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Activating the Void

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Programmed Pedestrian Infrastructure inSyracuse, NY

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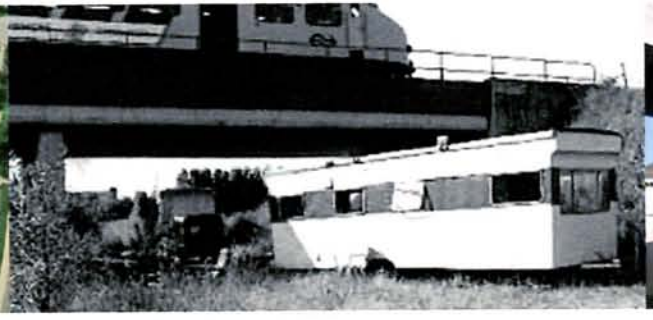

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Contention

The overlay of regional transportation infrastructure onto an existing city grid can produce an unsuccessful meeting between the scales of the infrastructure and the pedestrian. This creates a collision between the two entities, spawning a confused middle ground which typically remains unoccupied, except by parking. The lack of occupation produces physical and programmatic voids within the city fabric, which causes a lack of economic growth and activity. A secondary problem that occurs with the incorporation of regional transportation infrastructure is the need to accommodate the vast number of vehicles brought into the city by the interstate. To deal with the abundance of vehicles, much of the land immediately surrounding highways is occupied by parking facilities. These facilities, however, are neither spatially nor economically beneficial to the site, and are considered voids as they lack any meaningful use or activity. The scales of highways and pedestrians must be reconciled & the voids activated in order for cities to continue to survive with the ever-increasing presence of transportation infrastructure. Through specific examination, the voids created by transportation infrastructure can be transformed into connective devices, developed to fit into the context of the functioning urban fabric which surrounds the void. The architecture will serve as a connective system to allow pedestrians to operate in a space currently overtaken by vehicular traffic, generating a continuation of urban fabric and activity, and thereby transforming the void of non-place into place.

Project Description

Syracuse, New York contains an abundance of voids created by transportation infrastructure. Interstate 81 run north-south through the city, connecting with Interstate 690 and eventually to the New York State thruway. I-81 exists in the city as an overpass, a barrier which effectively slices the city in two. Each half of the city contains a major productive zone, though the area between the two, the district surrounding the highway, exists as both a physical and programmatic void. Within this area, there are numerous specific voids, most in the form of parking facilities which can be used to explore the possibilities of reconnecting the fabric.

The intention is to activate the void with multiple programs that respond to the needs of the surrounding area so that the zone can function in relation to the surrounding fabric. There are two major components--a pedestrian pathway spanning the barrier of the interstate and an urban shopping complex, which will be combined into one continuous building element. Allowing pedestrian passage across the boundary created by the highway is the first step in restitching the area. The incorporation of various programs into this pathway, including a movie/drive-in theater, retail shops, restaurants/cafes and a parking garage is intended to fill existing programmatic voids in the area. This will draw a population to the district and create an active zone within the city.

Method

There are several strategic methods employed in this study. First, to reintroduce & reprogram pedestrian infrastructure as a connective element to serve as a counterpoint to the fractured urban fabric created by the interstate. Also, the study of scale as a factor which causes disassociation between elements, and how the introduction of another scale can provide understanding & clarity to a space, in order to transform it into place

In addition, an examination of the programmatic zones that exist in the city in order to extrapolate an instrument of organization into which program can be included or juxtaposed. Finally, the combination of parking with more active & productive programs in order to release vacant lots for reuse in the city fabric.

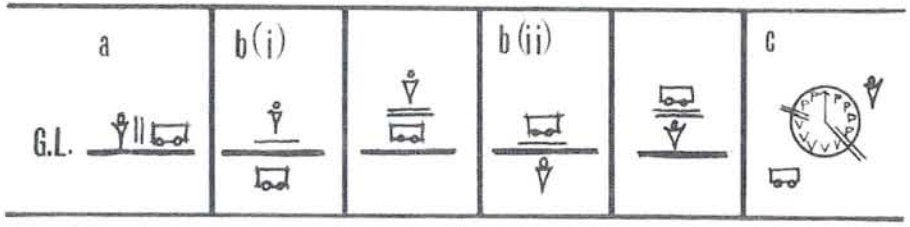
grid, n.
an arrangement of parallel bars with openings between them, a framework of crisscrossed or parallel bars, as in rigidity or organization; a grating or mesh-pattern of regularly spaced horizontal and vertical lines forming squares on a map, something resembling a framework of crisscrossed parallel bars

infrastructure, n.
a collective term for the subordinate parts of an undertaking; substructure, foundation, an underlying base or foundation especially for an organization or system

Since the development of modern high-speed transportation in the United States there has been an intense decentralization of major cities. People and activities relocate to the periphery, giving way to numerous suburban centers surrounding the urban area. The dispersion of the city into the periphery has created a necessity for a connective system, an infrastructure for transportation, to link the detached areas.

The necessity to link the periphery to the city core has caused transportation infrastructure to be imposed upon the traditional centralized city. This spawned the formation of what can be termed regional cities, as the focus is more about connecting one city or region to another, rather than the city center as the focal point.

There have been numerous opinions as to how to incorporate transportation systems into the city. Le Corbusier emphasized the distinction between natural speeds (humans) and mechanical speeds (automobiles, trams, motorcycles). In his city plans, he advocated the use of raised highways to create a separation between the pedestrian on ground level and the motor vehicle, as a high-speed vehicle could travel from one place to another without interrupting the slower pedestrian, thus eliminating the confusion he observed between the two in many cities. In Planning for Man & Motor, studies explore the various possibilities of both physical and temporal separation of the human and the automobile, including raised, sunken and divided roadways. While much study is dedicated to the segregation and separation between humans and infrastructural systems, little attention is give to the idea of integration and connection of the two.



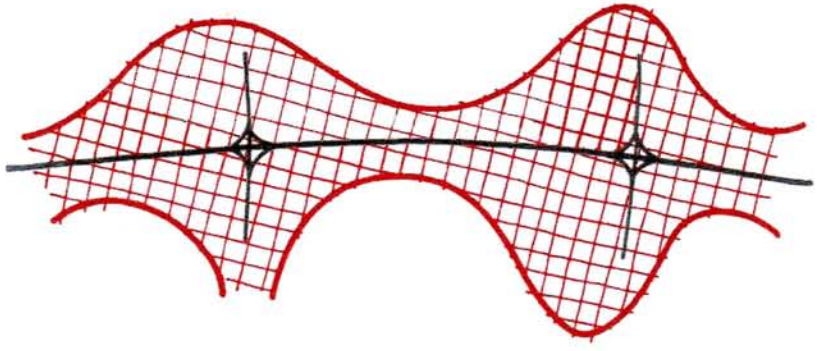
void, n.
a lack or want, a state or condition devoid of something, emptiness, vacancy, vacuum, an empty or vacant space; an unoccupied place or opening in something or between things; a vacancy caused by the removal of something.

terrain, n.
an extension of precisely limited ground fit for construction, for the city, a portion of land potentially exploitable, an extent of ground, region, district, territory
vague, adj.
from "vacuus", giving us vacant, vacuum, empty, unoccupied yet free, available, unengaged

In most cities, transportation infrastructure has been imposed onto urban fabric with little regard as to how the two come together. Highways and railways are laid over, under and through the city, creating voids within the urban fabric and discontinuities within the city grid. This division of the urban area creates residual spaces between infrastructures, spaces lacking program, occupation and productivity, as the disparate scale of the infrastructure discourages human occupation. The voids have been described as places where architecture and the environment do not mesh. They are considered ambiguous, unresolved, and unsettling (Carnegie).

Ignasi de Solá-Morales Rubio describes these voids as terrain vague, tagging them as uninhabited and unproductive (120). Franco Purini uses the term non-place to describe the voids, noting their discontinuity in comparison to the urban fabric. He observes that the voids operate in a moment of threshold between systems of contrasting function and scale, that is, between infrastructure and the urban fabric (125). The voids mark a collision between transportation infrastructure and the city, an unresolved correlation between high speed transportation and the human. This creates a sort of contradiction, as infrastructure is intended as a connective tool. That is to say, the infrastructure serving to connect region to region, city to suburb and city to city, is the same infrastructure which is breaking the cities apart, creating fragments, rifts & voids in the cores it is intended to connect.

Infrastructure + the City Grid



The ways in which a freeway is laid through a city can vary, which produces different results within the urban fabric. Both on the surface and elevated, the infrastructure can either run parallel to the existing street grid or cross through the grid. If parallel to the grid, the cost of overtaking land is much less, and the area surrounding the infrastructure is less affected by the intervention, as it is attempting to work with existing fabric. In cases where the infrastructure cuts through the city with no regard to the underlying grid, the negative effects on the fabric are greater. Blocks are left sliced at odd angles, cutting off corners and slicing blocks into disconnected segments. This creates spaces of irregular shapes and sizes which become difficult to occupy.

Similarly, when an infrastructure slices through a city, especially highways with complex interchanges, the impact of the intervention on the fabric is not limited to only the blocks immediately in contact with the roadway. The adverse effects of the presence of the infrastructure extend deeper into the grid, impacting the entire city. The effects do not only concern spatial boundaries, but involve economic and social issues as well.

scale, v.
to compare, estimate
scale, n.
a graded series in terms of which the measurements of such phenomena as sensations, attitudes, or mental attributes are expressed, a unit of dimension in a representation of an object, bearing the same proportion to the unit of dimension in the object itself, as the size of the object shown on the plan bears to the actual size of the object which it represents

Scale can be defined as the measure which establishes relationships in the urban environment (Hosken 49). This concept can be examined in a number of ways. For example, scale can be defined as the relationship of humans to the man-made environment. Man is considered the absolute scale, the measure of all things, as everything in the man-made environment is linked to humans. Other relationships exist in the urban environment, such as the relationship of buildings to each other, and buildings to the street and city. These are considered relative scales, as they are not based on human perception (46).

Historically, towns and cities were designed around the human scale. Circumferences of cities were based on the distance humans were able to walk, building heights determined by the material constraints and the number of stairs humans could climb. Modern advances in building and transportation technology have disrupted the traditional scale of the city. Circumferences of cities are stretched almost limitlessly because of the possibilities of highways and high speed transit and there are no vertical building limitations because of new material technologies and elevators (Hosken 46).

While humans still exist within the city, the relation between the scales of the two has been lost. This issue is only further emphasized in areas where transportation infrastructures, namely highways, impose themselves upon the urban landscape. The scale of transportation infrastructure functions in relation to factors related to the human, but not to the human itself. For example, an interstate highway is scaled to allow 6 lanes of vehicular traffic to flow.

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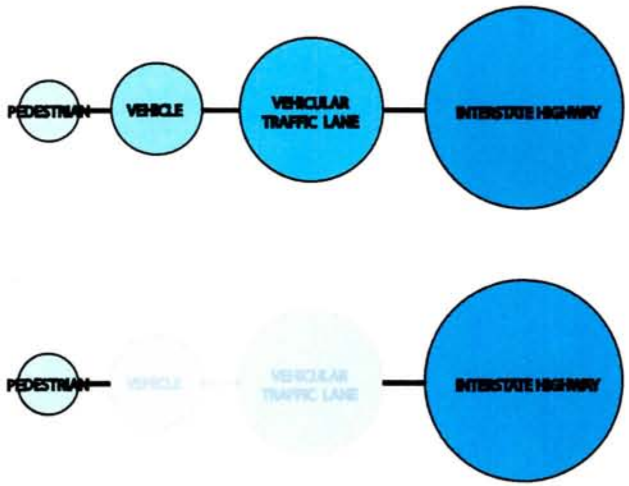

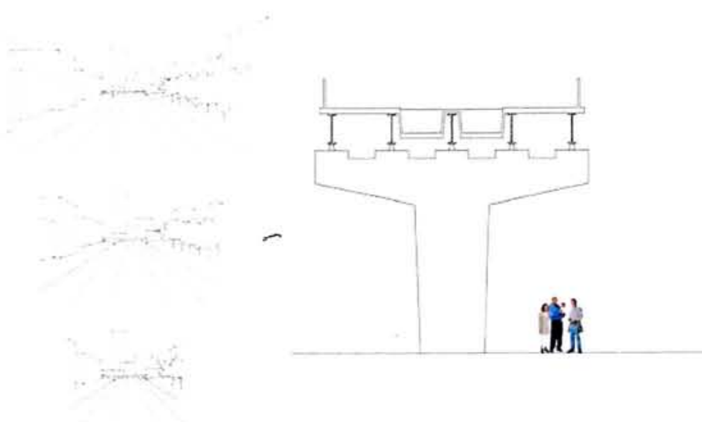

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The lanes are scaled according to the size of standard vehicles, and the vehicles themselves are scaled according to human dimensions. Highways, therefore, are indirectly scaled in relation to humans. When removed from this succession of relationships, however, there is no relation between the scales of the infrastructure and the human (see diagram). Similarly, transportation infrastructure is linked to the idea of limitless horizon, spreading out endlessly in all directions with no clear beginning or end. Urban fabric, in contrast, is marked by defining elements, block and streets, which provide a greater understanding of scale in relation to the human. When infrastructure and the city meet, there is no longer a comprehension of scale, as the infrastructure is created in proportions that do not relate to the human body. It is difficult, if not impossible, to establish relationships between the pedestrian and infrastructure, though it is these relationships that are fundamental in understanding the identity of a place.

This discrepancy in both scales and speeds of infrastructure and humans establishes the need for an architecture of flexibility. In order to fully engage both components of the void, the architecture must function on various levels. There is a difference in the way elements are viewed from a high speed passing vehicle as opposed to a slow-paced pedestrian. From the road, for example, the driver's cone of vision narrows as his or her speed increases, as they are trying to see farther ahead. This reduces the driver's awareness of his or her peripheral surroundings, including architectural works. With this in mind, architecture meant to interact with the passing motorist must operate in two scales and offer two levels of detail in order to engage the scales and speeds of both drivers and pedestrians (Hosken 102).

empty, adj.
containing noting, emaciated, shrunken, unoccupied, devoid of specific qualities, unsatisfactory, vain, meaningless, lacking purpose or substance

open, adj.
free, available, unengaged, not closed or blocked up, free from obstruction, affording unrestricted access or entry, not sealed, available; obtainable

Empty v. Open

Voids are typically associated with the quality of emptiness. That is, abandoned, lacking life, vacant (McDonogh 3). By activating the void, even if only by creating public space, the voids can be considered in terms of openness, rather than emptiness. Open space can be defined as a place, even if the activity defining the space is that of non-use. That is to say that while the space is technically empty, or rather, unoccupied, there is latent possibility within the space for successful occupation to occur (4). The significance of void/terrain vague/non-place as a site is linked to the potential for occupation and activity. Rubio notes that "the relationship between the absence of use, of activity, and the sense of freedom, of expectancy, is fundamental to understanding the evocative potential of the city's terrain vagues" (Terrain-vague 1). These voids are not hopeless vacuums completely drained of urban qualities, but rather moments where the city and infrastructure struggle to coexist. Purini observes that "non-places are not the opposite of places, nor do they simply indicate their absence. They are not negative entities, but rather

It is important to note that while an abundance of voids in the urban fabric is problematic, there can be a value and purpose to the spaces when only a few exist. Rem Koolhaas expresses the value of voids in a work, nothing that "the most important parts of the building consist of an absence of building." His scheme for the Tres Grande Bibliotheque consists of an 'information solid' from which voids, the main program elements, are carved. While this is intended for a singular building, the idea can be applied to the urban context as well (Infratecture 2). Similarly, Peter Marin discusses the importance of what he terms 'margins' within the city—holes, gaps and breathing spaces which allow flexibility and elasticity to exist in society (McDonogh 14). While empty voids—spaces lacking life, vitality and a potential for place, are hindrances to the urban condition, open spaces—those spaces with potential for occupation and participation within the city fabric, are valuable in the urban condition.

When introducing an architecture into the void, it is important to consider the nature of such an intervention. Using architecture as a means of continuing the urban fabric within the void does not mean that the void should simply be filled according to the surroundings. Purini emphasizes the opposite, in fact, noting that the void serves as "a habitat for other architectures," a place to be treated differently than the rest of the fabric (125). The intervention can draw spatial and aesthetic influences from the existing fabric, but should retain the inherent qualities of the void itself.

Traditional urban fabric is generally effective at generating activity within the city, though in the case of terrain vague, such a device is not the best solution. According to Rubio, "the role of the architect is inevitably problematic. Architecture's destiny has always been colonization, the imposing of limits, order, form...an instrument of rationalization" (122). In these spaces, however, the traditional form and order of the urban fabric is not effective. They are not capable of dealing with the speed and scale of the surrounding infrastructure. If traditional urban space were the simple solution, it is unlikely the voids would exist in the first place.

The Nature of the Void

New York, NY

Void Formation due to Abandoned Infrastructure
The New York City Highline

The New York City Highline was constructed in 1929 as an elevated freight rail. It is 1.45 miles long, 30-60 feet wide and 18-30 feet high, slicing through 22 city blocks on the west side of Manhattan. Like much of the infrastructure of the industrial era, the highline has fallen into disuse and disrepair. This creates a unique situation, as in this case, the infrastructure, rather than creating the void, has become the void.

Diller, Scofidio & Renfro intend to bring public activity to the abandoned highline, in other words, to activate the void. It is intended that the now privately owned railway will become an open public promenade with various landscape environments, built, owned and occupied by the general public. The new design includes various balcony overlooks and slow stairs, serving to connect the highline both visually and physically to the surrounding area. In this way, while still physically lifted above the city, the highline [the infrastructure which both caused and exists as the void] can become a functioning part of the urban fabric.

The mediation between the elements of infrastructure and humans in this project is approached in a unique way, as humans are occupying the highline. Because of this, the infrastructure itself is being transformed from a scale based on the automobile to a scale based on the pedestrian. The conception of the highline as a promenade, with the addition of stairways, benches and overlooks brings the infrastructure itself into a human scale, that is, the mediation between the two is a form of transformation.

