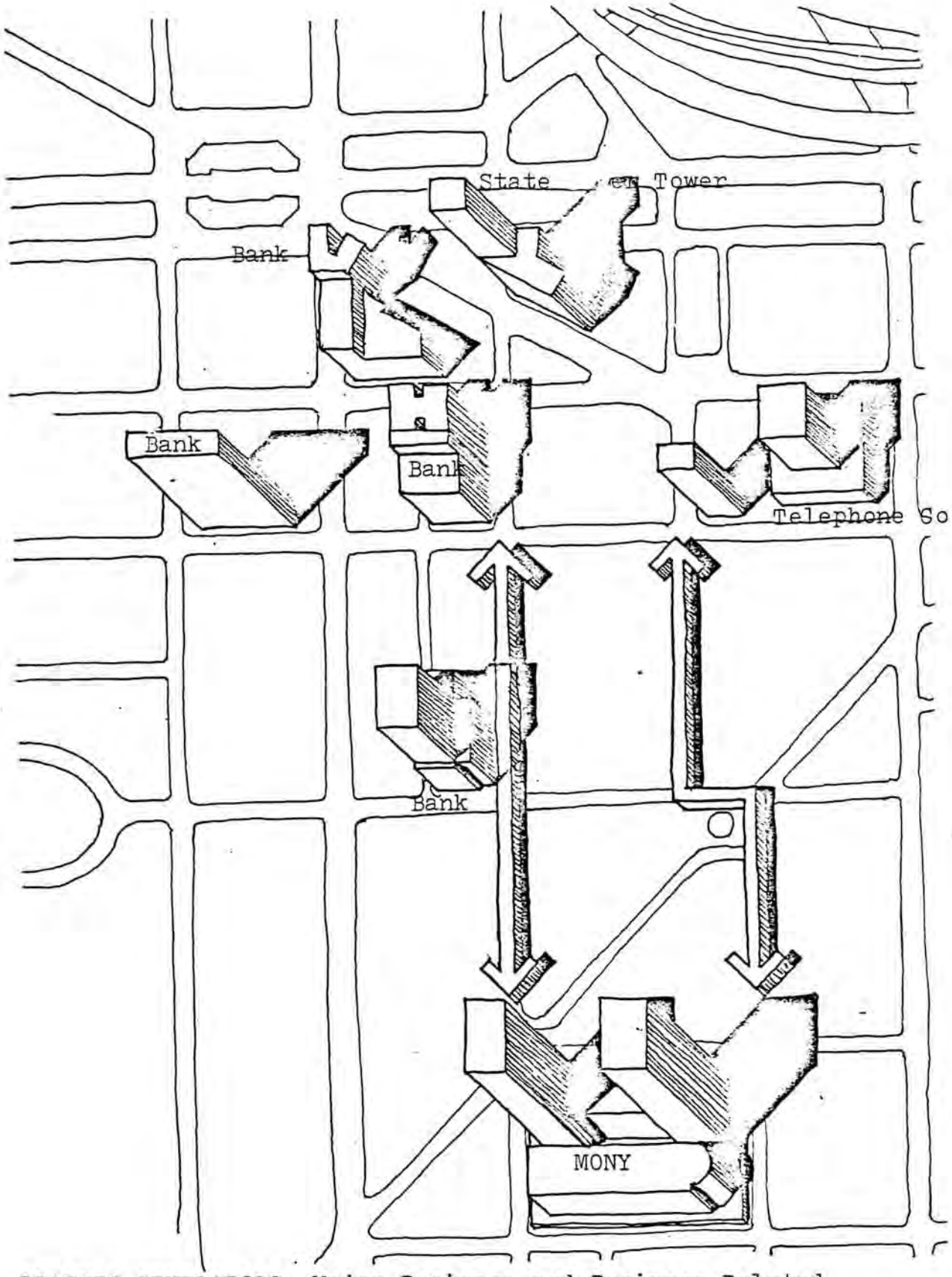
SYRACUSE N.Y.



TRAFFIC GENERATORS Major Governmental Centers

SCALE 0 100 200 300 400 500 ft

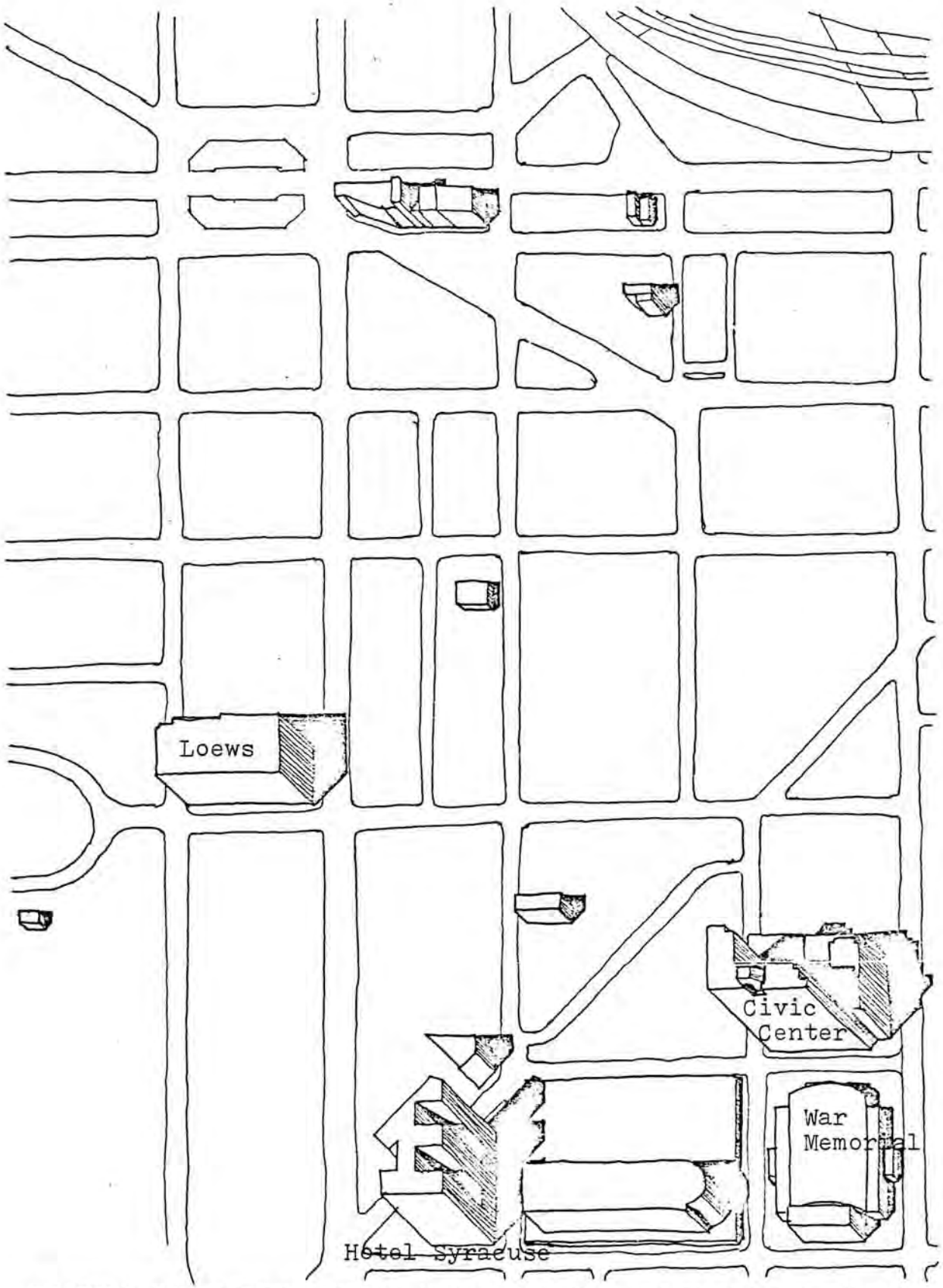
SYRACUSE N.Y.



TRAFFIC GENERATORS Major Business and Business Related

SCALE 0 100 200 300 400 500 ft

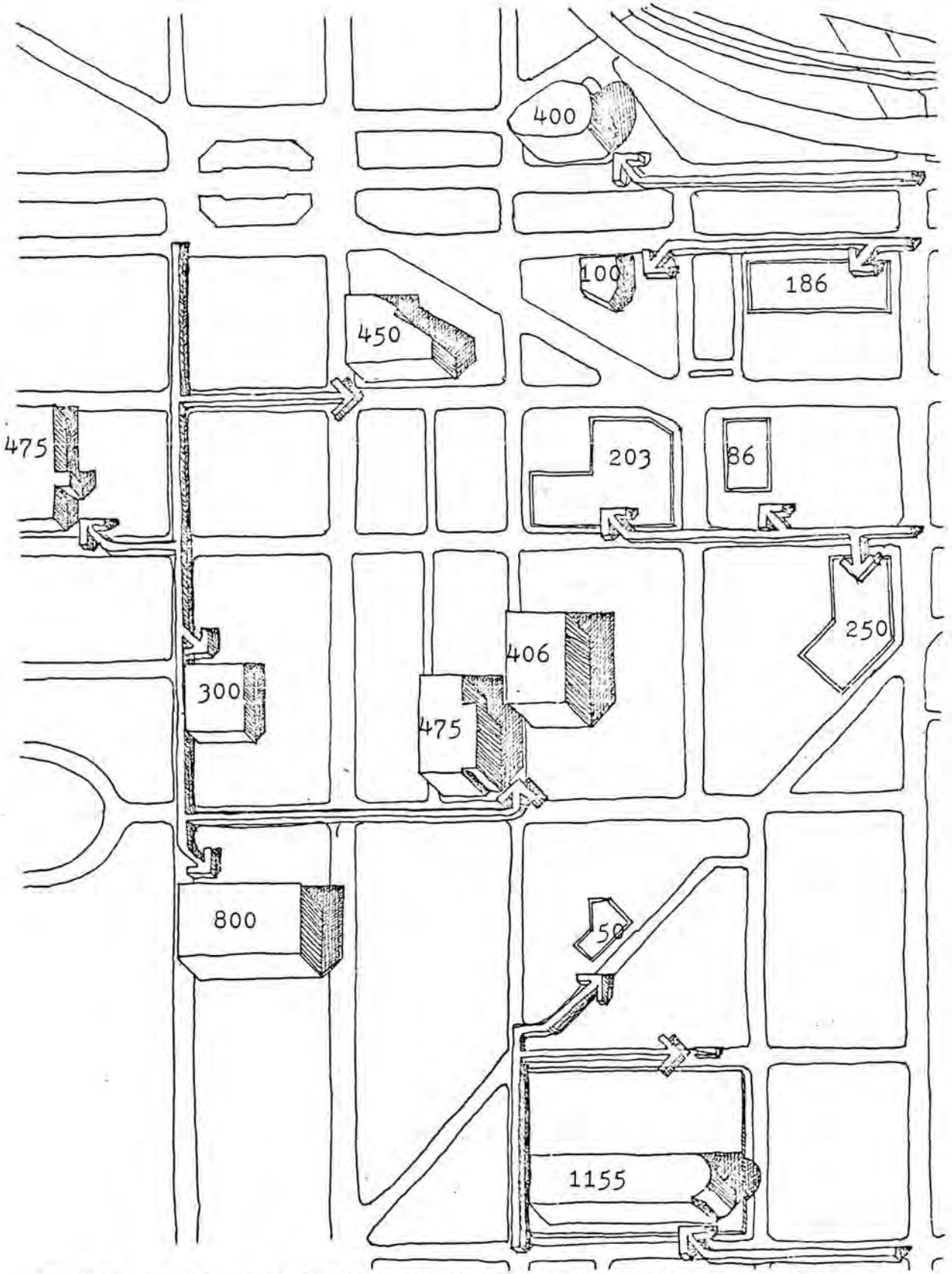
SYRACUSE N.Y.



TRAFFIC GENERATORS Major Entertainment and Nighttime Eating

SCALE 0 100 200 300 400 500 ft

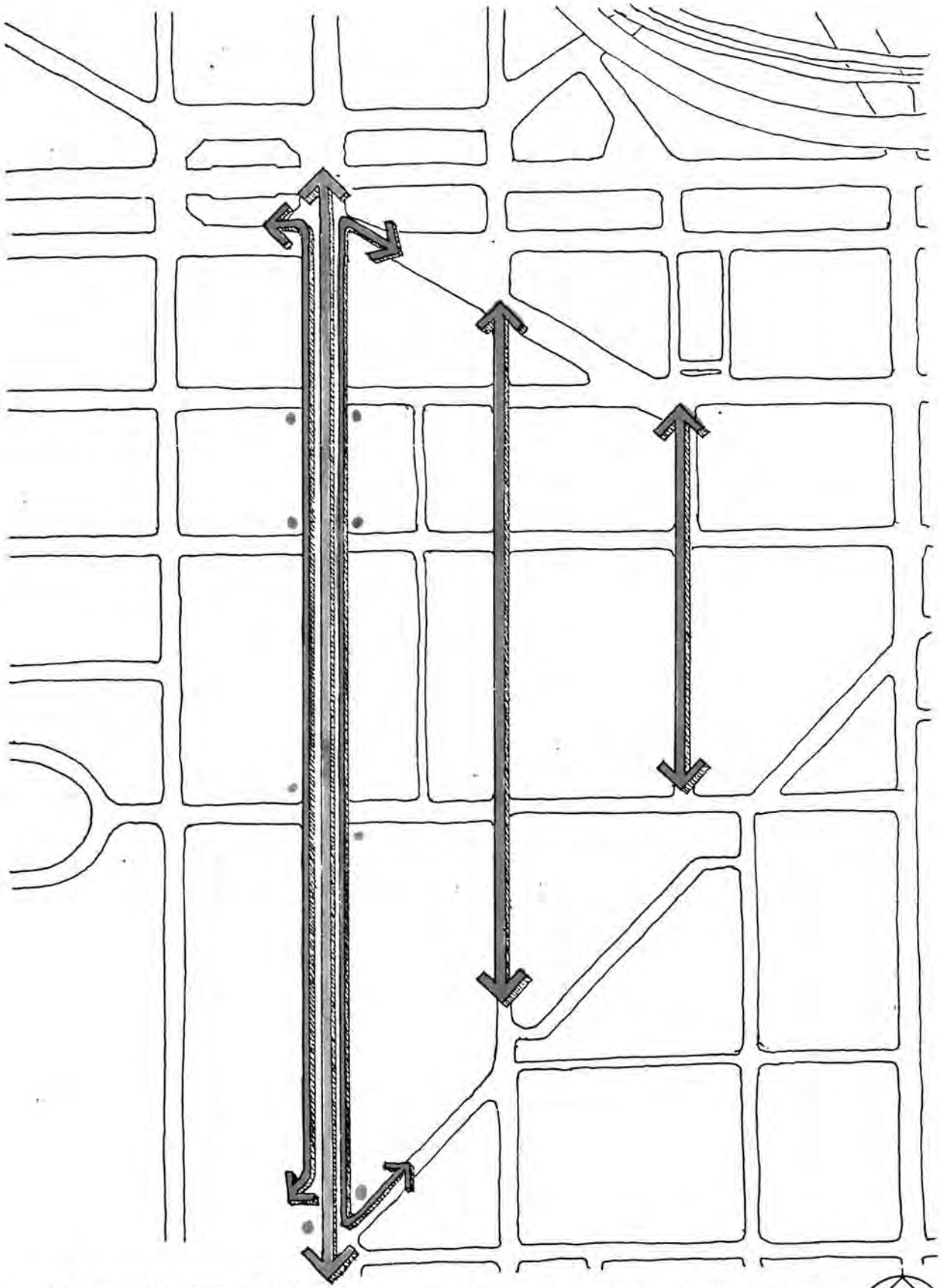
SYRACUSE N.Y.

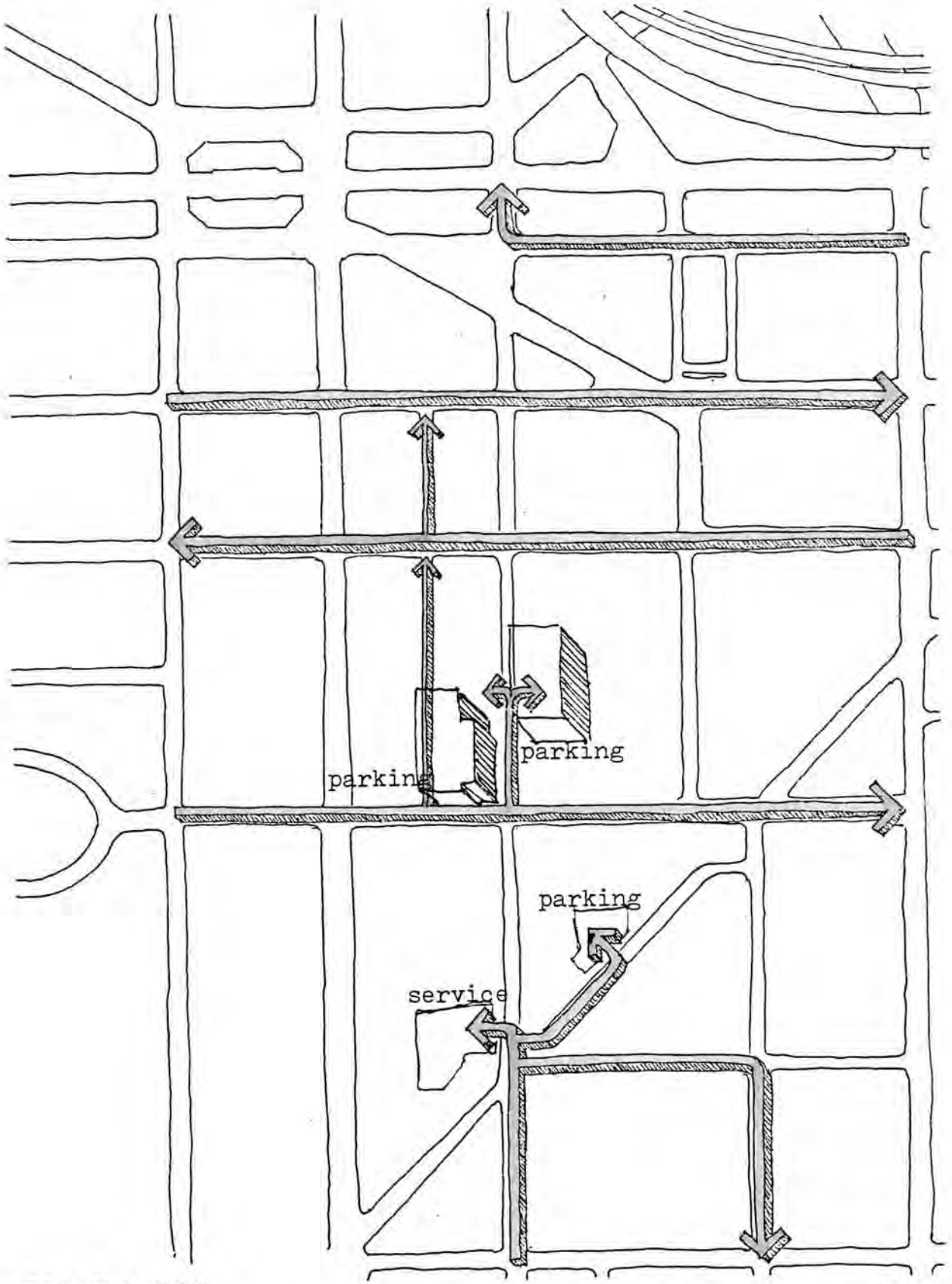


VEHICULAR PARKING WITHIN PEDESTRIAN-DOMINATED DISTRICT
WITH SUGGESTED ACCESS Number of car spaces listed as shown.

SCALE 0 100 200 300 400 500 ft

SYRACUSE N.Y.

