

SQUARES: A NETWORK OF SPACES

by

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A REPORT

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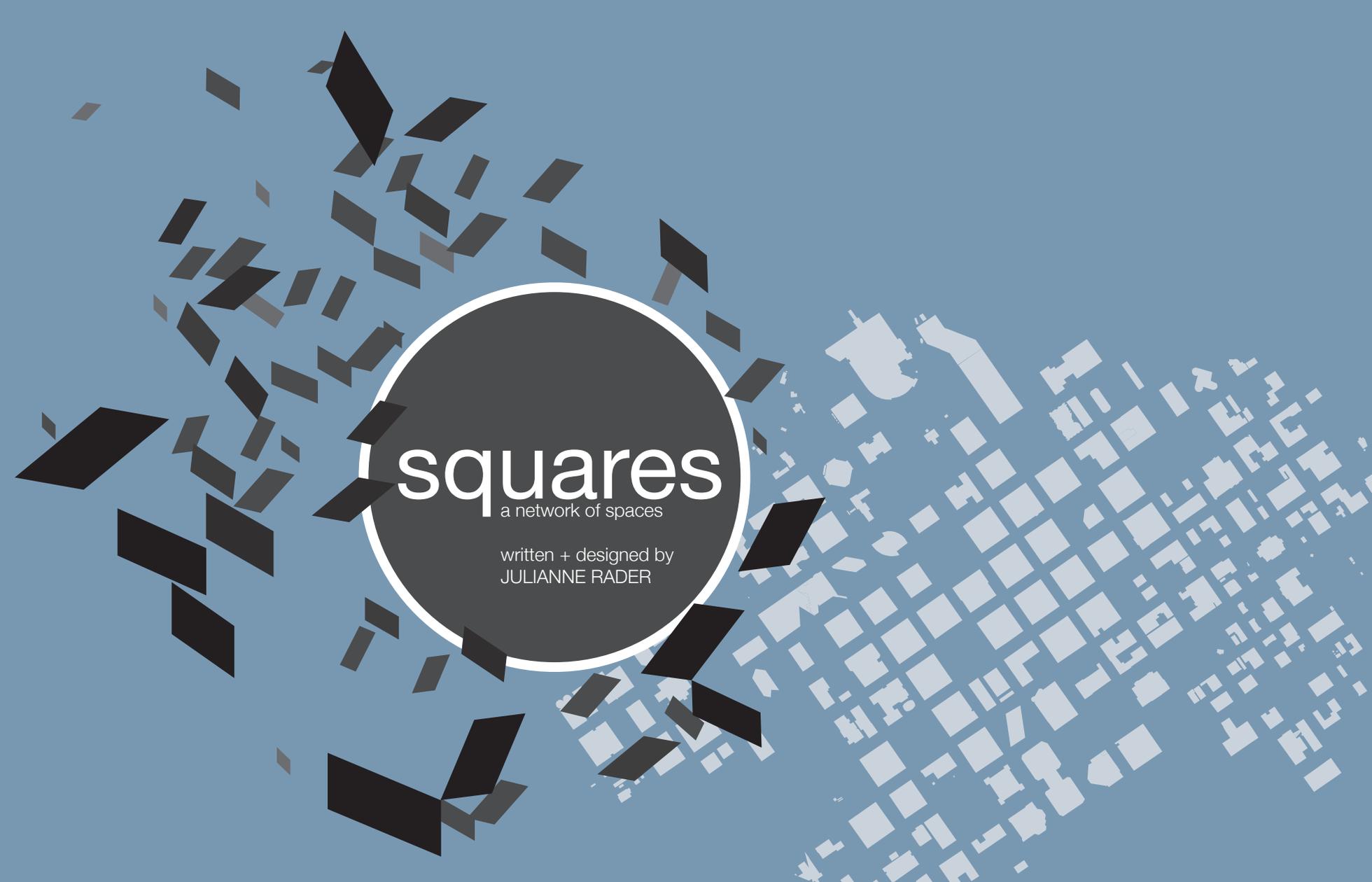
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## **Abstract**

Over the past centuries, modernization and industrialization has resulted in increasingly disconnected communities. With the advent and increased availability of the personal vehicle, the desire for larger homes on larger lots, and a steady increase in population, cities are all-too-often relinquishing their open and community-oriented spaces to concrete and mortar. Gone are the medieval days in which cities and towns were centered on large community spaces - places where residents could gather, work, shop, and play together. Therefore, this Master's Project and Report proposes the reintroduction of the town square – the quintessentially European notion of a central city space – as a means to unify modern American cities.

To support this proposal, existing research regarding the various characteristics and qualities of squares is compiled. The resulting information, including work by Carolyn Francis and Claire Cooper Marcus, Cliff Moughtin, Leon Krier, and Camillo Sitte, is then critiqued and synthesized in order to establish function, form and spatial organization typologies of squares. These typologies address not only the use and formal attributes of individual squares, but also where squares should be located and how they can link to one another in order to form larger networks. Together, the research and types substantiate the square as both a refuge from the city and a place for community members to connect.

In order to test the community connectivity of public squares, the research and typologies are applied to Super Neighborhood 22 in Houston, Texas. Houston established Super Neighborhoods as a means to link neighboring communities. In many cases, though, disconnections occur between the various natural and social systems found within the combined neighborhoods. Therefore, this Master's Project and Report proposes a network of public squares as a means to unite the contrasting land uses, residents, and natural systems found within Super Neighborhood 22's eleven smaller communities.



# squares

a network of spaces

written + designed by  
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# squares

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## Abstract

Over the past centuries, modernization and industrialization has resulted in increasingly disconnected communities. With the advent and increased availability of the personal vehicle, the desire for larger homes on larger lots, and a steady increase in population, cities are all-too-often relinquishing their open and community-oriented spaces to concrete and mortar. Gone are the medieval days in which cities and towns were centered on large community spaces - places where residents could gather, work, shop, and play together. Therefore, this Master's Project and Report proposes the reintroduction of the town square – the quintessentially European notion of a central city space – as a means to unify modern American cities.

To support this proposal, existing research regarding the various characteristics and qualities of squares is compiled. The resulting information, including work by Carolyn Francis and Claire Cooper Marcus, Cliff Moughtin, Leon Krier, and Camillo Sitte, is then critiqued and synthesized in order to establish function, form and spatial organization typologies of squares. These typologies address not only the use and formal attributes of individual squares, but also where squares should be located and how they can link

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# INTRODUCTION

## **Project Origins**

During the summer of 2008, I participated in The SWA Group's Summer Intern Program, an eight-week internship in which students work together to create real-world design solutions for a neighborhood within Houston, Texas. We had the pleasure of working with Super Neighborhood 22 (Fig. 1), a collection of eleven smaller communities adjacent to Downtown Houston. While many unique solutions were developed during this period, it was just the starting point for what is possible within the neighborhood. Therefore, I chose to continue working within Super Neighborhood 22.

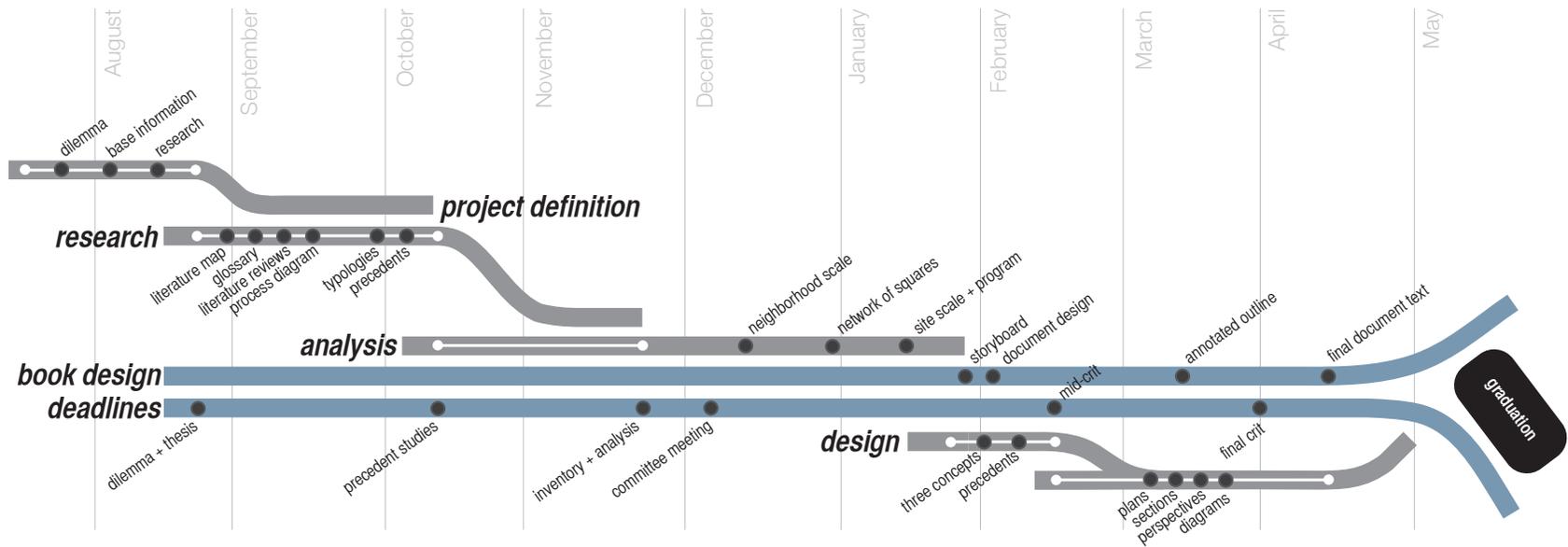
## **Dilemma**

Super Neighborhood 22 currently consists of a complex assemblage of land uses, residents, and natural systems. Though rich in diversity, character and history, the neighborhood lacks strong connections between its various social and natural systems, as well as to adjacent Downtown Houston.

## **Thesis**

Super Neighborhood 22 can be united through a network of squares at three scales.

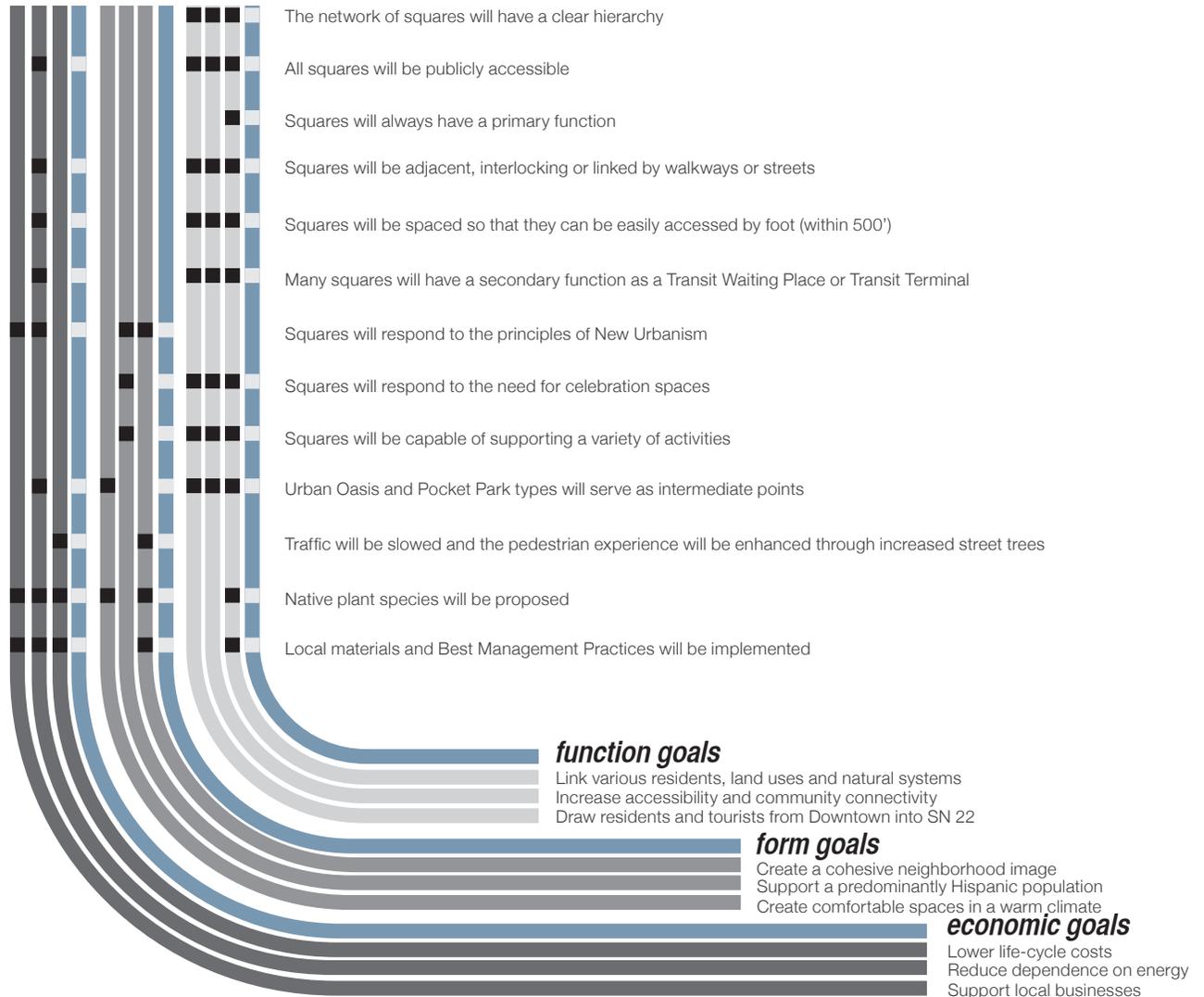
1. Super Neighborhood 22's various land uses, residents, and natural systems can be linked together through a network of public squares.
2. Super Neighborhood 22 can be linked to Downtown Houston through a secondary network of public squares.
3. Residents and patrons of Downtown Houston can unite within The City Center square type.



### Process + Timeline

In order to carry out the previously mentioned thesis statements, the above design process was followed (Fig. 1).

Figure 1 | Design process diagram (Rader).



## Goals + Objectives

The adjacent diagram illustrates the three categories of goals, as well as the objectives required to meet them (Fig. 2). As the diagram illustrates, some objectives apply to multiple goals.

Figure 2 | Goals and objectives (Rader).



## Why Types and Squares, Then?

In his book entitled *Archetypes of Urbanism*, Thomas Thiis-Evensen addresses two major concerns regarding the use of types - whether or not they are the basis for our experiences and whether or not they result in a lack of cultural and functional variations. He negates both of these questions, stating that types are “necessary prerequisites for orientation and recognition of the structure of our surroundings” (Thiis-Evensen 1999, 68). Therefore, this report will utilize typologies as a basis for design.