Boston, MA

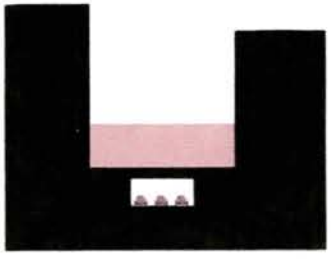
Physical Void due to Relocation of Infrastructure
Boston & the Big Dig

Since the 1930s the city of Boston has been undergoing a nearly constant process of construction concerning transportation infrastructure. In the 1930s, the decision was made to undertake a massive infrastructural building project to alleviate the city of its traffic congestion. The project was to include a bridge to East Boston, a parkway along the Charles River and a two-level street spanning two miles from North Station to the Dover Street Bridge.

The implementation of this new infrastructure caused a rift in the city, separating the city center from the busy North End and waterfront areas. Since the initial realization of the project, city residents have been opposed to the elevated roadway and its slicing effects on the city. In recent years the sheer volume of traffic and congestion in the area has made it necessary to do something more to accommodate the necessary capacity of the infrastructure. A new strategy had to be employed, as public opposition and urban constraints would not permit any further above-grade construction of the roadway. Thus, rather than expand the capacity of the infrastructure on the surface of the city, it was decided that a few lanes of surface road would remain at grade, and the entire elevated roadway would be moved underground.

The Nature of the Void

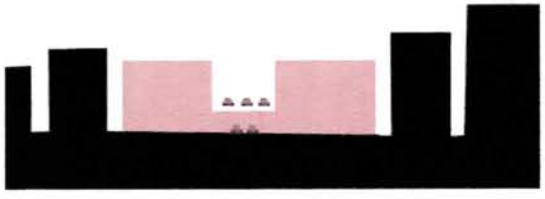
Boston, MA



Aside from the obvious planning and engineering issues, the relocation of the highway causes other problems in the city. When on the surface, the highway split the city into two parts, a major motivation for its relocation. When the roadway is moved underground the split in the city will still occur, though now the separation will be caused by the absence of the infrastructure, rather than its presence. The nature of this void varies from typical infrastructure/grid void conditions, as the infrastructure responsible for the void is now below grade, though possibility for connection and mediation still exists. Even as the void is slowly activated and worked into the city fabric, residue of the infrastructure that once ran through the urban fabric will always exist. Given the historic monumentality of the Big Dig project, the possibility, or perhaps the necessity, to recognize and incorporate the infrastructure, past or present, into an intervention exists.

The Nature of the Void

Syracuse, NY



Void Formation due to the Presence of Infrastructure Interstates 81 & 690

The city of Syracuse was once a booming industrial city, productive during the days of salt mining and shipping along the Erie Canal. Today, however, the city exists in a post-industrial state, struggling to support its dwindling population. One of the major factors affecting the city is the highway infrastructure which has been overlaid onto the existing fabric. Interstate 81 runs north-south through the city, slicing it in the north-south direction, which Interstate 690 effectively splits the city along an east-west axis. The highway has created a boundary within the city, a line difficult for the vehicle and nearly impossible for the pedestrian to cross. The city has been divided into two active zones which function on either side of the interstate, with little interaction or connection between the two. The middle ground surrounding the infrastructure itself is less successful, as it is not a part of either economic zone. Much of the fabric in the area is not fabric, but rather the absence thereof. The city has found it difficult to function with the presence of the infrastructure slicing through its blocks, as it is unable to facilitate activity within the voids. Because of this, nearly every block along I-81 has been turned into a parking lot. These parking lots are simply a way of filling, rather than activating the voids, however, as their program negates the value of human presence and activity.

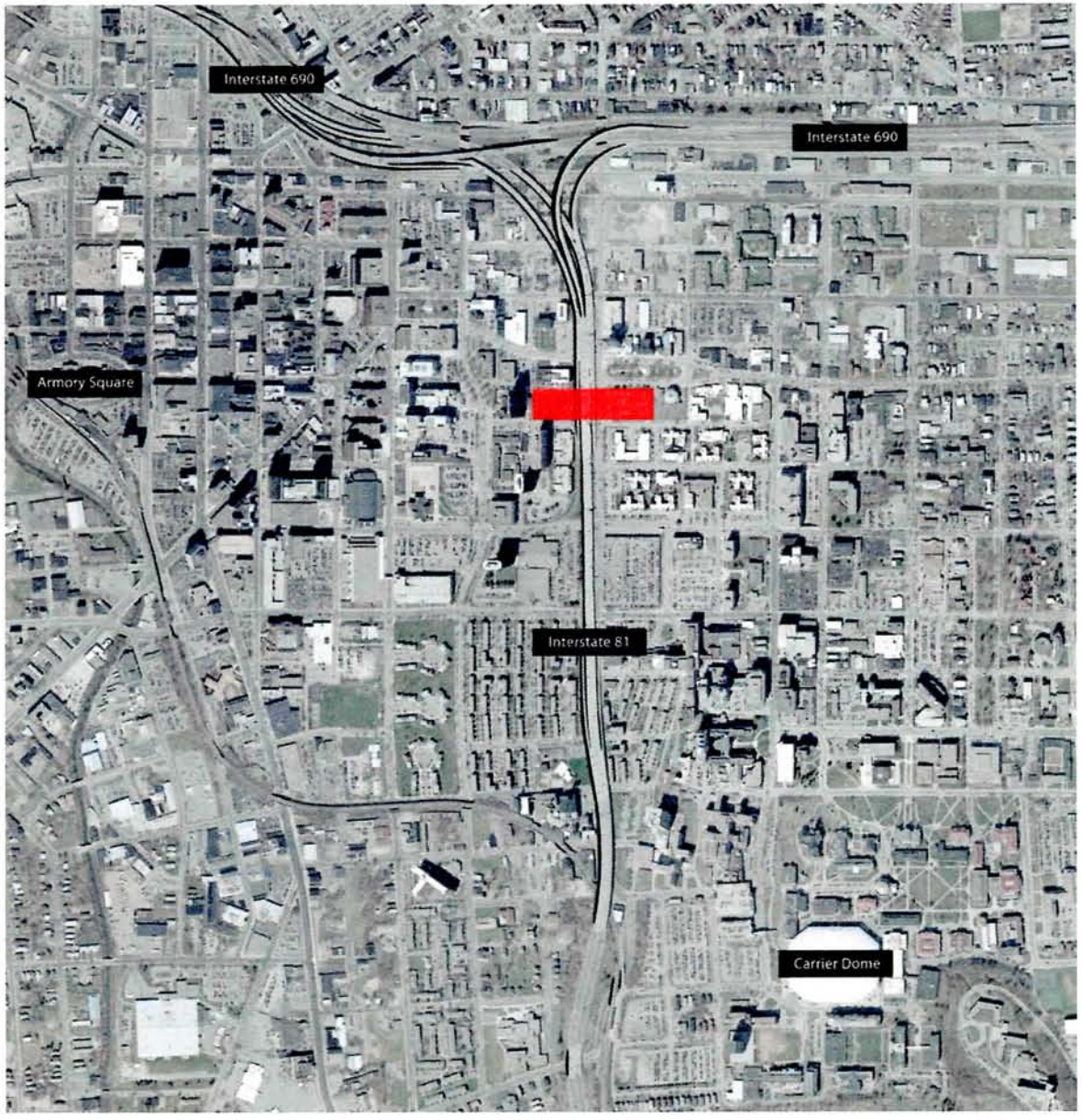
Pedestrian Infrastructure

Throughout history, pedestrian infrastructure has been a major element of urban planning. The early Greek Agora and the Roman Forum provided citizens with a place to conduct business and socialize. Italian piazzas provided a setting for public gathering, ceremonies and markets. Overtime these have developed into various other forms, such as paved pathways, treed streets, vehicular free zones and more enclosed facilities, such as shopping arcades and pedestrian malls, all of which provide a multifunctional program linked to the pedestrian.

While the form and function of the architecture housing pedestrian activity have varied over time, each was successful because of the importance of the pedestrian population in the city. Pedestrian infrastructure benefits the city in a number of ways. First, it works to bring the populations out of their cars and into the streets, encouraging use of the city in a relaxed atmosphere. The city can be experienced at level of deeper understanding at the slow speed of the pedestrian rather than the fast speed of the vehicle. Pedestrian infrastructure also provides the opportunity for interaction among users. This can be planned events as well as spontaneous meetings and activities, as interaction is much greater among people when they are removed from their vehicles.

Pedestrian-based facilities can also generate a great deal of economic activity for a particular area. Pedestrian infrastructure can serve as both a passageway and a destination. The programs within the space will generate a population of its own—those who go to the area for a specific purpose, whether it be eating, shopping, gathering or entertainment. The facility can also benefit from those who use the space as a means of getting from one place to another. Nearly all the arcades of the 19th century were used as shortcuts through city blocks, a concept which is still employed today. The opportunity for economic gain is great, as mixed users, through program and function, provide greater success than only one specific population type.

Site



Syracuse, NY

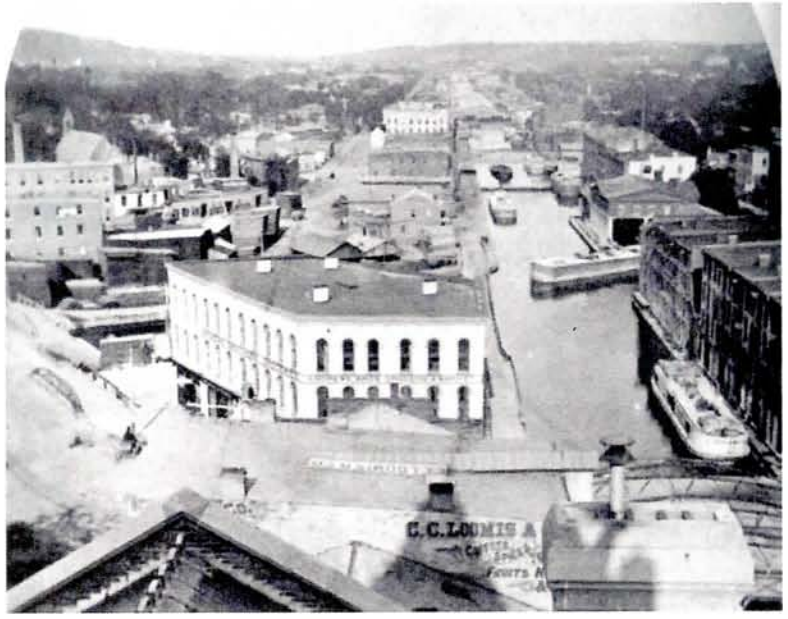
This thesis will analyze a site of void in the urban fabric and propose a solution for how to both activate and pass through the site. The site must be located in the close proximity to an interstate system, and must be enclosed by fabric on at least three sides in order to be understood as a void condition rather than an edge.

The site is located in Syracuse, NY. The city demonstrates both spatial and programmatic voids, especially in the zone surrounding the interstates.

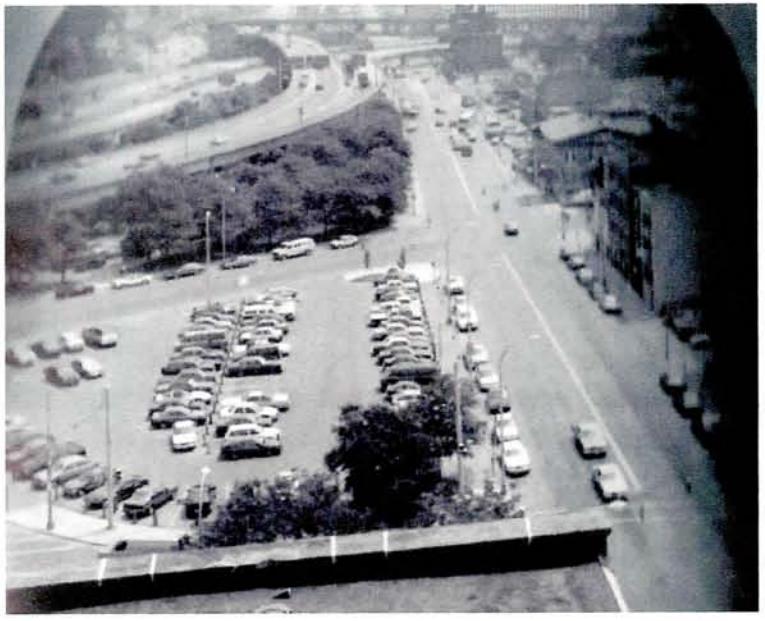
More specifically, the site is located on voided lots on either side of I-81, and will include the zone above and below the interstate as well. The site is surrounded on all sides by built urban fabric and can be easily identified as a void, terrain vague, non-place in the city.

voids: +/- 100,000 SF
interstate zone: +/- 35,000 SF

Past v. Present



Erie Boulevard 1938
dense fabric & activity

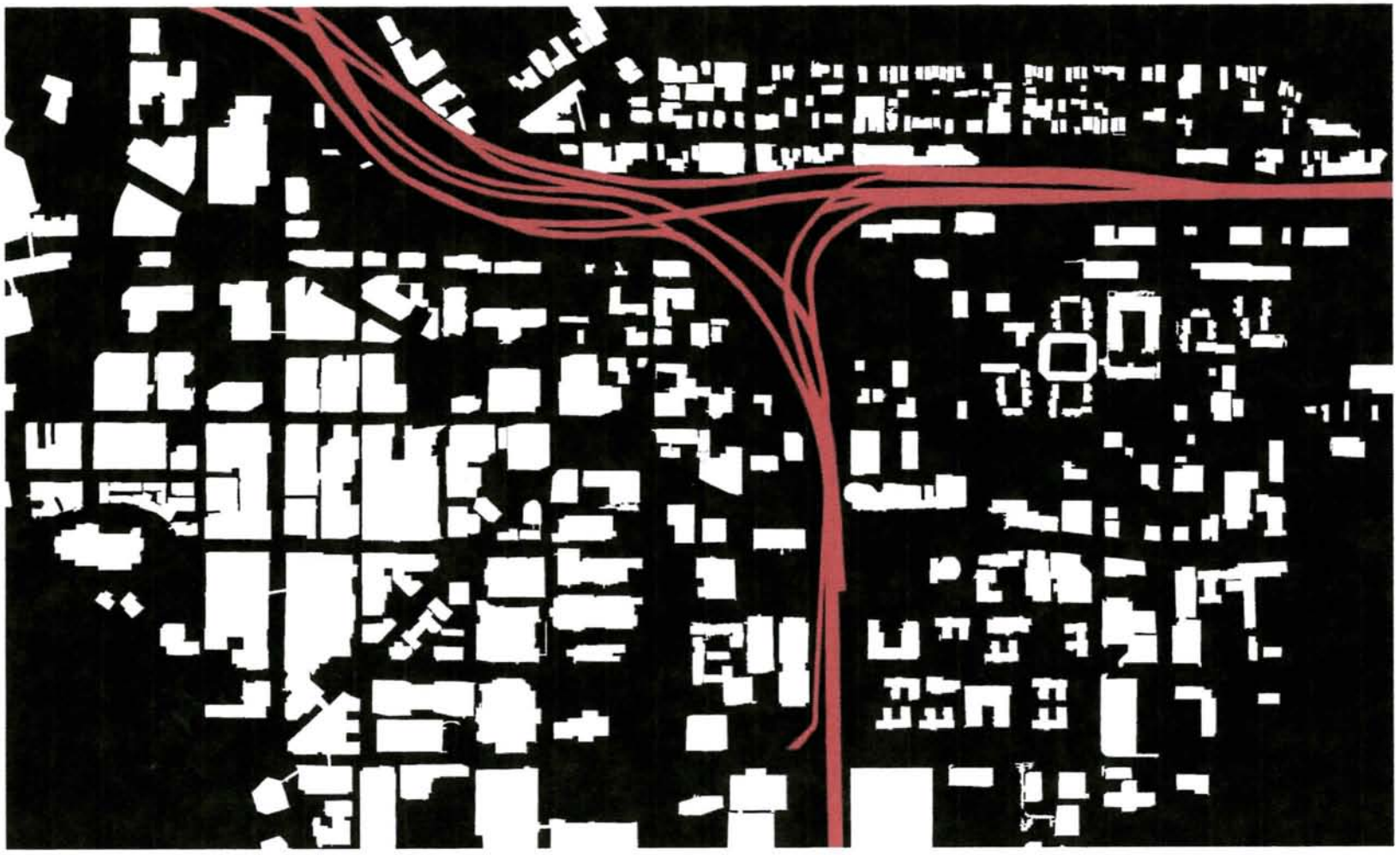


Erie Boulevard 1990
roadways & parking

1938 Aerial
high density urban fabric

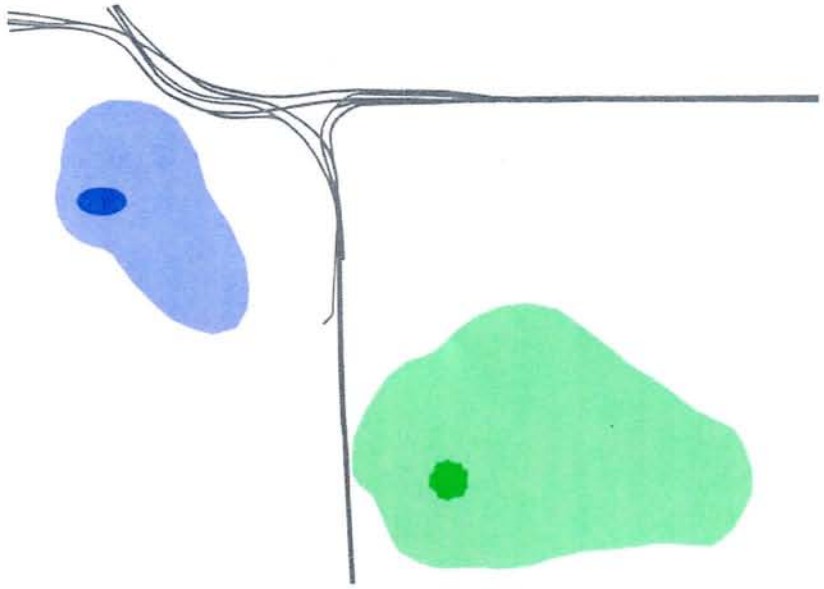
Past v. Present

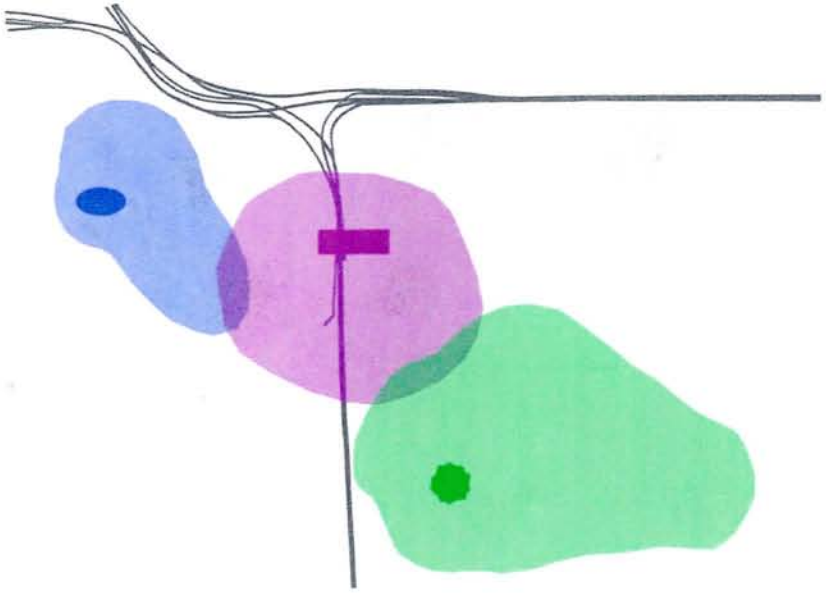
2000 Aerial
increased void space surrounding interstate