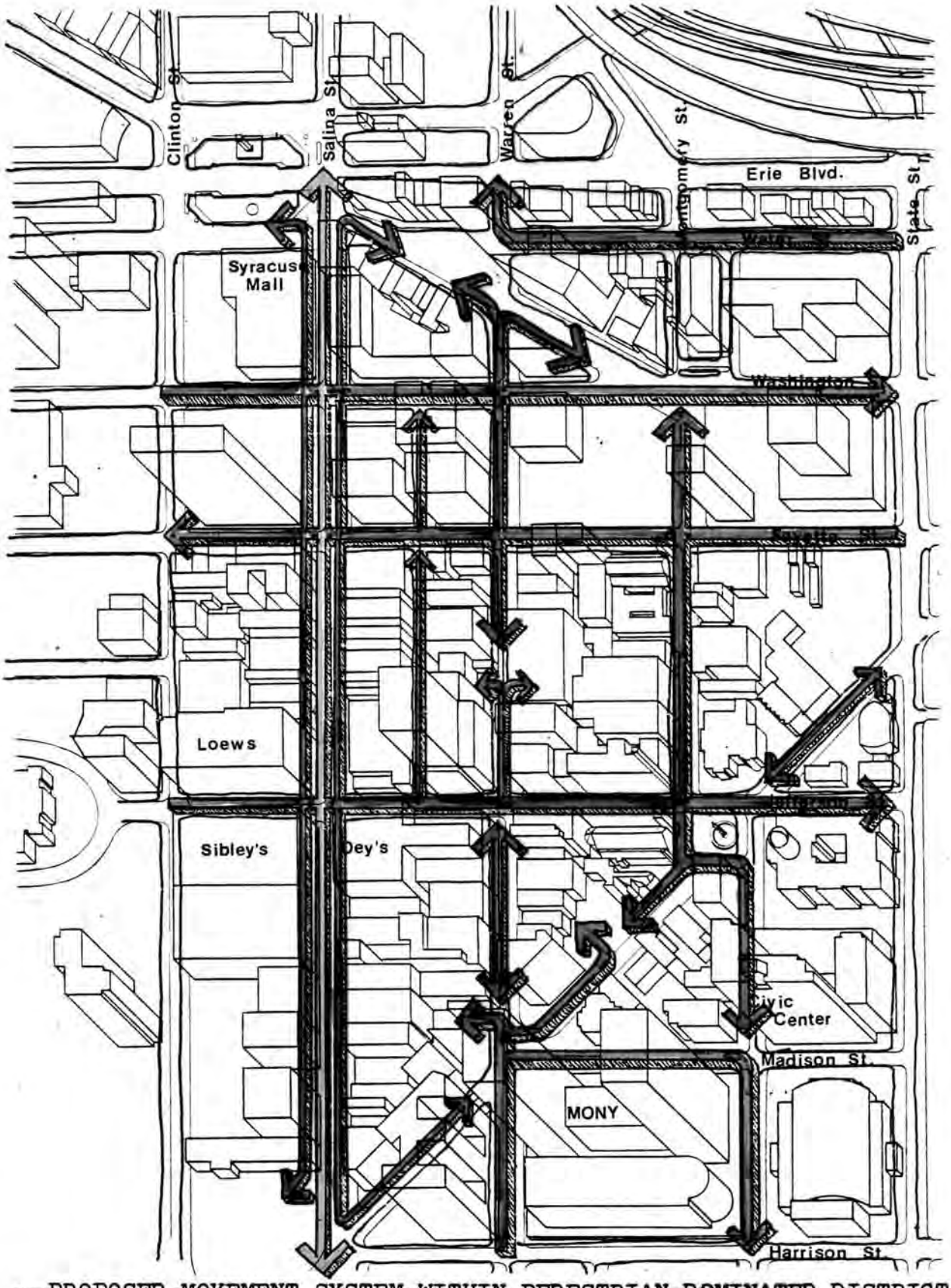

MAJOR TRAFFIC FLOW
Major Pedestrian Corridors
Major Transit Corridor (busses)
SCALE
0
100
200
300
400
500 ft



TRAFFIC FLOW

Vehicular Sevice
Secondary Pedestrian Connectors

SCALE 0 100 200 300 400 500 m

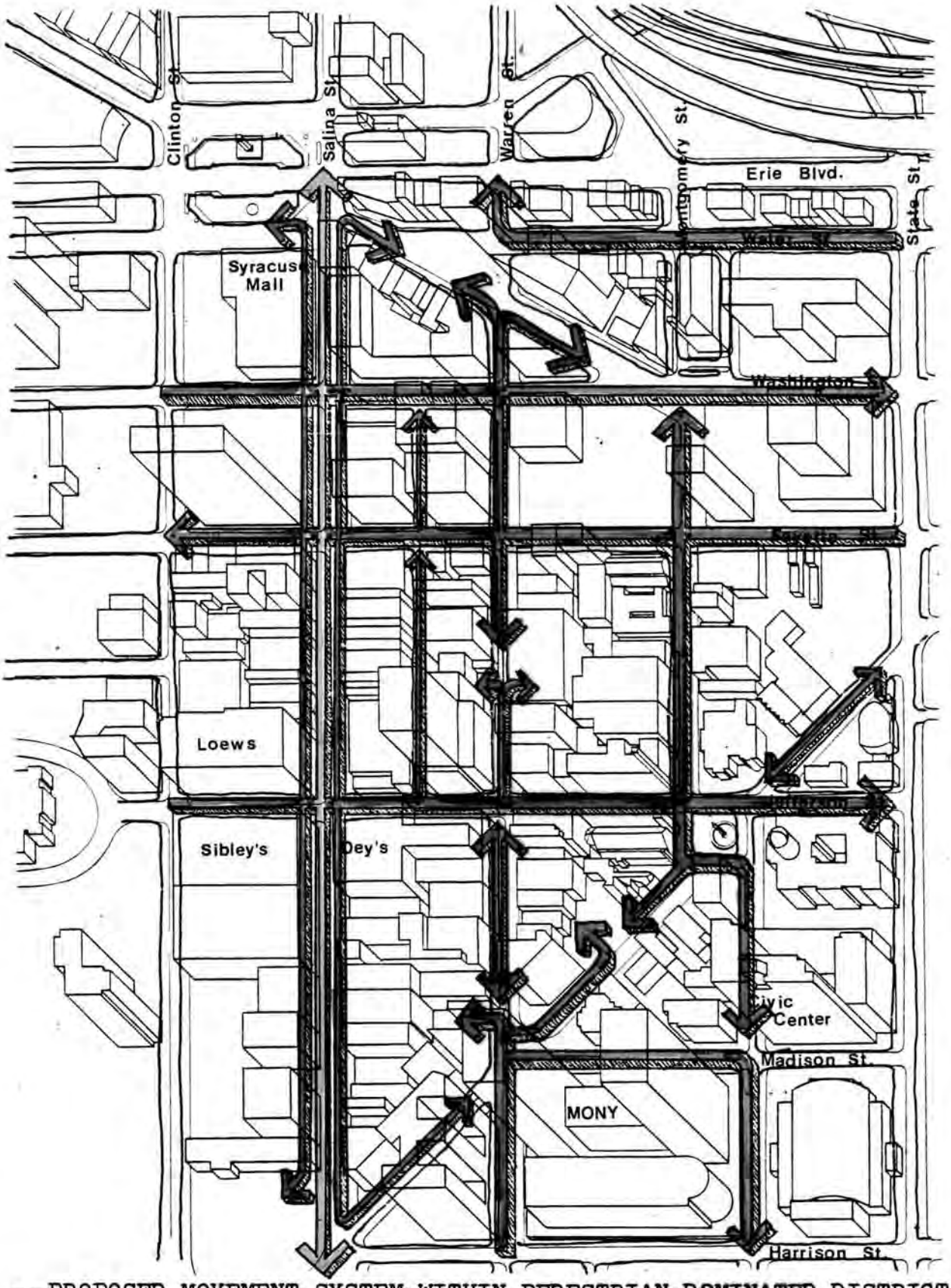


PEDESTRIAN MOVEMENT SYSTEM

PROPOSED MOVEMENT SYSTEM WITHIN PEDESTRIAN-DOMINATED DISTRICT

SCALE 0 100 200 300 500

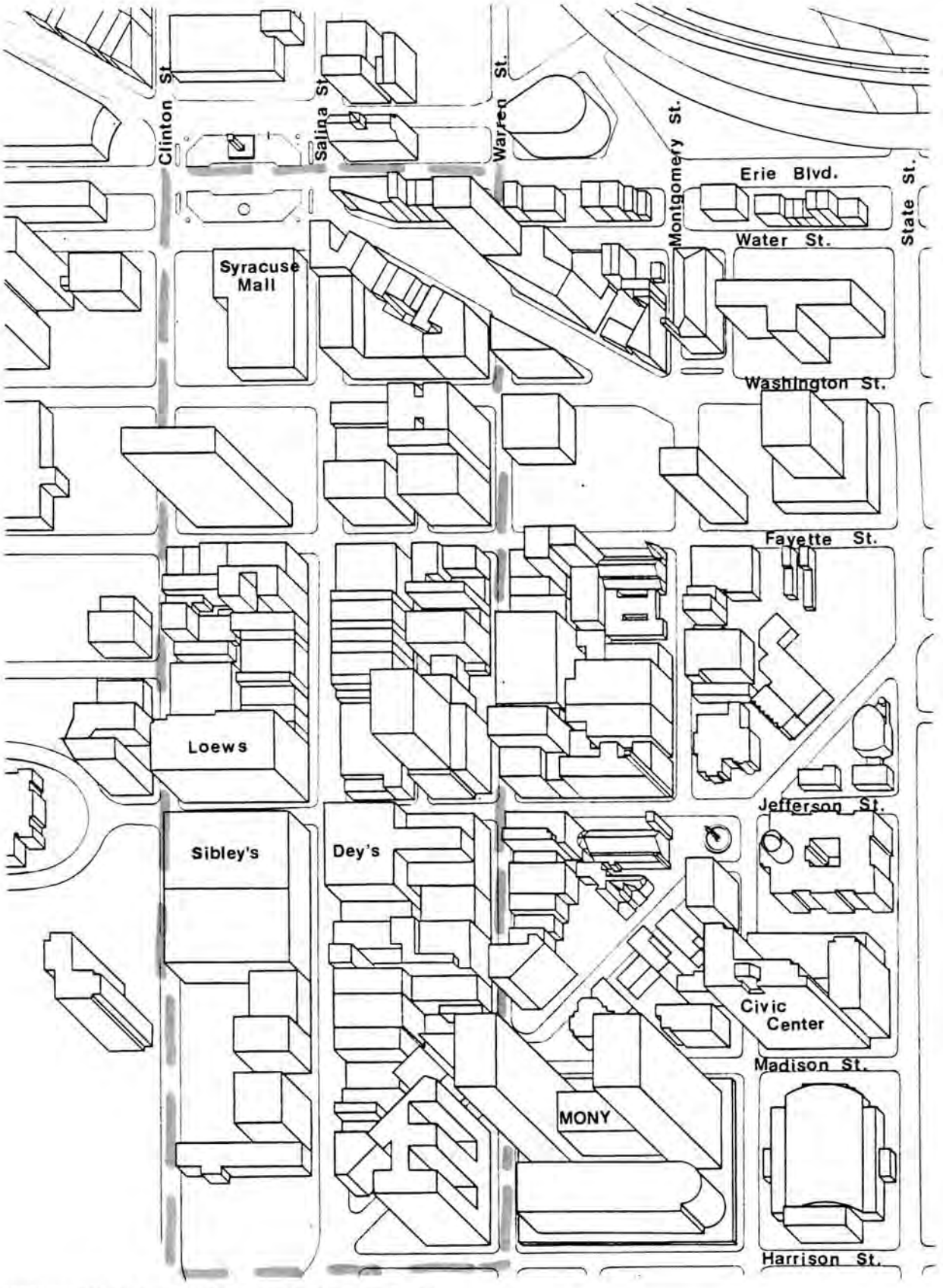
SYRACUSE N.Y.



PROPOSED MOVEMENT SYSTEM WITHIN PEDESTRIAN-DOMINATED DISTRICT

SCALE 0 100 200 300 400 500

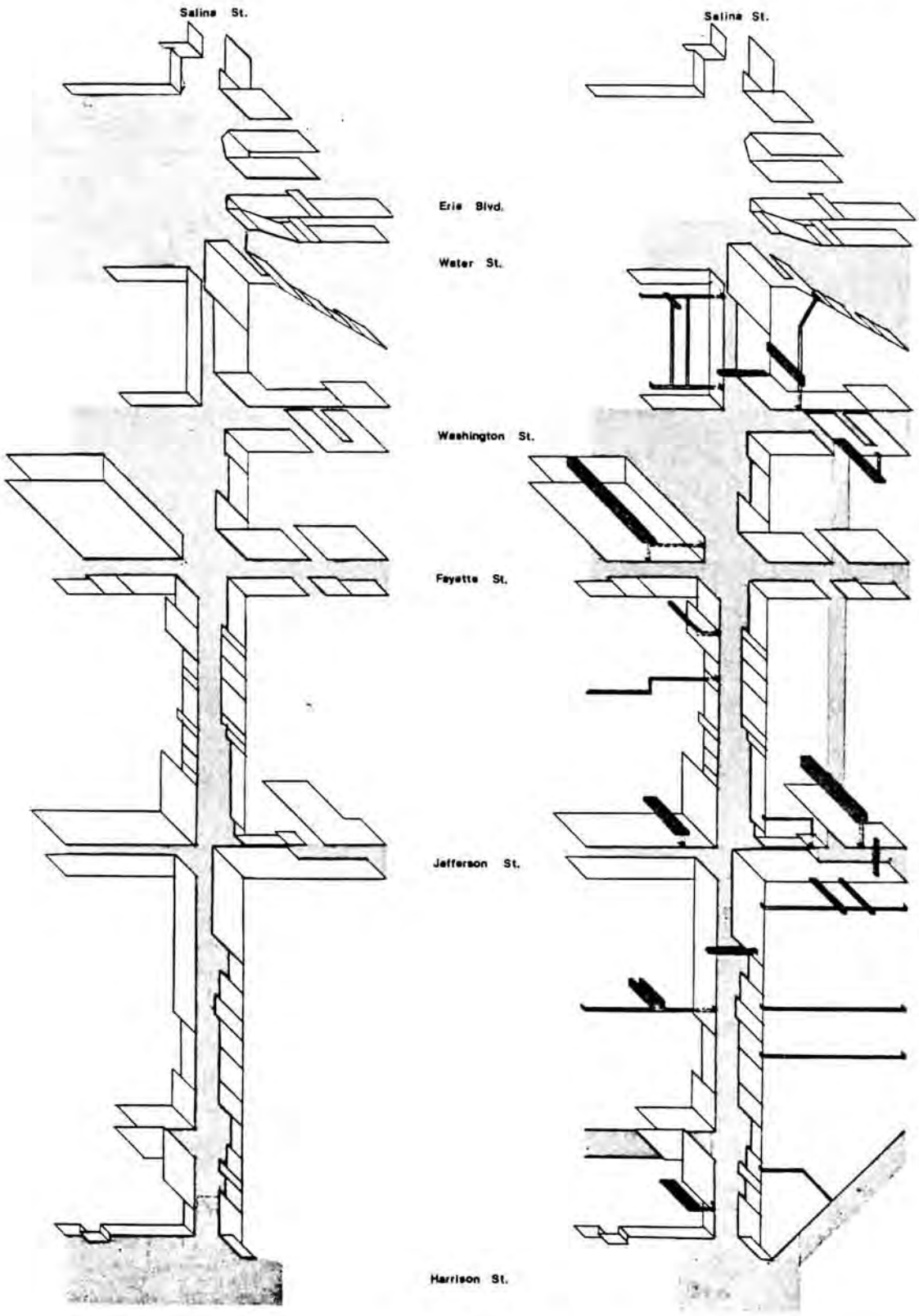
SYRACUSE N.Y.



PEDESTRIAN-DOMINATED DISTRICT

SCALE 0 100 200 300 400 500

SYRACUSE N.Y.

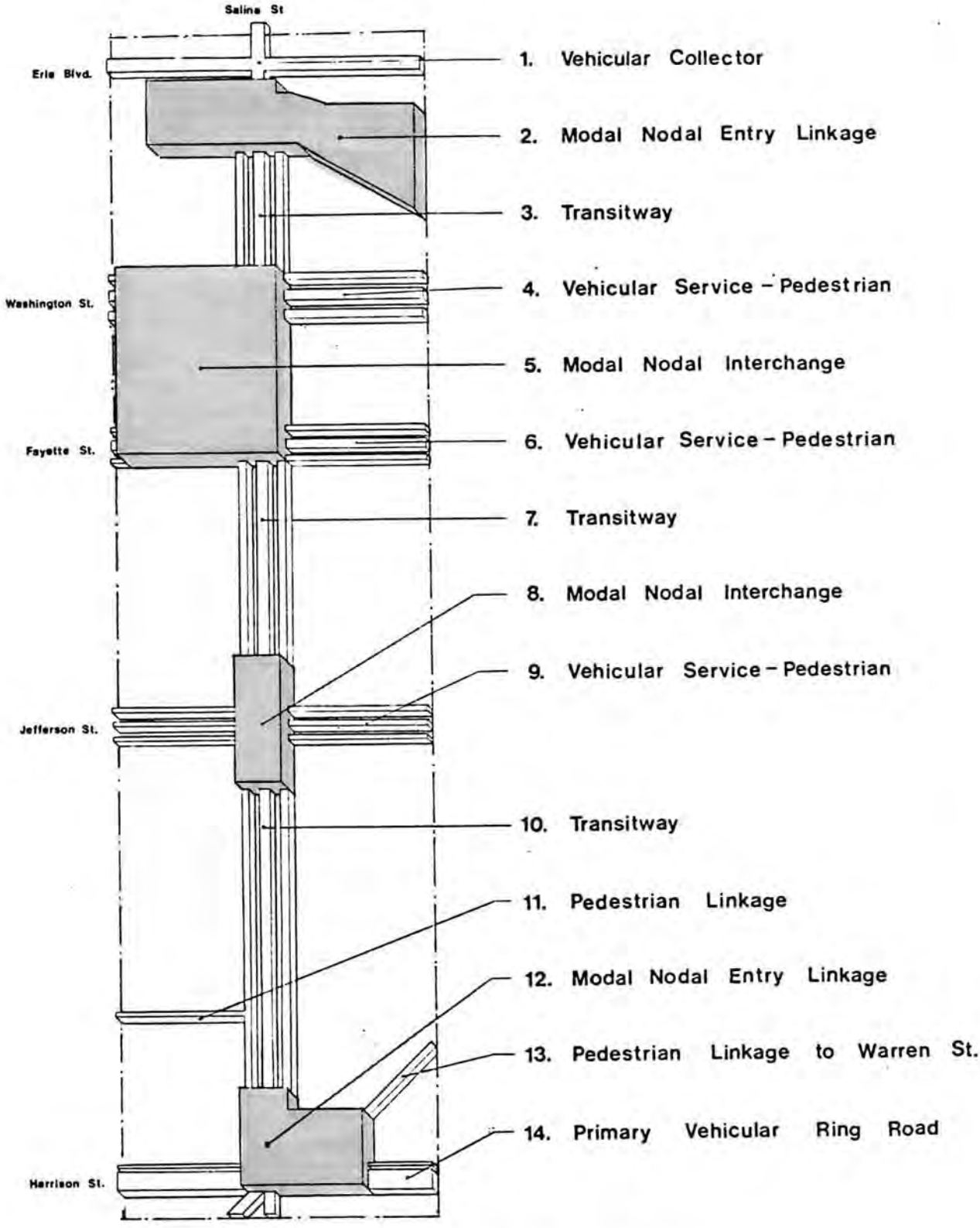


Salina St. Open Space ...

With Horizontal and Vertical Connectors.

SCALE 0 100 200 300 400 500 ft

SYRACUSE N.Y.

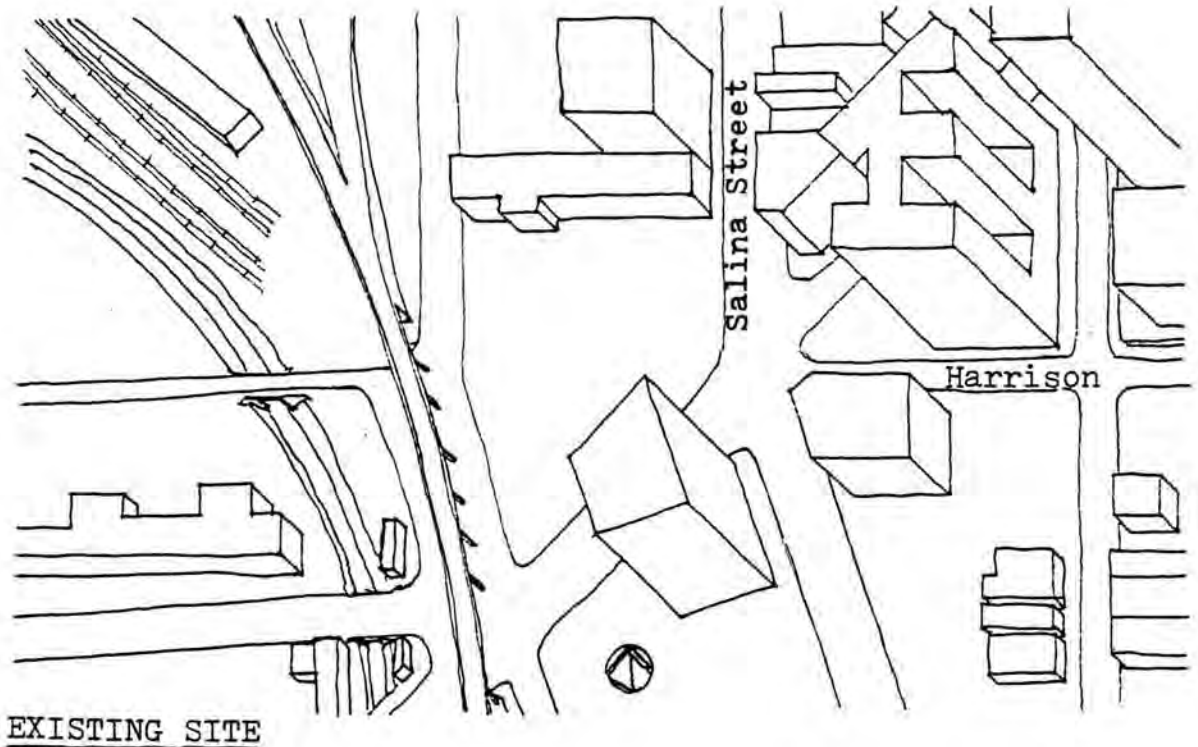


SCHEMATIC ORGANIZATION OF SALINA STREET

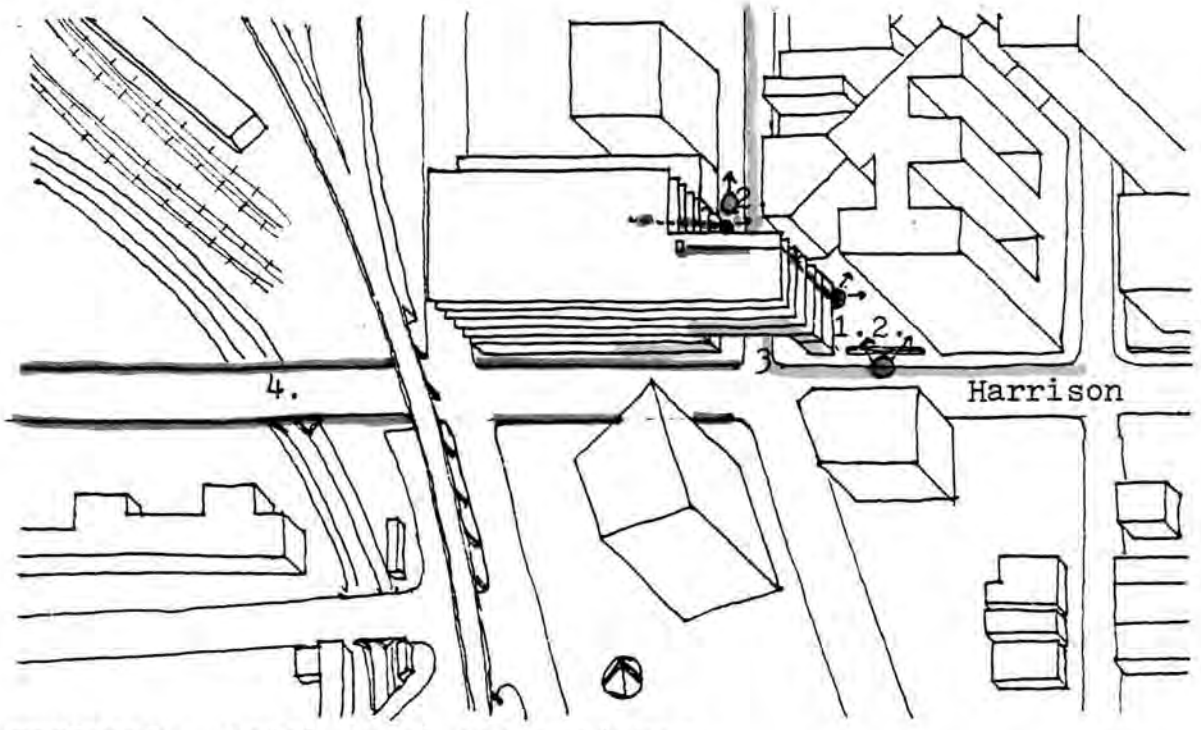
PEDESTRIAN-DOMINATED DISTRICT

SCALE 0 100 200 300 400 500

SYRACUSE N.Y.