But, then, why squares? Specifically, what, in terms of function and form, do squares provide for communities, and how can squares help to strengthen the connections between different land uses, residents and natural systems? Simply put, squares bring people together. This notion is supported by Paul Zucker, stating, “During the last decades city planners have been primarily concerned with such problems as the use of land, the improvement of traffic and general communication, zoning, the relationship between residential and industrial areas, etc. These considerations have somewhat overshadowed the fundamental importance of the square as a basic factor in town planning, as the very heart of the city” (Zucker 1959, 1). Thomas Thiis-Evensen

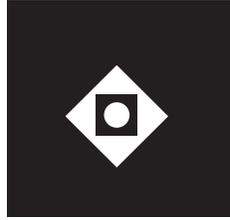
also supports the use of squares, noting, “As we have seen, the spatial function of the square is the establishment of a place of respite in the urban landscape: the square unites” (Thiis-Evensen 1999, 70). It is statements such as these, and the following research, that validate the unification of Super Neighborhood 22 through a network of squares.

## Spatial Organization

As the thesis states, this Master's Project and Report seeks to unify Super Neighborhood 22's land uses, residents and natural systems through a network of public squares. At the neighborhood scale, this requires a major ordering element.

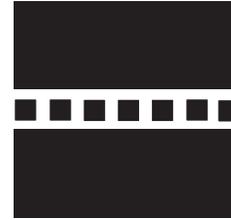
The most well-defined classification of organization types is Francis D.K. Ching's illustrations and definitions in *Architecture: Form, Space, and Order*. Therefore, his five types will be used as the reference for spatial organization typology.

The adjacent diagrams illustrate his five spatial organization types (Fig. 3 - 7). Precedent studies, seen in the Appendix, of each organization will be used to determine which type is best suited for Super Neighborhood 22. The selected type will then be used to develop a network of squares for the neighborhood.



## Centralized Organization

"A centralized organization (Fig. 3) is a stable, concentrated composition that consists of a number of secondary spaces grouped around a large, dominant, central space. The central, unifying space of the organization is generally regular in form and large enough in size to gather a number of secondary spaces about its perimeter. The secondary spaces of the organization may be equivalent to one another in function, form, and size, and create an overall configuration that is geometrically regular and symmetrical about two or more axes. The secondary spaces may differ from one another in form or size in order to respond to individual requirements of function, express their relative importance, or acknowledge their surroundings. This differentiation among the secondary spaces also allows the form of a centralized organization to respond to the environmental conditions of its site" (Ching 1996, 190).



## Linear Organization

"A linear organization (Fig. 4) consists essentially of a series of spaces. These spaces can either be directly related to one another or be linked through a separate and distinct linear space. A linear organization usually consists of repetitive spaces which are alike in size, form, and function. It may also consist of a single linear space that organizes along its length a series of spaces that differ in size, form, or function. In both cases, each space along the sequence has an exterior exposure. Spaces that are functionally or symbolically important to the organization can occur anywhere along the linear sequence and have their importance articulated by their size and form. Their significance can also be emphasized by their location: at the end of the linear space, offset from the linear organization, and at pivotal points of a segmented linear form. Because of their characteristic length, linear organizations express a direction and signify movement, extension, and growth" (Ching 1996, 198).

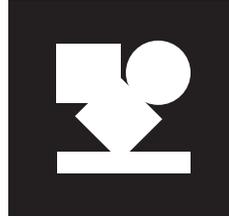
Figure 3 | Centralized organization type (Rader, as adapted from Ching).

Figure 4 | Linear organization type (Rader, as adapted from Ching).



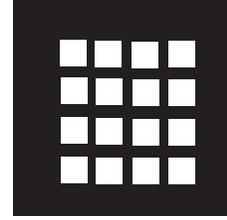
### Radial Organization

“A radial organization (Fig. 5) of space combines elements of both centralized and linear organizations. It consists of a dominant central space from which a number of linear organizations extend in a radial manner. Whereas a centralized organization is an introverted scheme that focuses inward on its central space, a radial organization is an extroverted plan that reaches out to its context. With its linear arms, it can extend and attach itself to specific elements or features of its side. As with centralized organizations, the central space of a radial organization is generally regular in form. The linear arms, for which the central space is the hub, may be similar to one another in form and length and maintain the regularity of the organization’s overall form. The radiating arms may also differ from one another in order to respond to individual requirements of function and context” (Ching 1996, 208).



### Clustered Organization

“A clustered organization (Fig. 6) relies on physical proximity to relate its spaces to one another. It often consists of repetitive, cellular spaces that have similar functions and share a common visual trait such as shape or orientation. A clustered organization can also accept within its composition spaces that are dissimilar in size, form, and function, but related to one another by proximity or a visual ordering device such as symmetry or an axis. Because its pattern does not originate from a rigid geometrical concept, the form of a clustered organization is flexible and can accept growth and change readily without affecting its character. Clustered spaces can be organized about a point of entry into a building or along the path of movement through it. The spaces can also be clustered about a large defined field or volume of space. This pattern is similar to that of a centralized organization, but it lacks the latter’s compactness and geometrical regularity” (Ching 1996, 214).



### Grid Organization

“A grid organization (Fig. 7) consists of forms and spaces whose positions in space and relationships with one another are regulated by a three-dimensional grid pattern or field. A grid is created by two, usually perpendicular, sets of parallel lines which establish a regular pattern of points at their intersections. Projected into the third dimension, the grid pattern is transformed into a set of repetitive, modular units of space. The organizing power of a grid results from the regularity and continuity of its pattern that pervades the elements it organizes. Its pattern establishes a stable set or field of reference points and lines in space with which the spaces of a grid organization, although dissimilar in size, form, or function, can share a common relationship” (Ching 1996, 220).

Figure 5 | Radial organization type (Rader, as adapted from Ching).

Figure 6 | Clustered organization type (Rader, as adapted from Ching).

Figure 7 | Grid organization type (Rader, as adapted from Ching).

## Square Function

After establishing a spatial organization typology, research focused on individual squares. Initial inquiries revealed two major methods of classification - by function and form. Therefore, existing typologies of both of these classes were solicited. For function, the search yielded the work of Claire Cooper Marcus and Carolyn Francis, presented in the book *People Places*, and Cliff Moughtin's book *Urban Design: Street and Square*. Once their types had been discerned, the authors' writings, definitions, and diagrams were critiqued in terms of their application to the project goals and Super Neighborhood 22.

Marcus and Francis, in *People Places*, state that the purpose of their typology is, "to make sense of the categories of downtown open space in U.S. cities" (Francis and Marcus 1998, 20). Their typology was formulated through the inventory of public spaces in San Francisco. However, the authors argue that the types are applicable to most cities. Francis and Marcus's types are sub-divided into six categories, listed in figure eight.

In addition to the typology outlined by Marcus and Francis, I examined Cliff Moughtin's function typology. Unlike Francis and Marcus' types, Moughtin's classification is a series of nine broad

categories, with the goal being to define city centers (Moughtin 1999, 88).

In both instances, they emphasize the importance of a clearly defined function as a means to create a lively and vibrant square. Moughtin states, “Activity in a square is important for its vitality and, therefore, also for its visual attraction” (Moughtin 1999, 87). However, the authors differ on what is the most important function. Moughtin states that it is “the symbolic meaning attached to [an object or space]”, arguing that great spaces invoke emotion (Moughtin 1999, 88). He also states that “the most successful squares, though they may have dominant function for which each is known and by which they may be classified, are often those that sustain activity through the diversity of uses in the surrounding buildings” (Moughtin 1999, 88). Marcus and Francis, on the other hand, suggest that the Grand Public Place is the most active and frequented function type because it tends to attract users from greater distances and is flexible enough to house many activities (Francis and Marcus 1998, 23).

Of the two typologies, Marcus and Francis’ is better suited for Super Neighborhood 22. This is because their typology is designed to meet the needs of diverse cities, such as Houston. In addition, their

typology is defined in greater detail and covers a wide range of functions.

However, their typology does not explicitly meet the needs of Super Neighborhood 22. For example, Houston’s public transportation is limited to bus and light rail lines. Therefore, the Subway Entry Place type is not applicable. Similarly, some types do not fit the project objective that all squares will be publicly accessible, such as the Roof Garden type and Decorative Porch type. Therefore, these were removed from the final typology. In addition, the Bus Terminal type does not include all the available public transit types found within the neighborhood. Types like the Bus Terminal - ones that somewhat apply to the neighborhood but need to be refined - are delineated by dashed lines in figure eight.

In addition to those types which do not apply to the site or project goals, several of Marcus and Francis’ types are streets. These were therefore removed from the list seen in figure eight. Finally, there were several types which were missing altogether. These additional types, developed by the report’s author and based on common land uses within Super Neighborhood 22, are located at the top of the second column in figure eight.

This process of assessing the existing types, removing extraneous types, and supplementing with missing types can be seen in figure eight.

The final step was sorting the types into broader categories based on their primary function. This diagram also depicts the final typology, a synthesis of literature on function typologies, in the center column.

This final function typology serves two purposes. First, it is applied to the precedent studies, seen in the Appendix. Later, it is applied to the design process.

# Selected Function Types

## Carolyn Francis + Claire Cooper Marcus

### The Street Plaza

- The Seating Edge
- The Widened Sidewalk
- The Bus Waiting Place
- The Pedestrian Link
- The Corner Sun Pocket
- The Arcade Plaza

### The Corporate Foyer

- The Decorative Porch
- The Impressive Forecourt
- The Stage Set

### The Urban Oasis

- The Outdoor Lunch Plaza
- The Garden Oasis
- The Roof Garden

### The Transit Foyer

- The Subway Entry Place
- The Bus Terminal

### The Grand Public Place

- The City Plaza
- The City Square

## Cliff Moughtin

- The City Center or Portal
- Setting for a Civic Building
- Principal Meeting Places
- Places for Ceremonial Occasions
- Spaces for Entertainment
- Spaces for Shopping
- Spaces around which Offices are Grouped
- Spaces for Residences
- Spaces Associated with Urban Traffic Junctions

## Supplemental Types (Rader)

- The Church Entry
- The Commercial Entry Plaza
- The Courthouse Square
- The Historic Square
- The Meeting Place
- The Pocket Park
- The Promenade or Riverfront
- The Performance Set

## Selected Types

- The Seating Edge
- The Widened Sidewalk
- The Transit Waiting Place
- The Street Corner
- The Corporate Foyer
- The Urban Oasis
- The Outdoor Lunch Plaza
- The Transit Terminal
- The City Center
- The Portal

## Primary Uses

- Assemble
- Entertain
- Move
- Retreat
- Work
- Worship

Figure 8 | Function typology diagram (Rader).

# Function Type Definitions

## **Assemble**

### **The City Center**

It is “predominantly hard surfaces, centrally located, and highly visible. When located near a diversity of land uses it tends to attract users from a greater distance and in greater variety than do other plazas. Such an area is often big and flexible...” (Francis and Marcus 1998, 23).

### **The Courthouse Square**

A space directly adjacent to a courthouse or similar civic structure.

### **The Historic Square**

A space either surrounding or incorporating a historic point, monument, statue, fountain or structure.

### **The Meeting Place**

A space used as a meeting point or place to gather.

### **The Street Corner**

A space located at the intersection of two or more thoroughfares. It is used for gathering, eating, and people watching (Francis and Marcus 1998, 21).

### **The Outdoor Lunch Plaza**

A space used predominantly for eating, particularly during the lunch hour. It has more than enough seating, and may incorporate vendors or a cafe (Francis and Marcus 1998, 22).

## **Entertain**

### **The Commercial Entry Plaza**

A space directly adjacent to a shopping center. It serves as an entry into the building or series of buildings and may also be used as a meeting place.

### **The Performance Set**

A space used to stage plays or show movies. It may be park-like in nature and includes a variety of seating options.

## **Move**

### **The Portal**

A space that marks an entry into or departure from a city, district or neighborhood (Moughtin 1999, 94-95).

### **The Promenade or Riverfront**

A space, most likely linear in form, adjacent to a major body of water. It is primarily used for walking, but may feature vendors and various recreational activities.

### **The Seating Edge**

“A seating-height wall or stepped edge” adjacent to a sidewalk (Francis and Marcus 1998, 20). It is used primarily for “brief periods of sitting, waiting, and watching and tends to be used more by men than by women” (Francis and Marcus 1998, 20).

### **The Transit Terminal**

A place where many transportation routes converge and many commuters enter and exit. It is primarily a place where riders move through, but may also attract street vendors and performers (Francis and Marcus 1998, 23).

### **The Transit Waiting Place**

A widened portion of the sidewalk used by passengers waiting for public transportation.

## **The Widened Sidewalk**

“A widened portion of the sidewalk...used primarily for viewing passersby” (Francis and Marcus 1998, 20).

## **Retreat**

### **The Pocket Park**

A park or green space secluded from the street. It serves as a retreat from the city and place for recreational activities.

### **The Urban Oasis**

A heavily planted, park-like space secluded from the noise and activity of the adjacent street. “The Urban Oasis is often popular for lunchtime eating, reading, and socializing, and ...tends to attract more women than men...” (Francis and Marcus 1998, 22).

## **Work**

### **The Corporate Foyer**

An entry into an office complex or business park. It is typically privately owned but available to the public, perhaps for limited hours of the day.

## **Worship**

### **The Church Entry**

A space directly adjacent to a place of worship. It may be used by local residents, as a community gathering space, by parishioners or for funerals and weddings.

## Square Form

As previously mentioned, the research into squares has yielded two different typologies - form and function. As with the function typology, existing classifications of form were first compiled. The result is work by Cliff Moughtin, Leon Krier, Camillo Sitte, Thomas Thiis-Evensen, and Paul Zucker. The form typologies, literature and diagrams of each of these designers were critiqued in order to assess their relevancy and appropriateness to Super Neighborhood 22 and the project goals.

**Leon Krier's** typology (Fig. 9) is based on modern urban forms. An initial look into Krier's types indicates that they include several variables outside the constraints of the project focus. This includes the form of blocks, streets and buildings (Carmon et al. 2003, 71). Therefore, Krier's types will not be considered as a basis for the final form typology.

**Cliff Moughtin's** typology (Fig. 10) is based on the work of Camillo Sitte and Paul Zucker, described below (Moughtin 1999, 99). Rather than assess an amalgam of Sitte and Zucker's work, their typologies will be directly evaluated. Thus, Moughtin's work will also not be considered when defining the final form typology.

**Camillo Sitte's** typology (Fig. 11) of urban space is first and foremost based on the prerequisite of enclosure. He then concludes that there are only two types of spatial form - long or deep. This is determined by the dominant building adjacent to the square. When the observer stands opposite the structure, the square shall appear as one of these two types. Additionally, though not directly related to form, Sitte maintained a great interest in the grouping of squares. He did not, however, see this as a form type, but rather a "manner in which squares could be related to each other and to the urban fabric in general" (Moughtin 1999, 99).

While Camillo Sitte is widely regarded as an important figure in architecture and planning, his types are too broad. Therefore, Sitte's work will not be noted when determining the final form typology.