2000 Figure/Ground Reversal
emphasizing the abundance of void
space surrounding the interstate

Activity Zones

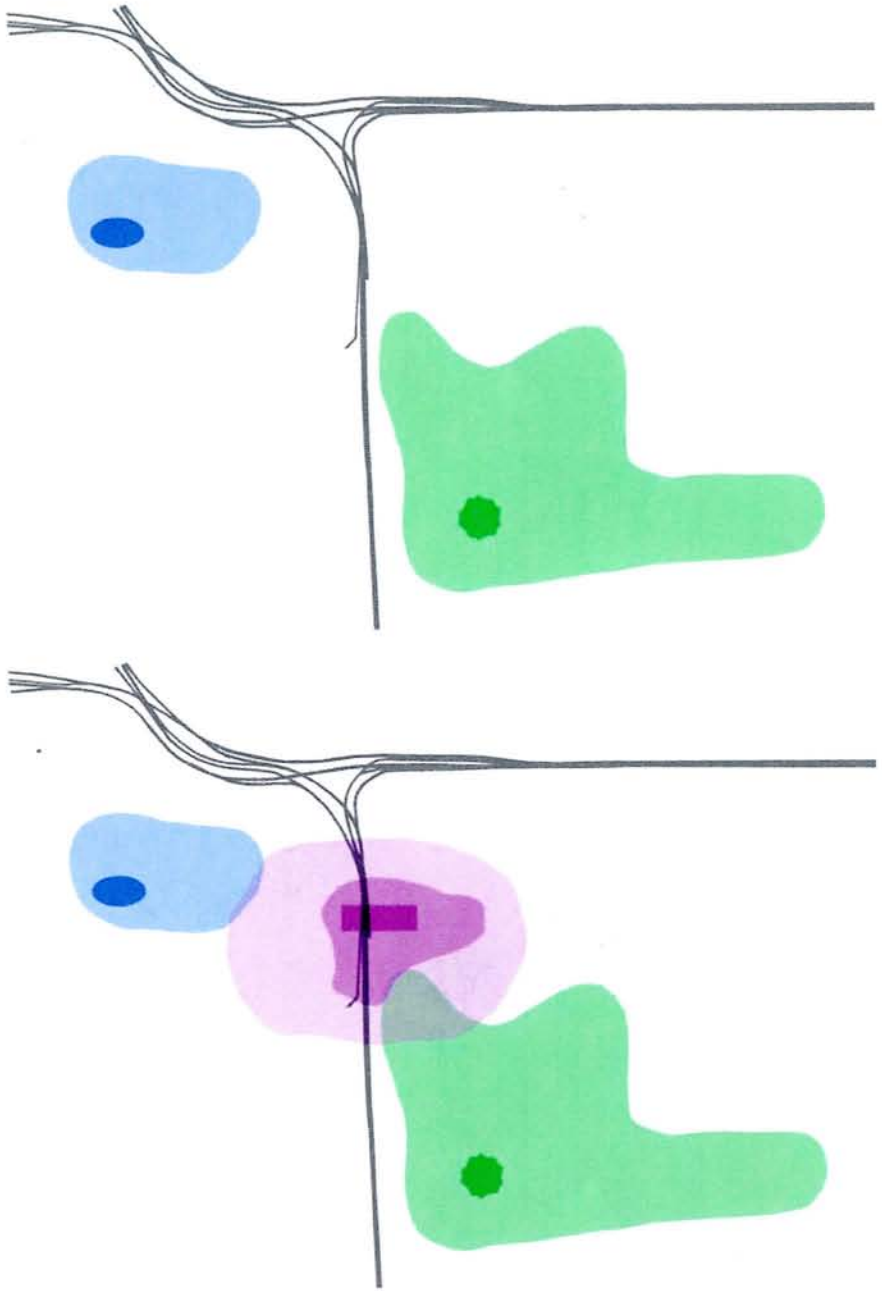




Interstate 81 slices the city of Syracuse into two parts. Each of the two halves of the city is strengthened by a major productive zone. The city's downtown is located west of I-81 and contains municipal and cultural programs, such as museums, a convention center and the city courthouse. The hill, east of I-81, is home to Syracuse University and several hospitals. The region in between these zones, the district surrounding the highway, exists as a void in the urban fabric. There is some activity linked to retail shops and the nearby hospitals, though the area cannot be considered a productive zone due to the vast amount of vacant space.

The architectural insertion into a specific void along the highway is intended to serve as a catalyst for new activity. It is intended that through the introduction of architecture with particular programmatic elements, the inactive zone surrounding the highway will become a productive zone as well.

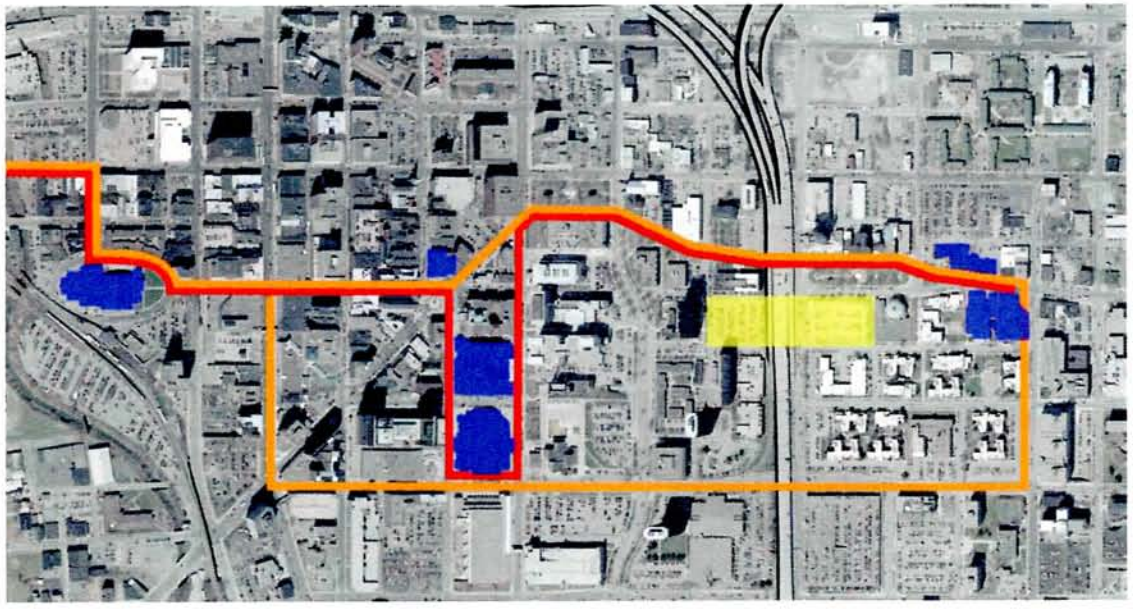
Active Pedestrian Zones

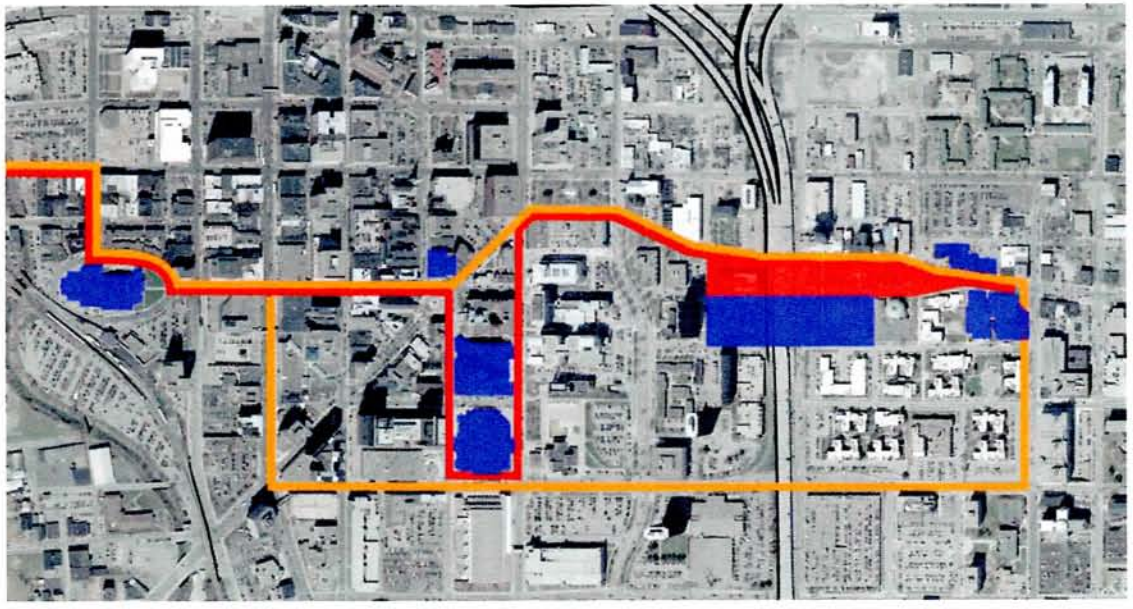


If compared, one can see that the two active zones in Syracuse occur in the same area as the two major pedestrian zones in the city. That is, the zones in the city where pedestrians are able to operate with relative ease are the same zones that are the most active and productive. The zone surrounding the highway is unproductive, in part, due to the lack of pedestrian activity in the area.

An important element of the new architecture is the inclusion of a pedestrian passageway across the interstate. Pedestrian movement is difficult in the areas on either side of the interstate, and passage across the highway is nearly impossible. If pedestrians are givens a means to move from one side of the interstate to the other, the potential for a more active, and therefore more productive zone in the city exists. The first step is eliminating the highway as a boundary and bridging one side to the other, which can later develop into expansion of pedestrian movement freely throughout the area. According to city officials, "increased pedestrian traffic will spur growth of new businesses & infuse existing businesses with a greater number of potential customers."

The S.U. Connective Corridor



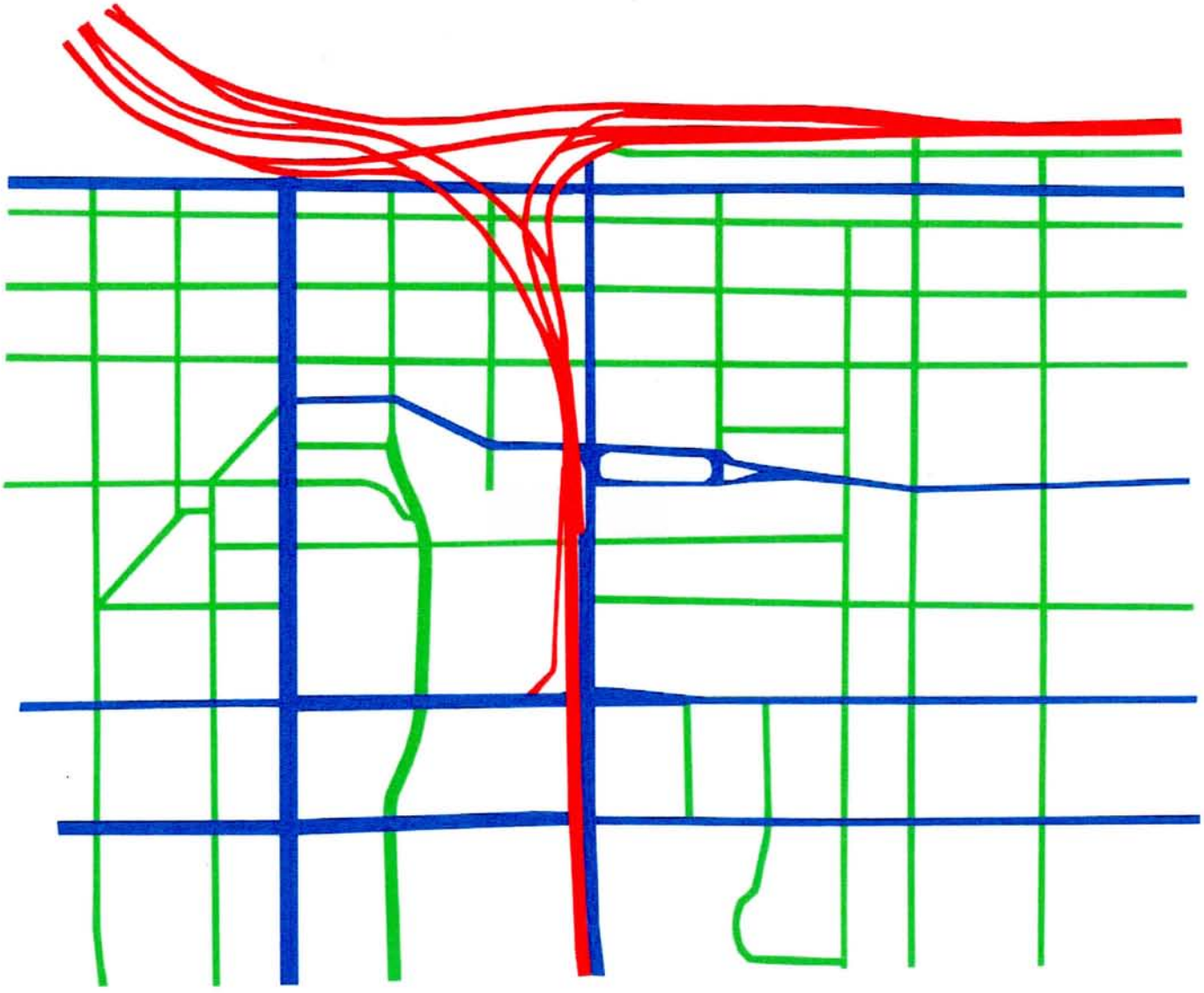


Syracuse University is currently taking measures to overcome the barrier created by I-81. Planning is currently underway for a corridor through the city, a combination public walkway and bus circuit. The Corridor is intended to link the active zone of the University with the active zone of the downtown area, in an effort at "eliminating the physical and cultrual barriers that have traditionally separated [the city]."

While this measure is perhaps not enough to connect the city on its own, it does have the potential to bring a new population to the area. As a major part of both the pedestrian and bus routes run in close proximity to the site, there is great opportunity to take advantage of the populations that will be arriving daily at the site, thereby increasing the usage and activity of the new architecture and further activating a dead zone.