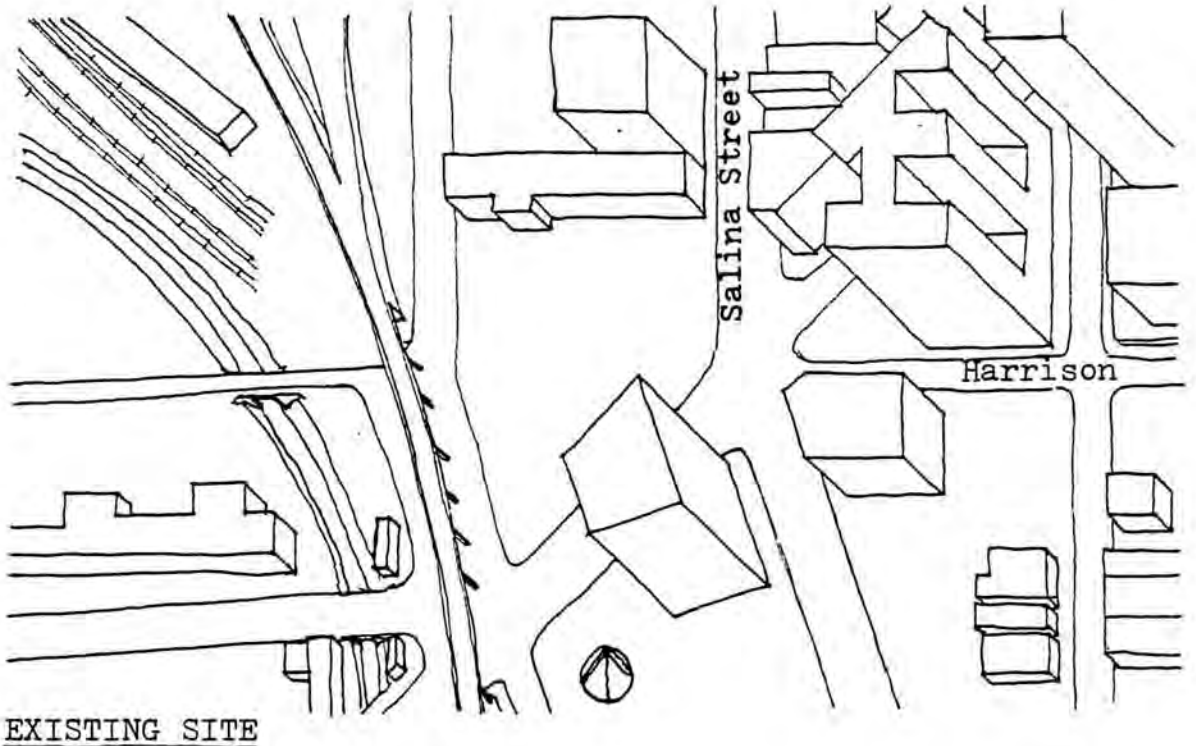
EXISTING SITE



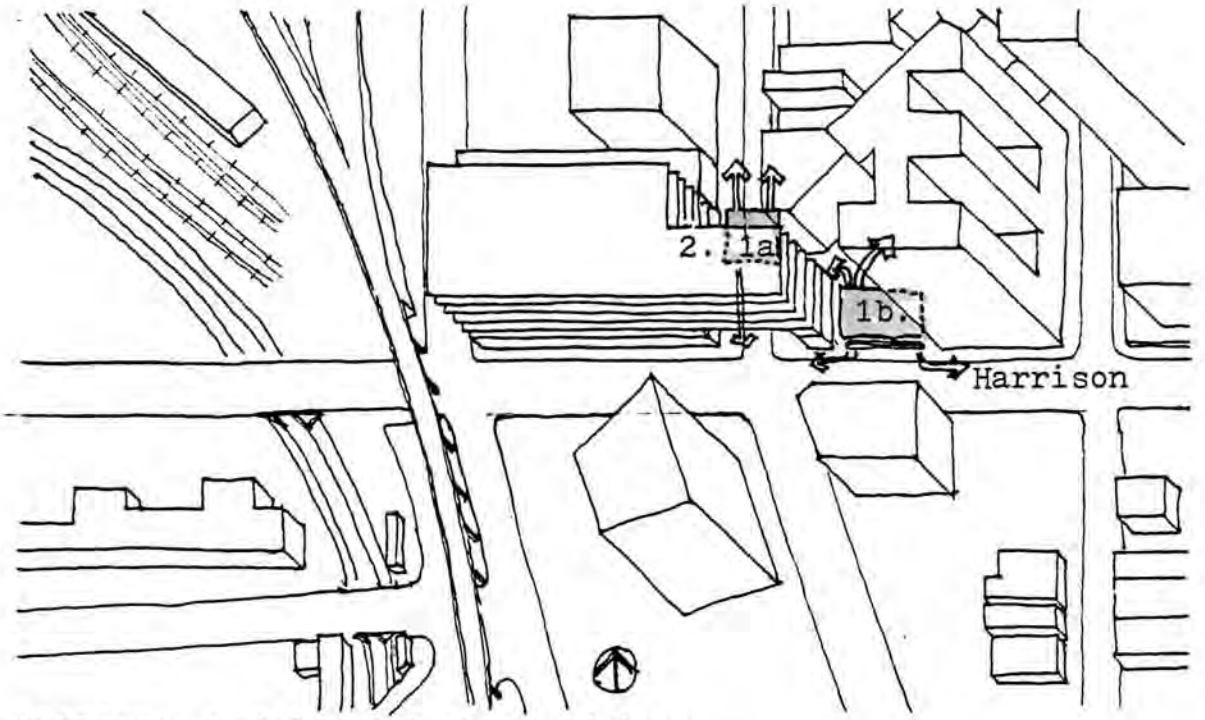
PROPOSED: Modal-Nodal Entry Linkage

Proposed, creation of new modal transfers:

1. Private Vehicle ⟶ Pedestrian (via Parking Garage)
2. Public Vehicle ⟶ Pedestrian (via Bus Stops)
3. Entry Gate from one mode to another.
4. Completion of Vehicular Ring Road.

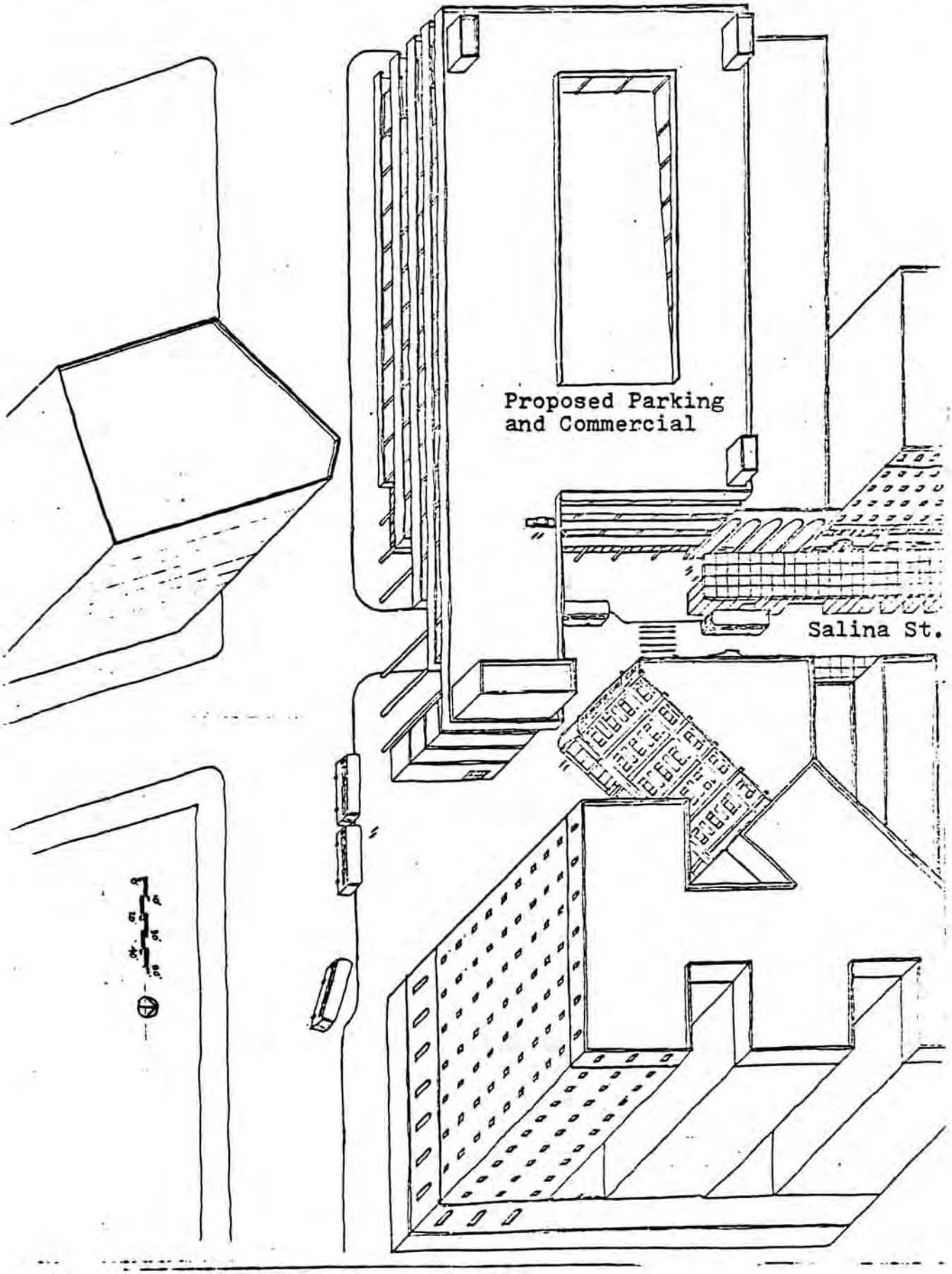


EXISTING SITE

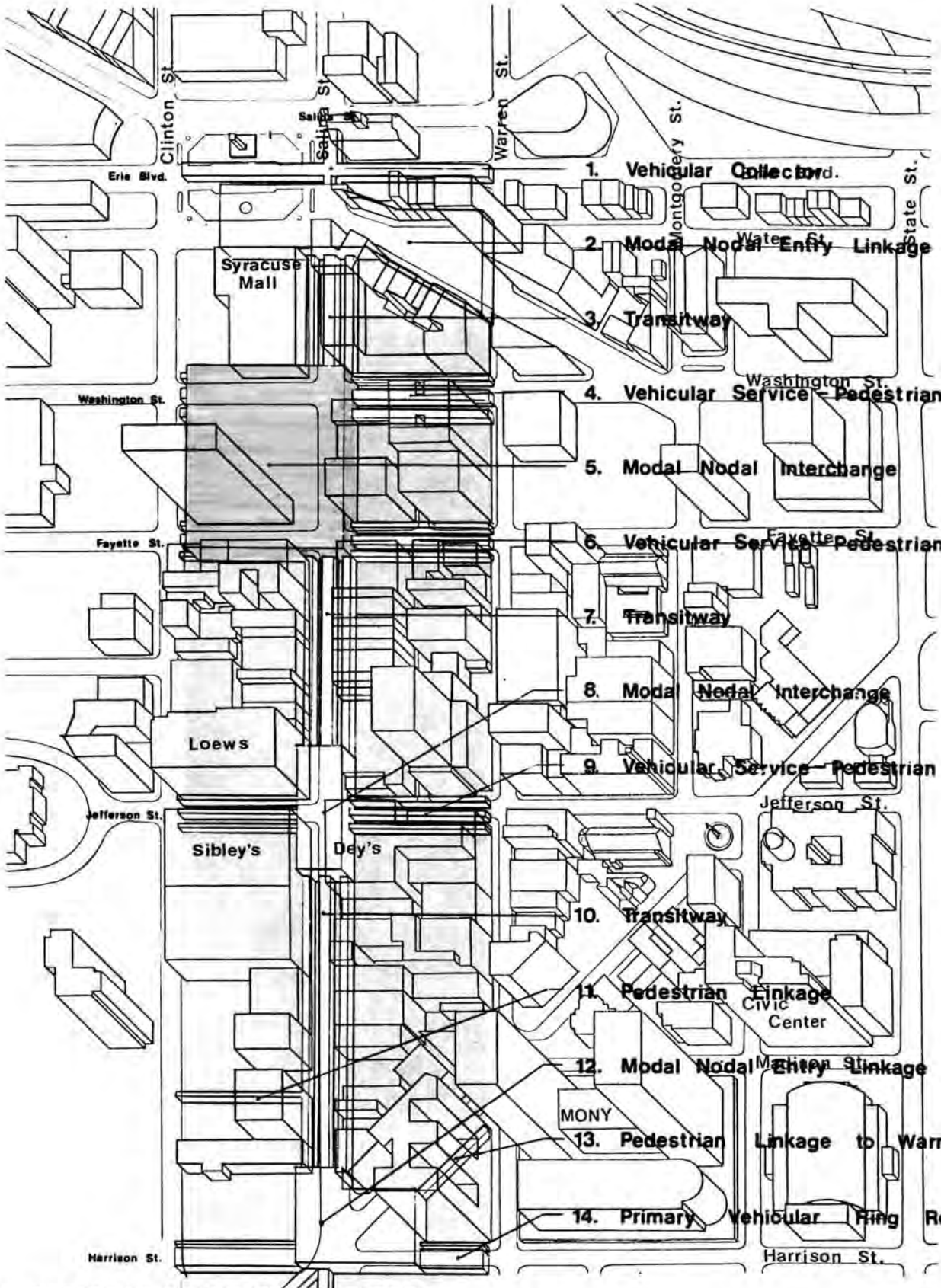


PROPOSED: Modal-Nodal Entry Linkage
Proposed:

1. Creation of two transition spaces:
   a. end/beginning of Salina Street Transitway,
   b. linkage to Warren Street.
2. Creation of commercial and retail shops on first level of parking structure, completing shopping nature of Salina Street.



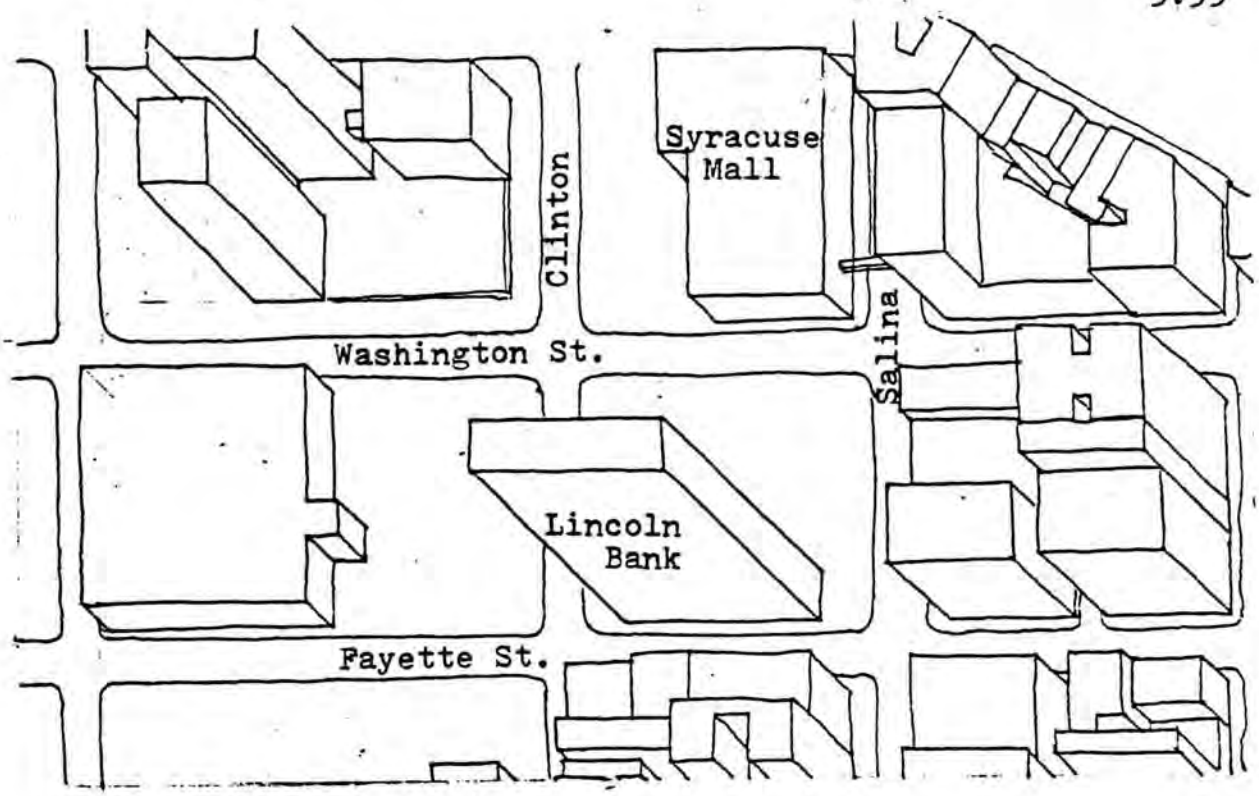
PRELIMINARY PROPOSAL



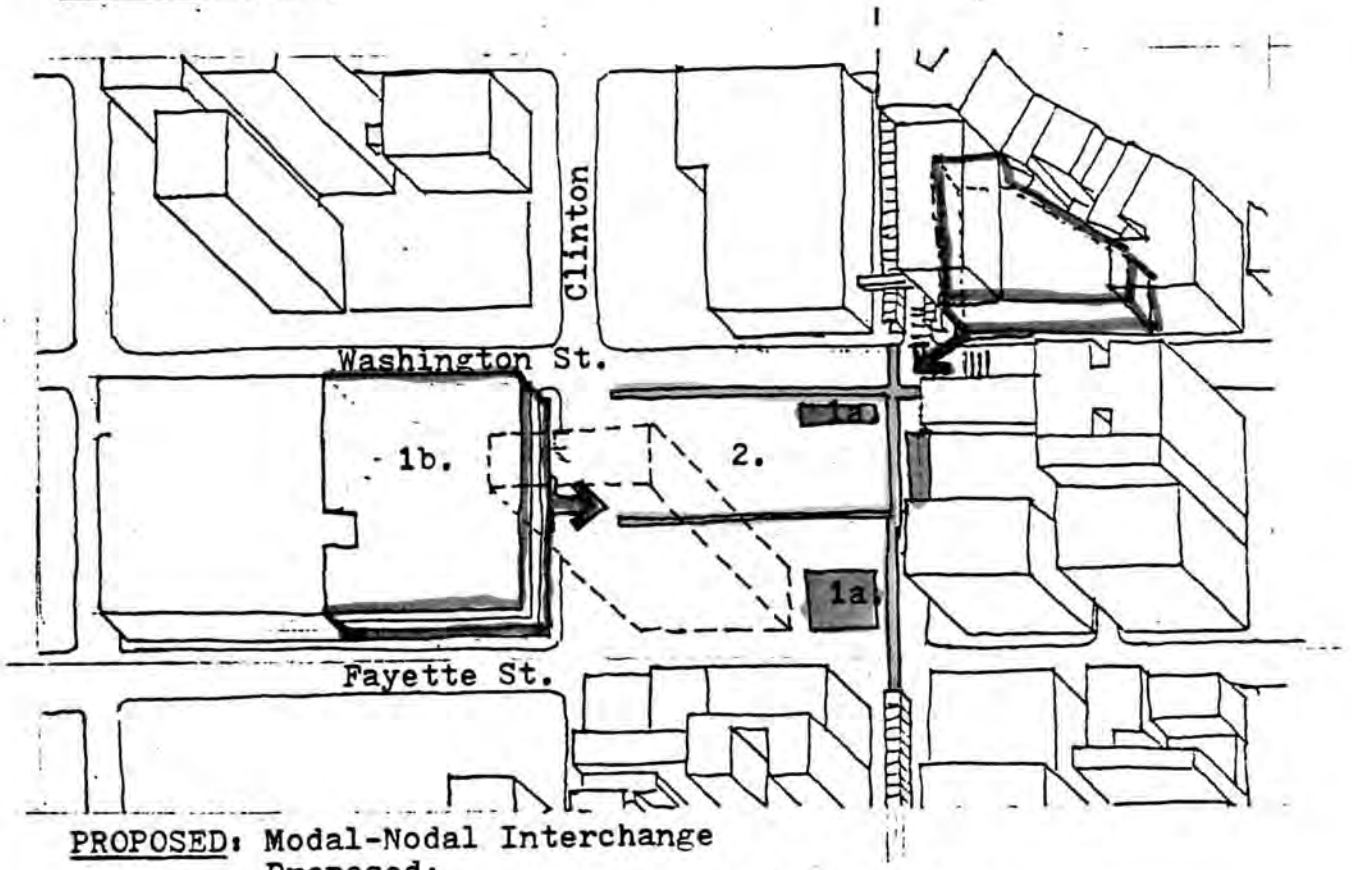
PEDESTRIAN-DOMINATED DISTRICT

SCALE 0 100 200 300 400 500

SYRACUSE N.Y.