**Thomas Thiis-Evensen's** work (Fig. 12) offers clearly defined types based on an evaluation of enclosure and directionality. His classification system asks the question, "Which of the directionalities in the main form and the surrounding elements is the most important for the overall character of the square?" (Thiis-Evensen 1999, 139). To determine this, Thiis-Evensen assesses the combination of building form, wall articulation

and floor surface. He suggests that each of these elements should then be evaluated in order to determine which has the strongest directionality (Thiis-Evensen 1999, 139).

Based on which element has the strongest visual direction, and the level to which it directs and encloses visitors, the specific type can be discerned. Thiis-Evensen's types, listed on the following pages, include: The Equilibrating Square, The Directional Square, The Centralized Square, and The Linked Square (Thiis-Evensen, 1999, 139).

Because Thiis-Evensen presents a distinctly defined typology based on an examination of variables within the project scope - wall forms, paving patterns, and objects found within a square - his classifications will be a foundation for the final form typology. However, Thiis-Evensen's Linked Squares type will not be considered as part of the form typology because it is a project requirement (objective) and is part of the spatial organization typology previously described.

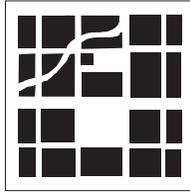
Finally, **Paul Zucker's** typology (Fig. 13) is based on two notions: 1.) public square archetypes should be based on form, not function; and 2.) that multiple form typologies may exist within a single space. To

this, he offers the example of Venice, stating, "Very often an individual square bears the characteristics of two types: it depends on the point of view, for instance, whether St. Mark's Square in Venice is regarded primarily as a closed square or as one element of the grouped squares of Piazza or Piazzetta" (Zucker 1959, 8).

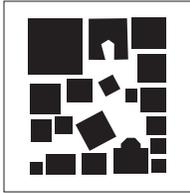
Similar to Thomas Thiis-Evensen's work, Zucker defines his types based on directionality and enclosure, including: The Closed Square, The Dominated Square, The Nuclear Square, Grouped Squares, and The Amorphous Square (Zucker 1959, 8). Because both Thiis-Evensen and Zucker provide clearly defined form types, capable of being applied to any place at any time, both will be synthesized to create a final form typology (Fig. 14-17). However, the grouped squares type will not be used because, like Thiis-Evensen's linked squares type, it is both a project objective and part of the spatial organization typology. The diagram of the typology creation process, as well as definitions, can be found on the following pages.

# Initial Form Types

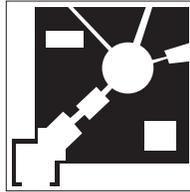
## Leon Krier



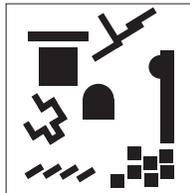
Urban Blocks Formed by Streets + Squares



Streets + Squares Formed by Urban Blocks



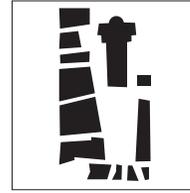
Streets + Squares are Precise Formal Types



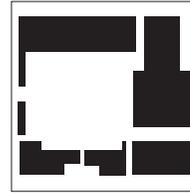
Buildings are Precise Formal Types

Figure 9 | Leon Krier's form typology (Rader, as adapted from Krier).

## Cliff Moughtin



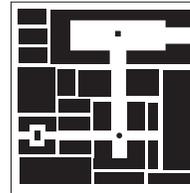
The Dominated Square



The Enclosed Square



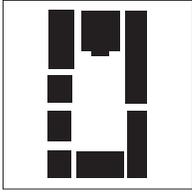
Linked Squares



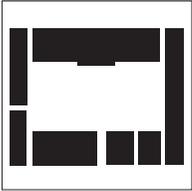
Spaces Linked by an External Reference Point

Figure 10 | Cliff Moughtin's form typologies (Rader, as adapted from Moughtin).

**Camillo Sitte**

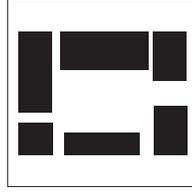


Long

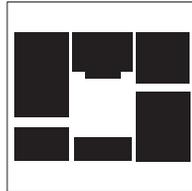


Deep

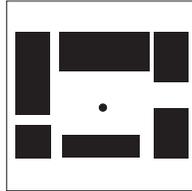
**Thomas Thiis-Evensen**



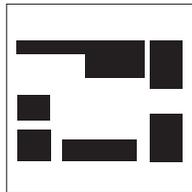
The Equilibrrious Square



The Directional Square

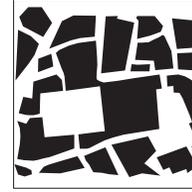


The Centralized Square



The Linked Square

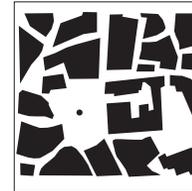
**Paul Zucker**



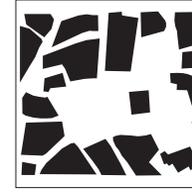
The Closed Square



The Dominated Square



The Nuclear Square



Grouped Squares



The Amorphous Square

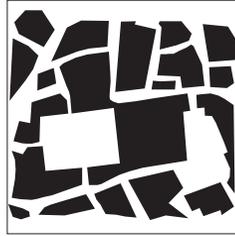
Figure 11 | Camillo Sitte's form typologies (Rader, as adapted from Sitte).

Figure 12 | Paul Zucker's form typologies (Rader, as adapted from Zucker).

Figure 13 | Thomas Thiis-Evensen's form typologies (Rader, as adapted from Thiis-Evensen).



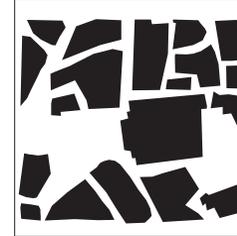
## Selected Form Types + Definitions



### The Closed Square

“Such a square would be visualized as a complete enclosure interrupted only by the streets leading into it” (Zucker 1959, 9). “The primary element in the appearance of any closed square is its layout, be it a quadrangle, rectangle, circle, or any other regular geometrical form” (Zucker 1959, 9).

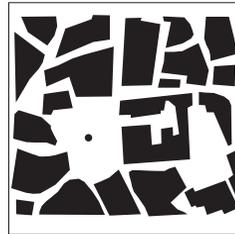
Figure 14 | The Closed Square type (Rader, as adapted from Zucker).



### The Dominated Square

“The Dominated Square is characterized by one individual structure or a group of buildings toward which the open space is directed and to which all other surrounding structures are related. This dominating building may be a church...or any other monumental structure.... In any case, such a commanding volume directs the spatial relations of the open area” (Zucker 1959, 11).

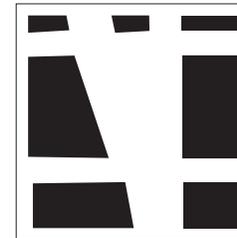
Figure 15 | The Dominated Square type (Rader, as adapted from Zucker).



### The Nuclear Square

“The spatial shape of the nuclear square is of a definite order, although not so tightly knit as in both aforementioned instances - a entity, even without the frame of a continuous row of buildings or without the domination of a frontal structure. As long as there is a nucleus, a strong vertical accent - a monument, a fountain, an obelisk...the impression of a square will be evoked” (Zucker 1959, 14).

Figure 16 | The Nuclear Square type (Rader, as adapted from Zucker).



### The Amorphous Square

“...Amorphous, i.e., formless, unorganized, having no specific shape...” (Zucker 1959, 16).

Figure 17 | The Amorphous Square type (Rader, as adapted from Zucker).



# THE NEIGHBORHOOD

## Where is the site and what are its edges?

Super Neighborhood 22 is located west of Downtown Houston (Fig. 18) and is approximately four miles by one mile in size or 5,000 acres. Its boundary is defined by Interstate 10 and White Oak Bayou to the north, Memorial Drive and Buffalo Bayou to the south, Interstate 45 to the east, and Memorial Park and the 610 Loop to the west (Fig. 20). Washington Avenue dissects the neighborhood offering direct access to the area's eleven sub-neighborhoods.

White Oak Bayou is paved and serves as a major collection point for precipitation from the northern half of the neighborhood, while Buffalo Bayou, the southern boundary, is one of the city's most significant and scenic natural systems. Memorial Park, the site's western boundary, is one of America's largest urban park expanses, encompassing over 1,500 wooded acres and offering facilities for jogging, tennis, hiking, biking, picnicking, golfing, and wildlife-watching.

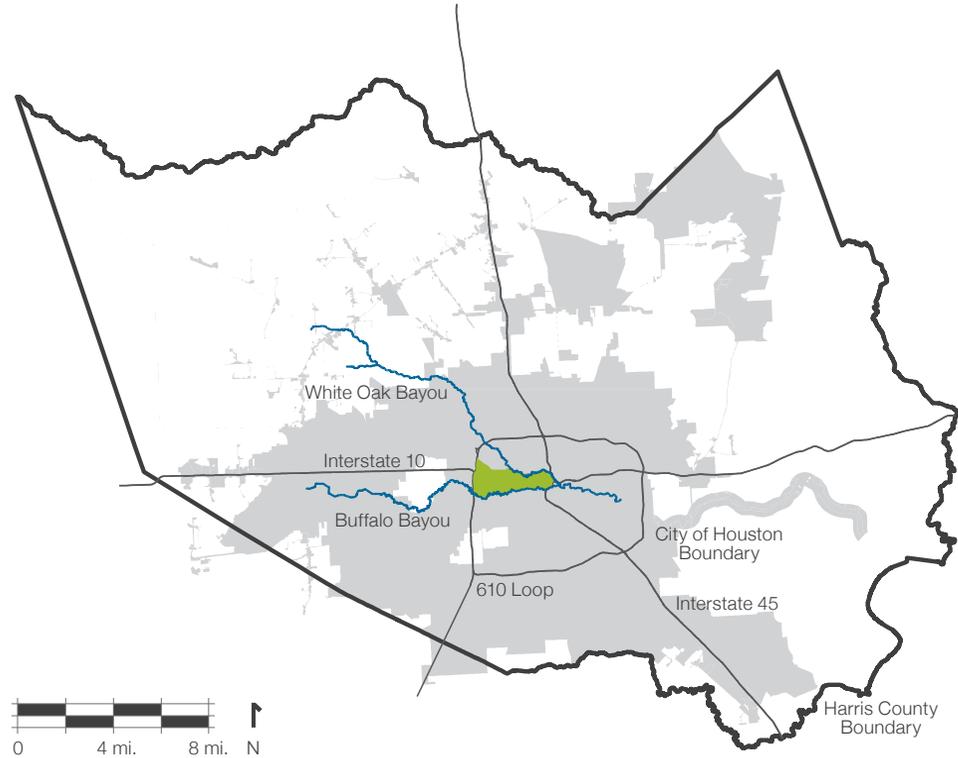


Figure 18 | Context Map of Super Neighborhood 22 (Rader).



The proposed network of squares shall build upon the direct access Washington Avenue provides to both the eleven smaller communities and Downtown Houston. To do so, a Linear Organization type is proposed, with major terminating spaces located at either end. These spaces may include the Washington-on-Westcott (W.O.W.) Roundabout, Memorial Park, or the entrance to Downtown.

Figure 19 | Diagram of Super Neighborhood 22 (Rader).

## What are the land uses and how can they contribute to a cohesive neighborhood?

Super Neighborhood 22 is composed of a wide variety of land uses, particularly along Washington Avenue (Fig. 20). This is most likely because Houston does not have zoning regulations.

Increased redevelopment and in-fill to the west of the neighborhood has also resulted in a patchwork of land uses.

**Residential Uses** | Single-family homes and neighborhoods are primarily located around the exterior of the neighborhood. Larger, upscale homes are located near Memorial Park; small, older homes are located to the north and south of the site, along the bayous; and historic bungalows can be found within the Sixth Ward, near Downtown.

Several new condominiums and apartments are located along Washington Avenue, particularly to the west of the neighborhood (Fig. 21).

Unfortunately, these apartments all vary greatly in style, scale and price. Near the center of the site, at the intersection of Washington Avenue and Heights Boulevard, are the Memorial-Heights Apartments. Though they are less than ten years old, the large complex is going to be demolished and rebuilt.

**Commercial Uses** | Washington Avenue is primarily lined with commercial uses, particularly services and conveniences. This includes car dealerships and service centers, gas stations and quick marts, fast food restaurants, and banks (Fig. 22). These uses are especially concentrated at major intersecting streets, including Shepherd Drive and Durham Drive, Heights Boulevard and Yale Street, and Sawyer Street.

**Industrial Uses and Vacancies** | Though the western half of the site has begun to experience redevelopment, much of the eastern portion of Super Neighborhood 22 still contains abandoned or vacant buildings and industrial uses (Fig. 23). These uses are especially centered around the First Ward and Downtown Houston. In addition, many of these uses are located on large, low-value lots (Fig. 28 and 29).

**Civic Uses** | Like the industrial uses, civic uses are primarily located near Downtown Houston, including The Wortham Center, The Downtown Aquarium, a USPS facility, and the Houston Police Impound lot (Fig. 24). Both the Police facility and USPS center have proposed finding new locations, therefore freeing up large tracts of land.

**Parks and Open Space** | Major open spaces and parks within Super Neighborhood 22 include Memorial Park to the west, Buffalo Bayou to the south, Glenwood cemetery near the center, and George Bush Park within Downtown Houston (Fig. 25). Both Washington Avenue and Glenwood cemetery are directly accessible from Washington Avenue. Buffalo Bayou can be easily reached by any of the major north-south streets.

**Transportation** | Personal vehicles and bus are the major modes of transit (Fig. 26 - 27). According to the 2000 census, the majority of residents utilize personal vehicles. The primary east-west routes by car are Washington Avenue, Memorial Drive and Interstate 10. The 610 Loop and Interstate 45 are the major north-south routes. Secondary roads are those that run north-south and intersect with Washington Avenue - T.C. Jester Boulevard, Shepherd Drive and Durham Drive, Heights Boulevard and Yale Street, Studemont Street, Sawyer Street, and Houston Avenue.

Bus lines cover a large portion of the neighborhood. The major line, though, runs down Washington Avenue and into Downtown. Unfortunately, on-site observations showed low ridership.