Pedestrian Route
Shuttle Bus Route
Selected Points of Interest
Site Footprint

Street Scales & Speeds

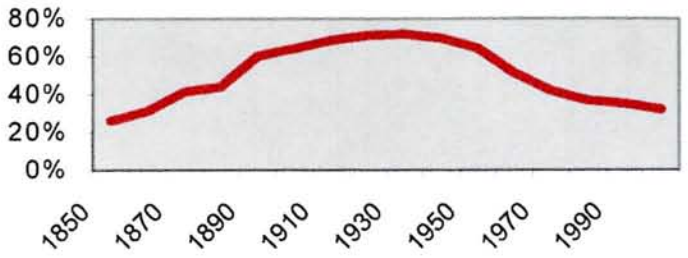


Interstate
High Speed, Large Scale

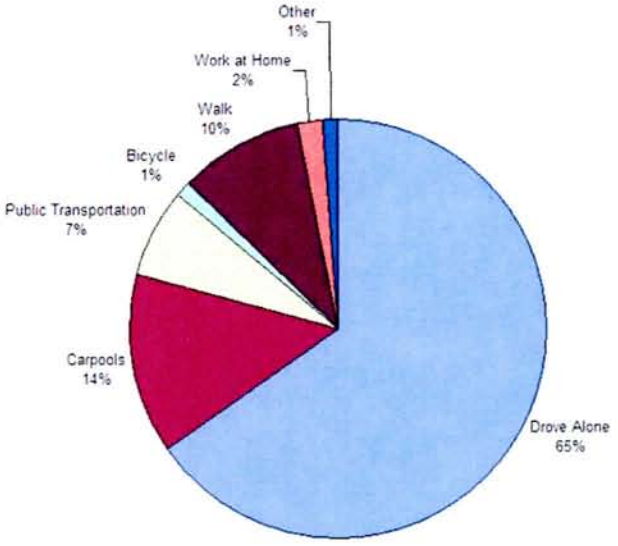
Primary Roads
Moderate Speed & Scale

Secondary Roads
Slow Speed, Small Scale

Site Footprint



Percentage of County Population
Living in the City of Syracuse



Means of Transportation to Work
City of Syracuse
(workers 16 & over)

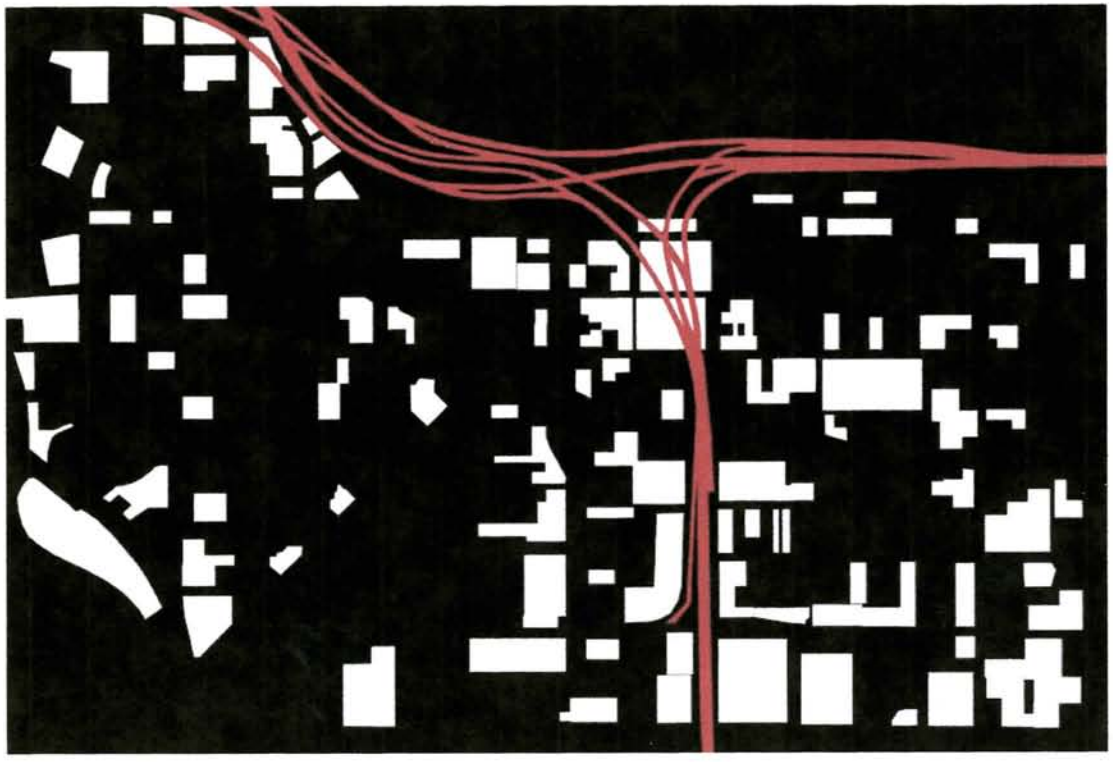
Population Trends & Commuters

One element extremely prevalent in the city of Syracuse is parking infrastructure. The entire city is littered with lots and garages in order to accommodate the automobile population.

Much of the parking infrastructure can be linked to the presence of the interstate in the city. With the incorporation of highway systems, the city began to decentralized, residents leaving the core for suburban areas. People move to the periphery to seek a better life outside of the city. Since the 1960s, Syracuse has experienced a steady decline in population.

This population decline is countered, however, by the number of workers who commute to the city daily for work. Many of those who live in the surrounding suburbs return to the city on a daily basis. The University Hill area alone houses the two largest employers in the city, SUNY Upstate Medical Center and Syracuse University. According to the 2000 census, 38% of workers in Syracuse are city residents, while 68% are from the suburbs. On average, 59,000 commuters enter the city daily to work. This daily surge in population causes a great need for parking facilities. Along the same lines, there is a reliance on the automobile in the city. Two-thirds of the population within the city drive to work each day, creating the need for more parking.

The Popularity of Parking

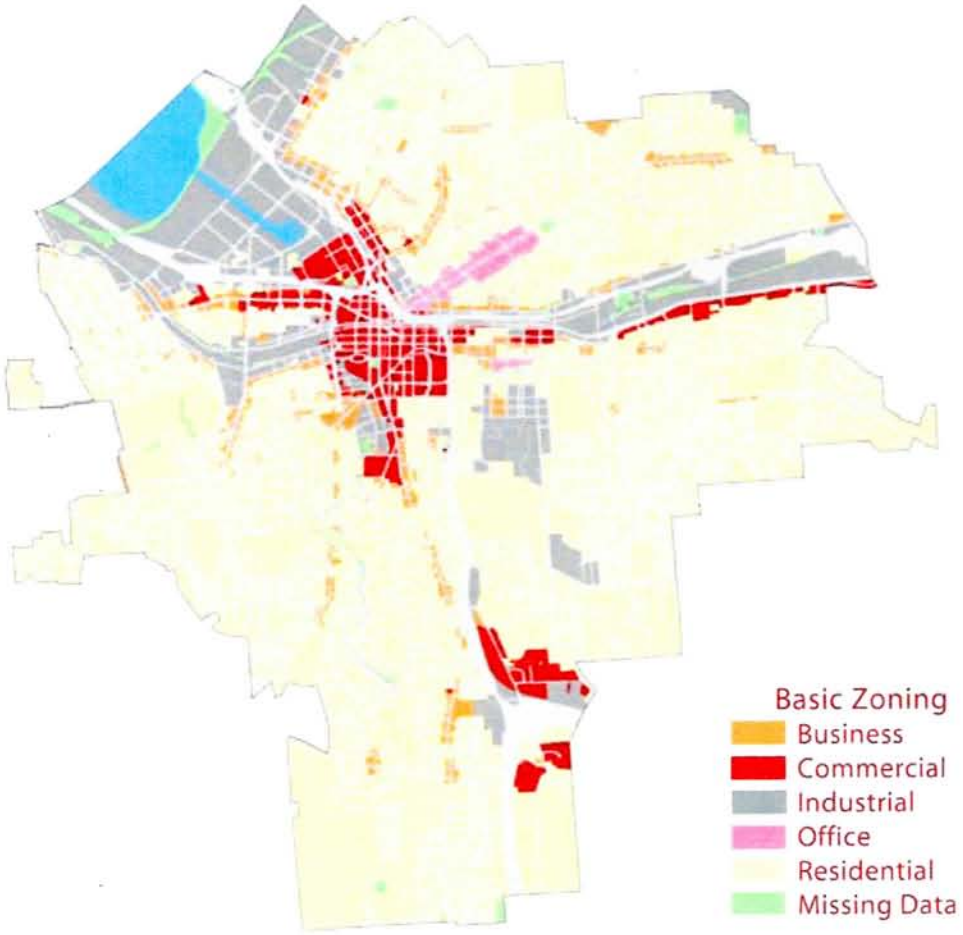


Where Do All the Cars Park?

It is indicated that in the Central Business District alone, the zone near Armory square, 25% of the land is appropriated for parking, providing 13,000 cars with a place to park. The zone immediately surrounding Interstate 81 consists of nearly all parking facilities, for two reasons. First, this location provides convenience for commuters, as it is directly off the highway and relatively close to their workplaces. In addition, the zone is full of voids in the urban fabric created by the presence of the highway. Parking facilities are located in these voids because of the difficulty of effectively occupying the voids with other program. If traditional urban fabric were successful in the void spaces, the voids would not exist in the first place. Parking lots and garages can be successful in such a place because the program is a void in itself. Parking lots require little spatial definition, and are neither socially nor economically productive—they are essential a non-place filled with a non-program, and therefore not affected by the overwhelming presence of the highway.

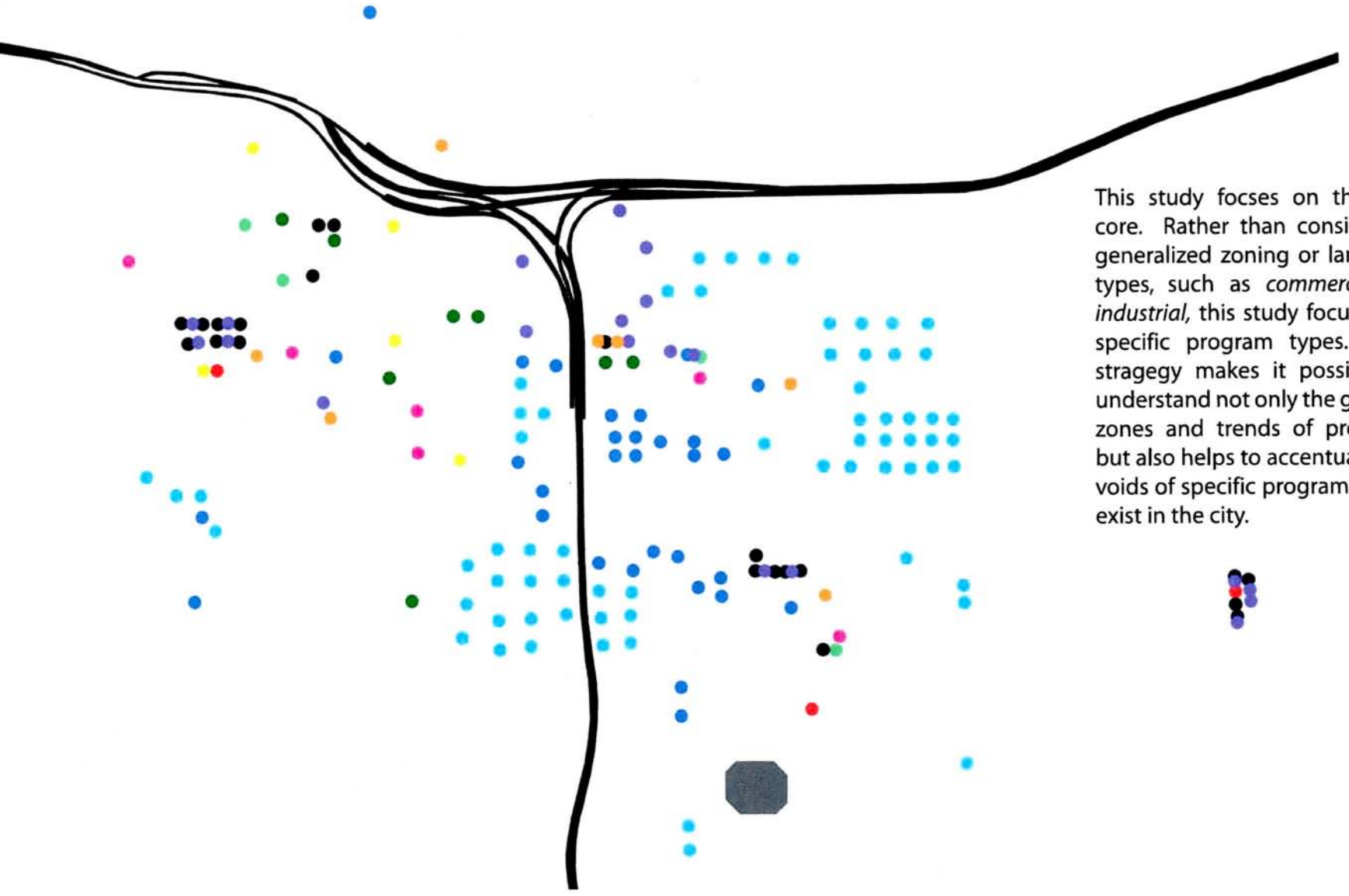
Program

Programmatic Zones

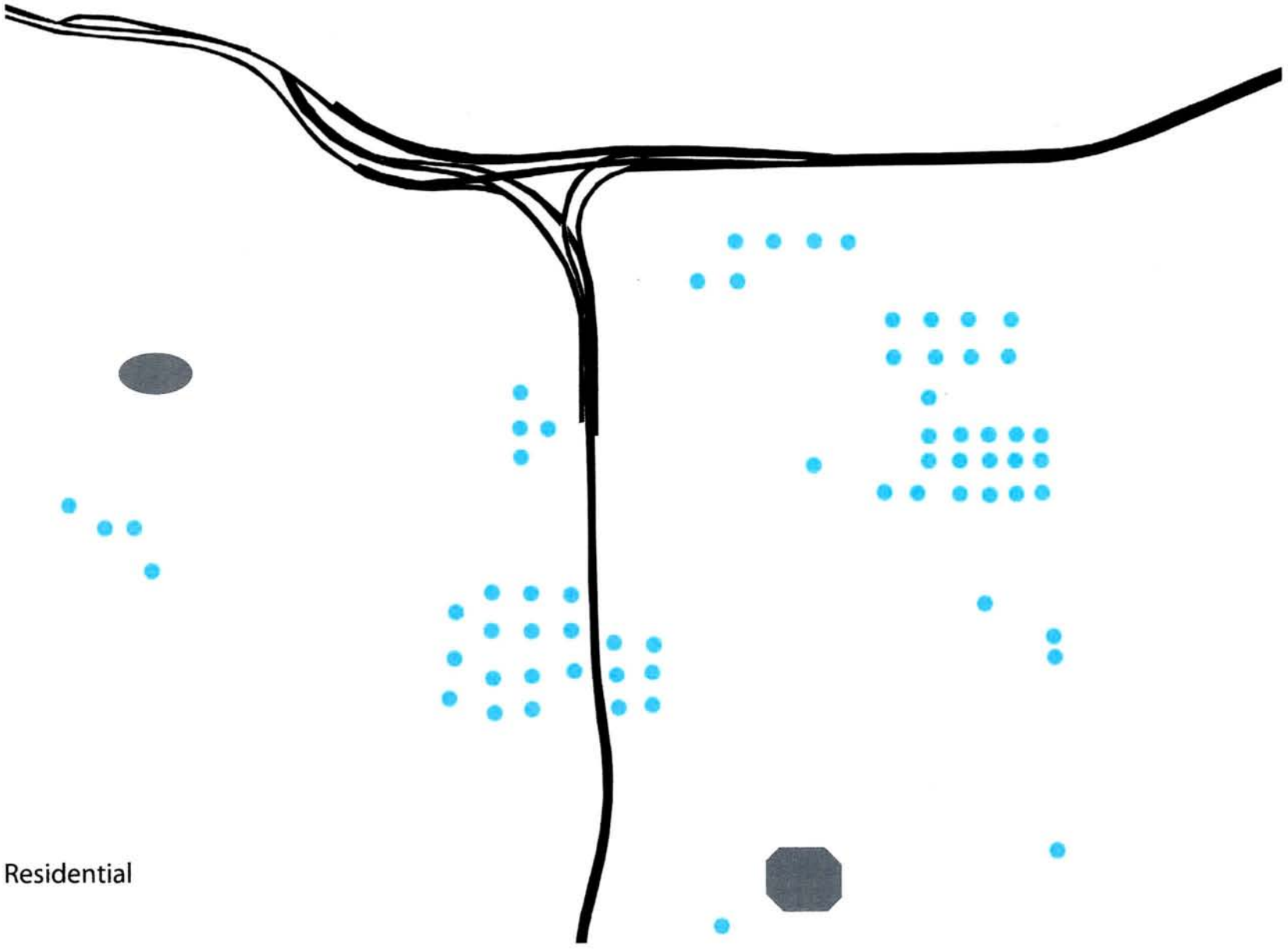


In order to activate the void with a successful intervention, an understanding of the surrounding district is necessary to clarify the needs of the site itself. A study of the program trends in the area surrounding the site is necessary to determine different programmatic zones. This can then be used to extrapolate an instrument of organization of program within the city. This understanding is important in determining how the new architecture will either be aligned with or juxtaposed to the existing fabric. There are a number ways the different programs can be divided, and when examining the area it is important to note not only the specific functions of the buildings, but also the different populations that are linked to these uses.