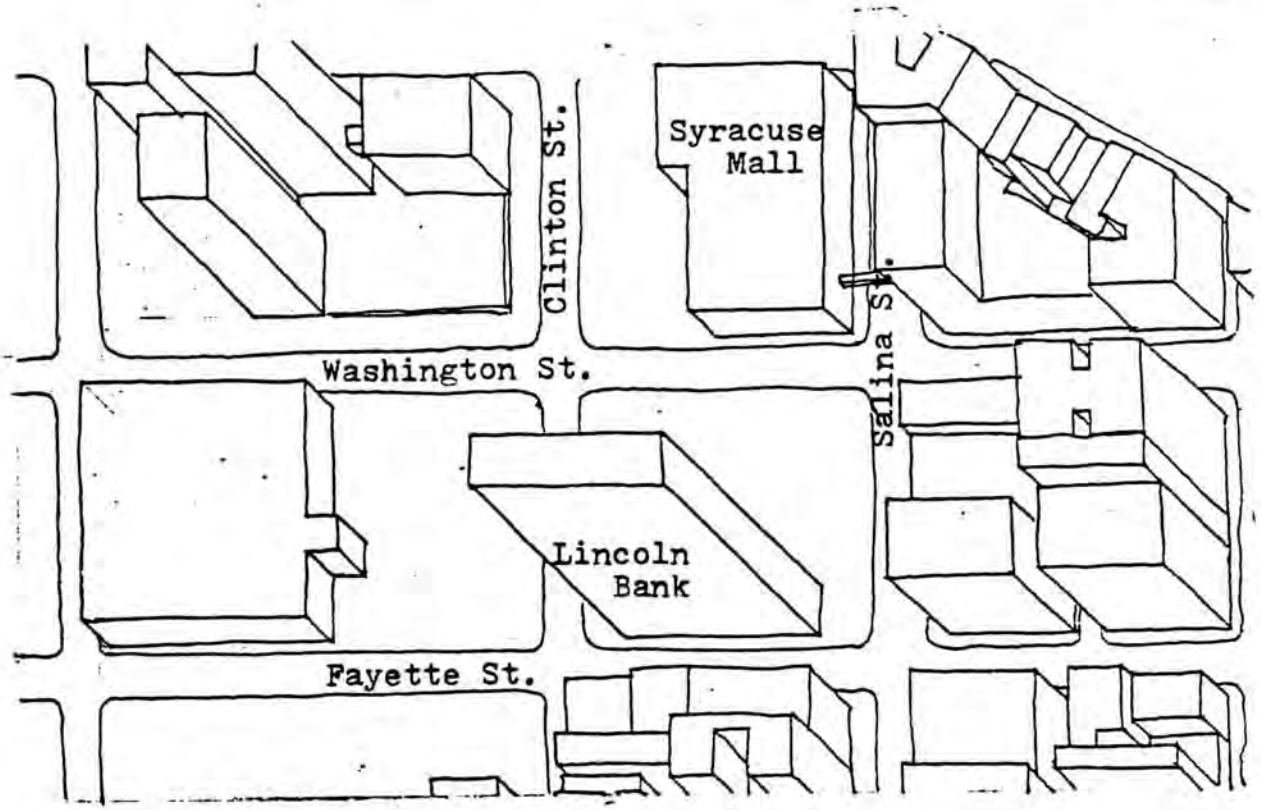
EXISTING SITE



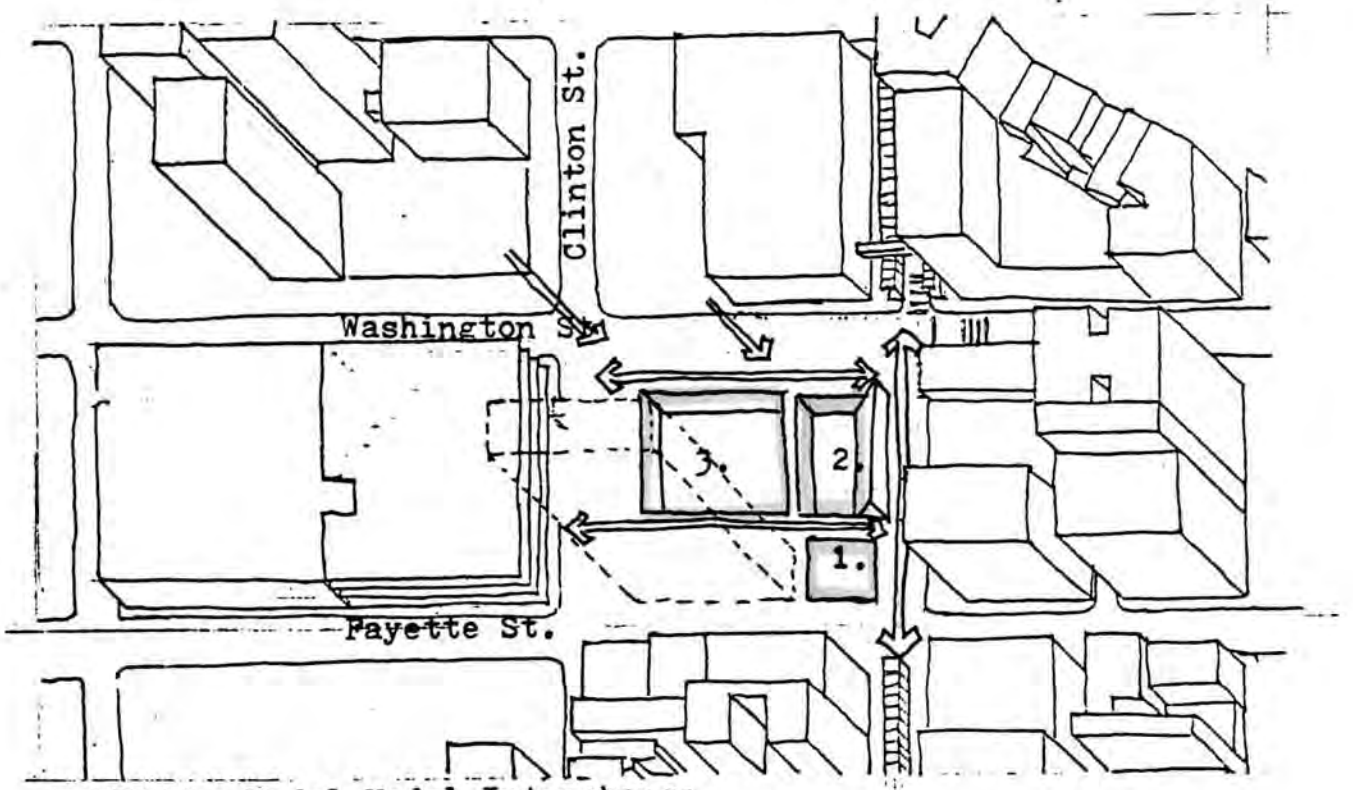
PROPOSED: Modal-Nodal Interchange

Proposed:

1. Cluster Modal Transfer Points,
   a. Inclusion of Bus stops .
   b. Expansion of Parking Garage.
2. Major Open Space as extension or pause in major Salina St. pedestrian axis.

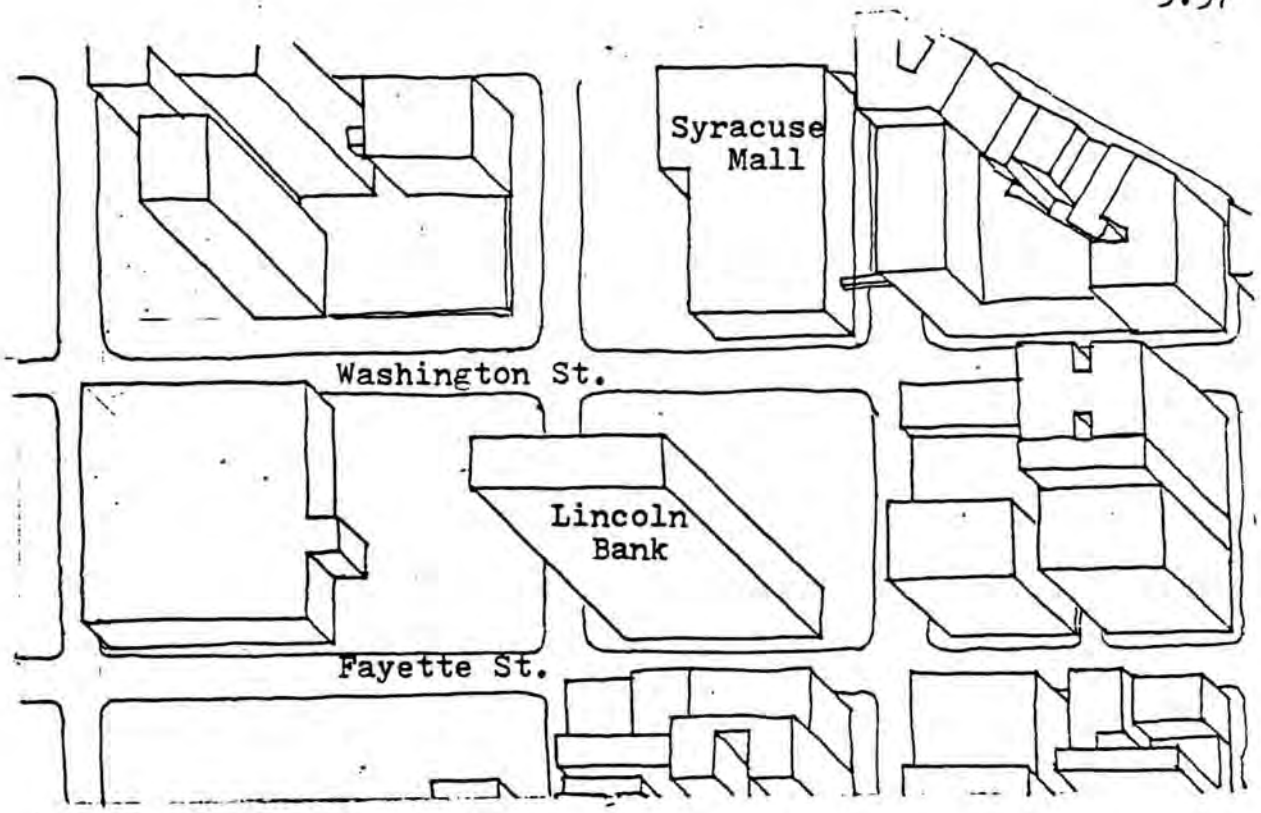


EXISTING SITE

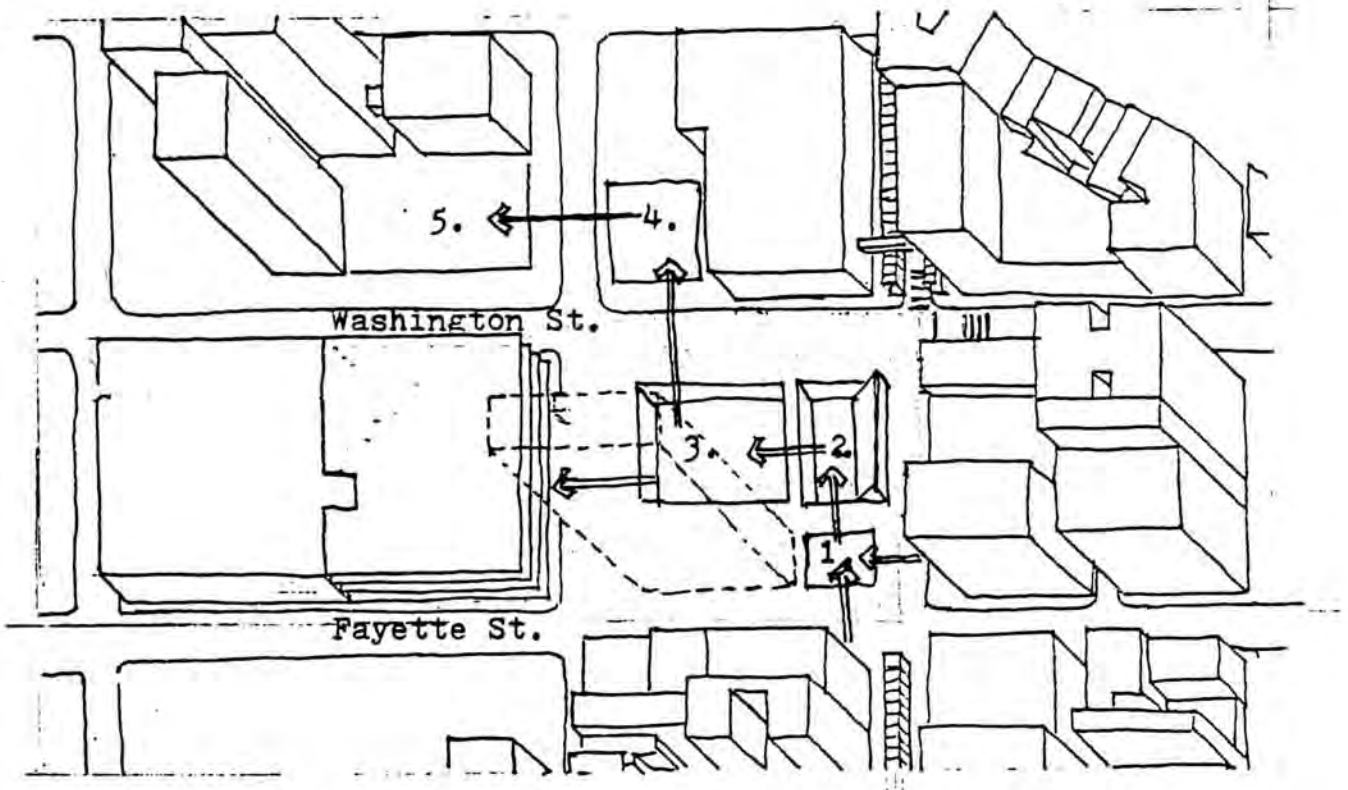


PROPOSED: Modal-Nodal Interchange
Proposed: Three part division of space:

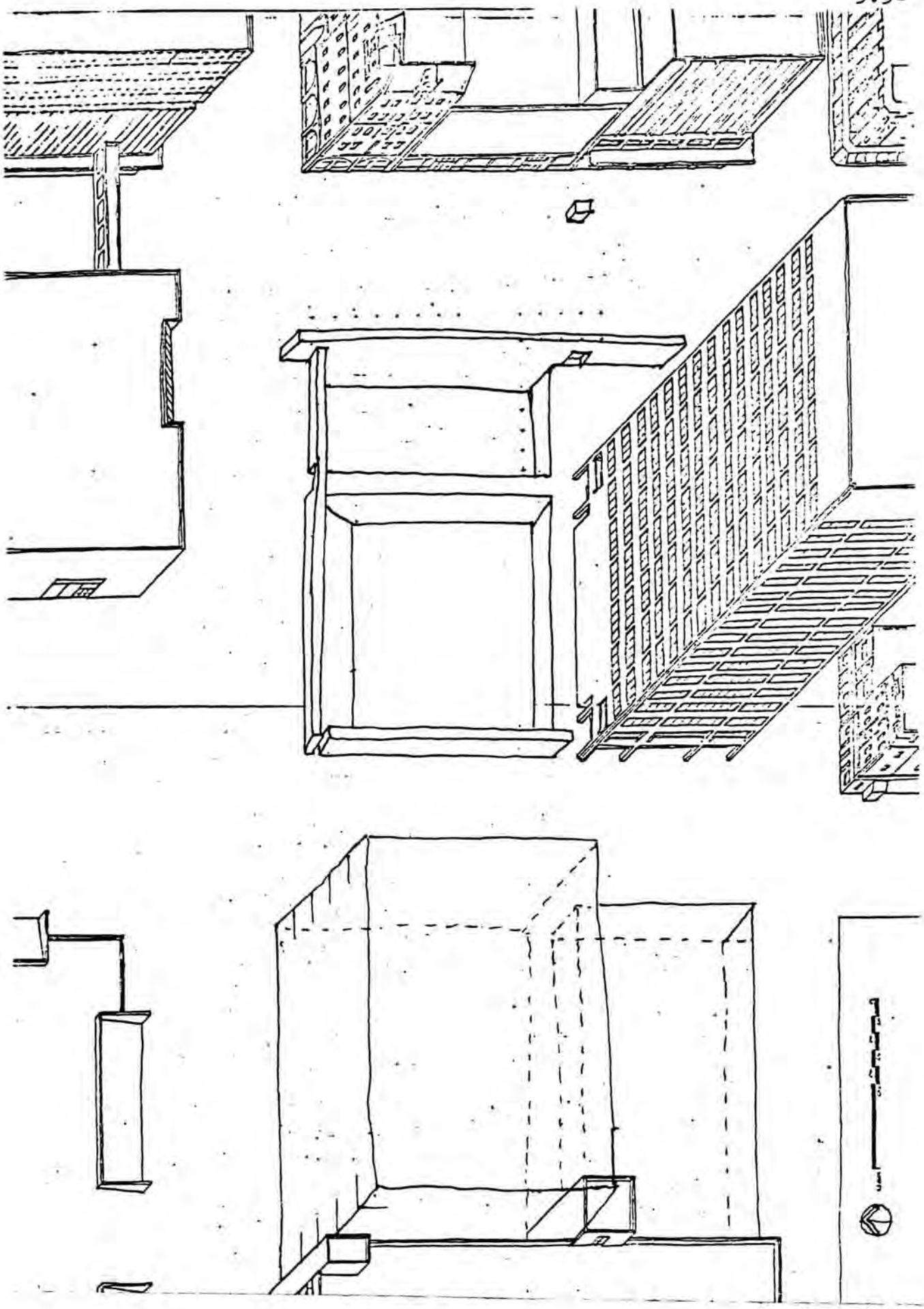
1. 'Front Porch' or formal entry for Lincoln Bank.
2. Linear organizer for movement along major axis.
3. Quiet space with movement around perimeter, (Rockefeller Center).