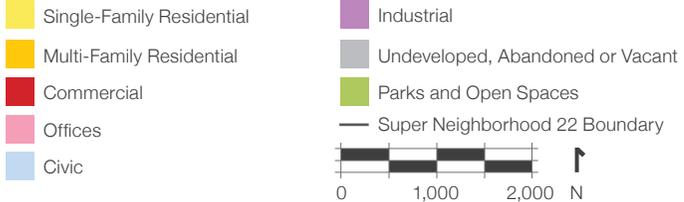
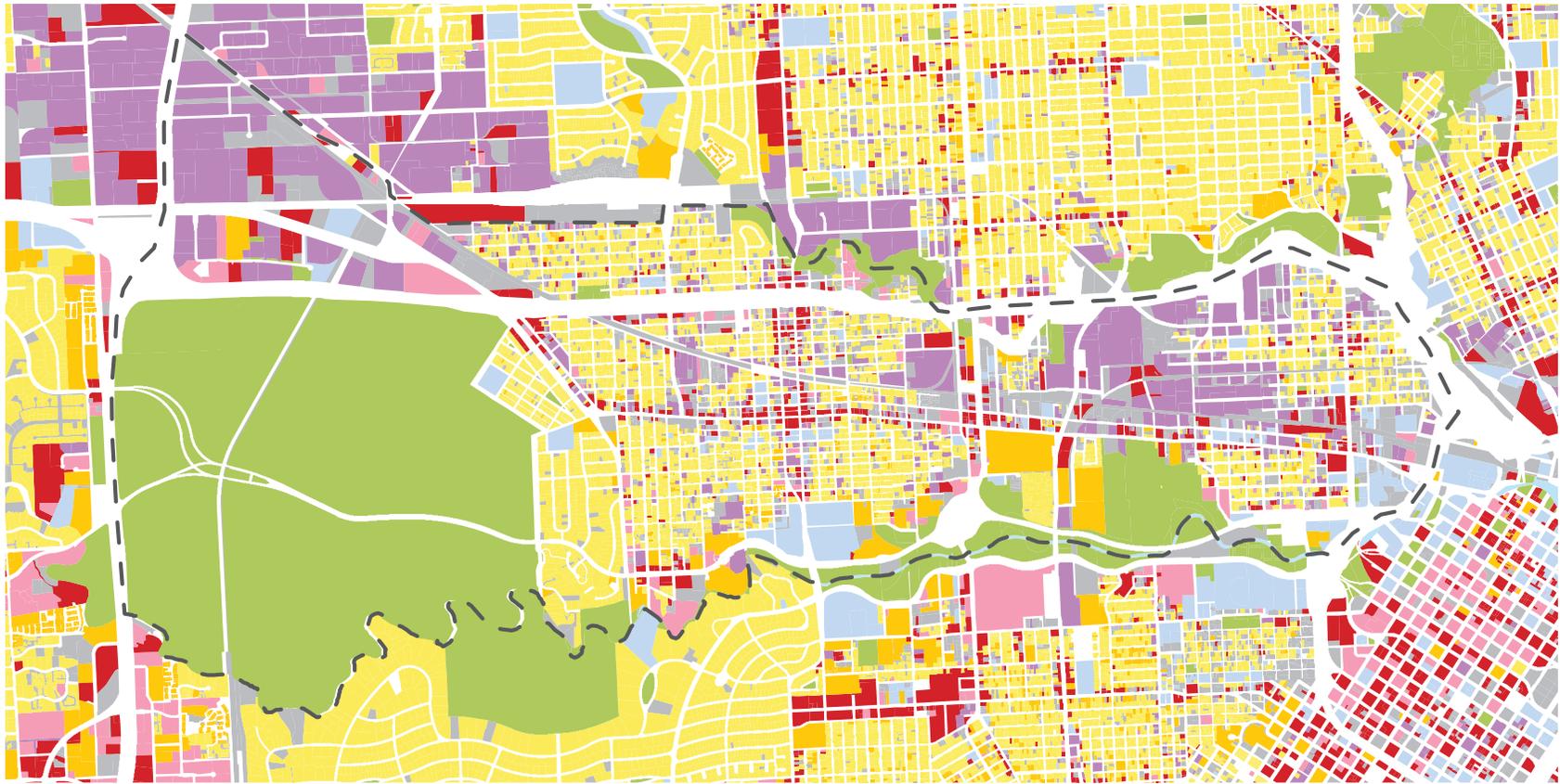


Figure 20 | Super Neighborhood 22 comprehensive land use map (Rader).



Figure 21 | Apartments on Washington Avenue (Rader).



Figure 22 | Car lot on Washington Avenue (Rader).



Figure 23 | Vacant lot on Washington Avenue (Rader).



Figure 24 | The Downtown Aquarium (Rader).



Figure 25 | Buffalo Bayou (Rader).



Figure 26 | A bus in Super Neighborhood 22 (Rader).



Figure 27 | Major transportation routes and nodes within Super Neighborhood 22 (Rader).



Figure 28 | Average land value per square foot for each sub-neighborhood (Rader).

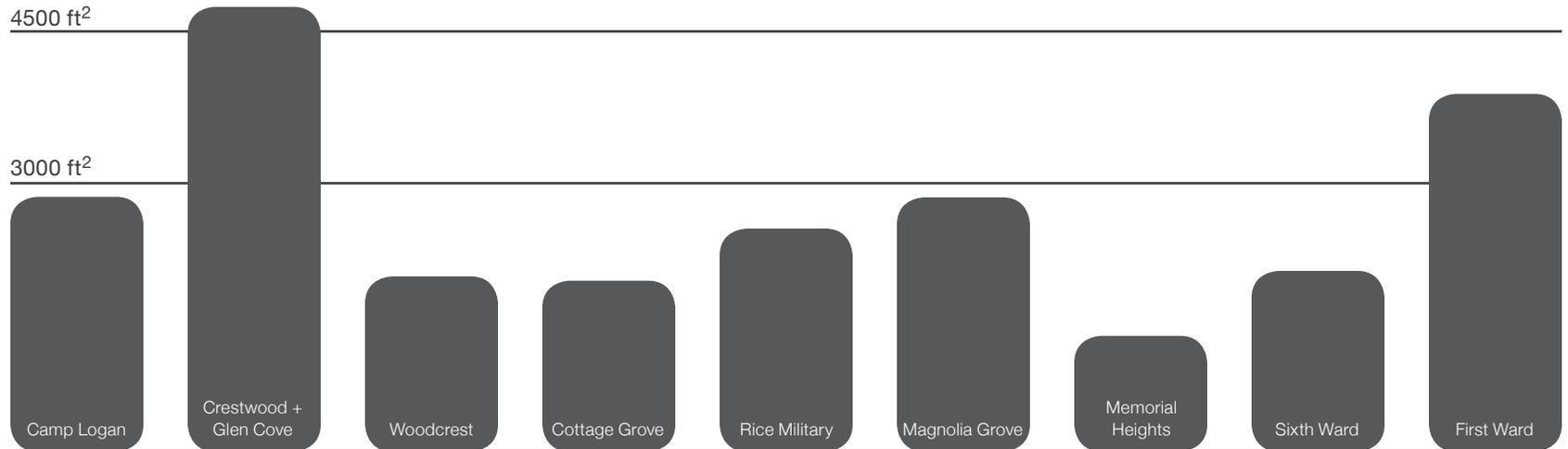


Figure 29 | Average lot size for each sub-neighborhood (Rader).

In order to unite the various land uses along Washington Avenue, the following design solutions shall be proposed:

First, to bring a greater **residential** base to Washington Avenue, new condominiums and apartments shall be proposed near the east end of the neighborhood, adjacent to Downtown, where development has lagged. And, in order to draw existing residents from the neighborhoods surrounding Super Neighborhood 22, secondary networks of squares or The Promenade type shall be proposed along major north-south streets intersecting Washington Avenue.

Next, The Commercial Entry Place type and various transit functions shall be proposed at major **commercial** centers. Doing so will not only help to draw residents from the surrounding neighborhoods, but will also help to break-up the linear organization along Washington Avenue into walkable sections. Near the east end of the site, proposed squares shall serve to infuse life into the currently underdeveloped area. This may include proposing squares in place of under-used, street-facing parking lots.

The area adjacent to Downtown, and near the First Ward, shall also be utilized as a major catalyst for

redevelopment. Doing so will take advantage of the numerous **vacancies**, as well as the proposed relocation of the USPS center and Police Impound Lot.

A major redevelopment project near Downtown will also allow for connections to the existing **civic** uses, including The Wortham Center (home to the Houston Ballet and Grand Opera) and The Downtown Aquarium.

Super Neighborhood 22 is home to several prominent **parks and open spaces**, including Buffalo Bayou to the south, Memorial Park to the west, and two historic cemeteries along Washington Avenue. Therefore, the linear organization of squares along Washington Avenue shall provide direct access to both cemeteries through the use of The Meeting Place type, The Seating Edge Type, The Historic Square type or The Street Corner type. However, emphasis will be placed on maintaining the sacredness of both cemeteries. The Promenade type shall be used to connect residents to both Memorial Park and Buffalo Bayou, and may occur within the proposed secondary networks. Additionally, patrons and residents shall be directly connected to Buffalo Bayou within the proposed development near Downtown.

Finally, additions to major **transportation** routes shall be proposed in order to improve the pedestrian experience along Washington Avenue. This includes new street trees and lighting; squares, such as The Transit Waiting Place type, The Street Corner type, and The Widened Sidewalk type; and a vegetated median in place of portions of the center turn lane along Washington Avenue. All these improvements will help to slow traffic, increase shade and comfort, and better accommodate pedestrian activity. They will also provide for a more user-friendly future light rail corridor.

At major intersections with Washington Avenue, where secondary networks of squares are proposed and secondary circulation occurs, The City Center type, The Commercial Entry Place type, The Street Corner type and The Transit Waiting Place type shall be implemented. Doing so will increase activity at these major nodes, provide additional community spaces, and help to link together the secondary networks of squares with the primary.

Lastly, elevated pedestrian ways, pedestrian bridges or additional controlled intersections shall be proposed near Downtown where pedestrians are currently forced to cross at high-speed intersections.

## Who are the residents or patrons?

The 2000 census recorded the population of Super Neighborhood as 18,552. A closer look at the demographics of the neighborhood reveals a fairly even distribution of ages and just a slightly disproportionate amount of males to females (Fig. 31). However, the majority of residents (Fig. 37 - 38) are Hispanic (Fig. 30).

In terms of education, the majority of residents twenty-five years of age and younger have either an elementary or middle school education (Fig. 32), while the majority of residents older than twenty-five years have attained less than a ninth grade level of education (Fig. 33). However, despite low levels of education, nearly two-thirds of residents are employed (Fig. 34).

Crime statistics show that the majority of crimes committed within Super Neighborhood 22 are either burglaries or car burglaries (Fig. 35) and are primarily committed on roads, streets or sidewalks or at residences (Fig. 36).

Finally, figure 39 illustrates the median household income, by census block, for Super Neighborhood 22. A large portion of the neighborhood, including the area adjacent to Downtown Houston, lives at or near the poverty line, seen in red.

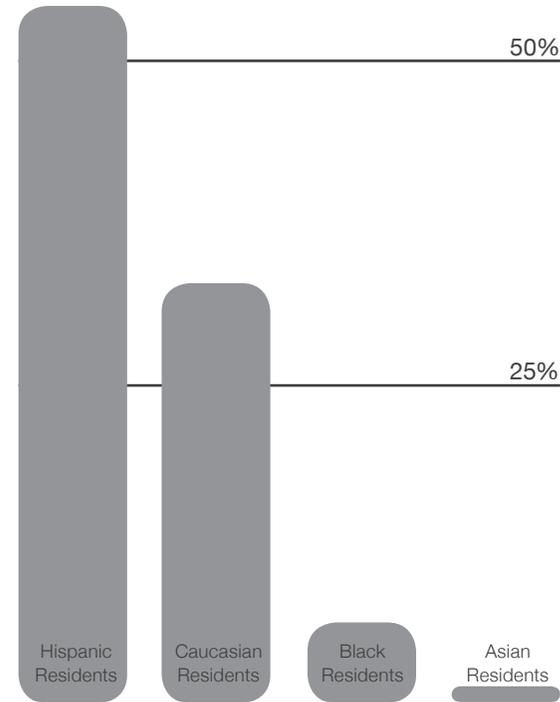


Figure 30 | Ethnicity of Super Neighborhood 22 residents (Rader).

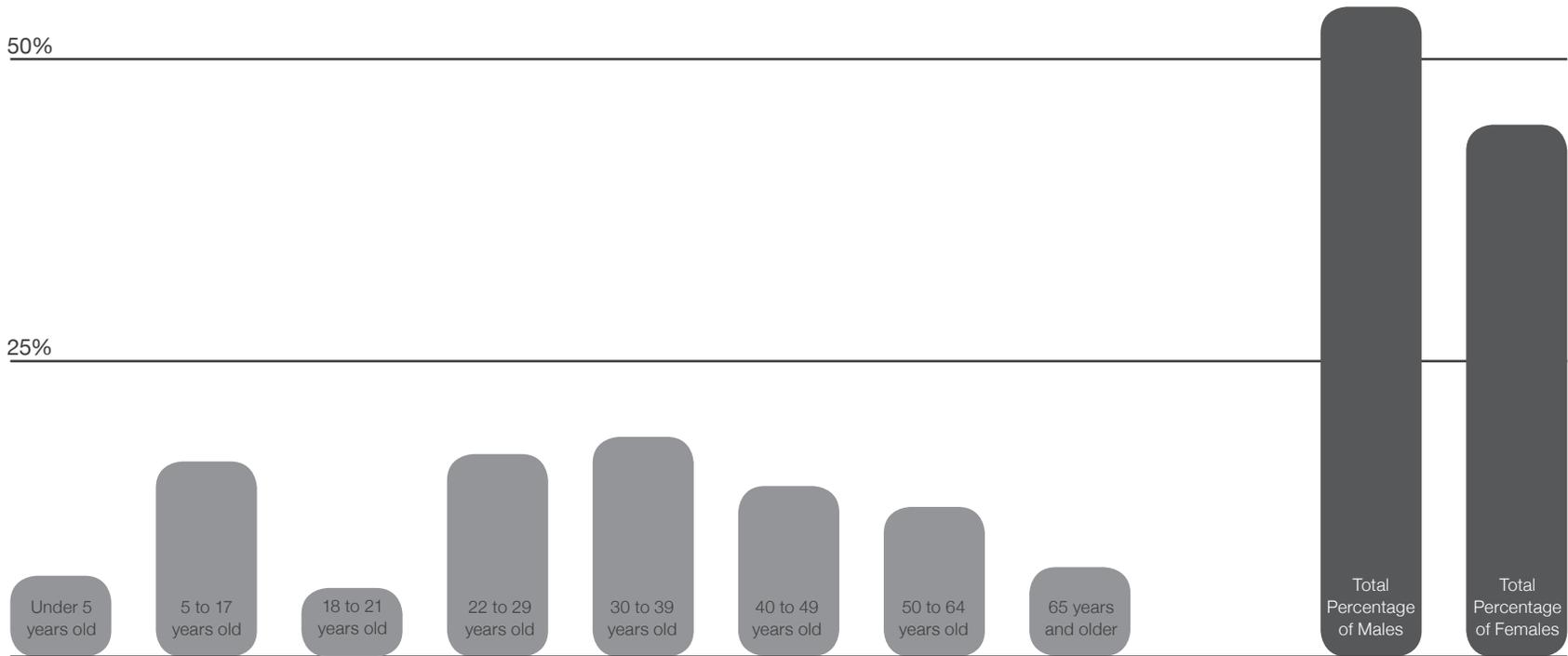
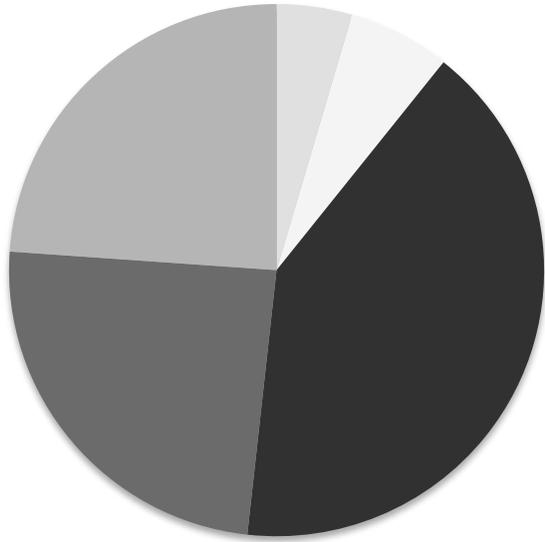


Figure 31 | Age and sex of Super Neighborhood 22 residents (Rader).