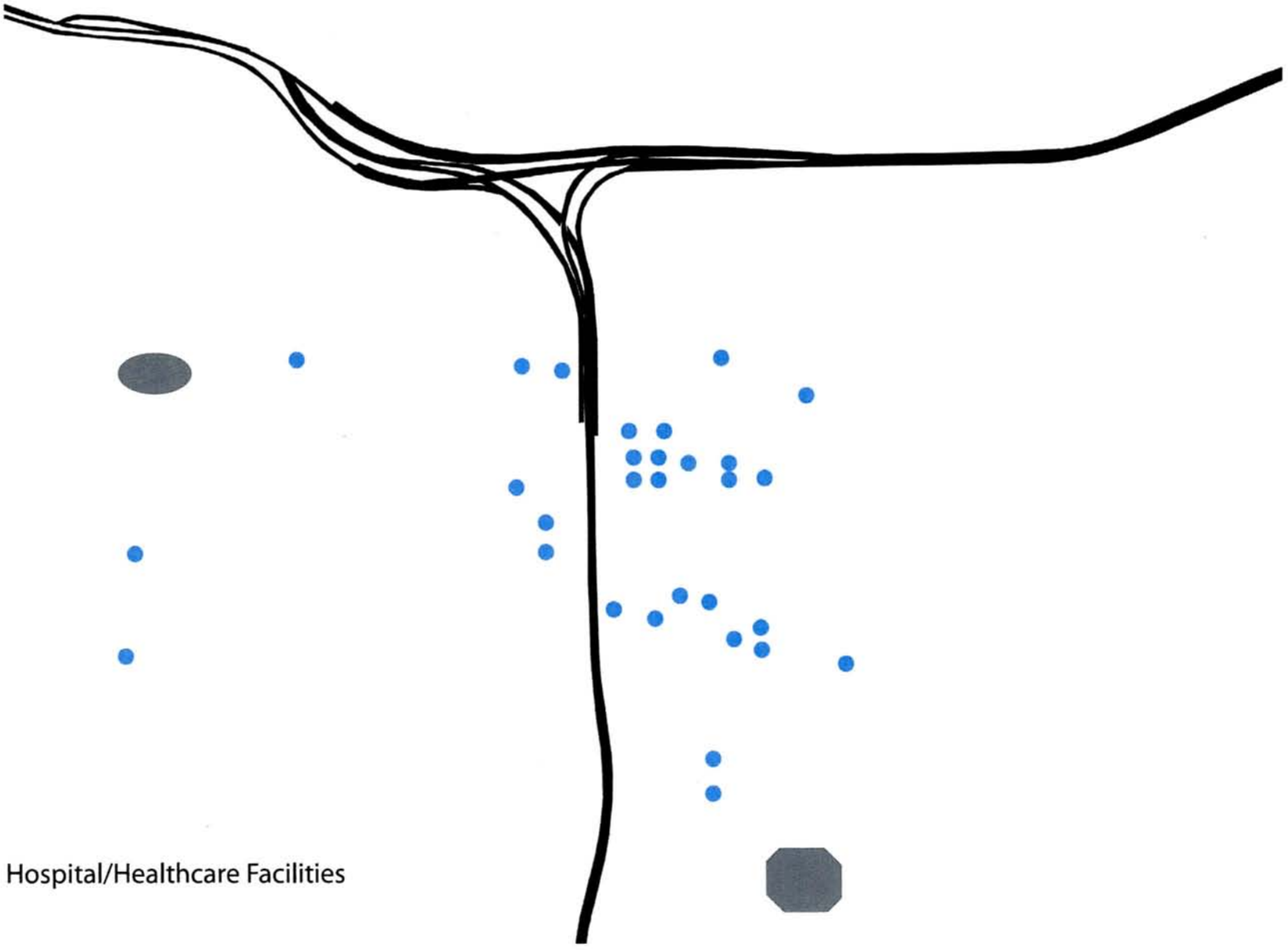
Programmatic Zones



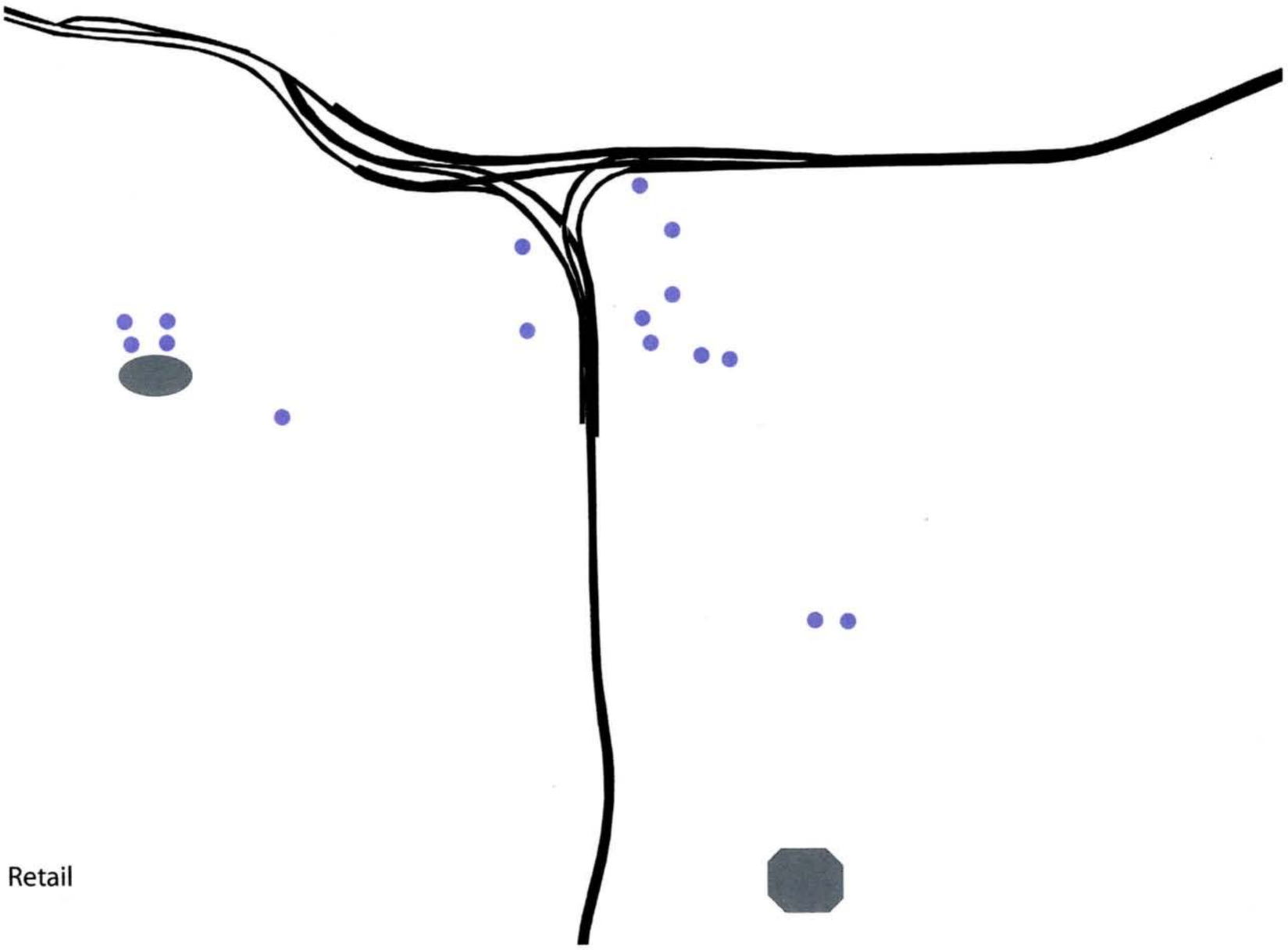
This study focses on the city core. Rather than considering generalized zoning or land use types, such as *commercial* or *industrial,* this study focuses on specific program types. This stragegy makes it possible to understand not only the general zones and trends of program, but also helps to accentuate the voids of specific program which exist in the city.