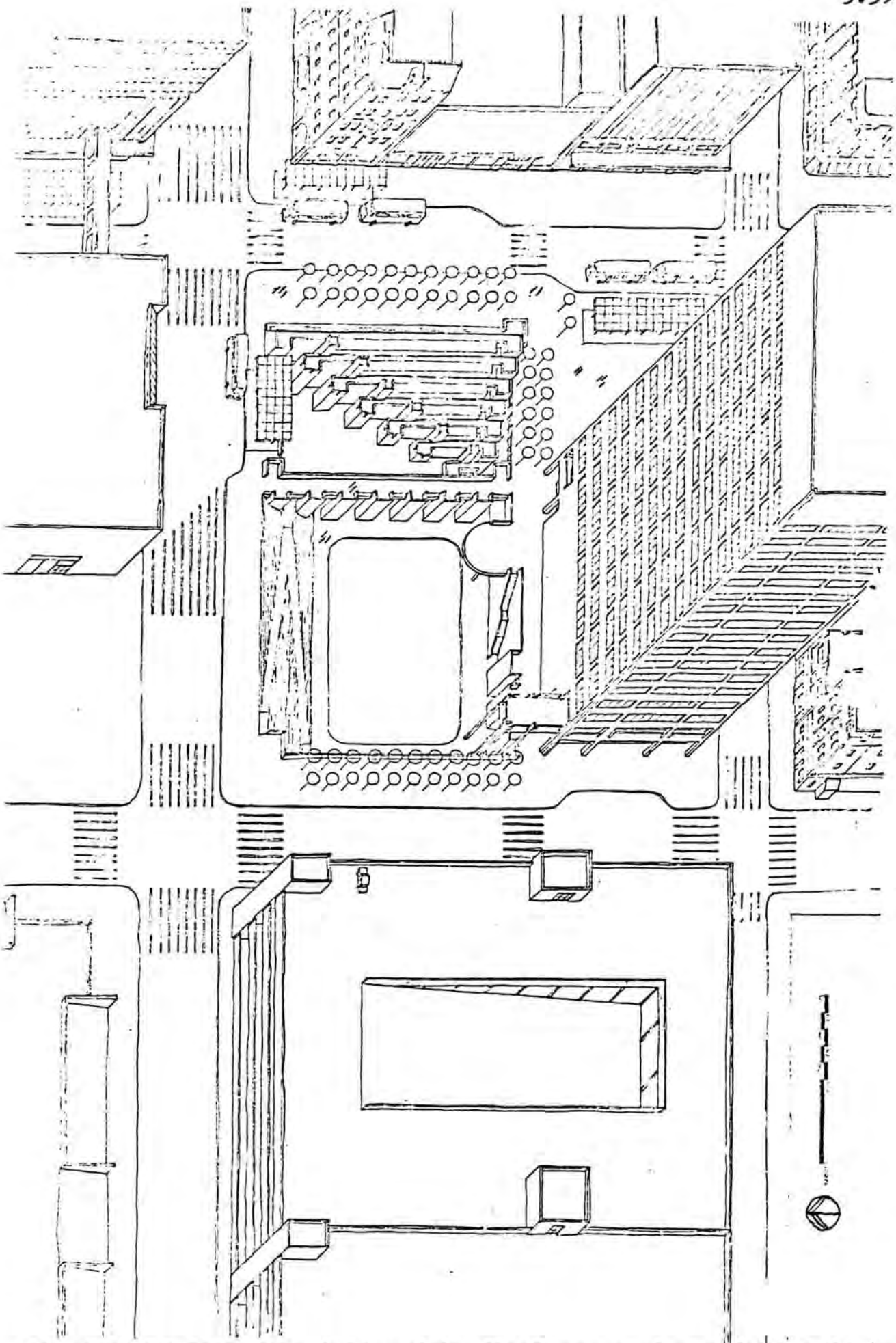
EXISTING SITE



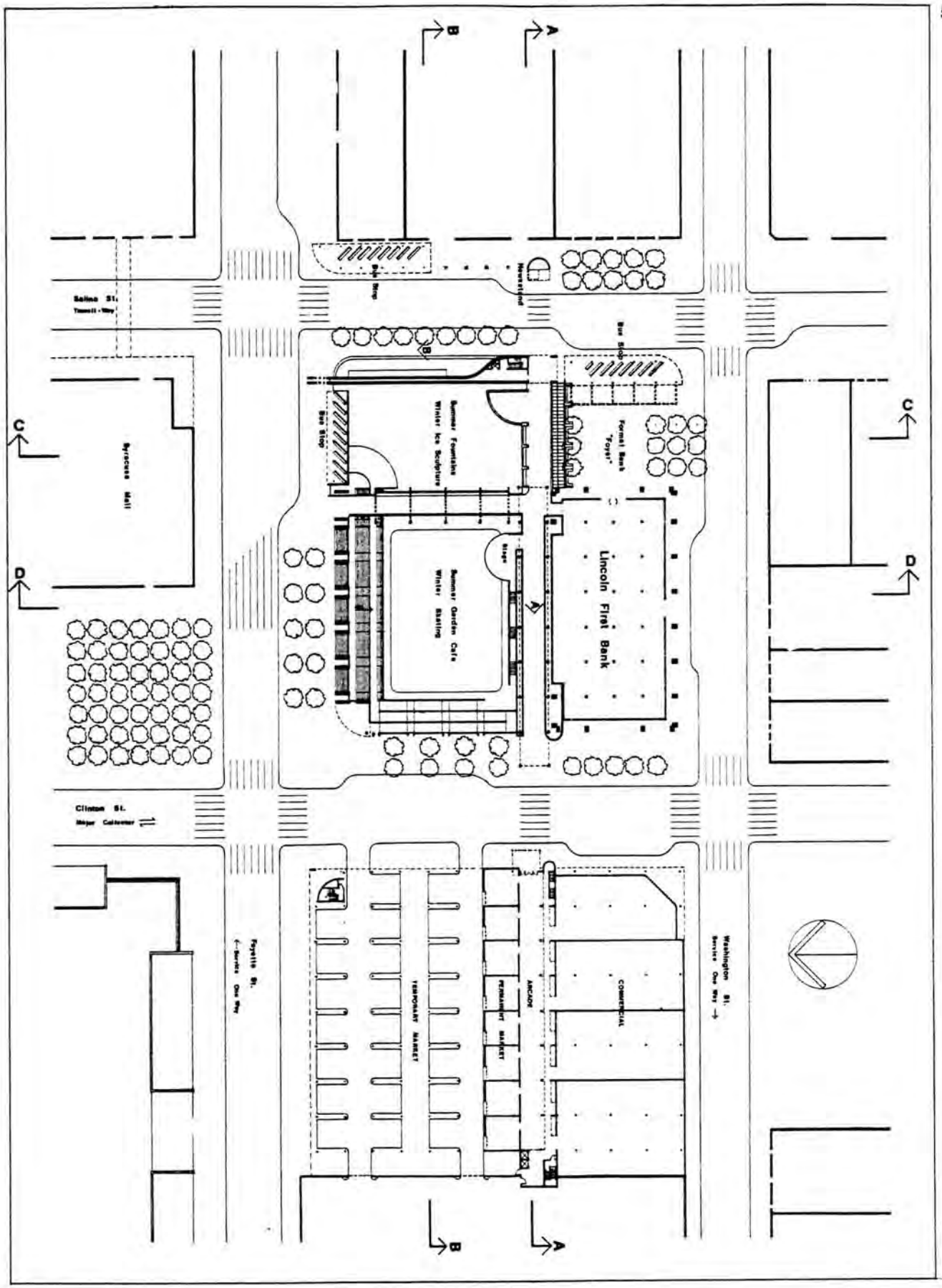
PROPOSED: Modal-Nodal Interchange
Development of a sequence of unique spaces developing off major pedestrian axis.



MAJOR MASSING: 1. Reconstituted Street Facade
2. New ground level base for Lincoln Bank
3. Expansion of garage to strengthen remaining



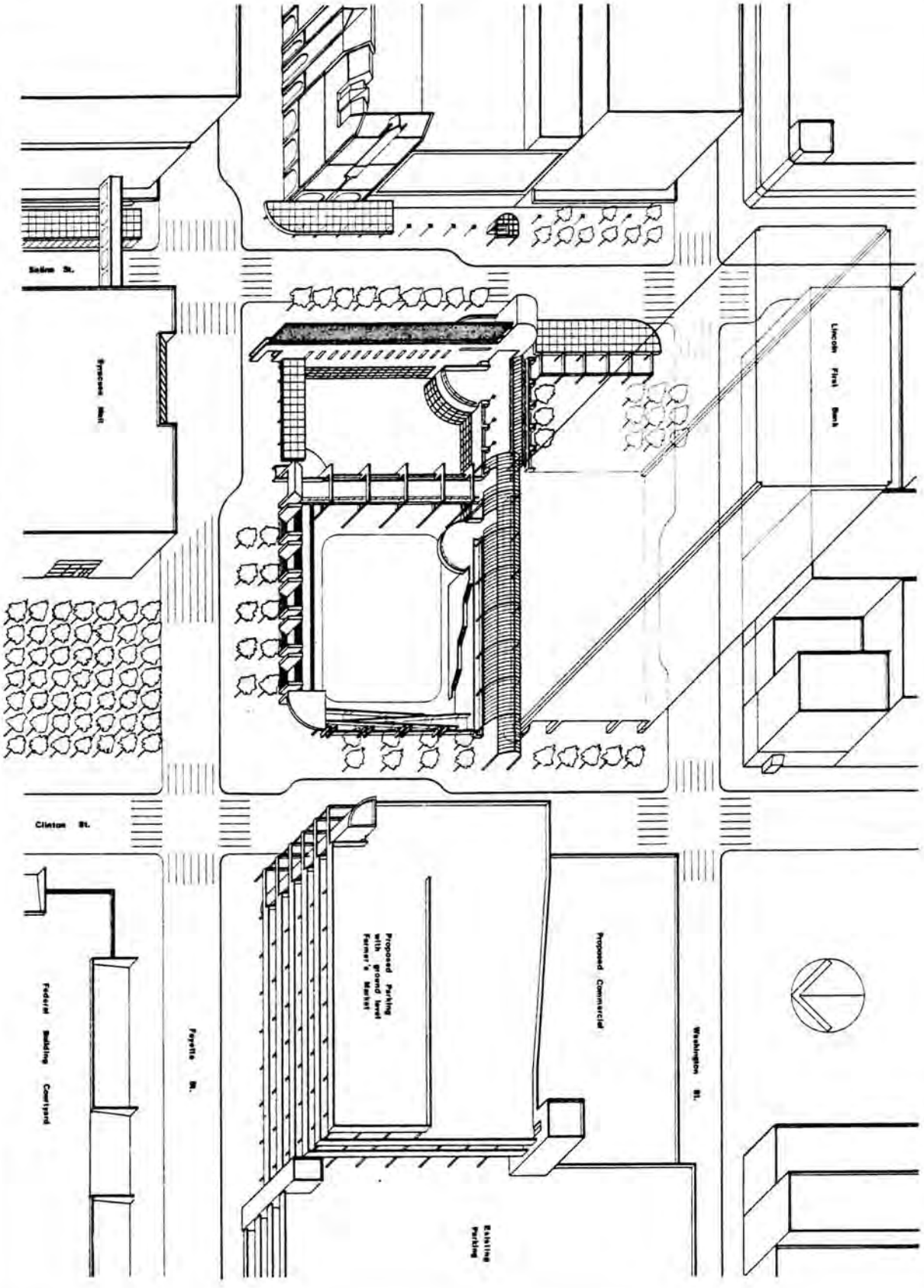
PRELIMINARY PROPOSAL: (altered in final proposal, pp.5.40-5.45.)



SITE PLAN

SCALE 25 50 100 200

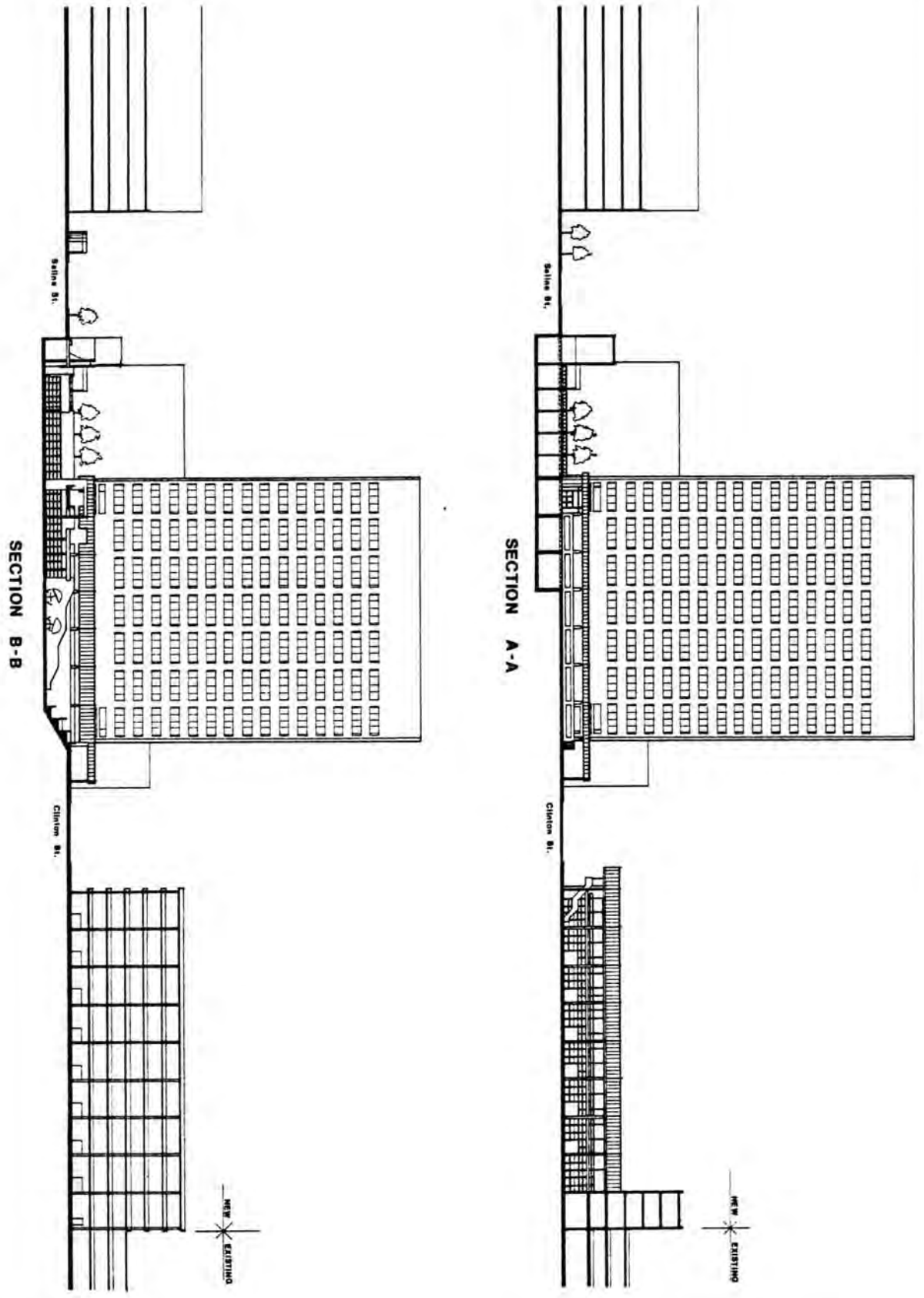
5 CASE STUDY
SYRACUSE, N.Y.



Axonometric View of the Site

SCALE 25| 50| 100| 200|

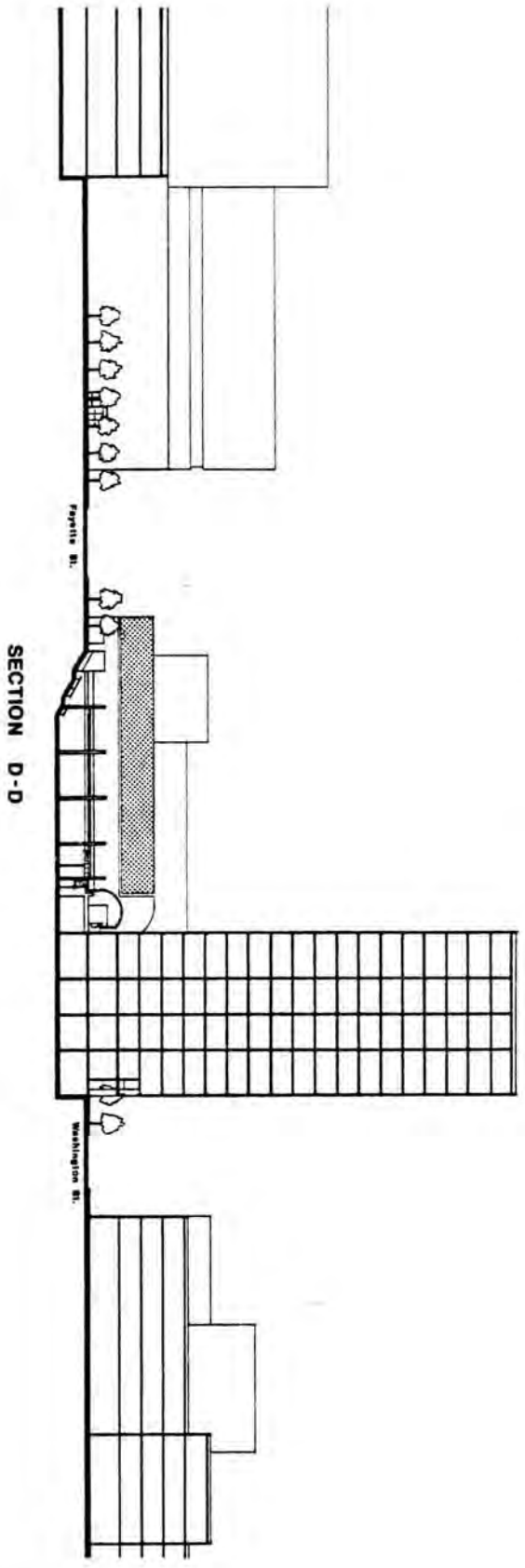
5 CASE STUDY SYRACUSE, N.Y.



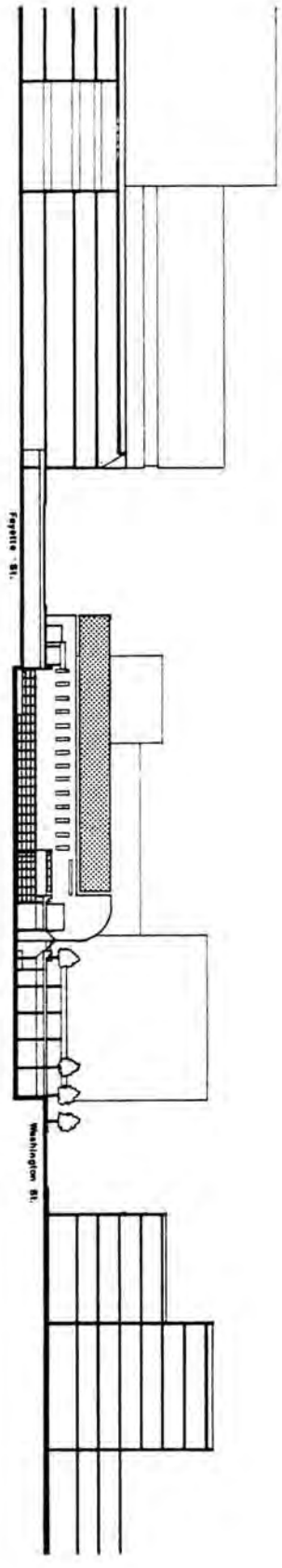
SECTIONS A-A, B-B.

SCALE 25 50 100 200

5 CASE STUDY SYRACUSE, N.Y.



SECTION D-D

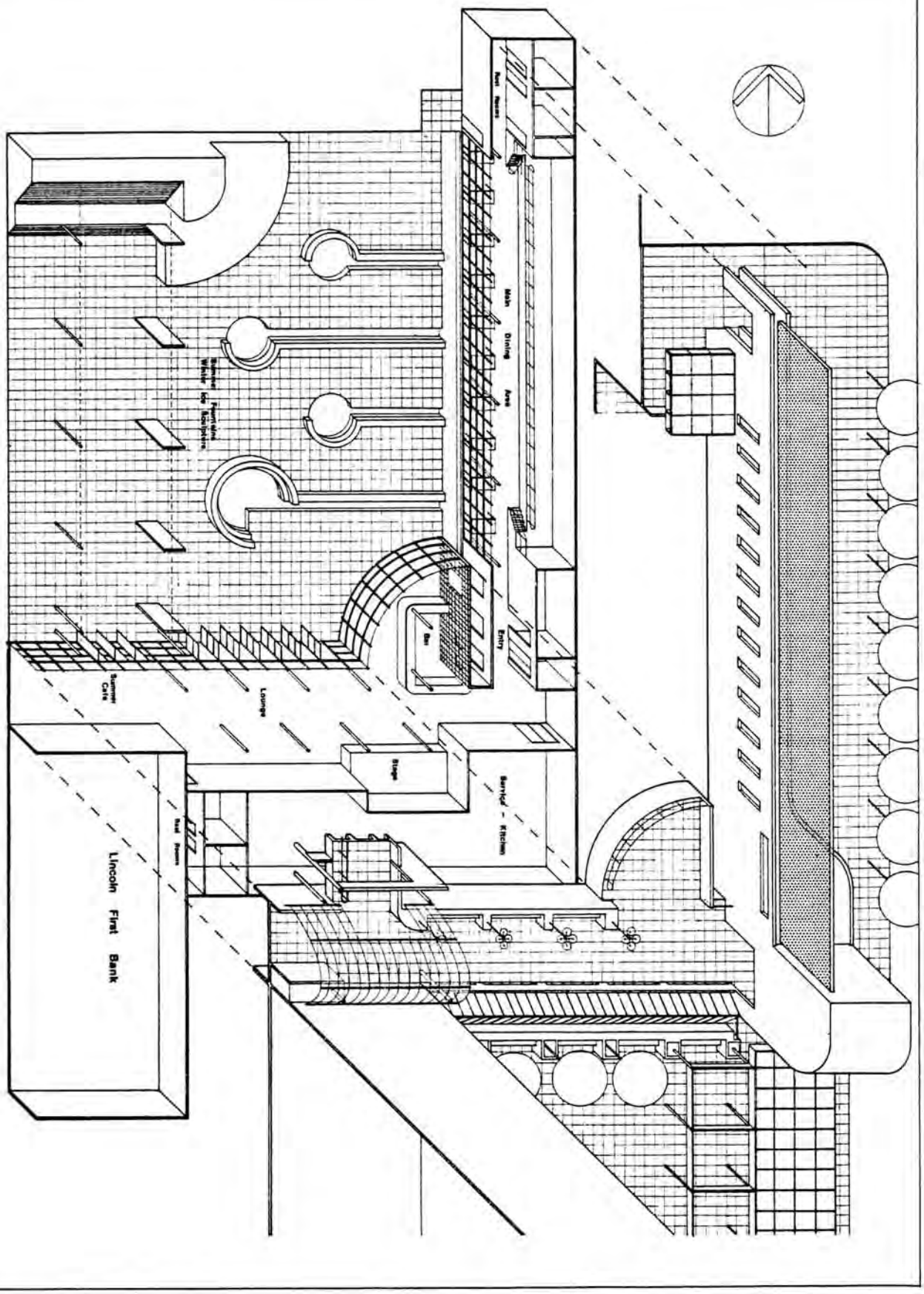


SECTION C-C

SECTIONS C-C, D-D.

SCALE 25 50 100 200

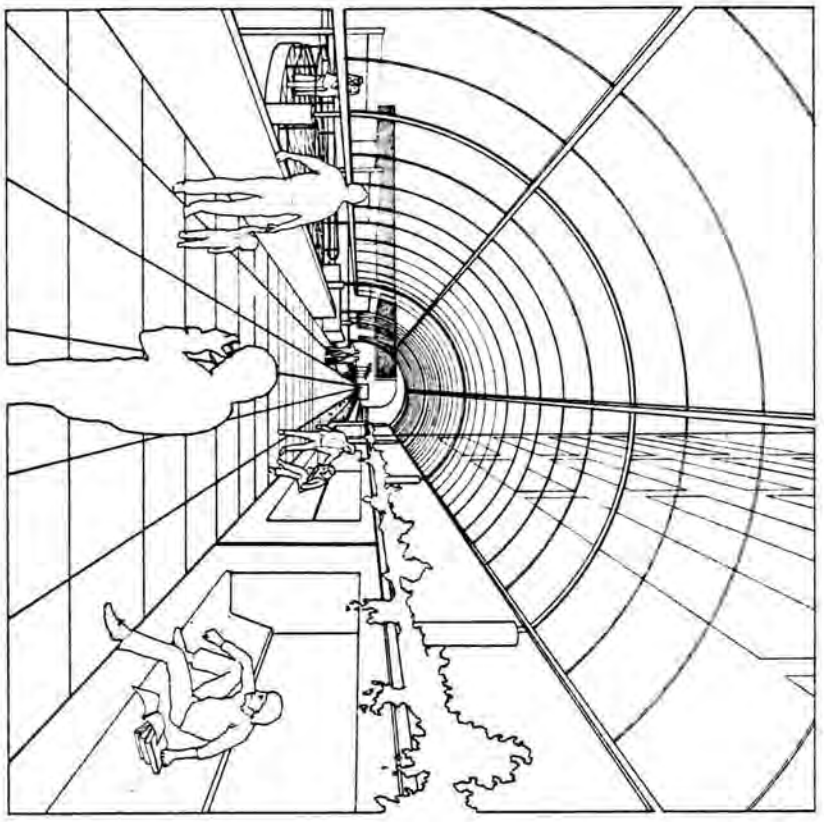
5 CASE STUDY SYRACUSE, N.Y.