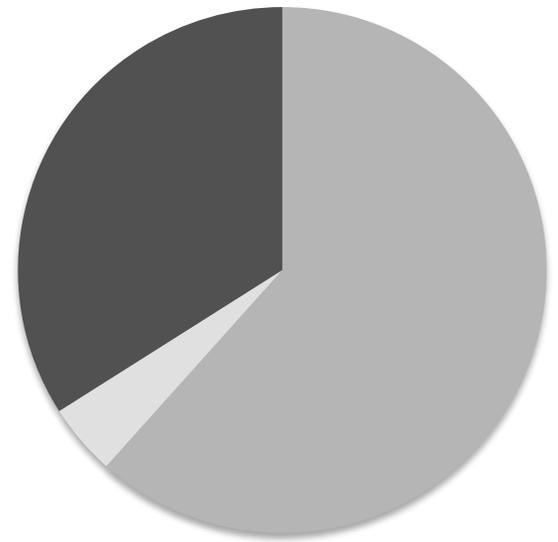
- Preschool
- Kindergarten
- 1st to 8th Grade
- High School
- College or Graduate School

Figure 32 | Education level of residents of Super Neighborhood 22 under 25 (Rader).



- 9th Grade or Less
- 9th to 12th Grade
- High School Diploma
- Some College
- Associates Degree
- College or Graduate School

Figure 33 | Education level of residents of Super Neighborhood 22 over 25 (Rader).



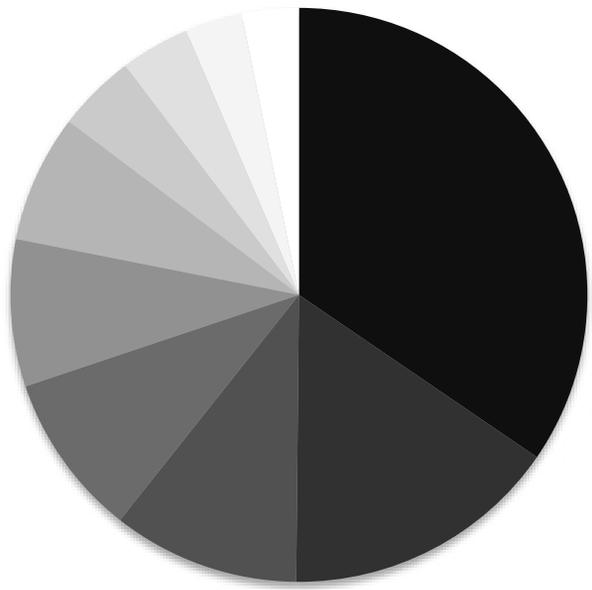
- Not in Labor Force
- Employed
- Unemployed

Figure 34 | Employment of residents within Super Neighborhood 22 (Rader).



- Burglary of a Motor Vehicle
- Burglary
- Auto Theft
- Driving While Intoxicated
- Narcotic Drugs
- Aggravated Assault
- Robbery

Figure 35 | Crime types by percentage for Super Neighborhood 22 (Rader).



- Road, Street or Sidewalk
- Residence or House
- Other Parking Lot
- Apartment Parking Lot
- Driveway
- Other / Unknown
- Apartment
- Garage or Carport
- Restaurant or Cafeteria Parking Lot
- Commercial Parking Lot or Garage

Figure 36 | Crime locations by percentage for Super Neighborhood 22 (Rader).



Figure 37 | Super Neighborhood 22 residents at lunch (Rader).



Figure 38 | Super Neighborhood 22 residents outside a cafe (Rader).

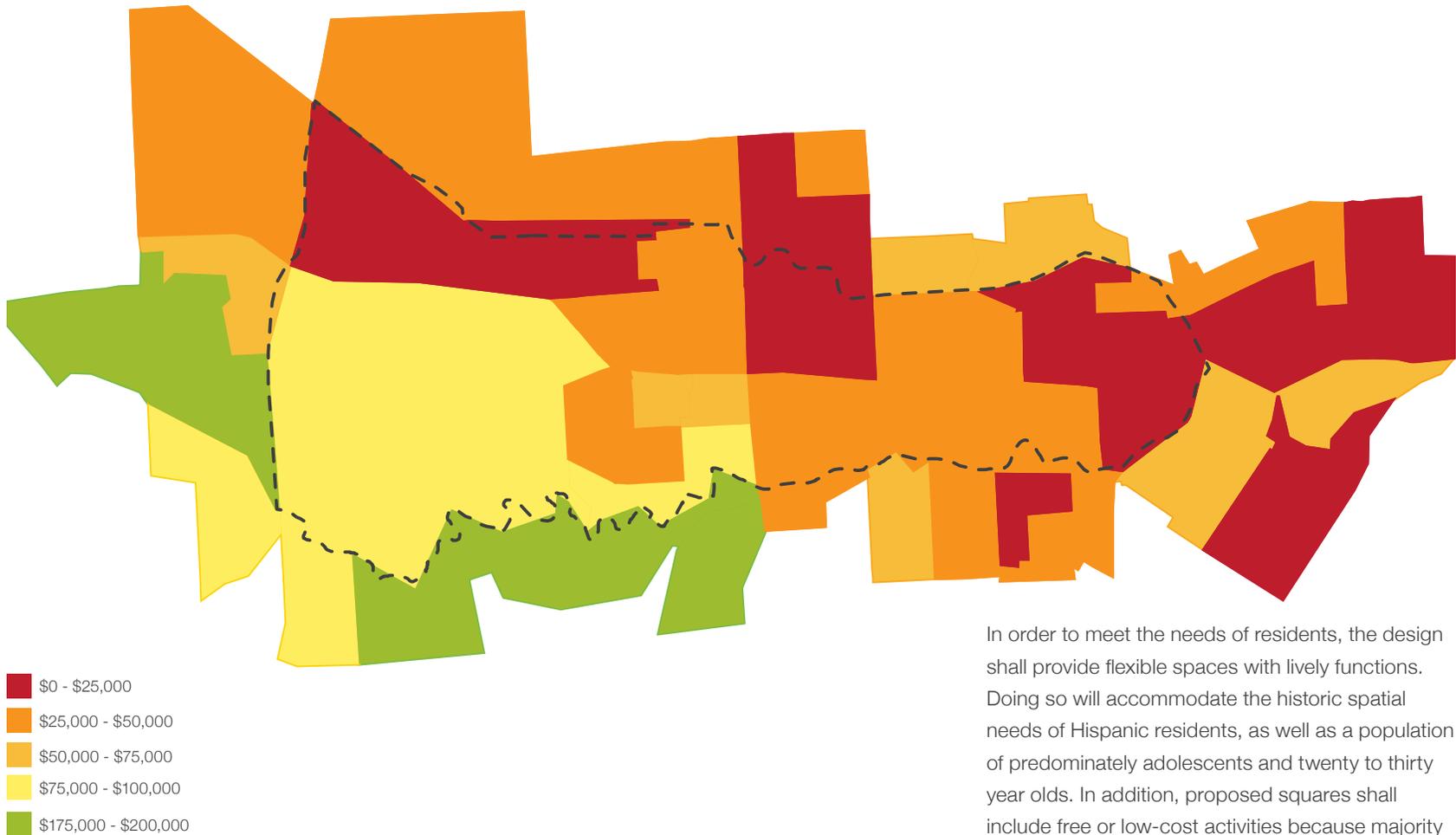


Figure 39 | Median household income of Super Neighborhood 22 census blocks (Rader).

In order to meet the needs of residents, the design shall provide flexible spaces with lively functions. Doing so will accommodate the historic spatial needs of Hispanic residents, as well as a population of predominately adolescents and twenty to thirty year olds. In addition, proposed squares shall include free or low-cost activities because majority of the neighborhood lives near the poverty line. Finally, street lighting shall be increased along Washington Avenue in order to help combat crimes.

## What are the natural systems and how do they impact the site?

The adjacent maps illustrate the major climatic conditions of both Texas and Harris County. Figure 40 shows the average temperatures for the state of Texas. Harris County, seen in grey, receives relatively high temperatures year-round, including average temperatures between 61° and 70° and highs between 91° and 100°.

Figure 41 illustrates the average amounts of rainfall Texas receives each year. Harris County, seen in grey, receives anywhere from 41 to 60 inches. Any water that falls to the south of Washington Avenue (Fig. 42) will make its way to Buffalo Bayou and become part of the Buffalo Bayou Watershed. Similarly, any water that falls to the north of Washington Avenue will fall into White Oak Bayou and become part of the White Oak Bayou Watershed. Near the east end of the site, White Oak Bayou merges into Buffalo Bayou. This system then flows into the Houston Ship Channel and the Galveston Bay. The two Bayous also delineate the 100-year flood plain locations. While the majority of the site does not lie within the 100-year flood plain, and none of the site is in a hurricane risk area, the neighborhood is still highly prone to flooding. This is a result of high-intensity rain falls, urban development, and low permeability.

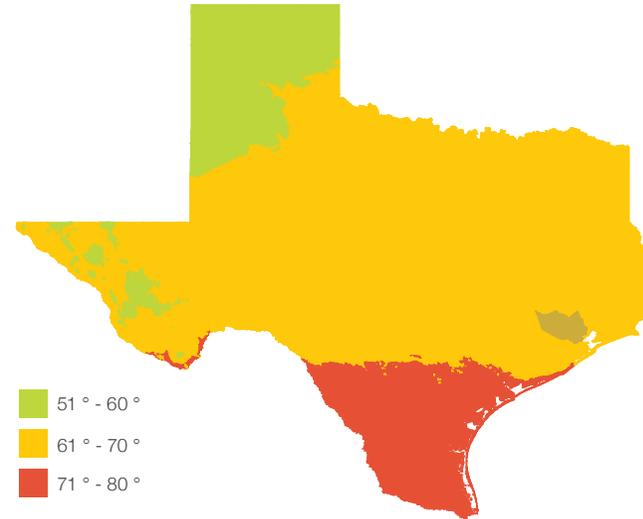


Figure 40 | Average temperatures in Texas (Rader).

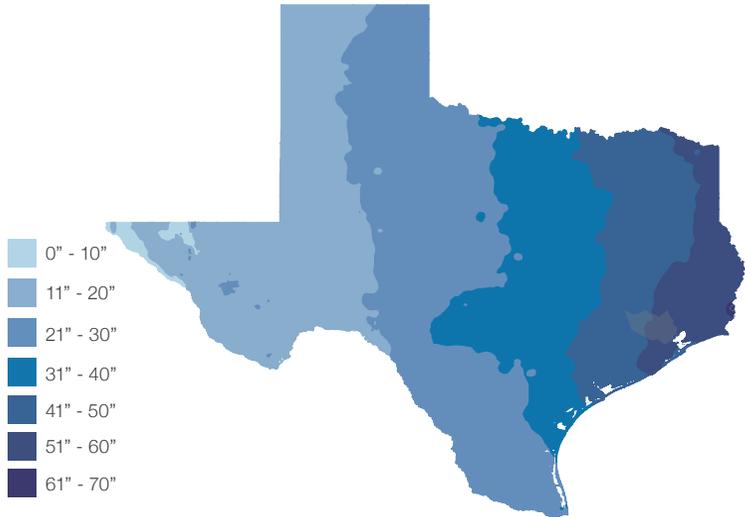


Figure 41 | Total annual precipitation in Texas (Rader).

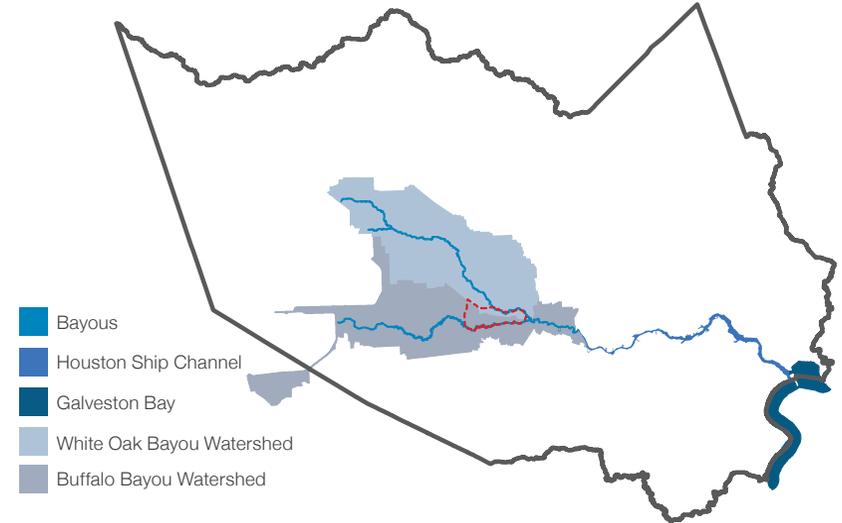


Figure 42 | Major bodies of water and their watersheds within Harris County (Rader).

In order to combat high year-round temperatures and high-intensity rain storms, the proposed squares and design solutions shall incorporate increased shade and permeability. This includes proposing additional streets trees and replacing parking lots with The Urban Oasis type and The Pocket Park type. In addition, by placing the primary network of squares along Washington Avenue - the neighborhood's high point - potential flooding will be avoided.



## The Proposed Network of Squares

As the first point of the thesis states, the primary goal of this Master's Project and Report is to unite the various land uses, residents and natural systems within Super Neighborhood 22 through a network of public squares. Using the previous inventory and analysis information, the following organization of squares is proposed (Fig. 43).

The proposed network is a linear organization along Washington Avenue with major terminus destinations at either end. The decision to pursue this organization method was made after precedents of each type were studied and compared. The linear organization precedent study can be found in the Appendix of this document. Along its length, multiple square functions are proposed in order to accommodate a wide range of activities and patrons. Specifically, squares proposed near the western edge of the organization build upon new development that has occurred, while squares to the east of the neighborhood act as catalysts for new development. The center of the site then becomes a major unification point and City Center.

In order to make the nearly four-mile long network more easily traversable, it is defined by seven unique districts. Each district is located at either a

major intersection or concentration of specific land uses, and includes squares selected specifically for that location. The districts are described alongside the diagram on the following page.

In between districts, additional street trees, as well as The Widened Sidewalk type, The Street Corner type, and The Transit Waiting Place type are proposed in order to make the pedestrian experience more comfortable. These strategies will also accommodate a future light rail line along the primary network and Washington Avenue.