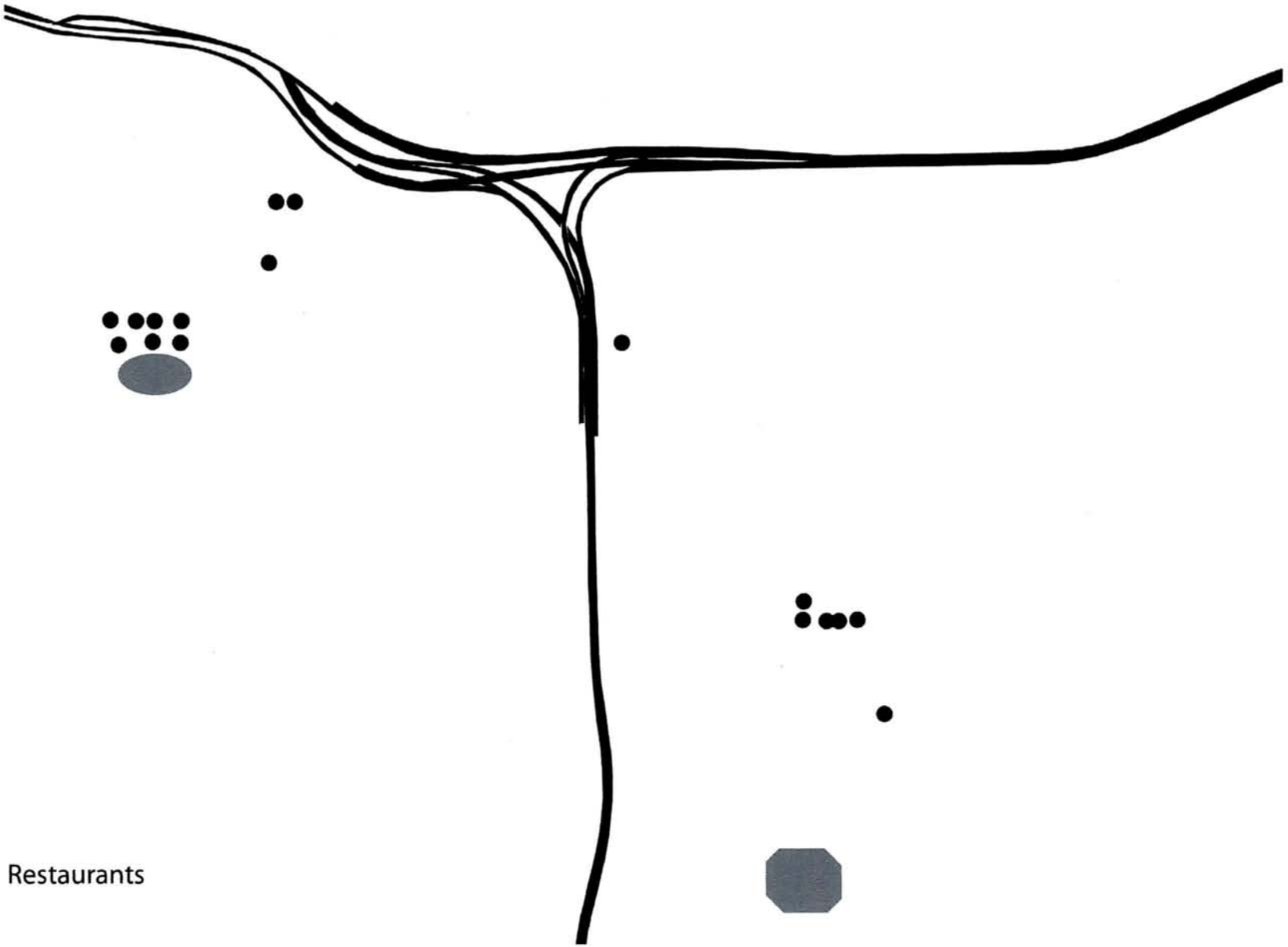
Residential



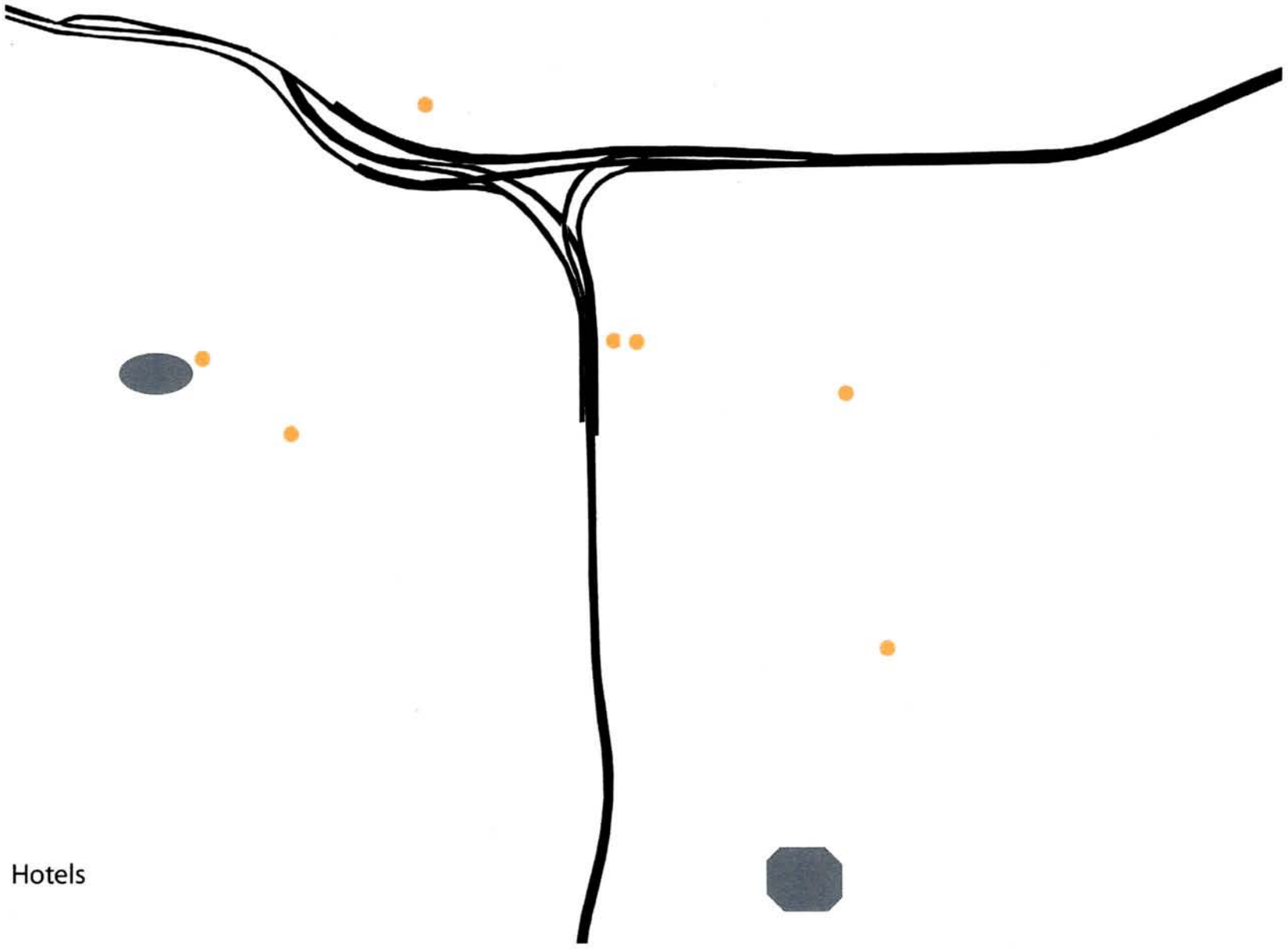
Hospital/Healthcare Facilities



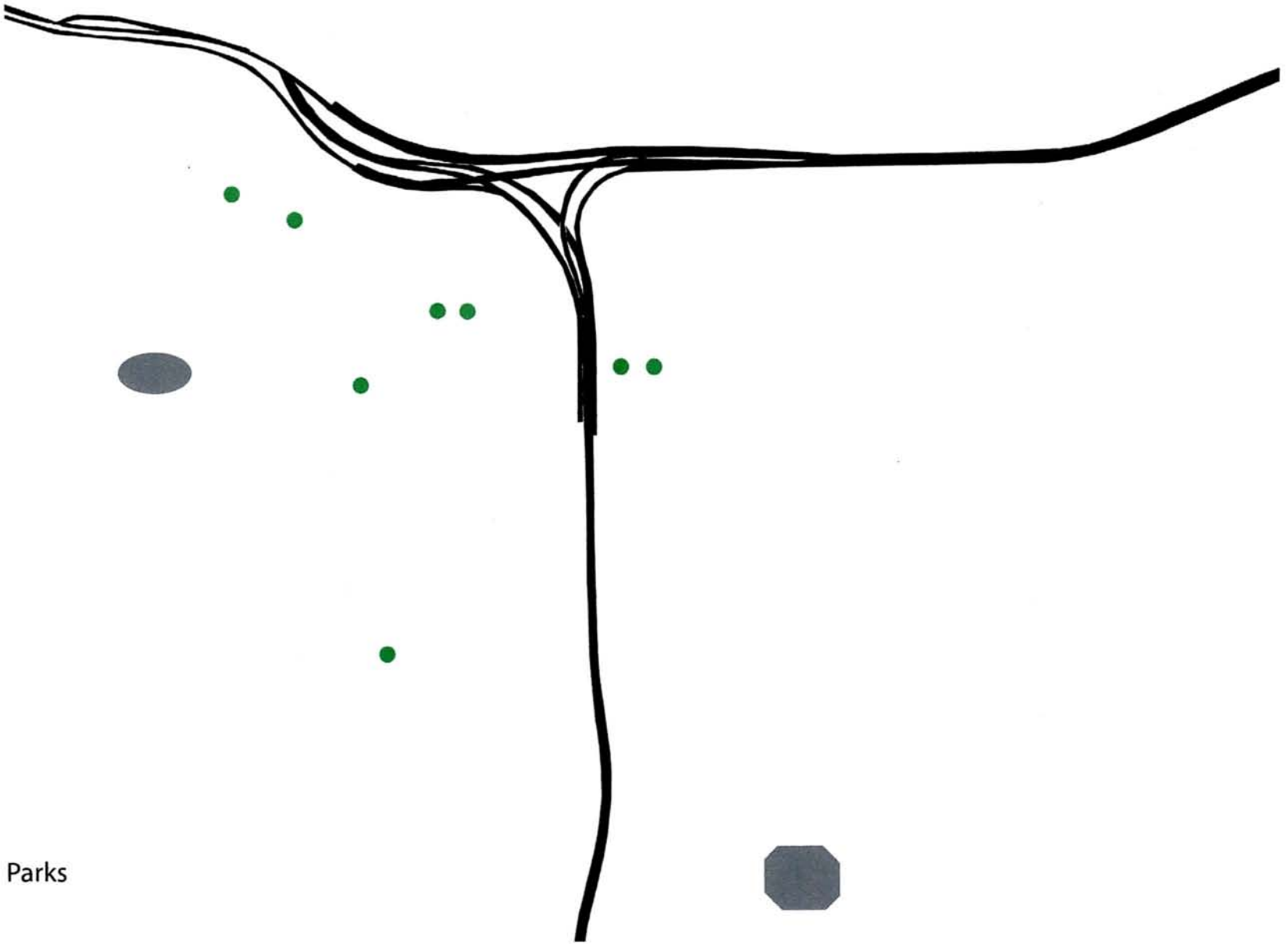
Retail



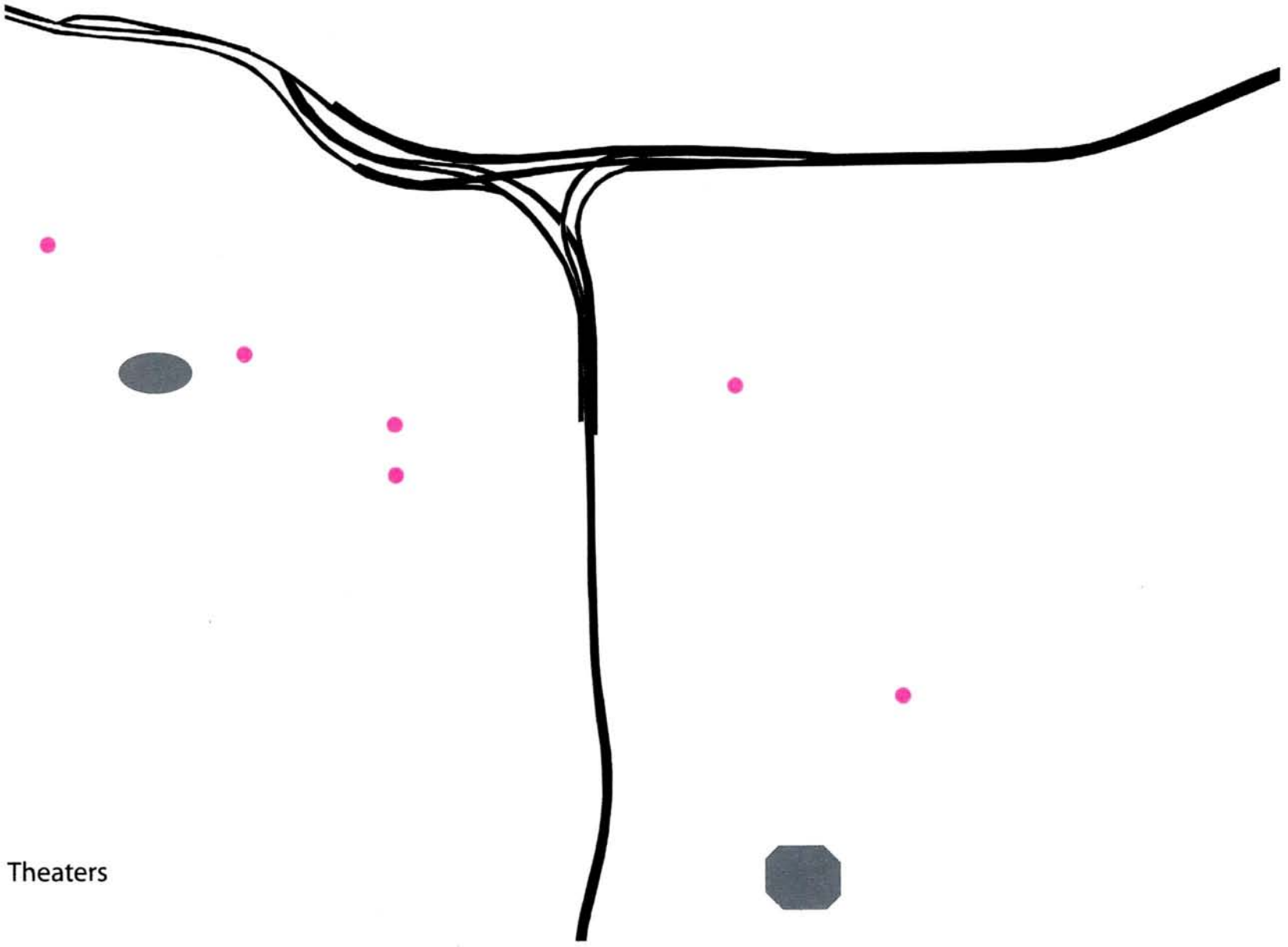
Restaurants



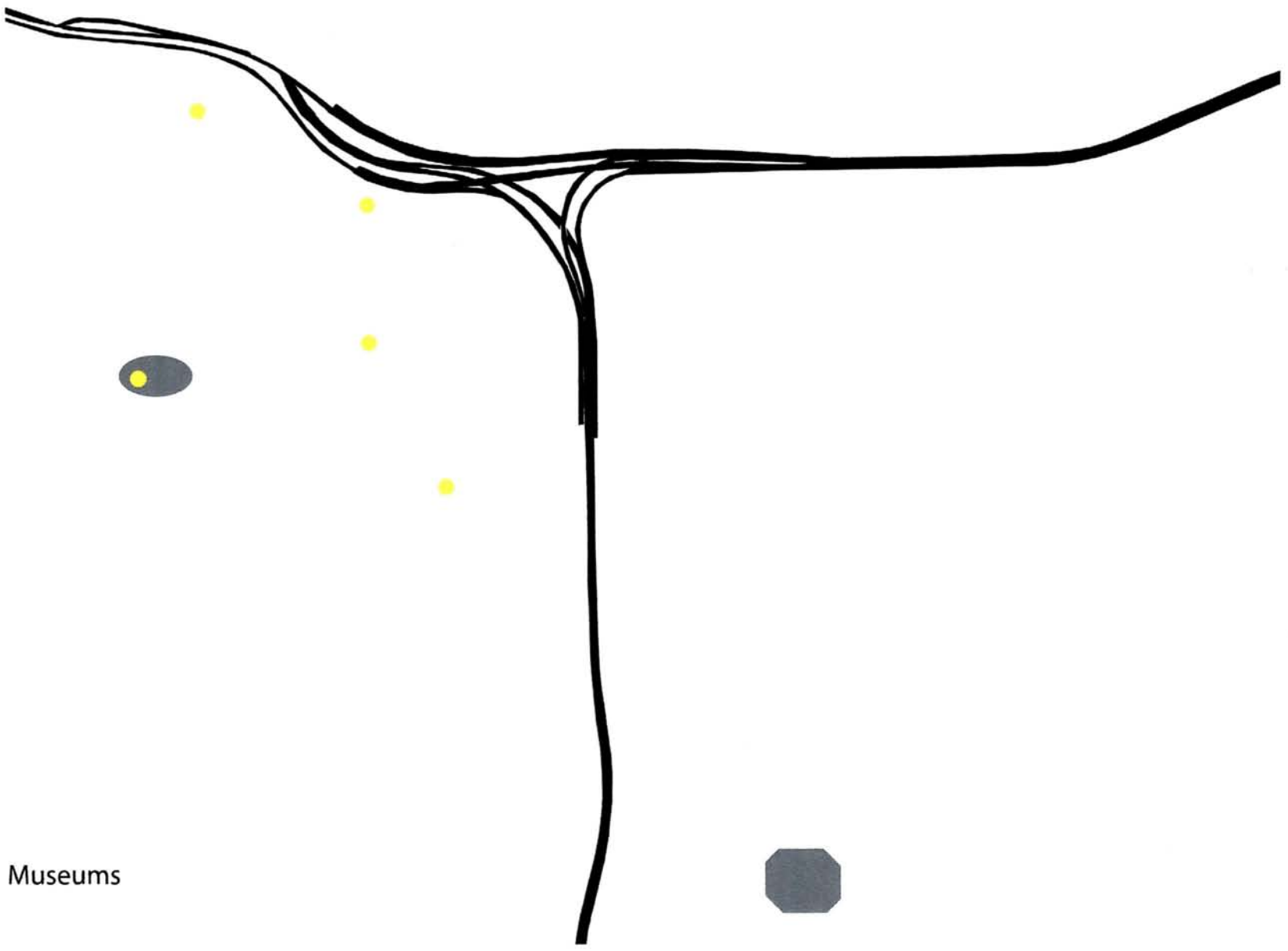
Hotels



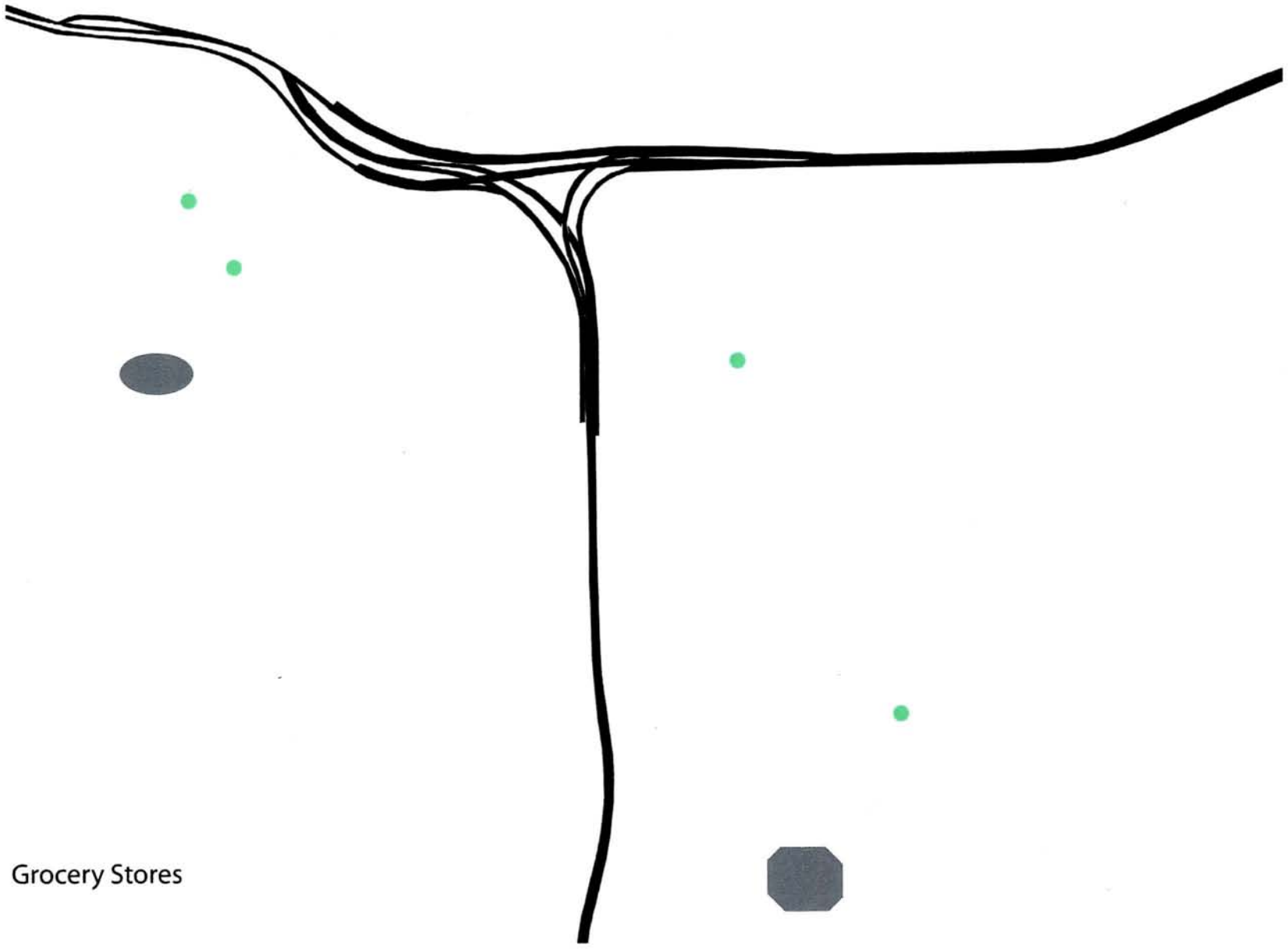
Parks



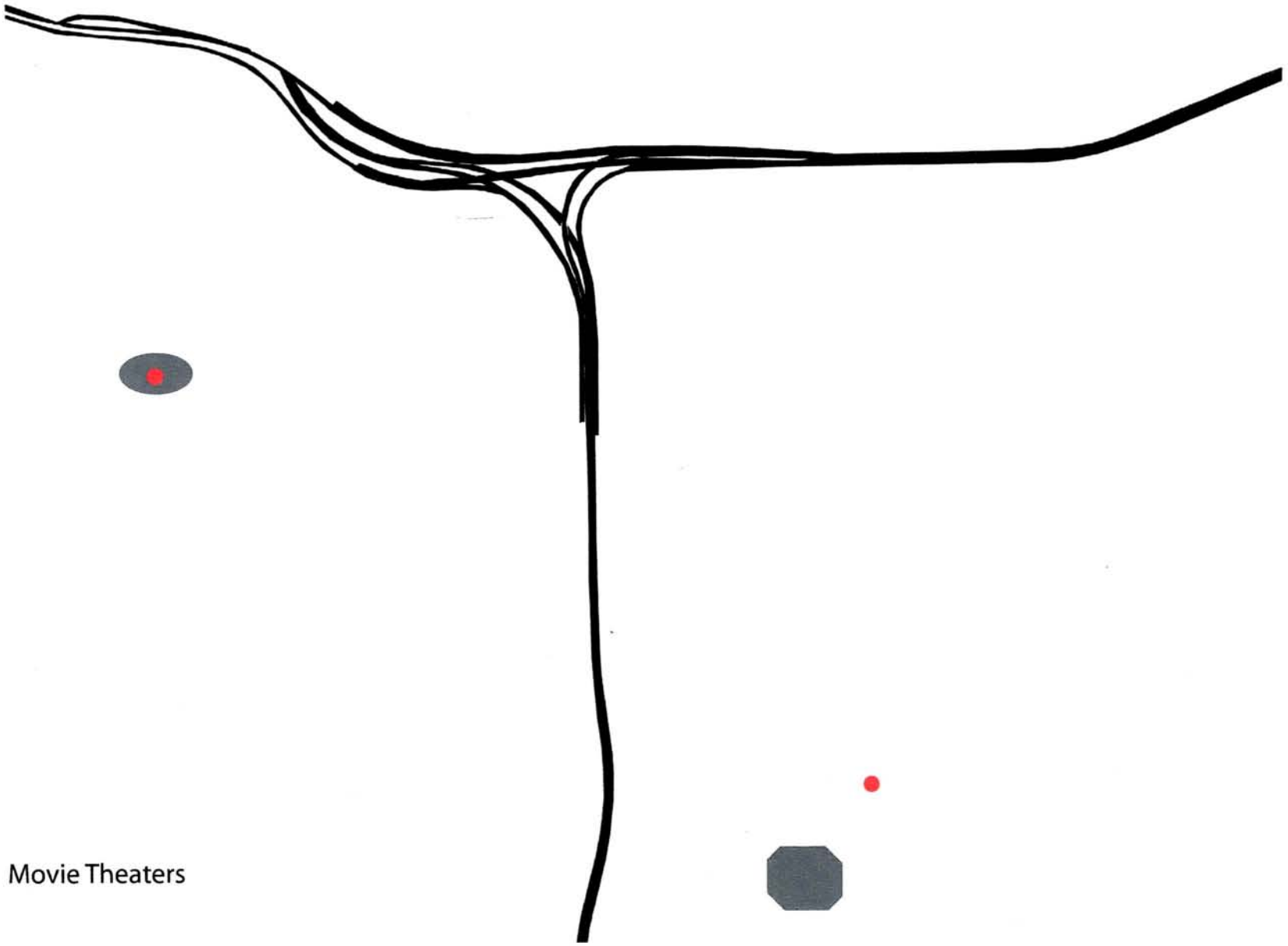
Theaters



Museums

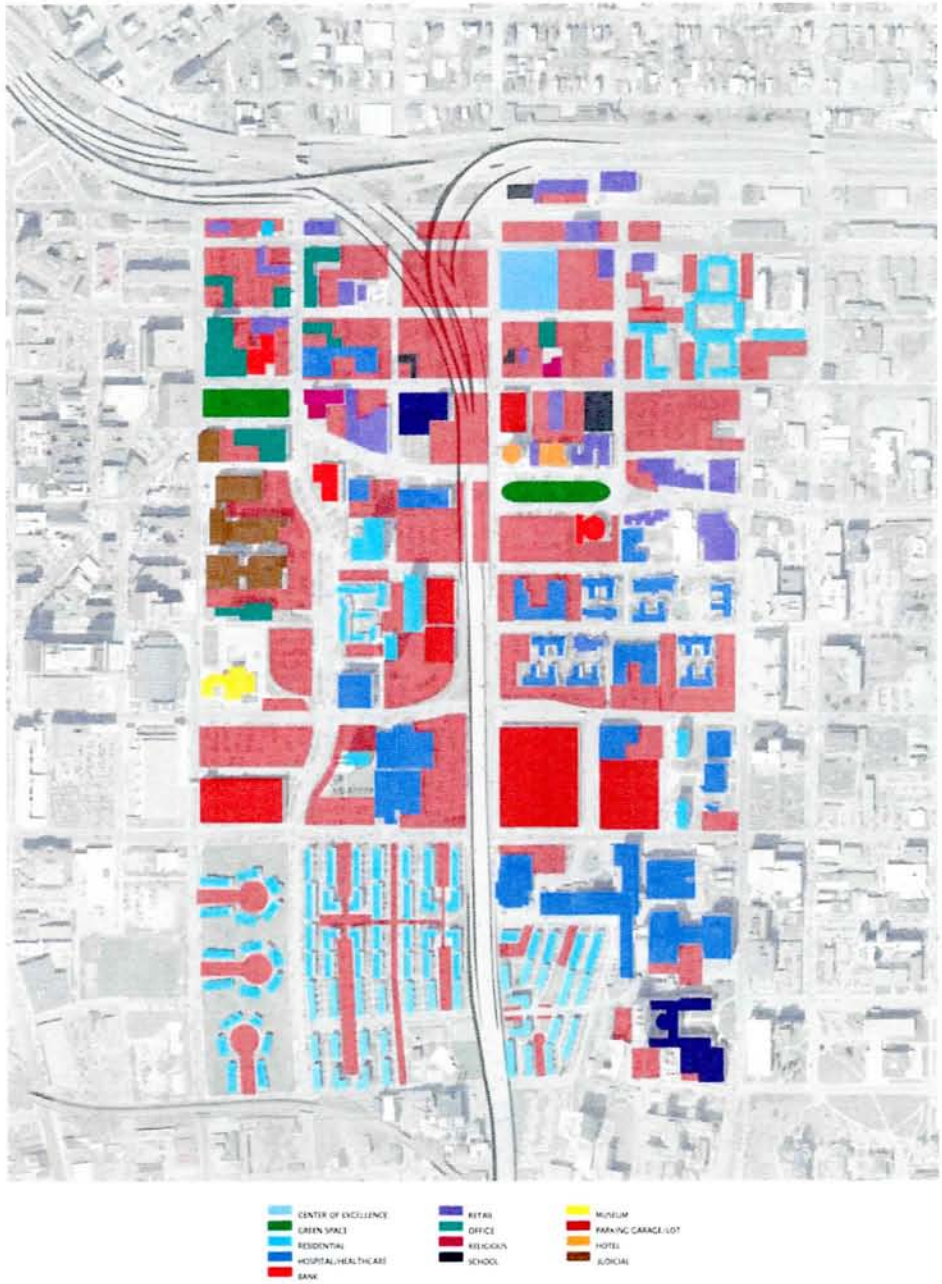


Grocery Stores



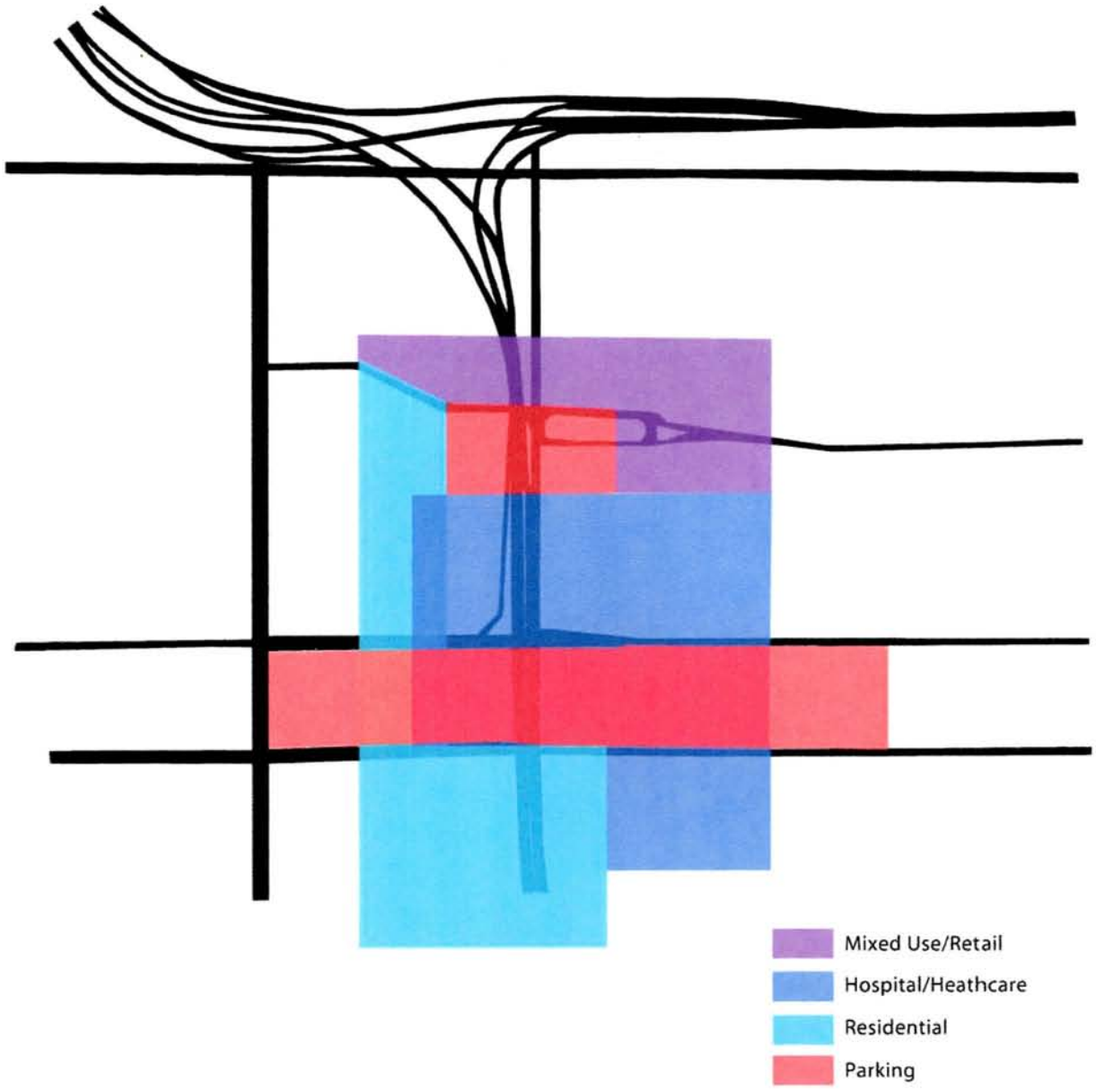
Movie Theaters

Programmatic Zones



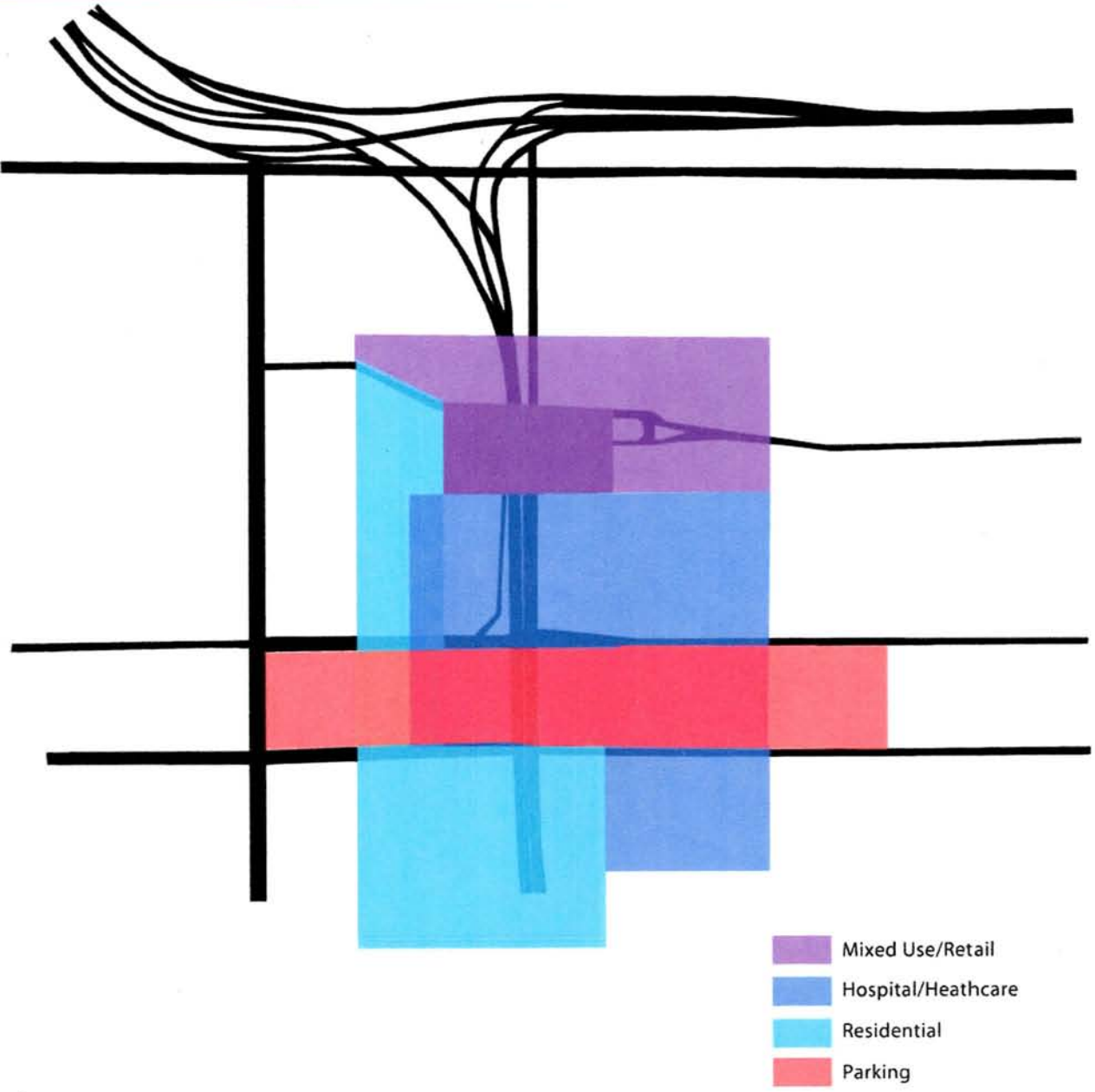
A smaller scale study of the programs immediately surrounding the site. Generally, each of the buildings in the area is located in close proximity to a parking lot or garage, producing nearly as many parking facilities as there are buildings in the area. The site itself is currently alotted for parking. The area surrounding the site is a combination of both historical and new buildings. Sharing the block with the site east of I-81 is a historic building from 1923, formally the First Church of Christ Science and more recently turned into the Syracuse Federal Credit Union. Directly across from the site is Forman Park, a small greenspace dedicated in 1839. On the other side of the park are two newly renovated hotels, the Marx and the Park View Hotel, located in a strip of restaurants and small retail facilities. On the opposite site of the highway, the site is surrounded by residential apartments and hospital facilities.

Programmatic Zones



The area surrounding the site is divided into three main zones. A residential district exists southwest of the site. This zone provides a permanent population to the area, a population that remains constant throughout the year. A hospital precinct exists southeast of the site. This zone is associated with a mixed population: first, the permanent users—the doctors and staff of the hospitals, and secondly, the transient population—the patients and their families. The hospital will provide not only a permanent population, but one that can change daily, weekly, and monthly as well. North of the site and the area immediately surrounding the site is a mixed-use retail zone. This includes different shops, restaurants and hotels. The population linked to this area is more of an inconsistent population, a frequently changing group of people who come to the area to fill particular needs, such as shopping, eating and entertainment. Overlaid within these zones, most notably in the hospital zone, is a strip of land dedicated to parking. Most of this parking is used to house the daily hospital population. A similar strip of parking exists on the site itself.

Programmatic Zones



Based on the programmatic zone studies, the architectural intervention into the area is intended be linked into the mixed-use retail sector. Opening up the site to new programs which can draw a new population into the area is important for bringing new activity to the region. The addition of another residential or hospital program would not stimulate enough new activity or population to revitalize the area. While the program is intended to bring in new users, it will also take advantage of the existing hospital and residential populations, as this will provide a stable group of customers.

The idea is to create an accumulation of desired activities so the building becomes a destination in the urban realm. These elements will overlap and intersect in order to create one integrated structure.

The main focus of the building's program is **pedestrian pathway** which will allow passage across the barrier of I-81. If the void is to function in the urban context, pedestrians much be able to negotiate the scale of the interstate in a well-planned manner.

Another major program element is a **movie theater complex**. A major programmatic void that exists in the city is the lack of entertainment facilities. In the downtown & University Hill areas, the IMAX theater at the Museum of Science & Technology is the only public movie facility, which plays only specialty movies. Given the capacity and popularity of the cinemas at Carousel Center and Shoppingtown Mall, a cinema in the downtown area has the potential to draw a large population, from both downtown residents and the some 17,000 SU Students.