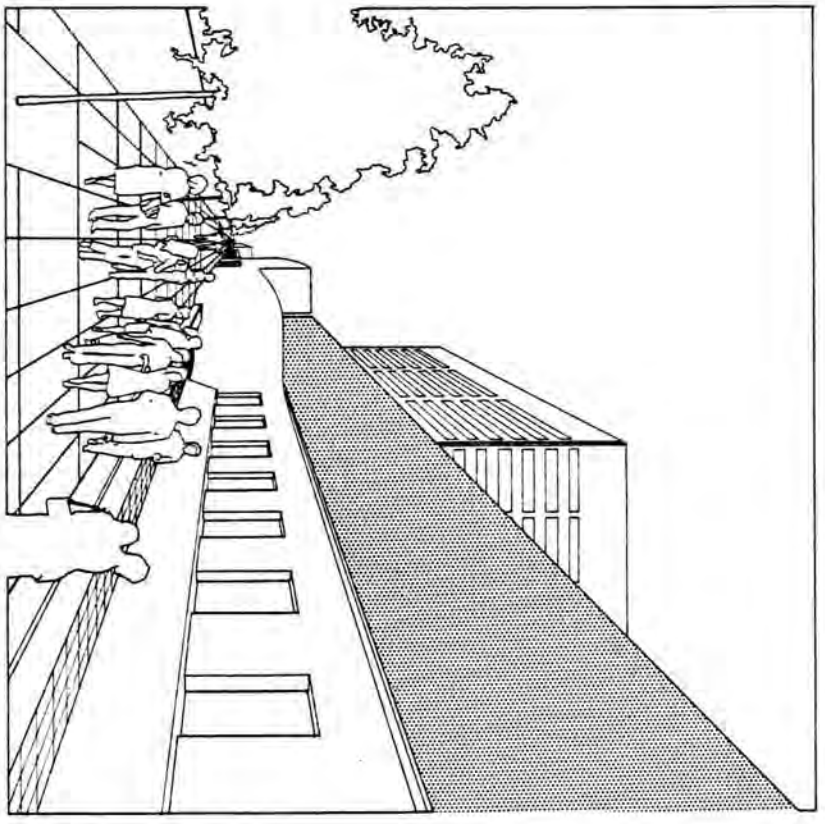
Axonometric View of Restaurant & Fountains

SCALE 10 25 50 75

5 CASE STUDY SYRACUSE, N.Y.



VIEW A



VIEW B

Views Along Major Pedestrian Circulation Routes

5 CASE STUDY SYRACUSE, N.Y.

CITIES WITH FULL MALLS AS OF MARCH 1975

City, State	Population	City, State	Population
Atchison, Kansas	12,565	Jackson, Michigan	45,484
Atlantic City, New Jersey	47,859	Kalamazoo, Michigan	85,555
Baltimore, Maryland	905,759	Knoxville, Tennessee	174,584
Battle Creek, Michigan	38,931	Lake Charles, Louisiana	77,998
Burbank, California	88,871	Lansing, Michigan	131,546
Centralia, Illinois	15,215	Las Cruces, New Mexico	37,857
Charlottesville, Virginia	38,880	Lebanon, New Hampshire	9,725
Coos Bay, Oregon	13,466	Lincoln, Nebraska	149,518
Dallas, Texas	844,401	Louisville, Kentucky	361,472
Danville, Illinois	42,570	Memphis, Tennessee	623,530
Decatur, Illinois	90,397	Miami Beach, Flordia	87,072
Dubuque, Iowa	62,309	Michigan City, Indiana	39,369
East Lansing, Michigan	47,540	Monroe, North Carolina	11,282
East Liberty, Pennsylvania	N/A*	Napa, California	35,978
Eugene, Oregon	76,346	New Bedford, Massachusetts	101,777
Evansville, Indiana	138,764	New London, Connecticut	31,630
Freeport, Illinois	27,736	Ottawa, Canada[1]	619,000
Fresno, California	165,972	Oxnard, California	71,225
Galveston, Texas	61,109	Parsons, Kansas	13,015
Greenville, South Carolina	61,208	Paterson, New Jersey	144,824
Honolulu, Hawaii	324,871	Pomona, California	87,384
Ithaca, New York	26,226	Portland, Maine	65,116

* Not available

City, State	Population	City, State	Population
Poughkeepsie, New York	32,029	Salisbury, Maryland	15,252
Providence, Rhode Island	179,213	Santa Monica, California	88,289
Quebec City, Canada[1]	493,000	Springfield, Illinois	91,753
Raleigh, North Carolina	121,577	Tacoma, Washington	154,581
Reading, Pennsylvania	87,643	Tampa, Florida	277,767
Redding, California	16,659	Toccoa, Georgia	6,971
Redlands, California	36,355	Trenton, New Jersey	104,638
Richmond, Indiana	43,399	Washington, DC	756,510
Riverside, California	140,089	Winchester, Virginia	16,643
Rockford, Illinois	147,370	Yakima, Washington	45,588
Sacramento, California	254,413	Youngstown, Ohio	139,788

[1]1973 Census; all others, 1970 Census

COSTS, AREAS AND COST PER SQUARE FOOT

Mall	Costs ($)	Area in Square Feet	Cost Per Square Foot ($)
Atlantic City, New Jersey	1,000,000	100,000	10.00
Centralia, Illinois	50,000	28,000	17.00
Coos Bay, Oregon	860,000	54,000	16.00
Danville, Illinois	112,000	97,170	1.15
Decatur, Illinois	577,000	46,000	12.32
East Lansing, Michigan	255,000	14,800	17.00
East Liberty, Pennsylvania	2,459,449	187,500	13.12
Eugene, Oregon	2,000,000	74,844	26.72
Evansville, Indiana	1,000,000	300,000	3.33
Freeport, Illinois	120,000	24,000	5.00
Fresno, California	2,569,885	224,000	11.50
Greenville, South Carolina	274,000	42,500	6.50
Honolulu, Hawaii	2,766,484	86,900	32.00
Ithaca, New York	800,000	85,800	9.30
Jackson, Michigan	500,000	160,000	3.00
Knoxville, Tennessee	313,000	57,200	5.50
Lansing, Michigan	828,000	92,250	9.00
Lebanon, New Hampshire	350,000	10,950	32.00
Louisville, Kentucky	1,717,000	166,020	10.34
Memphis, Tennessee	6,700,000	530,000	12.65
Miami Beach, Florida	600,000	300,000	2.00
Michigan City, Indiana	1,794,000	107,250	16.75
Monroe, North Carolina	160,000	19,800	8.00

Mall	Costs ($)	Area in Square Feet	Cost Per Square Foot ($)
Napa, California	1,775,000	19,200	92.00
New Bedford, Massachusetts	495,000	42,500	11.60
New London, Connecticut	1,426,209	60,000	11.88
Ottawa, Canada	750,000	118,800	6.30
Oxnard, California	647,000	120,000	5.40
Parsons, Kansas	750,000	104,000	7.21
Paterson, New Jersey	568,500	40,000	14.00
Pomona, California	640,000	210,000	3.00
Poughkeepsie, New York	3,200,000	142,500	22.45
Providence, Rhode Island	530,000	45,600	11.60
Quebec City, Canada	3,500,000	80,000	43.75
Raleigh, North Carolina	45,000	8,232	5.47
Reading, Pennsylvania	1,500,000	76,800	20.00
Redding, California	2,066,700	36,400	57.00
Richmond, Indiana	750,000	93,500	8.02
Riverside, California	730,107	137,214	5.32
Rockford, Illinois	1,831,000	89,760	20.40
Santa Monica, California	703,000	144,000	4.88
Springfield, Illinois	565,000	51,200	11.00
Tacoma, Washington	1,500,000	108,800	13.80
Trenton, New Jersey	1,800,000	72,000	25.00
Washington, DC	6,300,000	118,800	53.00
Youngstown, Ohio	1,832,900	167,000	11.00

RATIO OF INVISIBLE TO TOTAL COSTS OF MALL

Mall	Total Costs ($)	Invisible Costs[1]	Ratio (%)
Baltimore, Maryland	800,000	500,000	63
Coos Bay, Oregon	860,000	225,000	26
Danville, Illinois	112,000	45,500	40
East Lansing, Michigan	255,000	147,000	58
East Liberty, Pennsylvania	2,459,449	861,000	35
Freeport, Illinois	120,000	40,000	33
Fresno, California	2,569,885	680,912	27
Greenville, South Carolina	274,000	45,000	16
Ithaca, New York	800,000	200,000	25
Jackson, Michigan	500,000	100,000	20
Kalamazoo, Michigan	130,000	40,000	31
Knoxville, Tennessee	313,000	125,000	40
Lebanon, New Hampshire	350,000	50,000	14
Miami Beach, Florida	600,000	200,000	33
Michigan City, Indiana	1,794,000	1,300,000	72
Monroe, North Carolina	160,000	15,000	9
Napa, California	1,775,000	275,000	16
New London, Connecticut	1,426,209	475,863	33
Paterson, New Jersey	568,500	178,500	31
Pomona, California	640,000	525,000	82
Poughkeepsie, New York	3,200,000	2,200,000	69
Providence, Rhode Island	530,000	349,000	66

[1]Utilities, drainage, site preparation, grading, design inspection, legal work.

Mall	Total Costs ($)	Invisible Costs	Ratio (%)
Reading, Pennsylvania	1,500,000	213,000	14
Redding, California	2,066,700	341,700	17
Rockford, Illinois	1,831,000	408,000	22
Tacoma, Washington	1,500,000	180,000	12
Youngstown, Ohio	1,832,900	186,700	10

MALL BENEFITS: RETAIL SALES *

City	State	Year Opened	Increase in Retail Sales (%)
Atchison	Kansas	1963	8-18 (first 4 years)
Atlantic City	New Jersey	1973	233
Baltimore	Maryland	1974	"increased," figures N/A
Burbank	California	1967	17
Coos Bay	Oregon	1974	144
Danville	Illinois	1967	62 (total city)
Decatur	Illinois	1972	net increase of 7-30 (first 3 months after completion)
East Liberty	Pennsylvania	1970	"increase in business"
Eugene	Oregon	1971	N/A
Evansville	Indiana	1971	18.5
Freeport	Illinois	1968	3-30
Fresno	California	1964	"upward trend"
Jackson	Michigan	1964	30 (first year)
Kalamazoo	Michigan	1958	15 (first 5 years) 20 (first 9 years)
Knoxville	Tennessee	1961	24 (first year) 111 (first 5 years)
Lebanon	New Hampshire	1971	60
Louisville	Kentucky	1973	10-24 (first year)
Miami Beach	Florida	1960	10-25
New London	Connecticut	1973	N/A
Oxnard	California	1969	"mixed effect; those with progressive merchandising indicate increase; others do not"

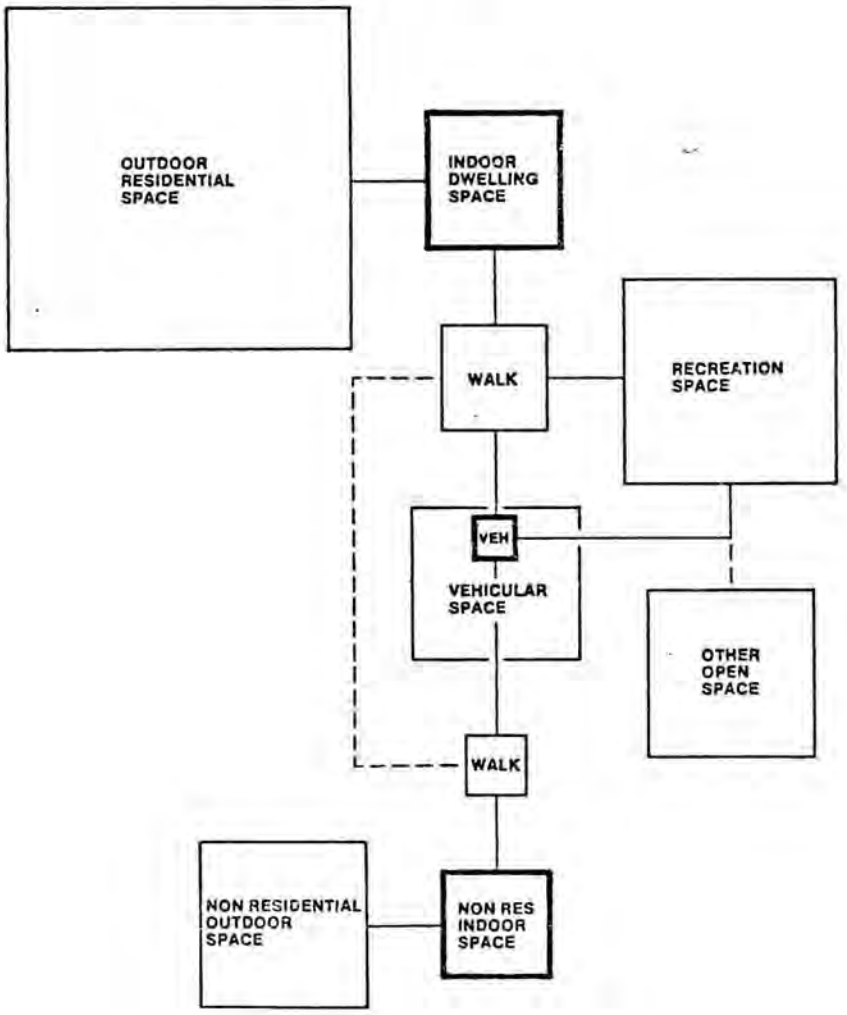
* As reported by local sources.

City	State	Year Opened	Increase in Retail Sales (%)
Parsons	Kansas	1971	15-25 (first 2 years)
Pomona	California	1962	"steady increase greater than that of whole city for first 3 years"
Providence	Rhode Island	1965	20 (first year)
Redding	California	1974	127
Riverside	California	1966	"increase for short time, but overall decreasing trend continued; downtown area being converted to financial, business and government center"
Santa Monica	California	1965	5-13
Springfield	Illinois	1970	12-20 (first 6 months of 1971)
Tacoma	Washington	1970	"increase even during construction"

Allocation of Urban Space in Seven Major Metropolitan Areas

	Los Angeles area	New York Region	Philadelphia area	Chicago area	Greater London	Paris agglom.	Moscow city
Base year	1960	1970	1960	1956	1971	1962	1956
Population (X 1,000)	7,579	18,682	4,023	5,170	7,418	6,457	4,839
Land area per person (sq ft)							
Residential	2,121	2,180	1,823	974	785	363	286
Public open space	1,301	1,219	327	619	330e	202	105
Streets	1,201	758	577	788	261	269	78
Nonresidential	893	612	758	654	425	203	175
Total in urban use	5,516	4,769	3,485	3,035	1,801	1,037	644
(in m^2)	(512)	(443)	(324)	(282)	(167)	(96)	(60)

Sources: Los Angeles Regional Transportation Study, *Base Year Report*, 1963. Tri-State Regional Planning Commission, *1970 Land Use Estimate*, Interim Technical Report 4335-3209, 1972. Penn-Jersey Transportation Study, vol. 1, *The State of the Region*, 1964. Chicago Area Transportation Study, vol. 1, *Survey Findings*, 1959. Greater London Council, *Annual Abstract of Greater London Statistics*, 1972. Institut d'Aménagement et d'Urbanisme de la Région Parisienne, "Paris et huit métropoles mondiales," *Cahiers de l'Institut...*, vol. 2, 1965. Akademiia Stroitel'stva i Arkhitektury SSSR, *Moskva: planirovka i zastroika goroda 1945-1957*, 1958.
Note: Street use in Philadelphia, London, and Moscow may be underestimated due to peculiarities of definition; institutional use, elsewhere listed under "nonresidential," appears under "open space" in Los Angeles.



Components of urban space

Ground Space per Traveler in Comfortable Movement

Travel mode	Assumed operating speed mph	(km/h)	Assumed occupancy per vehicle	Ground space per person at assumed speed and occupancy sq ft	(m^2)	Flow per hr per unit of paved width ft.	(m)
Pedestrian	3	(5)	0	130	(12)	120	(400)
Bicyclist	10	(16)	1	200	(42)	260	(860)
Local bus	12	(19)	15	225	(21)	280	(925)
Auto on street	21	(34)	1.5	5,500	(510)	20	(66)
Express subway	23	(37)	25	235	(22)	520	(1,695)
Auto on freeway	55	(88)	1.5	2,500	(232)	115	(380)
Airplane landing	150	(240)	60	1,400,000	(130,000)	0.5	(2)

Sources: Pedestrian, from Table 3.7. Bicyclist, Carlo De Rege, "An Analysis of the Traffic Stream of Bicycles in Central Park" (paper for New York University Graduate School of Public Administration, 1971; estimated curve in Figure 4.3; compare also Institute of Transportation and Traffic Engineering, University of California, *Bikeway Planning Criteria and Guidelines*, 1972, pp. 21, 27, 37. Local Bus, average space per vehicle at 12 mph calculated from Table 4.6 times bus equivalency of 1.6, divided by bus occupancy. Auto on Street, based on 4.5 percent of regionwide arterial daily flow per lane, representing midday hourly flow and midday average speed, both from Tri-State Regional Planning Commission, *Streets and Highways*, 1968, pp. 41, 43; an alternative method, based on extrapolation from Table 4.5, would yield 7,000 sq ft for Manhattan conditions only. Subway, based on 14.5 ft roadway width per track and 10-car trains on a 2-min headway. Auto on Freeway, from Table 4.6 with 4 ft per 12-ft lane added to allow for pavement on shoulders (landscaped buffers and medians are not included); Airplane Landing, based on 1-mi minimum spacing between parallel independent runways and 3-mi radar separation.

Table 1.4
Space for Travelers in Vehicles

	Net seating space per seated pass. sq ft	(m^2)	Minimum aisle width in.	(cm)
School bus	3.3	(0.31)	20.5	(52)
City bus	3.6	(0.33)	21.0	(53)
Subway car (PATH and MTA R-46)	3.9	(0.36)	27.5	(70)
Commuter bus	4.1	(0.38)	15.0	(38)
Airplane coach (narrow body)	4.6	(0.43)	17.0	(43)
Rail commuter car (MTA)	4.8	(0.45)	21.5	(55)
Subway car (BART)	5.3	(0.49)	29.5	(75)
Airplane coach (wide body)	5.6	(0.52)	20.0	(51)
Small auto, 1,300 lbs (580 kg), front seat	5.7	(0.53)	–	–
Rail coach (Metroliner)	6.3	(0.59)	26.5	(67)
Airplane first class (wide body)	7.5	(0.70)	30.0	(76)
Large auto, 4,000 lbs (1,800 kg), front seat	9.7	(0.90)	–	–

Source: Regional Plan Association. Based on field measurements at seated elbow level, including leg room in autos and cushion thickness, where applicable.

Coefficients of Pedestrian Flow Equations

Type of flow and source	*A* (theoretical maximum speed at free flow)		*B*	*B/A* (theoretical minimum space per pedestrian at zero speed)	
	(ft/min)	(m/min)		(sq ft)	(m^2)
1. Shoppers, Older (average)*	258	(78.6)	714	2.77	(0.257)
2. Commuters, Fruin (average)*	267	(81.4)	722	2.70	(0.251)
3. Mixed traffic, Oeding (average)†	295	(89.9)	835	2.83	(0.263)
4. Students, Navin & Wheeler (average)†	320	(97.5)	1,280	4.00	(0.372)
5. Mixed traffic, Oeding (outer boundary)†	400	(121.9)	1,132	2.83	(0.263)

Sources: See footnote 4.
Note: Extreme observations by Older suggest a minimum space allocation of 2.1 sq ft (0.2 m^2) per pedestrian at zero speed.
*Calculated, †Estimated.

Table 3.4
Maximum Pedestrian Flow

Type of flow and source	Maximum flow, peds. per unit of walkway				Mean speed at maximum flow			
	Calculated av.		Observed extreme		Calculated av.		Observed extreme	
	per ft	(per m)	per ft	(per m)	ft/min	(m/min)	ft/min	(m/min)
Shoppers, Older	23.3	(76.4)	33.0	(108.3)	129	(39.3)	170	(51.8)
Commuters, Fruin	24.7	(81.0)	n.d.	—	134	(40.8)	n.d.	—
Mixed traffic, Oeding	26.1	(85.6)	34.0	(111.5)	148	(45.1)	246	(75.0)
Students, Navin & Wheeler	20.0	(65.6)	26.4	(86.6)	160	(49.8)	240	(73.2)
Close military drill formation	n.d.	—	48.0	(157.5)	n.d.	—	300	(91.4)

Sources: See footnote 4 for observed values; calculated values by Regional Plan Association.
Note: n.d.—no data.

Table 3.5
Space per Pedestrian at Maximum Flow

Type of flow and source	Maximum flow, peds. per min per unit of walkway width		Space allocation per ped. at maximum flow	
	per ft	(per m)	sq ft	(m^2)
1. Students, Navin & Wheeler, average	20.0	(65.6)	8.0	(0.74)
2. Shoppers, Older, average	23.3	(76.4)	5.5	(0.51)
3. Commuters, Fruin, average	24.7	(81.0)	5.4	(0.50)
4. Mixed traffic, Oeding, average	26.0	(85.3)	5.5	(0.51)
5. Students, Navin & Wheeler, extreme	26.4	(86.6)	9.1	(0.85)
6. Shoppers, Older, extreme	33.0	(108.3)	5.2	(0.48)
7. Mixed traffic, Oeding, extreme	34.0	(111.5)	7.2	(0.67)
8. Close military drill formation	48.0	(157.5)	6.3	(0.59)

Sources: Same as Table 3.4.