In addition to the seven districts, there are three secondary networks of squares, located at major north-south intersections. They are intended to link residents to Washington Avenue and Buffalo Bayou.

The proposed primary network of squares, seven individual districts and three secondary networks all work together to unify the various land uses, residents and natural systems found within Super Neighborhood 22. Through the implementation of new squares, existing and proposed land uses, as well as Buffalo Bayou and other major green spaces, are paired with similar outdoor community spaces. The result is direct connections between residents and their built environment.

### **1 | Memorial Park and The W.O.W. Roundabout**

District One serves as both the western terminus point of the linear organization of squares and the connection to Memorial Park. This district includes the Portal type to mark start of the network of squares and The Promenade type as the link from the W.O.W. Roundabout into Memorial Park and vice versa. This district also utilizes newly developed residential buildings and commercial centers as backdrops for The Commercial Entry Place type and The Meeting Place type.

### **2 | T.C. Jester Boulevard at Washington Avenue**

District Two utilizes a portion of the large parking lot surrounding both the newly constructed CVS Pharmacy and new apartment buildings for The Commercial Entry Place type and The Transit Waiting Place type. The proposed Commercial Entry Place type also connects to the adjacent strip shopping area. Finally, this district includes a major Urban Oasis type between Detering Street and Lester Street where a vacant lot currently exists.

### **3 | Durham Drive and Shepherd Drive at Washington Avenue**

District Three, located at one of the major intersections within Super Neighborhood 22, serves as both a catalyst for increased in-fill and a major commercial center. To accomplish this, several

Commercial Entry Place types are proposed in portions of the parking lots lining Washington Avenue. A Pocket Park type is also proposed at the intersection of Washington Avenue and Fowler Street, where a vacant lot currently exists next to new apartment complexes.

### **4 | Yale Street and Heights Boulevard at Washington Avenue**

District Four includes a proposed City Center type, which aims to unite the eastern and western halves of the neighborhood. This district also proposes The Meeting Place type, The Transit Waiting Place type and The Street Corner type in order to provide community spaces adjacent to the wide variety of land uses present. Finally, this districts includes a secondary network that provides connections to the Art Car Museum, existing community center and Buffalo Bayou.

### **5 | Glenwood Cemetery**

District Five's primary function is to connect residents to historic Glenwood Cemetery. To do so, The Seating Edge type and The Meeting Place type are proposed at the entrance to the cemetery.

### **6 | The First Ward**

As mentioned in the inventory and analysis, the First Ward contains a significant amount of large, low-

value lots, and abandoned warehouses. Therefore, significant redevelopment is proposed within this district, including a new artists' live / work area. This district also proposes new residential and commercial structures in order to increase activity and draw residents from adjacent neighborhoods. Finally, District Six includes several Pocket Park and Urban Oasis types in order to provide comfortable resting places, increase shade, and improve permeability.

### **7 | Downtown Houston**

Because of the wide range of design opportunities present at the intersection of Super neighborhood 22 and Downtown Houston, and because the second thesis point is to connect the residents and patrons of Super Neighborhood 22 to Downtown, District Seven will be delineated in greater detail in the following section.

### **Secondary Networks**

The three secondary networks, located along Durham Drive and Shepherd Drive, Heights Boulevard, and Sawyer Street, serve as links to and from the residential neighborhoods and Buffalo Bayou, and the proposed network of squares along Washington Avenue. These connections are primarily made through the implementation of The Promenade type.



- The Promenade Type
- The Portal Type
- The Commercial Entry Type
- The Meeting Place Type
- The Urban Oasis Type
- The Street Corner Type
- The Transit Waiting Place Type
- The City Center Type
- Major Redevelopment Areas
- Secondary Networks

Figure 43 | Proposed network of squares (Rader).

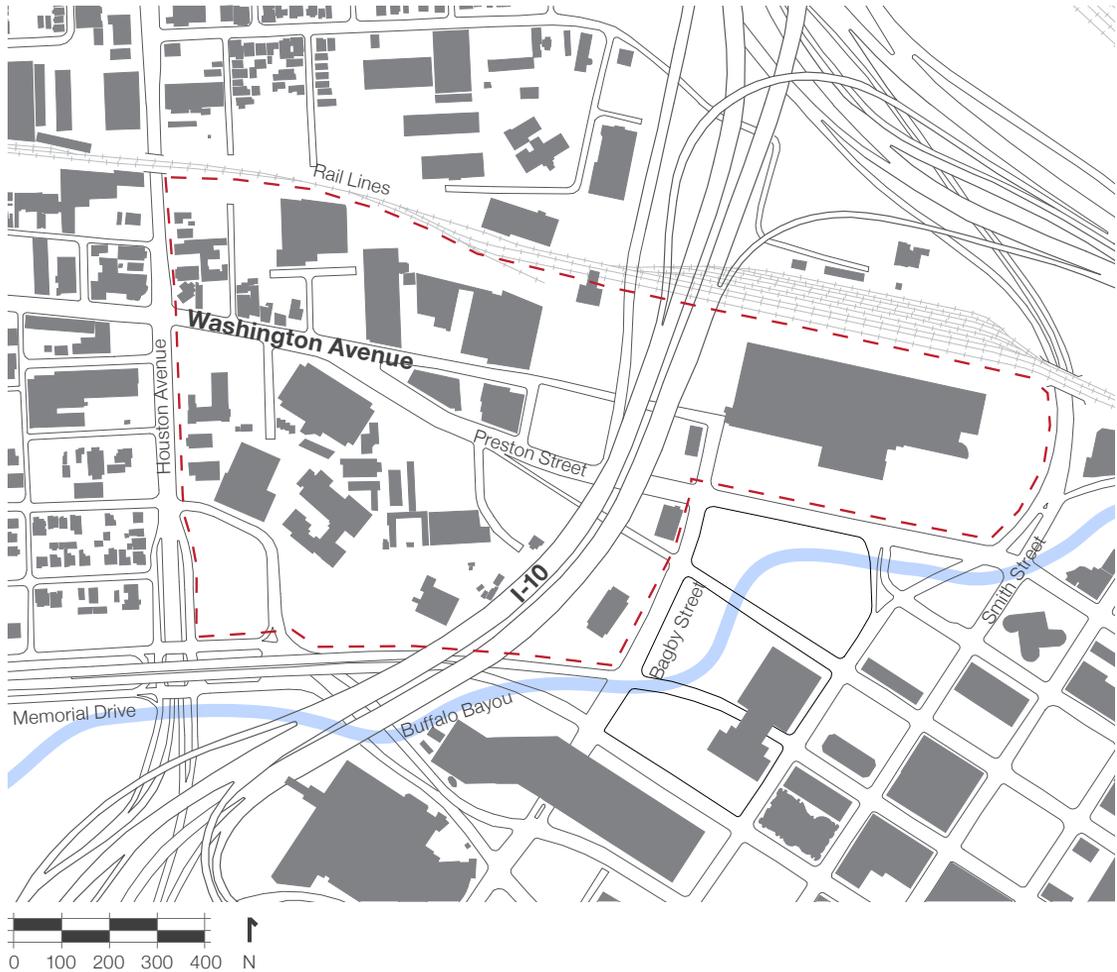
### Network of Squares

The above diagram (Fig. 43) illustrates the districts and key proposed squares. It should be noted, though, that some smaller scale squares are not represented.



THE DISTRICT





**Where is the site and what are its edges?**

District Seven is located adjacent to Downtown Houston at the eastern edge of Super Neighborhood 22 (Fig. 44). It is bounded by industrial and Amtrak rail lines to the north, Memorial Drive to the south, Houston Avenue to the west and Bagby and Smith Streets to the east, and is intersected by Interstate 10.

As the second point of the thesis states, Super Neighborhood 22 can be connected to Downtown Houston through a network of squares. Specifically, this connection shall occur within District Seven, along Washington Avenue and Preston Street. In addition, this District shall primarily serve as a City Center for both Super Neighborhood 22 and Downtown Houston.

Figure 44 | Context Map of District Seven: Downtown Houston (Rader).

## What are the land uses and how can they contribute to a cohesive neighborhood?

Like the rest of Super Neighborhood 22, District Seven contains a wide variety of disconnected land uses (Fig. 45).

**Residential Uses** | One residential building currently exists within the site, to the west of the USPS center, but is still under construction. Otherwise, the closest residential uses can be found within the Sixth Ward, near District Seven.

**Commercial Uses** | Commercial uses currently in operation are located at the intersection of Houston Avenue and Washington Avenue, and cater to the Police Impound lot. These uses include a police supply store, a bail bond office, and a legal office.

**Industrial Uses and Vacancies** | Much of the remainder of District Seven is comprised of vacant or abandoned warehouses and lots, especially to the west of I-45. However, an abandoned brick building, located near the Amtrak station, is unique and in good condition (Fig. 52).

**Civic Uses** | Civic and entertainment uses are primarily located to the east of I-45, and include the USPS center (Fig. 53), The Downtown Aquarium (Fig. 49), and The Wortham Center. To

the southeast of I-45, a large portion of land is occupied by the Police Impound Lot (Fig. 46) and an existing church (Fig. 47). Both the Police facility and USPS center have proposed finding new locations, which would free up a significant portion of District Seven. The remainder of the site could be purchased at low-costs, based on figure 28 in the previous section.

**Parks and Open Space** | District Seven directly connects to Buffalo Bayou at both the southern and eastern boundaries. The district is also adjacent to George Bush park, located at the intersection of Bagby Street and Preston Street.

**Transportation** | Like the rest of the neighborhood, vehicular transportation is the major mode of movement, and primarily occurs along Washington Avenue and Preston Street (Fig. 50 and 54). The site is also easily accessed by Interstate 10, Interstate 45 and Memorial Drive. Secondary circulation then occurs at the intersections of Houston Avenue and Bagby Street, which are both controlled stops.

The site is alternatively reached by foot along Washington Avenue or the light rail line along Main

Street, as well as by Amtrak or train.

Once here, surface parking is available under Interstate 45 (Fig. 51) or on surface lots along Washington Avenue.

**Utilities** | A power sub-station is located directly to the north of Washington Avenue and west of I-45, and is approximately one square block in size and nearly thirty feet tall (Fig. 48). Currently, it is surrounded by a large, unsightly barbed-wire fence.

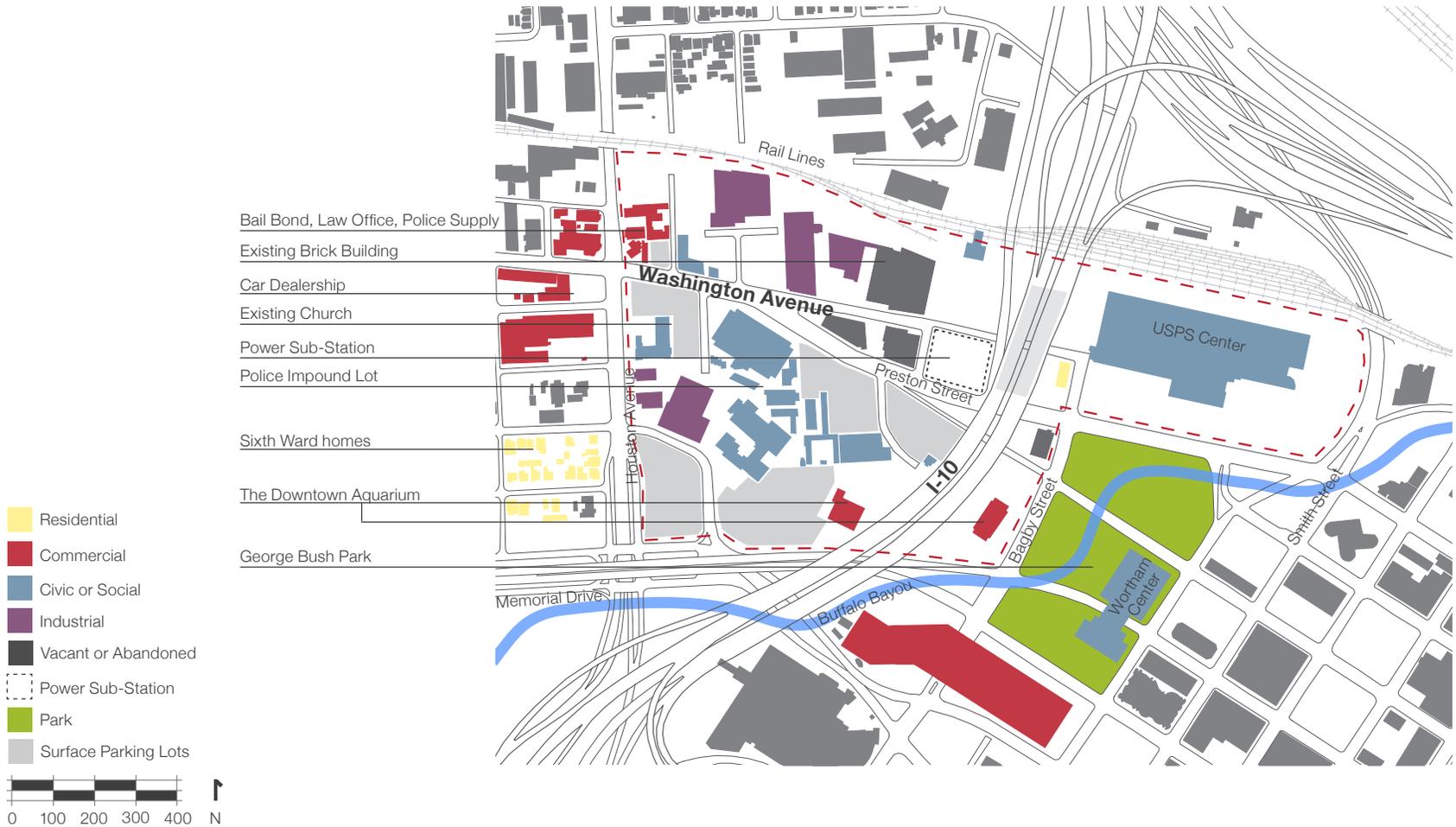


Figure 45 | Existing land use diagram of District Seven (Rader).



Figure 46 | View of the Police Impound Lot along Washington Avenue (Rader).



Figure 47 | View of the church at Houston Avenue and Washington Avenue (Rader).



Figure 48 | View of the power sub-station (Rader).



Figure 49 | The Downtown Aquarium (Rader).



Figure 50 | View down Washington Avenue looking west (Rader).



Figure 51 | View under Interstate 45 (Rader).



Figure 52 | Panoramic view of the existing Amtrak station and historic building (Rader).



Figure 53 | Panoramic view of the USPS center (Rader).

In order to create a more vibrant District Seven, connect users to Downtown Houston, and unify the various land uses, the following design strategies are proposed. First, residential uses shall be increased. Doing so will bring more permanent patronage and activity to the district. Second, a major commercial and entertainment center shall be implemented in place of the low-density warehouses and Police Impound Lot. This, too, will bring more activity to the area, and give residents and visitors a place in which they can experience a wide variety of cohesive businesses and social activities. Third, a series of squares shall be included in order to provide outdoor community spaces, and link visitors and land uses. And, finally, a transit center shall be proposed in place of the USPS center in order to unite the various surrounding transit types and give users easier access to the site.