These two main components will be supported by a series of **cafes, restaurants** and **retail facilities** of varying sizes, which are linked to the studied program zones in the immediate area.

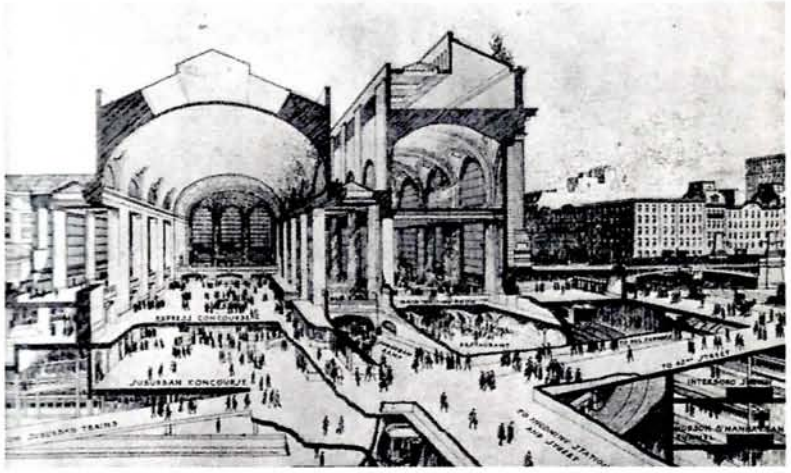
Due to the proximity of the interstate, and the fact that the site exists as a parking lot in its current state, an allowance for **parking** must be made. This parking will support the users of the facility, as well as for commuter workers in the day time. A key element to the parking, however, is its duality of use. In the evenings, the parking will be incorporated as an active element of the architecture, as it will be used as parking for a **drive-in theater** space as a part of the theater complex. This program will release the parking from its association with dead-program and will allow it to function as an active and productive element of the complex.

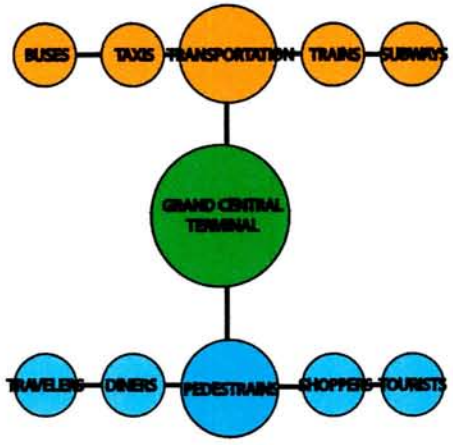
Major Pedestrian Circulatory Device

Movie Theater Complex				
.lobby		500		
.ticket sales/office		600		
.concession		500		
.restrooms		500		
.projector room		200		
.theater/seating		4200		
	subtotal	6500		
	4 theaters			26,000 SF
Retail Shops				
.small (15)		1000		
.medium (6)		2000		
.large (2)		4000		
	23 shops			35,000 SF
Cafes		750		
	4 cafes			3,000 SF
Restaurants		3500		
	2 restaurants			7,000 SF
Parking/Drive-in Theater				
			subtotal:	71,000 SF
Circulation @ 20%				14,200 SF
Mechanical @15%				10,650 SF
			total:	95,850 SF

Precedents

Grand Central Terminal
New York, NY

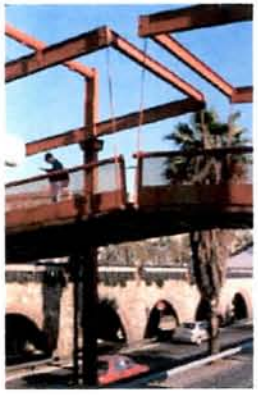




Grand Central is one of New York City's major transportation hubs. It serves the needs of travelers and commuters and includes various transportation types, such as buses, trains, taxis and subways. In contrast to many urban transportation facilities which are uncomfortably placed in cities, Grand Central functions with ease in the dense urban condition. The incorporation of transportation systems does not create voids in the surrounding fabric, as the architecture of the terminal is used to mediate between the scales of the infrastructure and the human. That is, the terminal itself acts as a gateway between urban street activity and transportation systems, allowing a transition between street and infrastructure, which eliminates the collision that generally occurs between the two scales.

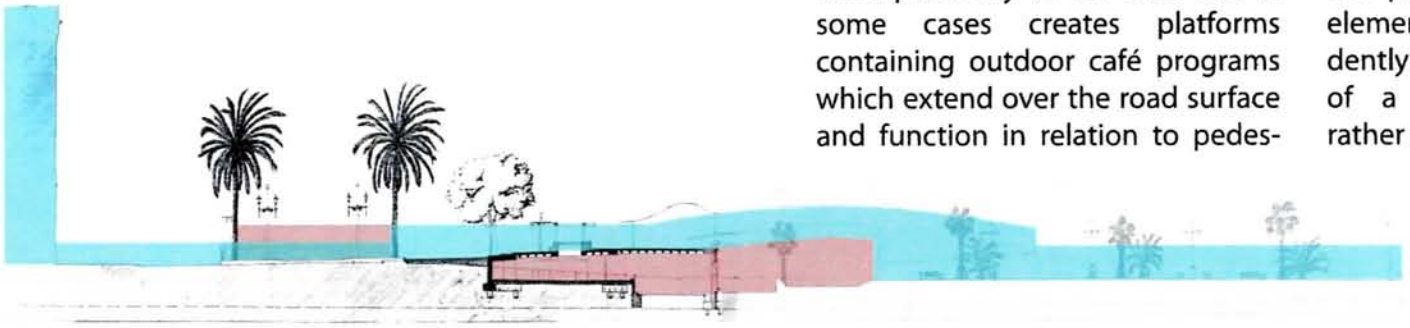
Grand Central is also able to function seamlessly in the urban condition is due to its duality of program. That is, while it is mainly considered a place of passage, a means of getting from one place to the next, it is also a destination for non-commuters. The terminal is home to other social, cultural and business programs beyond transportation. The multiplicity of programs draws a large population to the terminal, allowing it to serve as a catalyst for urban activity in midtown Manhattan. Instead of simply serving transportation needs, the terminal is a social-interactive realm in which thousands gather daily.

Moll de la Fusta
Barcelona, Spain
Manuel de Sola-Morales, 1982-90

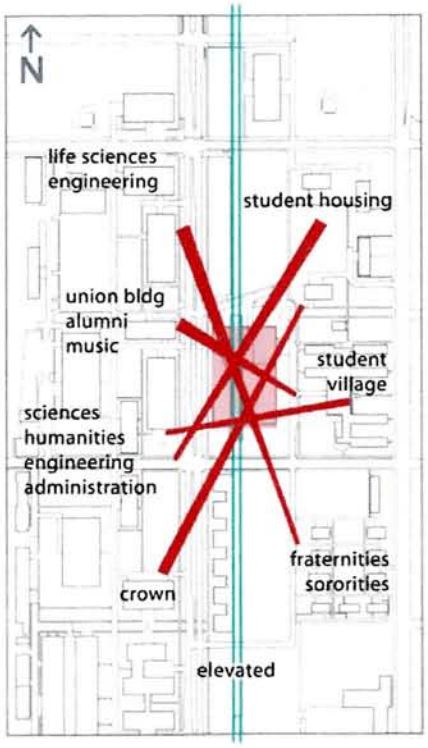


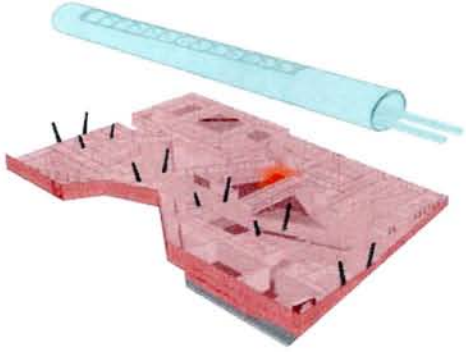
Located on the Barcelona waterfront, Moll de la Fusta is intended as a pedestrian promenade, loaded with shops, restaurant and other attractions. A high speed transportation route runs between the waterfront and the main urban space of the city, disconnecting the Moll from the city. The project attempts to reconcile the two major elements in a sectional manner, resolving the presence of the contradictory scales of the roadway and the pedestrian using a series of pedestrian links [overpasses] between the urban area and the waterfront. In addition, Sola-Morales places various programs in close proximity to the road and in some cases creates platforms containing outdoor café programs which extend over the road surface and function in relation to pedestrian circulation. Thus while Sola-Morales links the Moll itself back to the existing fabric, allowing it to be a part of the urban area, the Moll can also function in relation to the infrastructure which separates it from the city. By focusing on the presence of the pedestrian, the barrier condition created by the roadway is greatly diminished.