Pedestrian Behavior Related to Available Space

Approximate average area per person		
sq ft	(m^2)	
2-5	(0.2-0.5)	Flow: erratic, on the verge of complete stoppage Average speed: shuffling only Choice of speed: none Crossing or reverse movement: impossible Conflicts: physical contact unavoidable Passing: impossible
5-7	(0.5-0.7)	Flow: attains a maximum in traffic streams under pressure Average speed: mostly shuffling Choice of speed: none, movement only with the crowd Crossing or reverse movement: most difficult Conflicts: physical contacts probable, conflicts unavoidable Passing: impossible
7-11	(0.7-1.0)	Flow: attains a maximum in more relaxed traffic streams Average speed: about 70% that of free flow Choice of speed: practically none Crossing or reverse movement: severely restricted with collisions Conflicts: physical contact probable, conflicts unavoidable Passing: impossible
11-15	(1.0-1.4)	Flow: 65 to 80 percent of maximum capacity Average speed: about 75% that of free flow Choice of speed: restricted, constant adjustments of gait necessary Crossing or reverse movement: severely restricted with conflicts Conflicts: unavoidable Passing: rarely possible without touching
15-18	(1.4-1.7)	Flow: 56 to 70 percent of maximum capacity Average speed: about 80% that of free flow Choice of speed: restricted except for slow walkers Crossing or reverse movement: restricted, with conflicts Conflicts: probability high Passing: rarely possible without touching
18-25	(1.7-2.3)	Flow: roughly 50 percent of maximum capacity Average speed: more than 80% that of free flow Choice of speed: partially restricted Crossing or reverse movement: possible, with conflicts Conflicts: probability high Passing: difficult without abrupt maneuvers
25-40	(2.3-3.7)	Flow: roughly 33 percent of maximum capacity Average speed: approaching free flow Choice of speed: occasionally restricted Crossing or reverse movement: possible, with occasional conflicts Conflicts: about 50 percent probability Passing: possible, but with interference
Over 40	(Over 3.7)	Flow: 20 percent of maximum capacity or less Average speed: virtually as chosen Choice of speed: virtually unrestricted Crossing or reverse movement: free Conflicts: maneuvering needed to avoid conflicts Passing: free, with some maneuvering

Sources: Fruin, *Designing for Pedestrians;* Oeding, *Verkehrsbelastung und Dimensionierung von Gehwegen* (see footnote 4).

Travel and Floor Space in Selected Central Business Districts

	Persons entering CBD during typical weekday							
	persons (X 1,000)	% by transit	during peak hr (X 1,000)	Maximum net† accumulation (X 1,000)	total fl. space (millions of sq ft)	office fl. space (millions of sq ft)	Land area, (sq mi)	Total fl. space to land ratio
1. New York	3,167	71.1	805	1,538	739.8	245	8.6	3.1
2. London	(3,215)	76.4	722	n.d.	n.d.	125	10.0	n.d.
3. Chicago	864	59.0	206	282	92.3	(63)	1.1	3.0
4. Los Angeles	679	25.4	77	158	40.4	15.8	0.6	2.4
5. Philadelphia	900	52.7	155	210	124.2	(34)	1.9	2.3
6. Detroit	385	39.5	66	n.d.	50	(23)	1.1	1.6
7. San Francisco	672	52.9	(114)	165	n.d.	(26)	n.d.	n.d.
8. Boston	840	45.3	141	190	69.5	24.3	1.4	1.8
9. Pittsburgh	261	51.5	(52)	n.d.	32.3	15.8	0.5	2.3
10. St. Louis	348	26.5	62	89	39.2	11.3	0.9	1.6
11. Cleveland	273	43.0	(55)	92	46.8	15.3	1.0	1.7
12. Baltimore	385	30.8	54	118	33.0	(11)	0.8	1.5
13. Houston	324	22.6	55	55	n.d.	22	0.9	n.d.
14. Milwaukee	278	31.7	(47)	n.d.	31.2	14	n.d.	n.d.
15. Dallas	354	20.0	60	109	30.6	10.3	0.5	2.2
16. Seattle‡	100	32.0	n.d.	n.d.	27.0	5.0	0.3	3.2

Sources: Wilbur Smith and Associates, *Transportation and Parking for Tomorrow's Cities*, 1966, pp. 314-326; Manhattan floor space and travel (1971), Tri-State Regional Planning Commission.

Notes: n.d.-no data; numbers in parentheses are estimates.

Travel figures refer to various years between 1953 and 1971 and daily counts of persons entering are based variously on 24, 18, or 12 hrs.

*Railroad, subway, and bus; streetcar in some cities.

†Exclusive of persons living in CBD (518,000 in the case of Manhattan).

‡Excluding through trips and including 6 percent walk-only trips across the CBD cordon.

Table 4.2
Estimated Travel to and within the Manhattan Central Business District

	Person trips
Mechanical trips	
Inbound trips across CBD cordon	3,170,000
Through trips (double counted as inbound)	−600,000
Net inbound trips	2,570,000
Internal trips within CBD	+1,000,000
Total trips attracted by CBD floor space	3,570,000

	Residential	Nonresidential	Total
Trips	260,000	3,310,000	3,570,000
Floor space (sq ft)	186,000,000	554,000,000	740,000,000
One-way trips/1,000 sq ft of floor space	1.4	6.0	4.8

Pedestrian Occupancy of Selected Parks and Plazas in Midtown

Location (plaza, unless noted otherwise)	No. of peds.	% sitting	Space per ped. sq ft	(m^2)	Notes
1. Paley Park	180	95	23	(2.1)	Vestpocket park with chairs, food, fountain, and greenery
2. Greenacre Park	260	95	24	(2.3)	Vestpocket park with chairs, food, fountain, and lush greenery
3. 1 Dag Hammerskjold Plaza	109	90	96	(8.9)	Plaza designed like vestpocket park with seats, fountain, and potted trees
4. Time-Life	144	72	104	(9.7)	Expanded sidewalk with fountains and substantial sitting areas
5. 437 Madison Ave.	30	30	120	(11.1)	Raised plaza with steps and seats
6. 1740 Broadway	14	0	181	(16.8)	Expanded sidewalk
7. Duffy Square	14	50	190	(17.7)	Traffic island with a bench
8. Seagram	77	78	234	(21.7)	Gently raised with substantial sitting, fountains and trees
9. Average, all Midtown Plazas	1,620	n.d.	307	(28.5)	497,700 sq ft of plazas
10. Average, Midtown Parks	690	n.d.	323	(30.0)	Pedestrian pavement in Bryant Park and along south rim of Central Park
11. Equitable	34	0	353	(32.8)	Expanded sidewalk
12. CBS	12	100	417	(38.7)	Depressed plaza with barrier and potted trees
13. 1700 Broadway	16	31	449	(41.7)	Expanded sidewalk with planting box
14. 245 Park Ave.	8	25	450	(41.8)	Raised plaza with barrier
15. Union Carbide	18	0	544	(50.5)	Expanded sidewalk
16. FDR Post Office	12	0	667	(62.0)	Expanded sidewalk

Source: Regional Plan Association.
Note: Items 1-3 based on manual counts in May 1974 and represent maximum midday occupancy. Items 4-16 based on aerial photography in May 1969 and represent midday occupancy on a random weekday. Item 9 excludes Paley and Greenacre parks and may be undercounted due to the difficulty of distinguishing pedestrians under trees; space for this item refers to pedestrian pavement only; including green areas in two parks, space per pedestrian is 1,244 sq ft (115.6 m^2).
n.d. – no data.

ZIP CODE	CHARACTERISTICS OF MAIN POST OFFICE: Post Office Name	County Name	Class and Category	Del. Serv.	No. Sta. Rts.	RESIDENT POPULATION AND LIVING ARRANGEMENTS: Total Population	No. of Households	No. of Families	% in Grp. Qtrs.	HOUSEHOLD SIZE: % With 1 Person	% With 2 Persons	% With 3 Persons	% With 4-5 Persons	% With 6+ Persons
ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14
131	SYRACUSE(M-Z), NEW YORK	SECTIONAL CENTER				154,483	44,208	36,928	3.3	14.6	27.3	16.7	27.2	14.2
13200	SYRACUSE	ONONDAGA				NO DEMOGRAPHIC DATA AVAILABLE.				NONRESIDENTIAL ZIP				
13201	M O BOXES	ONONDAGA				NO DEMOGRAPHIC DATA AVAILABLE.				NONRESIDENTIAL ZIP				
13202	M O CARRIERS AREA 1	ONONDAGA	A			8,859	3,588	1,735	5.2	46.9	23.6	8.9	12.2	8.4
13203	M O CARRIERS AREA 2	ONONDAGA	A			21,043	8,178	5,113	2.9	34.5	29.3	13.8	16.0	6.4
13204	M O CARRIERS AREA 3	ONONDAGA	A			32,983	12,078	7,966	1.4	30.4	27.8	15.6	18.0	8.2
13205	COLVIN	ONONDAGA	SX			26,231	8,657	6,337	1.5	23.0	29.5	16.1	20.0	11.4
13206	EASTWOOD	ONONDAGA	SX			21,924	7,666	5,759	.2	21.6	31.9	17.7	20.8	8.0
13207	ELMWOOD	ONONDAGA	SX			20,393	6,560	5,129	.3	19.6	31.4	16.2	20.5	12.3
13208	SALINA	ONONDAGA	SX			28,553	9,941	7,703	1.4	21.4	32.0	18.1	20.8	7.7
13209	SOLVAY	ONONDAGA	BX			15,725	4,692	3,997	1.8	13.8	27.6	18.5	28.0	12.1
13210	UNIVERSITY	ONONDAGA	SX		1	32,885	9,395	5,844	26.8	28.6	32.1	17.3	15.9	6.1
13211	MATTYDALE	ONONDAGA	BX			8,771	2,686	2,303	.3	11.9	31.0	19.5	26.7	10.9
13212	NORTH SYRACUSE	ONONDAGA	BX			25,754	6,986	6,427	1.4	7.6	24.0	19.2	35.3	13.9
13214	DE WITT	ONONDAGA	BX			12,384	3,546	2,937	9.1	12.3	29.0	18.7	32.7	7.3
13215	ONONDAGA	ONONDAGA	BX			8,859	2,256	2,052	7.3	10.1	25.0	16.8	31.4	16.7
13219	WESTVALE AREA	ONONDAGA	A			20,833	5,949	5,386	1.0	9.1	28.4	18.7	30.6	13.2
13224	DE WITT AREA 2	ONONDAGA	A			10,333	3,353	2,723	1.7	15.0	33.2	18.4	25.1	8.3
13225	HANCOCK FIELD	ONONDAGA				NO DEMOGRAPHIC DATA AVAILABLE.				NONRESIDENTIAL ZIP				
132	SYRACUSE, NEW YORK	MULTI-CODED CITY				295,530	95,531	71,411	4.8	22.1	29.4	16.8	22.2	9.5

ZIP CODE	ZQ Rating	HOUSEHOLD INCOME DISTRIBUTION: % Over $25,000	% $15,000 $24,999	% $10,000 $14,999	% $7,000 $9,999	% $5,000 $6,999	% $3,000 $4,999	% Under $3,000	Median Household Income	YEARS OF SCHOOL COMPLETED BY POPULATION AGED 25 YEARS AND OVER: % College 4 or More	% College 1-3 Yrs	% High S. 4 Yrs	% High S. 1-3 Yrs.	% Elem. 0-8 Yrs.	Median Years	DISTRIBUTION OF HOME VALUE: % Over $50,000	% $25,000 $49,999	% $15,000 $24,999	% $10,000 $14,999	% Under $10,000	Median Home Value
ITEM	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
131	48	3.4	13.6	26.0	21.1	11.3	9.4	15.2	$ 9,002	10.9	10.0	33.6	23.0	22.5	12.1	1.3	14.7	35.7	25.4	22.9	$15,407
13200		NONRESIDENTIAL ZIP																			
13201		NONRESIDENTIAL ZIP																			
13202	36	1.0	2.7	4.3	12.8	16.4	20.9	41.9	$ 3,762	7.7	6.2	22.2	24.4	39.5	10.3	1.5	11.8	39.2	26.4	21.1	$15,440
13203	48	4.9	7.8	17.1	19.8	15.7	15.0	19.7	$ 6,897	11.5	8.7	28.5	19.8	31.5	11.8	3.0	20.6	45.8	21.6	9.0	$18,899
13204	39	.9	6.0	16.2	19.7	15.4	16.7	25.1	$ 6,032	5.2	5.5	26.8	25.2	37.3	10.5	.1	8.0	45.7	30.4	15.8	$15,651
13205	47	1.8	10.6	21.0	19.4	14.6	13.1	19.5	$ 7,368	7.9	9.1	33.8	23.8	25.4	12.0	.1	14.1	50.5	29.4	5.9	$17,389
13206	52	2.9	12.9	27.7	21.4	12.5	10.0	12.6	$ 9,025	7.8	9.9	38.0	21.0	23.3	12.1	.1	11.9	60.1	22.5	5.4	$17,829
13207	56	5.4	16.5	24.5	22.0	12.7	9.1	9.8	$ 9,445	15.1	12.1	37.0	17.7	18.1	12.4	.6	19.6	54.8	20.2	4.8	$18,737
13208	44	1.2	10.3	22.7	21.4	13.3	12.9	18.2	$ 7,733	4.3	5.7	31.7	23.0	35.3	10.9	.0	7.8	52.1	30.7	9.4	$16,465
13209	50	2.3	15.2	30.4	22.2	10.4	9.5	10.0	$ 9,645	5.1	6.9	39.3	23.8	24.9	12.0	.5	14.2	51.7	27.3	6.3	$17,541
13210	55	4.1	10.2	16.1	16.8	11.4	14.5	26.9	$ 6,447	34.6	12.1	23.4	11.6	18.3	12.9	.5	21.9	48.4	20.0	9.2	$18,930
13211	49	1.4	13.1	33.5	21.7	10.4	8.5	11.4	$ 9,665	3.5	8.5	39.9	22.5	25.6	12.0	.2	16.0	42.3	37.3	4.2	$16,128
13212	62	2.5	22.9	37.4	20.3	6.6	5.2	5.1	$11,656	13.8	11.6	44.6	18.0	12.0	12.4	.3	25.0	57.5	15.6	1.6	$19,137
13214	73	16.0	27.8	25.5	11.1	7.0	4.6	8.0	$13,688	34.4	15.7	31.0	9.4	9.5	13.0	2.8	55.1	38.7	2.2	1.2	$26,987
13215	62	7.0	27.3	30.8	15.9	8.0	5.0	6.0	$12,373	17.2	11.7	36.1	17.8	17.2	12.4	2.9	34.3	41.8	16.4	4.6	$21,725
13219	64	4.3	24.5	36.3	16.7	6.5	5.6	6.1	$12,030	15.4	13.2	40.4	15.4	15.6	12.5	.5	28.7	60.4	8.6	1.8	$21,242
13224	68	14.8	24.1	19.0	14.7	9.6	8.0	9.8	$11,936	30.9	14.7	29.3	12.9	12.2	12.9	5.4	41.1	44.4	6.9	2.2	$24,029
13225		NONRESIDENTIAL ZIP																			
132	52	3.8	13.6	23.2	19.0	12.1	11.6	16.7	$ 8,518	13.3	9.7	33.2	19.6	24.2	12.2	.9	18.9	50.2	22.4	7.6	$18,399

ZIP CODE	White Collar Workers	OCCUPATIONAL DISTRIBUTION OF EMPLOYED LABOR FORCE: % Managers Officials	% Profes sionals	% Clerical & Sales	% Farmers Farm Mgr.	% Craftsmen Foremen	% Opera tives	% Service Workers	% Labor ers	% Farm Laborers	INDUSTRIAL DISTRIBUTION OF EMPLOYED LABOR FORCE: % Business & Finance	% Professional Services	% Wholesale Ret. Trade	% Educational Services	% Public Admin.	% Communi cations & Util.	% Trans portation	% Manu facturing	% Con struction	LABOR FORCE: % Unem ployed	% in Armed Forces
ITEM	16	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
131	84	7.2	15.1	21.4	2.9	16.1	19.7	12.0	4.1	1.5	5.3	8.3	18.1	12.0	4.1	2.8	2.8	30.0	7.8	5.5	.3
13200		NONRESIDENTIAL ZIP																			
13201		NONRESIDENTIAL ZIP																			
13202	77	4.1	14.4	25.0	.0	8.7	16.2	25.9	5.1	.6	10.9	19.7	18.0	9.6	2.2	3.6	2.5	21.0	2.3	8.7	1.0
13203	118	7.0	17.0	30.3	.0	11.1	16.8	14.0	3.8	.0	9.4	13.7	22.3	7.1	4.6	3.5	3.1	26.6	3.4	5.3	.3
13204	65	4.4	10.0	25.1	.0	13.9	23.3	18.1	5.0	.2	9.3	10.0	20.5	6.9	4.5	3.1	3.3	32.1	3.8	5.4	.4
13205	89	5.6	12.7	28.8	.0	13.0	17.5	17.9	4.2	.3	9.8	14.9	20.8	8.2	4.1	4.2	2.8	24.0	5.4	4.4	.8
13206	121	7.3	13.5	33.9	.2	12.5	16.7	12.5	3.3	.1	9.9	8.6	22.8	6.4	5.5	3.9	3.9	29.7	4.0	3.1	.3
13207	149	8.2	16.7	35.0	.0	11.6	12.5	12.4	3.5	.1	12.3	13.8	21.0	9.5	6.1	3.9	3.3	20.7	4.7	3.5	.3
13208	84	4.0	9.6	32.3	.0	15.2	21.5	12.6	4.7	.1	9.0	8.1	23.4	5.6	4.6	4.2	3.1	32.8	4.7	4.2	.2
13209	81	6.6	10.1	27.9	.2	16.8	22.6	11.2	4.4	.2	7.8	7.1	21.7	4.6	4.5	4.5	2.9	38.4	4.2	3.6	.2
13210	215	4.6	33.8	29.7	.1	5.5	8.0	15.3	2.9	.1	7.7	20.1	15.6	27.2	3.4	3.4	1.1	11.5	2.4	4.0	2.7
13211	92	6.4	10.6	31.0	.0	16.4	19.6	11.9	4.1	.0	9.5	6.2	28.5	5.8	2.7	3.2	3.8	29.9	6.9	3.7	.6
13212	161	9.3	19.6	33.0	.0	14.2	12.8	7.9	3.2	.0	9.3	7.2	26.1	8.3	3.5	3.7	4.3	29.1	4.9	2.8	6.9
13214	326	15.5	29.1	31.9	.0	7.5	5.6	8.1	2.3	.0	8.8	12.2	28.5	18.1	3.2	1.8	1.6	17.4	2.6	2.3	.3
13215	159	11.7	19.8	28.3	1.5	14.3	9.3	10.3	3.6	1.2	9.9	13.7	22.0	8.7	3.4	5.5	2.5	20.9	7.3	2.9	.1
13219	188	11.2	17.1	36.9	.0	11.7	12.0	8.5	2.4	.2	10.8	9.6	23.0	9.0	4.4	4.0	2.3	27.7	4.7	3.2	.1
13224	300	15.1	28.9	30.9	.3	5.8	7.9	9.2	1.9	.0	12.2	15.5	26.7	14.9	3.6	2.9	1.8	15.0	3.0	2.9	.4
13225		NONRESIDENTIAL ZIP																			
132	124	7.3	17.1	30.9	.1	12.0	15.6	13.2	3.7	.1	9.6	11.8	22.2	10.1	4.2	3.7	2.9	25.9	4.2	4.0	1.2

ZIP CODE	Family Life Cycle Code	Families: % With Children Under 18	Families: % With Female Head	Males Per 100 Females	% Pop 14 Years & Over Married	AGE OF DISTRIBUTION OF THE TOTAL POPULATION: % Under 6 Years	% 6-13 Years	% 14-17 Years	% 18-24 Years	% 25-34 Years	% 35-44 Years	% 45-54 Years	% 55-64 Years	% 65 Years & Over	Median Age in Years	RACE: White % Tot Pop	RACE: Negro % Tot Pop	DOMINANT ETHNIC GROUP: Abbrev Name	DOMINANT ETHNIC GROUP: % Tot Pop	Spanish Americans % Tot Pop	RESIDENCE IN 1965: % Diff House Same State	% Diff State or Abroad	% Pop Non Movers
ITEM	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
131	F3-8	59.4	8.7	95.8	62.1	11.4	18.1	8.2	11.6	11.3	10.8	10.6	8.7	9.3	25.7	98.7	.6	IT	2.9	.1	31.6	4.8	59.1
13200						NONRESIDENTIAL ZIP																	
13201						NONRESIDENTIAL ZIP																	
13202	N2-8	62.2	40.8	98.0	35.2	12.8	15.3	6.1	14.6	11.9	8.0	7.9	9.3	14.1	26.0	43.8	54.6	OT	2.6	.6	41.9	12.2	32.0
13203	N2-4	45.7	17.9	84.1	50.5	9.5	11.7	6.1	14.8	11.1	9.7	10.7	11.1	15.3	32.2	96.5	2.3	IT	17.2	.3	34.7	5.6	53.8
13204	N2-2	51.2	20.7	87.3	50.5	11.7	13.7	5.7	12.6	10.8	9.2	11.5	11.2	13.6	30.8	89.3	9.1	PO	8.2	1.0	36.6	4.4	53.7
13205	F2-5	54.3	19.1	85.3	53.4	10.4	16.2	8.0	11.2	9.9	10.3	11.3	9.6	13.1	29.2	78.0	20.9	CA	3.3	.4	33.1	6.4	55.5
13206	F2-4	47.3	12.8	85.6	59.8	9.0	14.1	6.9	10.8	10.8	10.6	12.6	12.1	13.1	33.6	99.2	.5	IT	13.4	.0	26.2	3.4	66.3
13207	F5-1	49.7	16.1	84.9	57.6	9.8	16.3	8.5	9.9	10.1	10.2	11.8	10.3	13.1	30.4	92.5	7.0	CA	4.3	.4	28.7	5.1	63.1
13208	F2-9	47.1	14.7	84.9	58.2	10.3	12.0	6.3	12.7	11.0	8.9	12.3	12.4	14.1	32.9	99.5	.2	IT	20.4	.2	27.1	3.3	64.3
13209	F2-3	57.1	8.6	93.5	63.9	11.1	17.0	8.8	9.3	11.5	11.8	13.0	9.6	7.9	28.4	98.7	.7	IT	11.4	.0	25.7	3.2	68.6
13210	G1-7	49.4	15.0	99.0	36.8	8.0	8.8	4.1	37.6	13.5	6.3	6.3	6.0	9.4	22.3	83.8	14.2	OT	7.5	.3	33.3	23.2	31.7
13211	F4-6	54.4	8.4	93.7	64.8	10.0	15.3	8.0	11.8	12.1	10.9	14.8	9.1	8.0	29.2	99.5	.4	IT	6.1	.3	28.3	3.7	62.3
13212	F4-5	66.8	7.0	99.8	68.0	11.4	20.1	8.9	9.7	12.9	14.1	12.8	5.7	4.4	24.9	98.7	1.0	IT	4.4	.1	27.7	12.1	57.4
13214	F4-8	60.3	5.9	95.1	58.5	8.3	15.3	8.0	15.4	10.1	12.8	12.4	9.1	8.6	27.9	98.9	.8	OT	6.0	.0	34.7	9.0	53.0
13215	F4-9	61.1	5.8	97.7	62.0	9.2	19.6	8.7	7.1	10.0	12.8	11.8	9.1	11.7	30.6	98.6	.4	GE	3.2	.0	25.2	4.6	67.5
13219	F3-8	57.5	6.7	95.4	66.7	9.9	17.8	8.9	8.8	9.9	12.5	14.5	10.2	7.5	29.8	99.1	.3	IT	7.1	.1	25.4	4.4	67.7
13224	F5-8	49.0	8.8	89.4	60.4	8.9	12.8	9.1	10.1	10.7	10.3	14.0	12.8	11.3	33.5	87.6	11.7	RU	8.5	.0	31.7	10.4	54.1
13225						NONRESIDENTIAL ZIP																	
132	F2-7	53.2	13.9	90.7	55.2	10.0	14.5	7.2	14.3	11.2	10.3	11.6	9.8	11.1	28.5	91.7	7.4	IT	7.2	.3	30.7	7.9	56.1