In addition, pedestrian spaces will be improved through the addition of street trees, lights, The Seating Edge type, The Street Corner type, The Transit Waiting Place type, and a vegetated median along Washington Avenue. These design strategies, along with the aforementioned proposals, will all aide in creating a more comprehensive, vibrant, pedestrian friendly community center.

## Who are the residents or patrons and where are they coming from?

As previously mentioned, no residents currently live within District Seven. Therefore, unless additional residences are proposed, the only patrons arrive via bus or car along Washington Avenue. But, by proposing additional, dense housing units, District Seven will be able to maintain a more permanent user base.

If proposed, residential units should occur to the northwest of the site (Fig. 54). This would allow for pedestrian friendly connections to the proposed transit center, keep residents away from busy Memorial Drive, open up the south of Washington Avenue to commercial development, and allow for the existing historic brick building to be re-purposed as a residential structure.

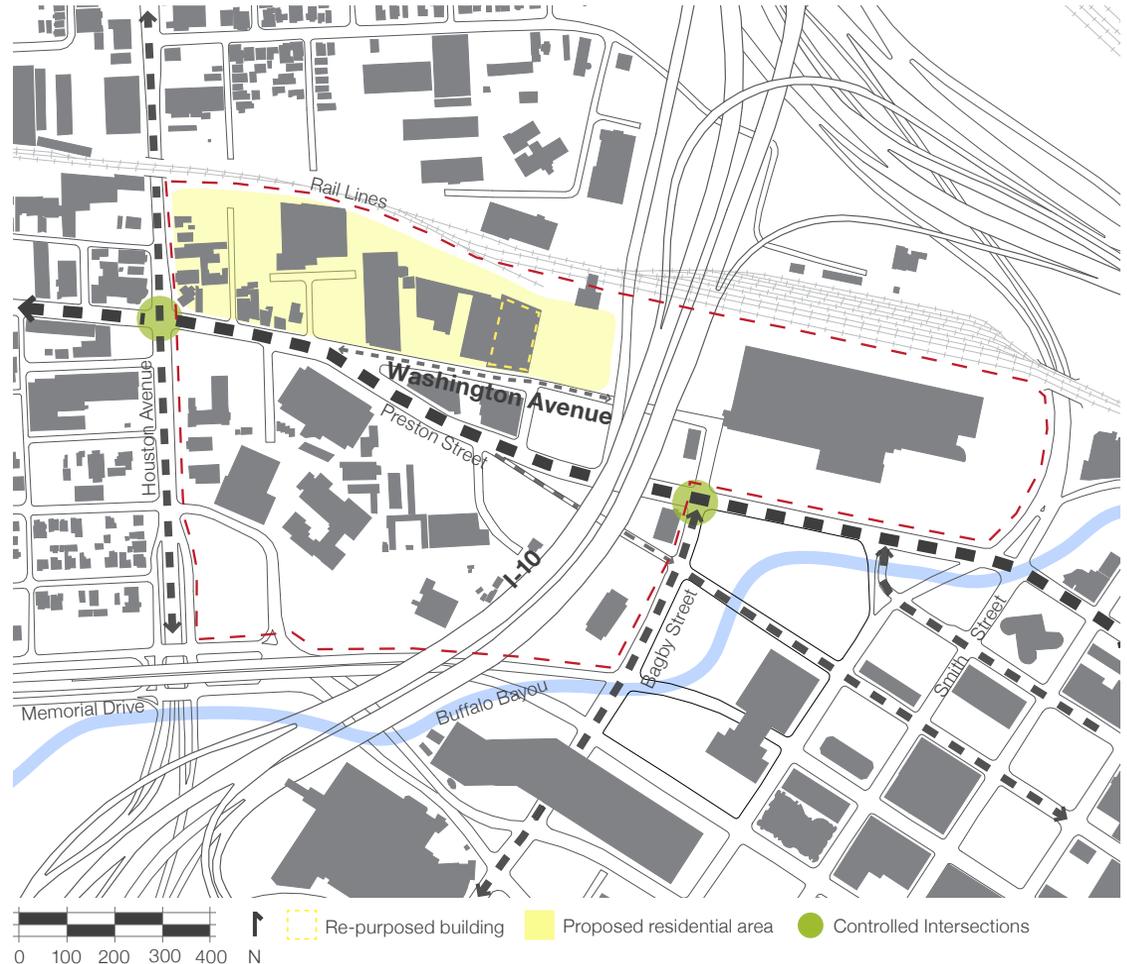


Figure 54 | Existing circulation diagram of District Seven (Rader).



Figure 55 | Buffalo Bayou as seen from Bagby Street (Rader).

### **What are the natural systems and how do they impact the site?**

Buffalo Bayou (Fig. 55) runs alongside the south and east borders of District Seven, providing direct access at Bagby Street and Memorial Drive. Otherwise the site is poorly vegetated. But, through the addition of street trees and The Pocket Park and The Urban Oasis types, the District will be more visually appealing, more comfortable for pedestrians and vehicular traffic will slow.

## The Proposal for District Seven

The information obtained from the inventory of the existing conditions was then used to propose design solutions for the district. As the second part of the thesis states, and the proposed network of squares depicts (Fig. 43), Super Neighborhood 22 can be linked to Downtown Houston through a secondary network of public squares. Because this project specifically seeks to unite the various land uses, residents and natural systems, the concept of *Layered Urbanism* is proposed. This concept seeks to unite city dwellers with a wide variety of land uses and program elements through the layering and inter-mixing of spaces.

The following, in conjunction with figures 56 thru 58, describes District Seven's major design strategies:

**Building Uses** | District Seven brings together both residents and land uses through the proposal of a new four-part redevelopment plan in place of the existing low-density and vacant uses. The first area, located to the west, is the daily conveniences zone, which features the existing church in conjunction with a new youth center, retail shops and offices, and nearly a thousand new residential units. These new uses and spaces will increase commercial activity during the day, and bring a more steady stream of permanent patrons to the district.

The second area, located in the middle of the district, features a large City Center square type, about which new residential and commercial stores are proposed. Like the first zone, these spaces will bring permanent patronage to the site. In addition, the large City Center, described in greater detail in the subsequent section, supports a wide variety of activities throughout the day and well into the evening and night.

Part of what will keep The City Center lively around the clock is the third zone within District Seven - the entertainment area. This zone builds upon the existing Aquarium and adjacent performing arts theater by providing night life, bars, restaurants, and a movie theater. This eastern zone also incorporates both active and passive recreation spaces under and adjacent to Interstate 45.

And, last, is the new inter-modal transit center, which will provide residents and patrons with easy access to a variety of transit types - including bus, commuter train, and, in the future, light rail. For both the ease and safety of pedestrians, as well as for added visual interest, an elevated pedestrian way (Fig. 59) guides people over the highway off-ramp, and to and from the transit center, The City Center and The Aquarium.

**Squares** | But, the primary goal of this project is to unite the residents, land uses, and natural systems through a network of public squares. As figure 57 illustrates, the proposal for District Seven includes a wide variety of squares, each supported by the proposed, adjacent building uses.

The conveniences zone features The Church Entry type, The Outdoor Lunch Plaza type, and several green spaces, all aimed at providing communal spaces for the residents, church patrons, and youth at the new community center. This includes a lush Pocket Park type (Fig. 60) with sculptural mounds, ample seating, and trees for dense shade.

The central area of District Seven is centered around the newly proposed City Center type, but also includes The Promenade type and The Urban Oasis type in the form of an orchard. These spaces cater to the four large commercial and residential structures surrounding the square by providing places to gather, dine, and play. In addition, the northern half of the City Center provides the new residential buildings with a large community space and free program elements.

Squares and spaces to the east of the district primarily support the new inter-modal transit center,

including a large, sheltered Transit Waiting Place type (Fig. 61); a Commercial Entry Place type adjacent to the transit center; and several Widened Sidewalk types. Each of these spaces seek to make using public transportation a more enjoyable, comfortable experience.

**Parking and Circulation** | In order to easily access the new district, make vehicular circulation more efficient, and open up land, the plan proposes closing the eastern portion of Washington Avenue after it merges with Preston Street. The plan also proposes continuing Center Street into the site in order to provide easy access to the residential parking lots at the north of the district. Similarly, an existing curb cut is utilized to the southwest of Houston Avenue in order to provide access to the parking garages and lots, and well as the roundabout and drop-off.



Figure 56 | Figure ground diagram of District Seven and surrounding context (Rader).

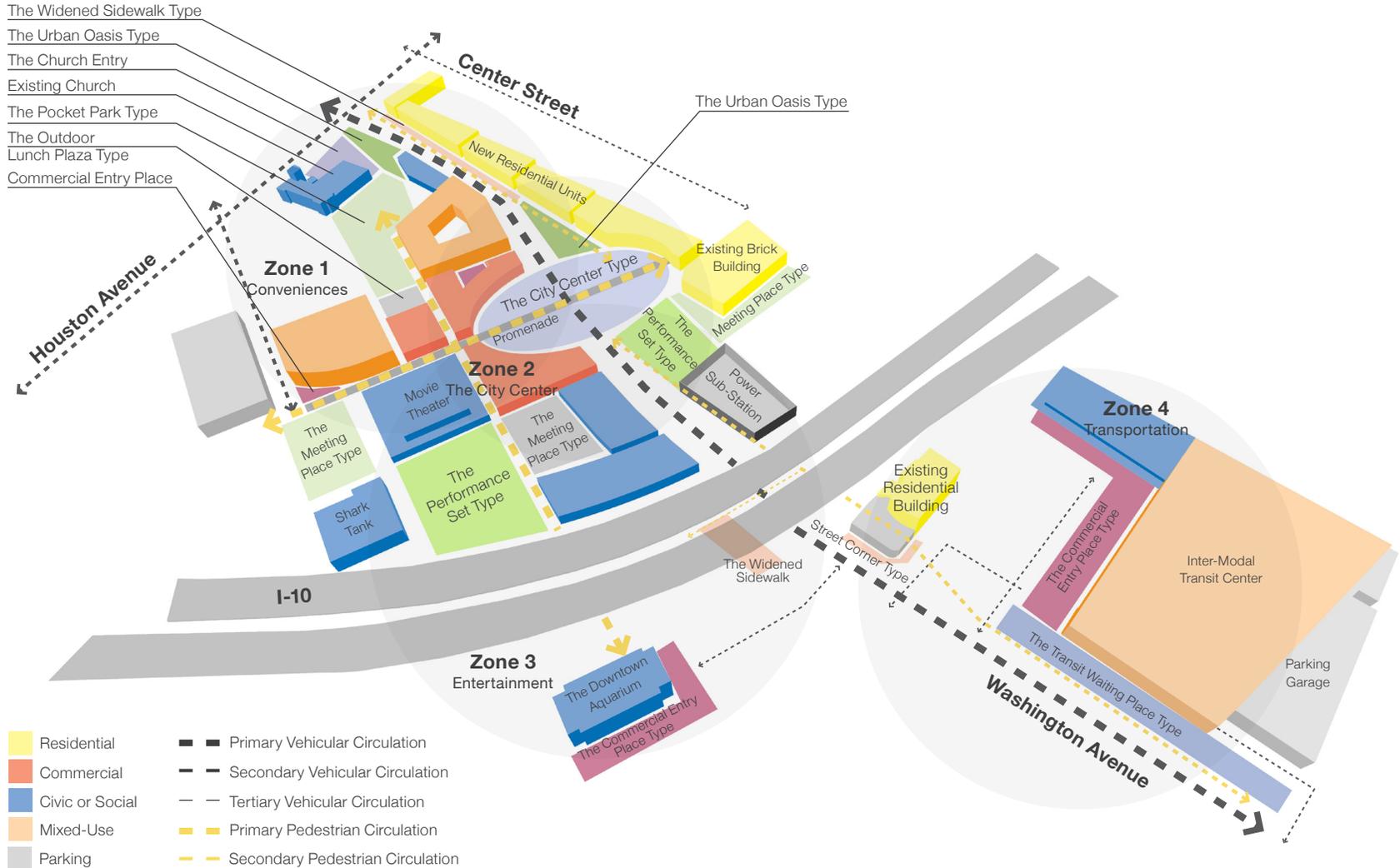


Figure 57 | Proposed zones, circulation, land use and squares within District Seven (Rader).



Figure 58 | Proposed plan of District Seven with locations of conceptual perspectives (Rader).

### **Aerial View of District Seven**

Figure 59 depicts, in diagrammatic form, the proposed squares and spaces along Washington Avenue. It should be noted that, for the purposes of clarity and readability, trees and vegetation are not represented.

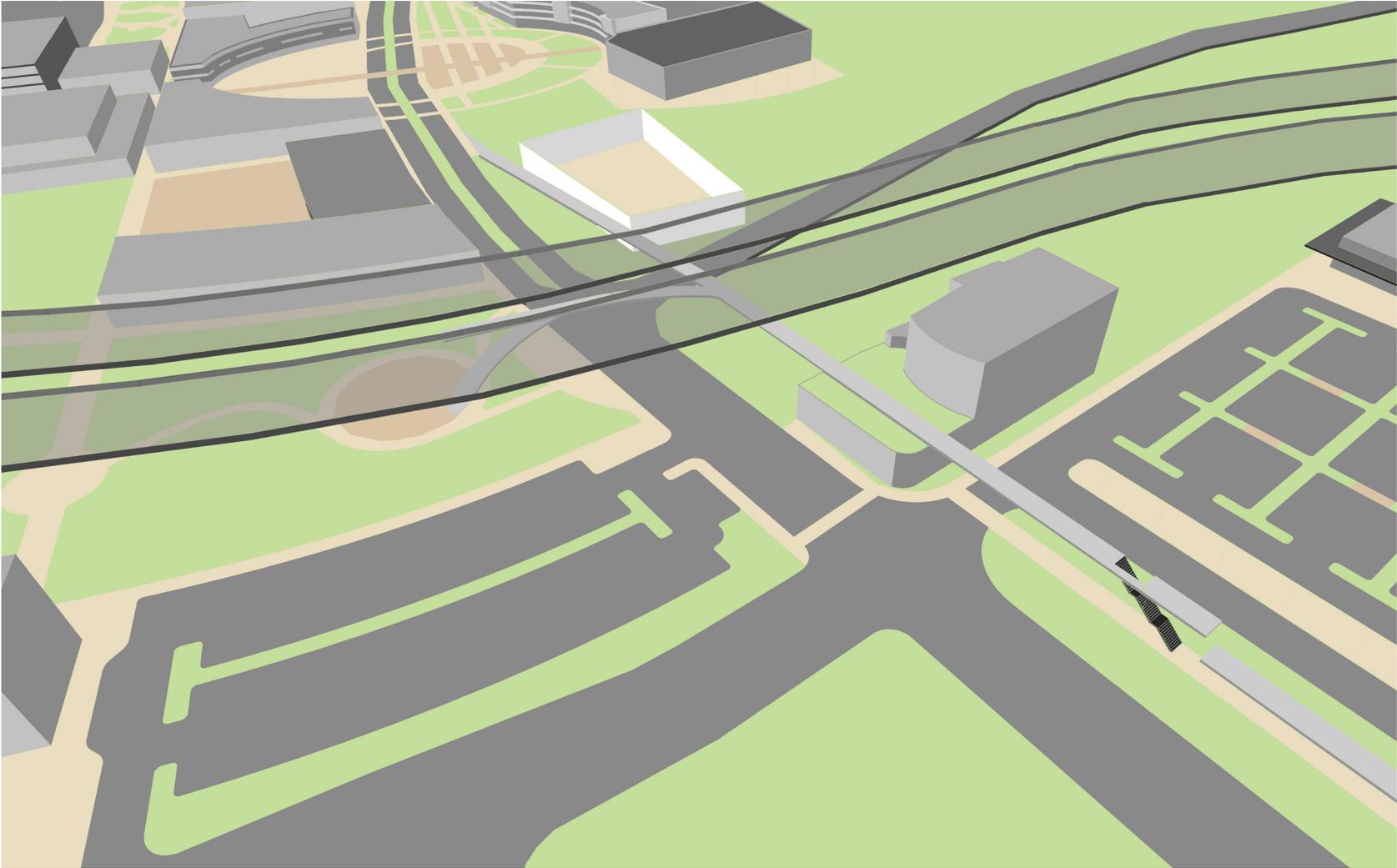


Figure 59 | Diagrammatic aerial view of District Seven (Rader).