A pertinent issue stemming from this scheme is the nature of the mediation between the two elements. The infrastructure and the pedestrian are overlapped both visually and physically, through the overpasses and platform programs, though there is no link between the two programmatically. Each of the elements still functions independently of one another, offering more of a programmatic coexistence rather than an overlap.



McCormick Tribune Campus Center
Illinois Institute of Technology
Rem Koolhaas OMA, 2003





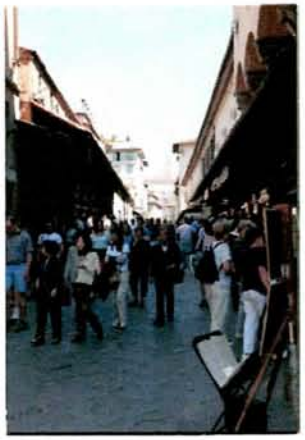
The campus center is situated along a major thoroughfare of the IIT campus, located on one side of State Street, cut off from the other side by four lanes of traffic and an elevated railway. The idea was use the campus center to "suture" the two halves of campus, the student housing on one side and academic and institutional buildings on the other. The center contains various programs, including dining, meeting (lounges, billiard rooms, basketball court) and shopping facilities, all intended to bring the dismal campus to life.

Koolhaas' approach stemmed from the idea that the campus, with greater land area and a smaller population, is now an 'urban condition in the void,' a place in need of reurbanization. The design focused on two main elements, which occur in two main scales. First, the one-story student center itself, which focused on the idea of the pedestrian. Koolhaas studied the existing paths students had created across campus, which he allowed to continue through the building in order for the center to function in connection with existing surroundings. The space between the pathways was filled with "programmatic neighborhoods," located in relation to the connections created across campus. The other major element, or scale, of the project is stainless steel tube wrapping the elevated train. This serves to muffle the sound and vibration of the train, which runs directly overtop of the campus center. By occupying the once empty transportation space, Koolhaas created a "zone of congestion" in what was once a void, producing successful activation of the campus center, the point where the divergent scales of the train and the human come together.

Ponte Vecchio
Florence, Italy
Taddeo Gaddi, 1345

public connections

private connections



The Ponte Vecchio in Florence, Italy is an example of a programmed urban connector. The bridge's main purpose is to connect the two halves of Florence which are separated by natural barrier of the Arno River. What makes the bridge stand apart from the other bridges with the same purpose is its additional function as a shopping destination. The bridge is not only a means of getting across the river, but also an attraction in itself. Thousands are drawn daily to the abundance of jewelry shops which line the bridge's edges.

While the main level of the Ponte Vecchio and shops are a public component, there is an element of private connection to the bridge as well. The Vasari Corridor was commissioned by Cosimo I de'Medici in 1565 as a celebration of his son's marriage. The corridor is used to connect the city's government seat, Palazzo Vecchio, on one side of the river with the Medici's private residence, Palazzo Pitti, on the opposite side of the river. As another programmatic element, the corridor is connected to the Uffizi Gallery, its walls lined with various paintings from the gallery's collection.

Thus, there are two main components to the bridge, the public passageway and the private corridor, both intended as a means of connection in the city, though each includes an additional programmatic element, a shopping destination and an art gallery respectively, which draw an additional population to the bridge.

Appendix

Fig. 3. Human-figure dimensions used in determining sight-line clearances

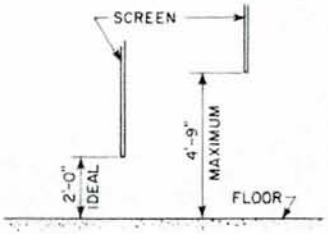


Fig. 4. Height of screen above floor at first row of seats

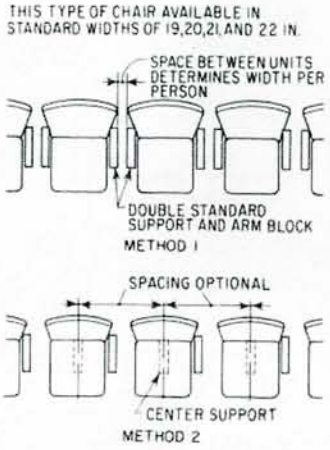


Fig. 5. Methods of obtaining wider spacing for chairs nearest screen

Maximum spacing for first row is 26 in.

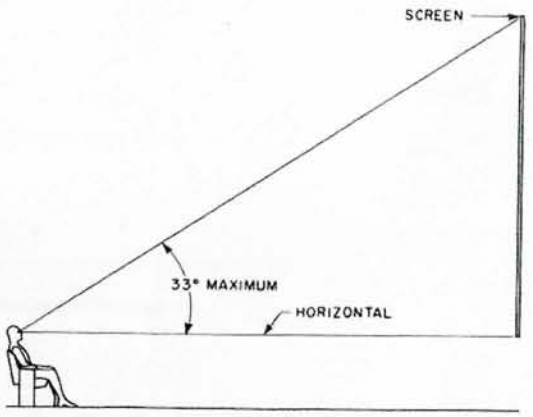


Fig. 1. Method of determining minimum distance from screen to first row of seats

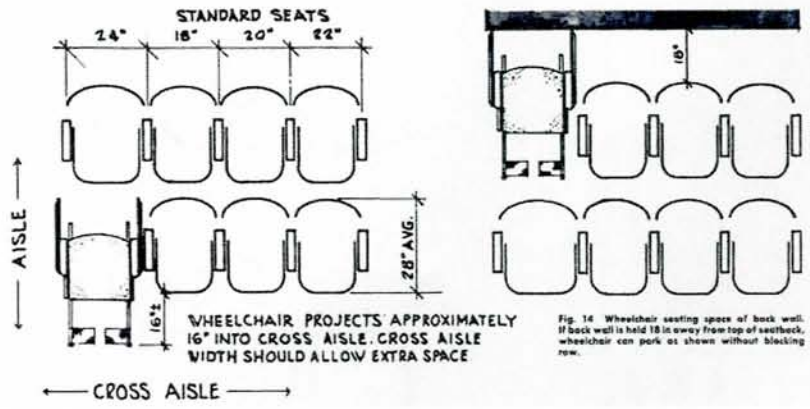


Fig. 16 Wheelchair seating space at back wall. If back wall is held 18 in away from top of seatback, wheelchair can park as shown without blocking row.

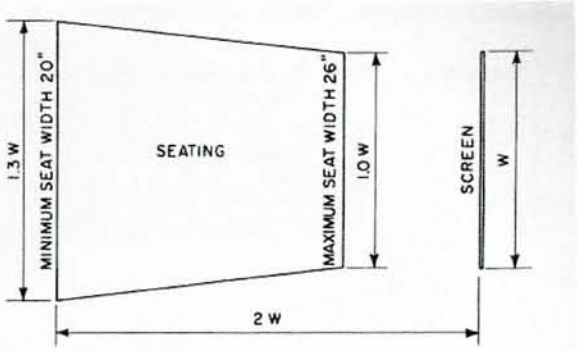


Fig. 2. Maximum viewing distance and maximum width of seating pattern

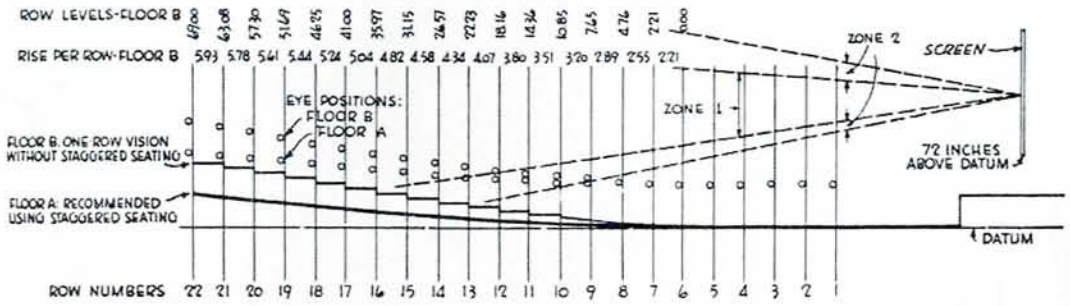


Fig. 6 Single-slope auditorium. On ground sloping 3 ft or more downward toward screen. Without staggered seats, risers required starting tenth row.

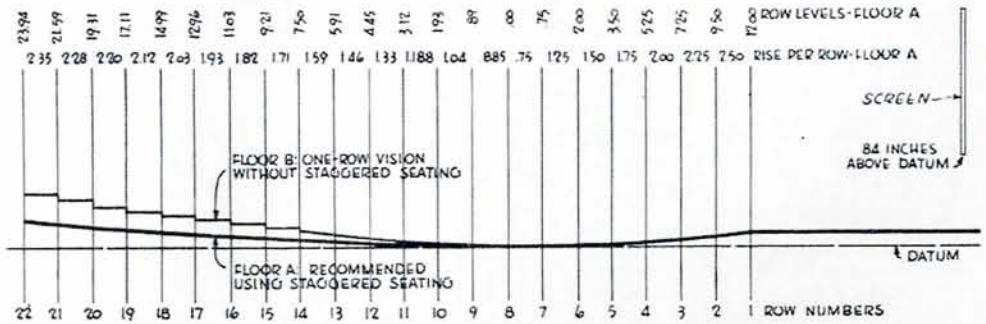
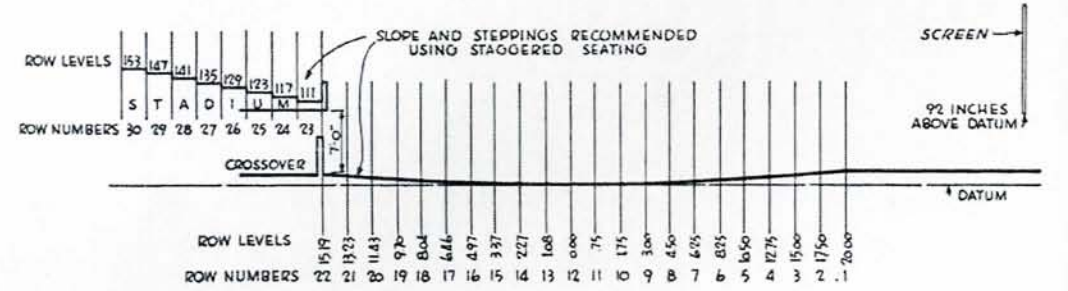


Fig. 7 Double-slope auditorium. On level ground, or on ground sloping less than 3 ft in any direction. First six rows aligned to allow view of entire screen.



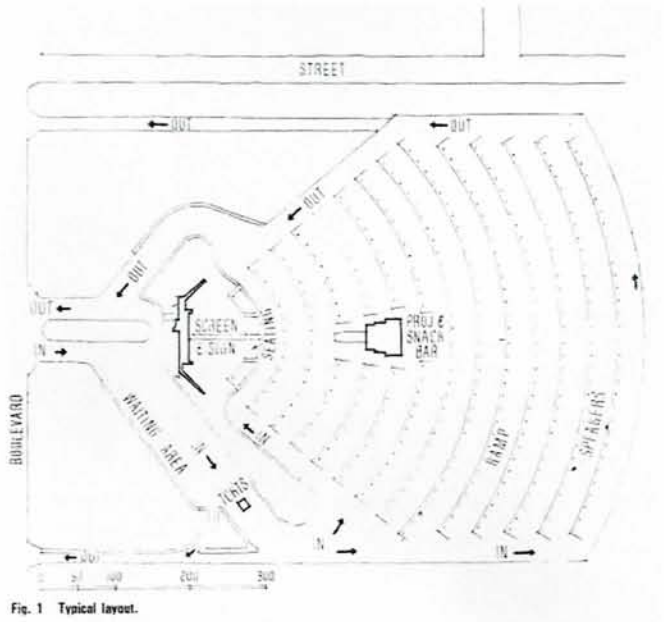


Fig. 1 Typical layout.

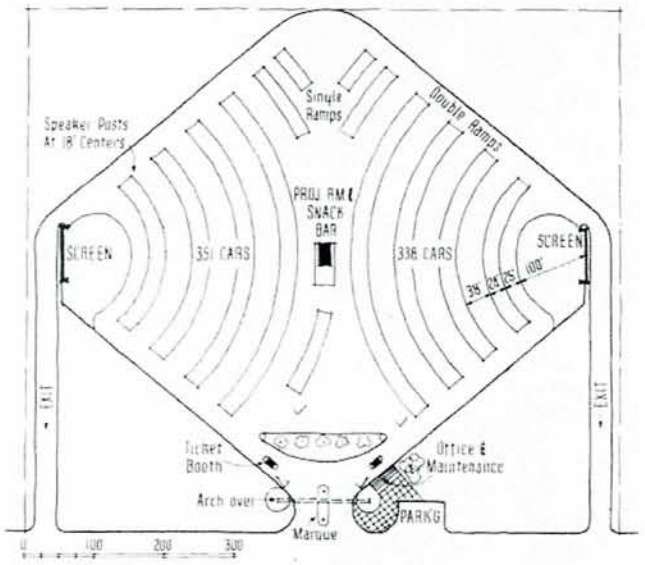


Fig. 3 Back-to-back theaters.

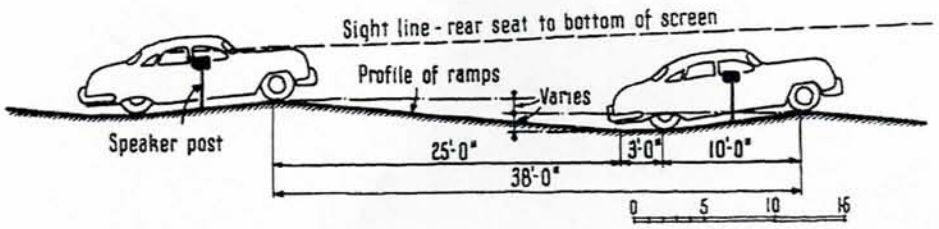
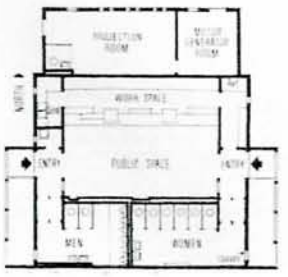


Fig. 2 Typical profile.



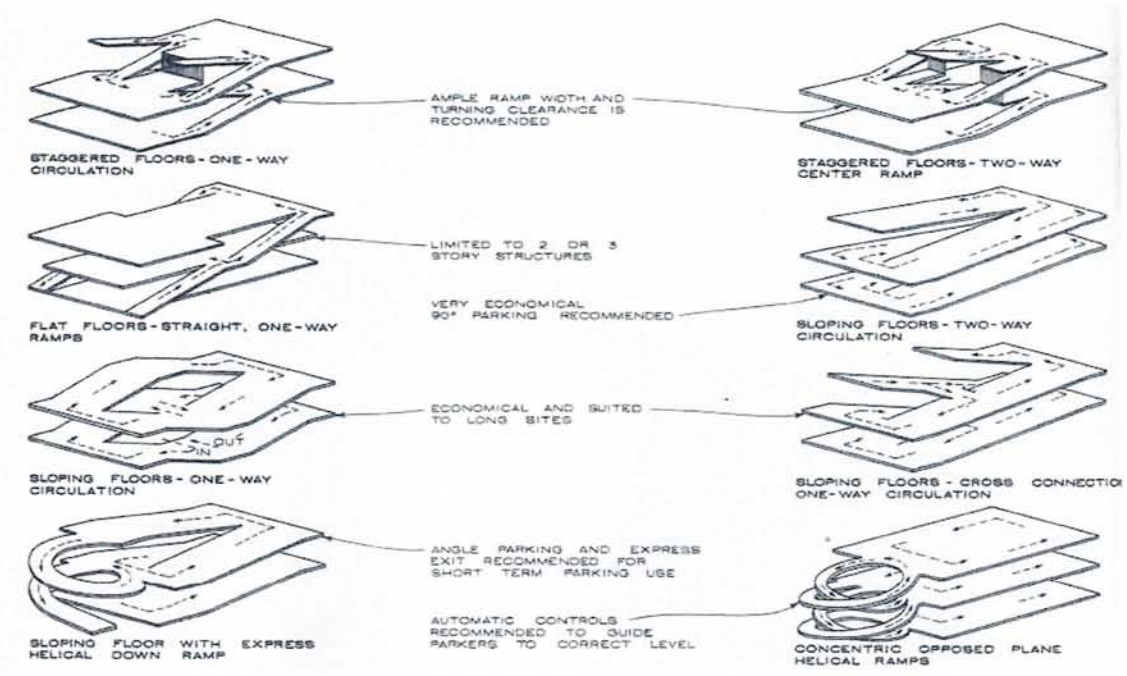
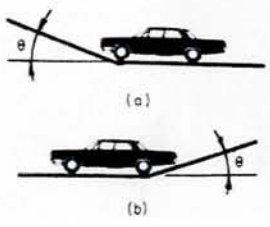
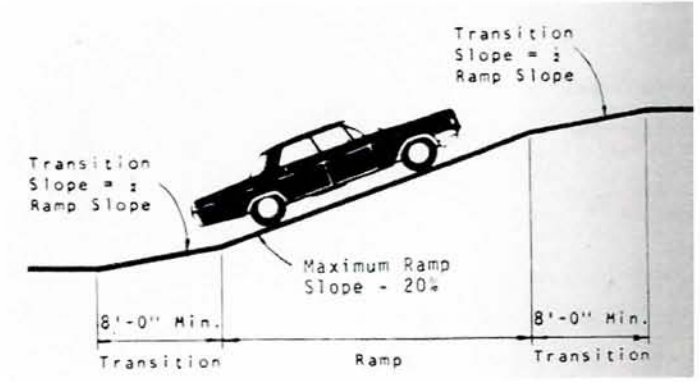


Fig. 2 Ramp breakover angle.





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