ZIP CODE	Housing Life Style Code	CHARACTERISTICS OF HOUSING UNITS: % Owner Occupied	% Renter Occupied	Median Monthly Rent	% Seasonal Units	% Vacant For Sale	% Vacant For Rent	Median No Rooms per Unit: Owners	Renters	% Units by Size of Structure: Single Unit	Attached: 2 Units	Attached: 3-4 Units	Multiple: 5-49	Multiple: 50+	% Mobile Homes	% Units by Year Structure Built: 1965-1970	1960-1964	1950-1959	1940-1949	1939 or Earlier	% Moved in since 1960
ITEM	40	51	52	53	54	55	56	57	58	59	90	91	92	93	94	95	96	97	98	99	100
131		77.8	22.2	$110	5.7	.8	1.0	6.9	5.3	75.9	9.0	3.5	3.5	.2	7.9	10.9	7.9	12.5	4.2	64.5	43.2
13200		NONRESIDENTIAL ZIP																			
13201		NONRESIDENTIAL ZIP																			
13202	CC-1	5.2	94.8	$ 96	.0	.2	11.6	6.6	3.8	4.1	11.8	9.5	47.4	27.2	.0	18.4	12.7	3.0	3.4	62.5	13.8
13203	CC-1	33.8	66.2	$119	.1	.4	6.2	6.6	4.4	26.2	26.6	14.0	19.8	13.4	.0	4.5	6.7	7.9	7.9	73.0	35.0
13204	CC-5	36.6	63.4	$103	.0	.5	4.8	6.6	4.8	25.8	35.9	18.1	18.1	2.1	.0	1.8	2.2	4.6	5.3	86.1	36.1
13205	CC-5	52.2	47.8	$120	.1	.9	3.5	6.7	5.0	47.2	24.7	13.5	13.9	.7	.0	1.9	7.2	11.2	8.0	71.7	38.6
13206	CC-7	61.9	38.1	$124	.0	.3	1.1	6.4	4.6	56.5	18.7	9.1	13.4	2.0	.3	2.6	7.3	17.4	12.1	60.6	43.4
13207	CC-5	63.8	36.2	$130	.0	.8	1.7	6.7	5.2	58.8	23.4	8.8	8.8	.2	.0	2.0	5.1	18.3	9.3	65.3	44.6
13208	CC-5	56.0	44.0	$109	.0	.4	1.8	6.5	4.9	46.8	30.6	15.0	7.1	.3	.2	1.6	1.8	8.7	7.5	80.4	48.4
13209	CC-5	72.0	28.0	$107	.0	.4	1.4	6.2	5.2	68.3	19.0	7.8	3.1	.1	1.7	5.2	11.2	28.9	7.9	46.8	46.9
13210	CC-1	32.7	67.3	$116	.1	.6	3.6	6.9	4.5	30.6	21.0	13.1	27.8	7.5	.0	13.0	7.3	8.7	12.3	58.7	27.2
13211	CC-3	74.6	25.4	$161	.0	.1	1.4	6.0	4.7	80.8	6.9	1.9	9.9	.2	.3	9.9	4.8	33.7	19.1	32.5	46.6
13212	CC-7	75.6	24.4	$171	.1	.5	1.5	6.4	4.9	81.5	5.1	2.1	8.9	1.9	.5	12.4	11.0	50.3	14.8	11.5	37.1
13214	CC-2	74.8	25.2	$146	.0	.5	.3	7.1	4.3	75.2	1.4	.5	18.6	.7	3.6	10.7	17.3	44.2	11.2	16.6	33.1
13215	CC-0	87.3	12.7	$134	.0	.3	.7	6.8	5.1	90.3	4.2	1.5	2.7	.0	1.3	11.5	16.6	30.3	10.2	31.4	47.8
13219	CC-0	87.2	12.8	$171	.0	.7	1.3	6.5	4.5	88.3	2.0	.6	8.3	.2	.6	12.1	13.9	45.7	11.5	16.8	46.0
13224	CC-5	68.4	31.6	$155	.3	.6	1.3	7.1	4.6	69.9	8.0	2.6	17.3	2.1	.1	11.5	11.0	32.0	12.0	33.5	37.2
13225		NONRESIDENTIAL ZIP																			
132		54.7	45.3	$118	.0	.5	3.1	6.6	4.7	50.9	19.9	10.0	15.1	3.7	.4	6.5	7.6	19.2	9.6	57.1	38.7

ZIP CODE	Level of Living Index	PERCENT UNITS WITH SELECTED HOUSEHOLD EQUIPMENT: More Than 1 Bathroom	Air Conditioning	Central Heating	Telephone	Television	UHF Television	Clothes Washer	Clothes Dryer	Dish Washer	Food Freezer	AUTOMOBILE OWNERSHIP: % Units With 3 Or More	% Units With 2 Autos	% Units With 1 Auto	% Units Without Auto	HEATING FUEL: % Units Utility Gas	% Units With Electric	% Units With Oil	COOKING FUEL: % Units Utility Gas	% Units With Electric	% Units Bottled Gas
ITEM	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121
131	95	23.7	11.6	89.0	92.4	97.6	43.3	79.1	48.8	17.6	37.6	4.5	27.3	57.7	10.5	47.9	2.4	43.7	33.0	45.2	20.2
13200		NONRESIDENTIAL ZIP																			
13201		NONRESIDENTIAL ZIP																			
13202	47	5.7	14.0	94.8	74.0	88.5	30.2	38.3	11.7	7.7	10.2	1.4	2.9	31.4	64.3	75.3	9.0	8.3	77.4	16.8	1.2
13203	61	17.3	23.9	94.4	85.8	93.4	46.7	60.1	26.8	13.3	10.8	3.3	11.8	51.4	33.5	81.8	4.3	11.1	83.3	14.5	.8
13204	41	10.3	12.8	92.0	84.1	96.1	45.5	64.8	18.9	4.6	14.0	1.6	9.3	51.6	37.5	89.0	2.0	6.7	93.1	4.9	1.3
13205	65	21.0	15.1	94.5	89.2	97.2	51.5	65.6	30.6	10.8	17.4	2.8	17.1	50.7	29.4	88.5	1.6	9.1	86.9	12.1	.4
13206	76	22.7	23.6	96.7	96.2	100%	60.5	78.0	40.4	13.1	16.1	2.8	18.3	62.5	16.4	90.5	1.1	7.0	80.1	17.4	.7
13207	84	29.5	20.2	96.8	95.0	100%	60.8	78.5	41.2	15.4	16.5	3.4	23.4	57.6	15.6	82.7	1.2	13.5	81.2	17.3	1.5
13208	59	19.2	18.8	92.4	93.2	96.9	50.8	77.5	29.7	7.6	13.2	2.1	15.2	56.5	26.2	90.4	2.3	5.5	85.8	13.6	.3
13209	95	25.0	20.5	92.8	94.5	98.0	62.1	84.4	46.0	20.5	25.7	3.8	24.4	59.9	11.9	87.6	1.9	8.4	66.6	29.9	3.4
13210	68	19.8	17.5	93.5	91.0	92.3	56.3	51.0	24.2	14.0	12.0	3.0	15.9	56.2	24.9	80.5	4.8	9.7	76.8	22.0	.7
13211	95	23.8	31.0	95.9	97.5	100%	53.9	84.9	47.7	19.4	21.8	5.6	25.1	61.2	8.1	88.5	2.1	8.1	71.3	27.2	.8
13212	136	33.2	31.0	98.1	98.5	100%	73.6	89.5	73.8	34.1	30.7	6.6	35.1	54.8	3.5	87.5	3.5	7.4	44.8	53.8	1.1
13214	177	60.3	44.0	96.8	97.7	100%	79.0	85.5	68.7	56.9	33.0	5.1	46.6	42.7	5.6	79.5	2.8	15.7	33.3	63.3	3.4
13215	148	44.4	12.9	95.8	96.9	96.8	66.8	86.3	64.7	36.8	35.6	5.5	44.5	46.0	4.0	58.0	4.3	34.2	22.9	67.3	8.4
13219	148	50.3	23.8	97.5	98.8	99.4	73.6	90.5	65.1	39.2	29.0	4.9	35.5	54.4	5.2	87.3	4.2	7.4	41.9	56.8	1.0
13224	152	54.5	42.2	98.4	96.8	100%	72.5	81.2	58.0	47.8	24.1	4.6	38.1	48.1	9.2	87.4	7.3	4.9	54.5	45.0	.5
13225		NONRESIDENTIAL ZIP																			
132	85	25.3	21.6	94.8	91.8	97.0	57.0	72.2	38.6	18.4	18.5	3.4	20.9	53.4	22.3	85.4	3.1	9.2	73.0	25.0	1.3

BIBLIOGRAPHY

Alexander, Christopher. "A Collection of Patterns Which Generate Multi-Service Centers." Pg. 141-180. Architect's Yearbook XIV The Inner City. London: 1974. Gresham Press.

Alexander, Laurence A. (Editor). Public Attitudes Toward Downtown Malls: A National Opinion Research Survey New York 1975 . 1) Research Information compiled on Downtown areas by Downtown Research and Development Center. 2) Research arm for Downtown Idea Exchange. 3) Downtown Research and Development Center, 555 Madison Ave., N.Y., N.Y. 10022

Alexander, Laurence A. (Editor). Downtown Malls an Annual Review. Vol. 1 1975 New York . 1) Research Information compiled on Downtown areas by Downtown Research and Development Center. 2) Research arm for Downtown Idea Exchange. 3) Downtown Research and Development Center, 555 Madison Ave., N.Y., N.Y. 10022.

Applebaum, William. Shopping Center Strategy; A Case Study of the Del Monte Center. Monterey Calif. 1970.

Argan, Guillo C. The Renaissance City. George Braziller, N.Y. 1969 .

Bacon, Edmond N. Design of Cities. Viking Press, N.Y. 1967 .

Banham, Reyner. Megastructure Urban Futures of the Recent Past. Harper and Row, Publishers, New York, 1976 .

Banham, Reyner. Theory and Design of the First Machine Age. The Architectural Press, London, 1960 .

Barnett, Jonathan. Urban Design as Public Policy: Practical Methods for Improving Cities. N.Y. 1974 . Published by Architectural Record a McGraw-Hill Publication.

Barton-Aschman Associates, Inc. Action Plan For Improvements in Transportation Systems in Large U.S. Metropolitan Areas. Auto Free Zones: A Methodology for Their Planning and Implementation. U.S. Government Printing Office, Washington, D.C. 1972, July.

Becker, Franklin D. "A Class-Conscious Evaluation, Going Back to Sacramento's Pedestrian Mall." Landscape Architecture, October, 1973.

Brambilla, Roberto (Ed.). More Streets For People. Italian Art Landscape Foundation, Inc. 1976 N.Y.C.

S. Breines and Dean, W.J. Pedestrian Revolution: Streets Without Cars. (N.Y. 1974) Vintage Books. 1)Random House, Inc. 201 E. 50th Street, New York, N.Y. 10022. 2) ISBN O-394-71305-2.

Carlson, D. and Carlson, M.R.S. "Pedestrian Mall: Its Role in Revitilization of Downtown Areas." Urban Land, Vol. 33 No. 5, pg. 3-9, May 1974. 1)Urban Land Institute, 1200 18th St., N.W. Washington, D.C. 20036.

Choay, Francoise. The Modern City: Planning in the 19th Century (George Braziller, N.Y. 1969). Note: Part of series Planning and Cities General Editor - George R. Collins.

Chudcoff, Howard P. The Evolution of American Urban Society. Prentice-Hall, Inc., New Jersey 1975.

Continini, E. "Anatomy of the Pedestrian Mall." American Institute of Architects Journal, Feb. 1969, pg. 42-50.

Cook, Peter et al. "Living City" pg. 116. Architect's Year Book, The Pedestrian in the City. Ed David Lewis Elek Book Ltd. Publisher: London, 1965. Garden City Press Ltd.

Cook, Peter - Archigam Group. "Control and Choice Living." Architect's Yearbook Urban Structure. Ed. David Lewis, Elek Books Ltd. Publisher: London, 1968. Garden City Press Ltd.

Crosby, Theo. Architecture: City Sense. Reinhold Publishing Corporation, New York, 1965.

Cullen, Gorden. The Concise Townscape. N.Y. 1961 ,Van Nostrand Reinhold Co.

Doxiadis, Constantinos. A. Ekistics. An Introduction to the Science of Human Settlements. Huchinson of London, 1968.

Evenson, Norma. Le Corbusier: The Machine and the Grand Design. George Braziller, New York, 1969.

Gage, Michael. Hard Landscape in Concrete. Halstead Press, 1975, N.Y.

Gibberd, Frederick. Town Design. Reinhold Publishing Corp., New York, 1953 .

Goffman, Erving. Relations in Public: Microstudies of the Public Order. NY Basic Books, 1971.

Goffman, Erving. Encounters: Two Studies in the Sociology of Interaction. Indianapolis, Bobbs-Merrill, 1961.

Goffman, Erving. Behavior in Public Places, Notes on the Social Organization of Gatherings. Collier-Mac-Millian Ltd. 1963.

Gosling, David. Maitland, Barry. Design and Planning of Retail System. The Whitney Library of Design 1976.

Gray, John. Pedestrianised Shopping Streets in Europe. 1965.

Greun, Victor. Centers for the Urban Environment: Survival of the Cities. N.Y.: 1973 , Van Nostrand Company.

Heckscher, August with Phillis Robinson. Open Spaces: The Life of American Cities. Copyrighted A Twentieth Century Fund Essay. Harper & Row, 1977, N.Y.

Hesselgren, Sven. Man's Perception of Man-Made Environment. Dowden, Huchinson & Ross, Inc., Stroudsburg, Pa., 1975.

Hornbeck, James S. Stores and Shopping Centers. McGraw-Hill Book Co. Inc. 1962.

Institute of Traffic Engineers. Traffic Planning and Other Considerations for Pedestrian Malls. Washington, D.C. 1966 .

Ittelson, William, H.; Proshansky, Harold M.; Rivlin, Leanne G.; Winkel, Gary H. An Introduction to Environmental Psychology. Holt, Rinehart and Winston, Inc., N.Y. 1974 .

Klein, H. and Asenberg. Auto-Free Zones: Giving Cities Back to People. City Magazine.

Krangdorf, N.; Underberg, Neil. Business and Legal Problems of Shopping Centers. N.Y. 1970.

Levi-Strauss, Claude. "Crowds." New Left Review, XV. May-June 1962: 5-5.

Lerup, Lars.; Brambilla, Roberto.; Longo, Gianni. "Street Smarts." Architectural Design. November, 1974. pp. 723-725.

Lewis, David (Editor). Architect's Yearbook--The Pedestrian in the City. London, 1965. Gresham Press.

Malt, Harold Lewis. Furnishing the City. McGraw-Hill, Inc., New York, 1970 .

McAfee, Malo, Lebensold, Afflick, Nichol. SyracUSA. (Syracuse, 1970). 1) Development of a plan for revitalizing downtown Syracuse. 2) Full documentation available from Metropolitan Development Association of Syracuse and Onondaga County, Inc., 1900 State Tower Building, Syracuse, New York 13202.

McHarg, Ian L. Design with Nature. Doubleday & Company, Inc., Garden City, N.Y. 1969.

Moller, Tom Just. By-Center-Menneske. Lyngrey, Danmark, 1965.

Morris, Eleanor Smith. "New Urban Design Concepts Greenways and Movement Structures--The Philadelphia Plan" pg. 27-40. Architect's Yearbook, The Pedestrian In the City. Ed. David Lewis, Elek Book Ltd. Publisher, London: 1965. Garden City Press, Ltd.

Mumford, Lewis. The City in History Its Origins, Its Transformations, and Its Prospects. Harcourt, Broce & World, Inc. New York, 1961.

Onibokun Adepoju. "A Comprehensive Evaluation of Pedestrian Malls in the United States." The Appraisal Journal, April, 1975, pg. 202-218. Vol. 43. 1) 155 E. Superior Street, Chicago, Ill. 60611.

Pushkarev, Brois w Zupan Jeffrey. Urban Space for Pedestrians. MIT 1975 Halliday Lithograph Corporation.

Rapoport, Amos. House, Form and Culture. Prentice-Hall, 1969, New Jersey.

Rapuano, M, Haldin, L. The Freeway in the City. Principles of Planning and Design. U.S. Govt. Printing Office, Washington, D. C. 1968.

Redstone, Louis G., FAIA. The New Downtowns Rebuilding Business Districts. McGraw Hill, N.Y. 1976 .

Restone, Louis G. New Dimensions in Shopping Centers and Stores. N.Y. 1973 .

Regional Plan Association. Urban Design Manhattan. Viking Press, New York, 1969 .

Robertson, Jaquelin. "Rediscovering the Street." The Architectural Forum. Nov. 1973, pg. 24-32.

Roring, Fritz. The Medieval Town. U. of Cal. Press, Berkley & Los Angeles, 1967.

Rosenan, Helen. The Ideal City; Its Architectural Evolution. Harper & Row, N.Y. 1972 .

Rowe, Collin. "Collage City." Architectural Review. August, 1975, pp. 65-90.

Readings from Scientific American. Cities Their Origin, Growth and Human Impact. W. H. Freeman and Co., San Francisco, 1954 .

Saalman, Howard. Medieval Cities. New York, 1968. George Braziller.

Sharp, Dennis, Editor. Planning and Architecture Essays Presented to Arthur Korn by the Architectural Association. Barrie and Rockliff, London, 1967 .

Shun, Kanda. "The 'Street' and 'Hiroba's Japan" Architect's Yearbook XIV The Inner City. Pg. 85-93. Eds. Dillan Kennedy & Margrit I. Kennedy, Elek Books Ltd. Publisher, London: 1974. Gresham Press, Old Woking Survey.

Sitte, Camillo. Translated by George Collins and Christiane Crasemann Collins. City Planning According to Artistic Principles. Random House, N.Y. 1965 . Originally published in 1889 in German as "Der Stacltebau nach seinen kunstlevischen Grundsatzen."

Smithson, Alison and Peter. Urban Structuring. Reinhold Publishing Corp., New York, 1967 .

Spreiregen, Paul D. AIA. Urban Design: The Architecture of Towns and Cities. AIA copyright 1965 McGraw-Hill, N.Y. material first appeared in articles in AIA Journal in 62, 63, 64.

Tunard, Christopher and Pushkarev, Boris. Man-made America, Chaos or Control. Yale University Press, New Haven and London, 1963 .

U.S. Department of Transportation. National Transportation Trends & Choices (To the Year 2000). Superintendent of Documents, U.S. Government Printing Office, 1977 Washington, D.C.

U.S. Fed. Highway Administration. Bicycle and Pedestrian Facilities in the Federal-Aid Highway Program Wash., D.C. 1974 . 1) U.S. Federal Highway Administration. 2) U.S. Govt. Printing Office, Washington, D.C. 20402. 3) Stock No. 5001-0082.

Van Ginkel Associates. "Movement in Midtown" Architect's Yearbook XIV The Inner City, pg. 54-67. Eds. Dillan Kennedy & Margarit I. Kennedy, Elek Books Ltd. Publisher. London: 1974. Gresham Press, Old Woking Survey.

White, Morton & Lucia. The Intellectual Versus the City. Harvard University Press & MIT Press. Cambridge, Mass. 1962.

Whyte, William H. "The Best Street Life in the World: Why Shmoozing, Smooching, Noshingling are Getting Better all the Time." New York. July 13, 1974. pg. 27-33.

Wiebenson, Dora. Tony Granier: The Cite Industrielle George Braziller, N.Y. 1969 . Note: Part of series Planning and Cities, General Editor George R. Collins.

Wingo, Jr., London Ed. Cities and Space. Essays from the Fourth RFF Forum. John Hopkins Press, Baltimore, Md., 1963 . Resources for the Future, Inc.

Wolf, Peter. The Evolving City, Urban Design Proposals by Ulrich Franzen and Paul Rudolph. Whitney Library of Design, 1974.

Wurman, Richard Saul. Cities: Comparisons of Form and Scale. Joshua Press, Philadelphia, Pennsylvania, 1974 .

Zimmerman, W. "Pedestrians in the Vertical City." Real Estate Review, Vol. 3, No. 4, pp. 46-51. Winter 1974. 1) 89 Beach St., Boston, Mass. 02111.

Zucker, Paul. Town and Square from the Azora to the Village Green. Columbia University Press, 1959.

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