### **Pocket Park for Residents**

Figure 60 depicts the concept of a Pocket Park being located adjacent to the church and proposed mixed-use residential and commercial building. Further design development of the square could feature ample shade and seating, paved walkways, and sculptural earthwork, as well as a specific meaning and identity.



Figure 60 | Conceptual view of the proposed residential Pocket Park (Rader).

### **Transit Waiting Place**

Figure 61 illustrates the concept for the Transit Waiting Place type. With further design development, this square type, located along Washington Avenue, could feature shaded spaces under which to wait for buses, as well as access to the elevated pedestrian way.



Figure 61 | Conceptual view of the proposed Transit Waiting Place Type and transit center (Rader).



THE SITE

As previously mentioned under the Square Function heading of the Literature + Synthesis portion of this report, The City Center type is defined as “...predominantly hard surfaces, centrally located, and highly visible. When located near a diversity of land uses it tends to attract users from a greater distance and in greater variety than do other plazas. Such an area is often big and flexible...” (Francis and Marcus 1998, 23).

To achieve what Francis and Moughtin define as The City Center, the adjacent proposal (Fig. 62) includes a wide variety of flexible spaces and program elements, all aimed at uniting residents with the proposed land uses. The following describes the design strategies for the proposed City Center in greater detail:

**Form and Orientation** | According to the form typology on page 17, The City Center is defined as The Closed Square type (Fig. 14) because of its complete enclosure and regular geometric shape. While this type certainly helps to better define the space, the dense oval form and north-south orientation were specifically designed as such to maximize shade in Houston's warm climate.

In addition, the north-south orientation of the oval, in contrast to the east-west alignment of the street

and sidewalk, creates a more notable spatial break for pedestrians and serves as a traffic calming device for drivers.

**Land Use and Function** | As previously described, The City Center's success is dependent upon attracting patrons to a variety of land uses. Therefore, the four proposed buildings enclosing the square include the following range of uses: one to four bedroom apartments, town homes, shops and boutiques, chain retail stores, businesses, conveniences, restaurants, bars, night clubs, and lounges. The various uses will not only draw a diversity of users, but will also encourage them to stay within the square throughout the day and well into the evening and night.

**Program Elements and User Comfort** | However, the vitality of The City Center does not depend solely on the surrounding land uses; it must also include outdoor spaces capable of supporting the buildings' functions. This City Center, in particular, must also accommodate both a majority of Hispanic patrons and patrons living at or below the poverty level.

Therefore, the same oval form used to create shade, is also used to sub-divide the large space into a variety of programmed areas. To the north

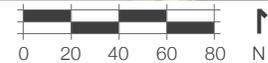
of Washington Avenue, adjacent to the residential functions, the outer portion of the oval includes shaded green spaces for residents to gather and relax; a lawn for screening movies against the backdrop of the glass enclosed power sub-station; and a community orchard (Fig. 65). The interior of the oval, on the other hand, is defined by cooling water features; seating edges; and a large, flexible, paved gathering space for festivals, parades, community meetings or farmers' markets

To the south of Washington Avenue, the outer portion of the oval (Fig. 63) features a combination of paved and grass covered spaces and water features (Fig. 64) for informal gatherings outside stores; dining; or playing. Similar to the northern half of the square, the inner oval to the south features a flexible, paved, gathering space for lunchtime vendors, flea markets, or people watching.

**Aesthetics** | Visually, the site's palette reflects a more modern, refined version of its industrial roots, with pale stone slabs, concrete and dark stone buildings, clean lines, and stainless steel accents. Lighting and seating are simple and streamlined, and water features are in the form of elegant sprays. A modern, dark copper Richard Serra Sculpture also terminates the Promenade at the south, furthering the modern industrial feel.



Figure 62 | Detailed plan of the proposed City Center with locations of perspectives (Rader).



## **Promenade and City Center**

The adjacent image (Fig. 63) illustrates the southern half of The City Center and The Promenade. This square supports the newly proposed commercial, retail and residential spaces with areas for outdoor dining, relaxing in the shade and gathering, while The Promenade provides easy access to the site's shops, offices, residences, and parking. The space also includes ample lighting and trees, cooling water features, and a sculpture at the end of the Promenade's axis.

This view also demonstrates how the north-south orientation of The City Center square provides for maximum shade.



Figure 63 | View of the southern half of the proposed City Center and The Promenade looking south (Rader).

### **Interactive Fountain**

Figure 64 depicts the fountain within the southern half of The City Center. The space incorporates the same aesthetics found within other gathering spaces in The City Center, including the bands of paving and ground cover. Here, though, some pavers are replaced by sprays of water, giving residents a fun, cooling place to enjoy.



Figure 64 | View of the proposed fountain within The City Center (Rader).

## **The Orchard**

The adjacent image shows the orchard, located to the northwest of The City Center. It features a variety of native, fruit bearing trees and wide pathways for visitors to pick from. This unique, free program element also serves as a communal space for the adjoining residential building, and a traffic calming strategy. Finally, figure 65 shows part of the inner oval. The oval form helps to sub-divide The City Center, and includes plants and water features.



Figure 65 | View of the proposed orchard (Rader).



# CONCLUSIONS



By implementing a network of squares at three different scales, Super Neighborhood 22's various land uses, residents and natural systems can be united. Specifically, public squares work with their adjoining land uses - such as The Commercial Entry Place type next to a retail store or The Church Entry type next to a place of worship - to provide patrons with an outdoor space capable of meeting the same needs as the building. The proposed squares also link residents to their surrounding environment through more enjoyable pedestrian spaces, such as The Promenade type or The Urban Oasis type. And, finally, squares bring together residents from all walks of life by increasing transportation options, making transit stops more safe and comfortable, and by providing flexible spaces in which residents can meet and participate in free or low-cost activities.

In addition, proposed improvements along Washington Avenue, including increased street trees and lighting; the implementation of The Widened Sidewalk type and The Street Corner type; and a vegetated median, will all help to slow traffic and activate the street edge. More importantly, these design decision will help to link the proposed squares by making the sidewalk a more comfortable refuge from the heat.

All things considered, a network of squares may be difficult to implement within an already developed urban area. Neighborhood groups and city organizations may face resistance from store tenants or land owners. And, certainly, an undertaking such as this would be costly and time consuming.

But, careful planning and phasing may help to achieve such a large scale proposal. For example, construction in District Seven could begin with the removal of abandoned warehouses to the north of Washington Avenue, and replacing them with residential units. Next, squares, such as The Church Entry type and The Street Corner type, could be implemented adjacent to the new residential buildings, as well as the land uses to be maintained. The transit center and light rail line along Washington Avenue could also begin construction, providing residents with easy access to and from the district. Then, possibly decades later, as the Police Impound Lot and USPS building begin to relocate, the southern portion of The City Center type could be completed, as well as the remainder of the district.

In the meantime, additional research may help to show that the benefits of improving the public realm through squares far outweigh the costs.

Therefore, were this research to continue, it would focus on the short and long-term costs and benefits of implementing a major network of public spaces, including financial implications, benefits to surrounding store owners and residents, health and quality of life improvements, and environmental effects. To date, though, the research and designs show that the centuries old principles of squares and piazzas still hold the power to unify and connect people and land uses; to draw people outdoors, even in uncomfortable conditions; and to transform underdeveloped cities into cohesive, lively, vibrant places.



# APPENDIX



## Precedent Study Method

“The abundance of squares in Italy and France may be explained by a combination of climatic conditions and temperamental attitudes characteristic of the romance peoples of the southern and western Europe. These conditions led to a form of public life - and life in public - which made street and square the natural locale for community activities and representation. Not by chance then, Rome and Paris are the cities which we associate primarily with the idea of the perfect square, and it is therefore logical that in an analysis of generic types so many Roman and Parisian squares should be discussed” (Zucker 1959, 4).

As Paul Zucker states in *Town and Square*, many people look to Europe for the quintessence of squares and piazzas. While Zucker specifically mentions France and Italy, the characteristics and conditions he describes may be found throughout Europe. Therefore, the precedent study will focus on squares and spaces within several European countries.

However, Cliff Moughtin warns, “There is some danger in attempting to transfer design concepts which may be effective at one particular time or at one particular place or in one culture to a quite different setting” (Moughtin 1999, 88). With that, the

study will also include contemporary squares and spaces.

The previous two quotes set the stage for the selection of precedents. Once historic and modern sites, particularly in Europe, were selected, the project goals were revisited in order to help guide the remainder of the selection process. Ultimately, the project seeks to create a network of public squares and spaces. Therefore, precedents of each of the five spatial organization types were examined.

Once all the sites had been selected, the features which would be inventoried and applied to Super Neighborhood 22 were established:

### Spatial Organization

- Features, spaces or buildings which support Ching’s spatial organization definitions
- Axes or sight lines
- Benefits and constraints of each spatial organization type

### Function

- The Presence of previously defined function types

### Form

- The presence of previously defined form types

### Circulation

- Pedestrian and vehicular circulation patterns
- Public transit stops

### Walkability

- Walking distances, either 500’ or 200’
- Walkability from public transit stops
- Demographics and population density

Finally, the overall goal of the precedent studies is, when using the same variables across multiple cultures, times, scales and cities, to evaluate which spatial organization types may or may not be applicable to Super Neighborhood 22.



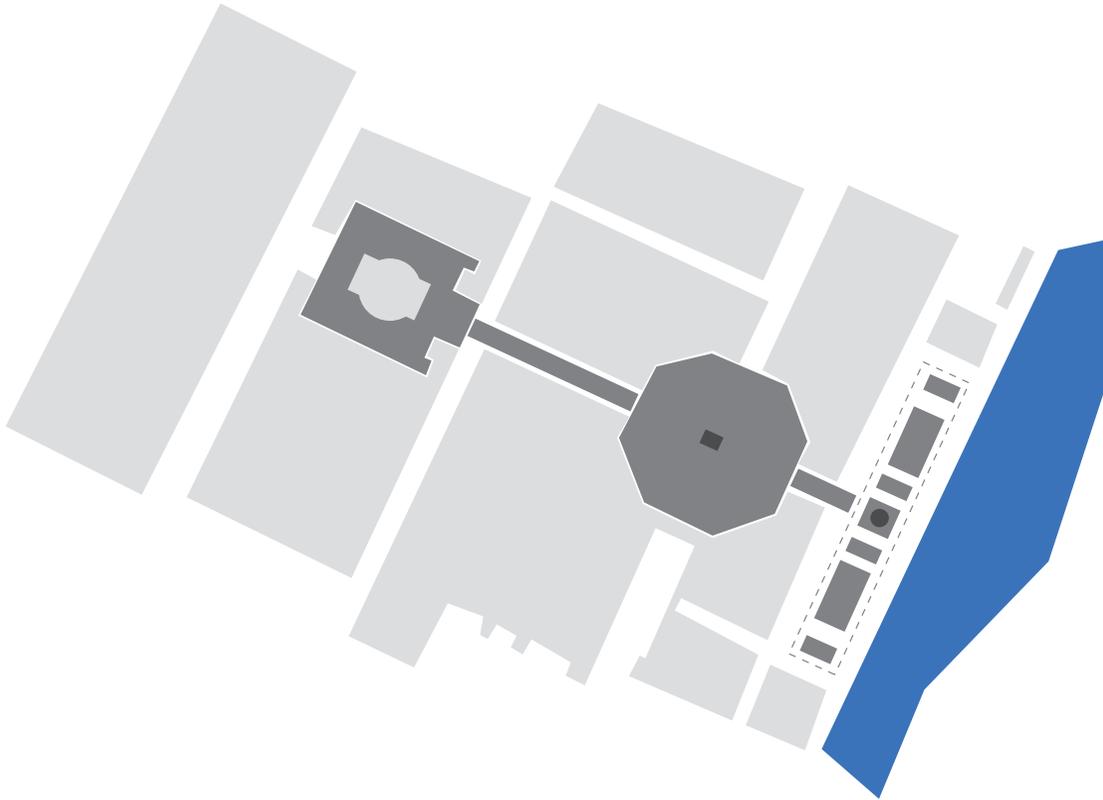
## Amalienborg Courtyard

Copenhagen, Denmark

**Historic Centralized Organization Precedent  
1749 to late 1993**

**Approximately 600 feet in length**

**Designed by Nicolas Eigtved**



The Amalienborg Courtyard (Fig. 66) and surrounding spaces are located in Copenhagen, Denmark, and connect the medieval city center and historic opera house to Inderhaven, the internal city port. The courtyard was originally commissioned by Frederik V as the centerpiece to a new quarter, Frederiksstad. Today, two of the four buildings are still occupied by the Royal Family. A third has been converted into a museum (Webb 1990, 146).

West of Amalienborg Courtyard, aligned on axis by Frederik's Street, is Frederik's Church. This, too, was designed by Eigtved. Unfortunately, his original design was far too audacious, and a less expensive design was constructed in 1894 (Webb 1990, 146).

To the east of Amalienborg Church, also oriented by Frederik's Street, is Amaliehaven Gardens. In 1993, it was developed into a place to "sit and rest, to observe the port activities and to contemplate the sea" (Favole 1995, 159).

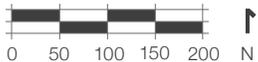


Figure 66 | Figure ground diagram of The Amalienborg Courtyard (Rader).

## Spatial Organization

Based on Ching's definitions, this space is classified as a centralized organization because it features a central, unifying space about which other spaces are organized by an axis. In this scheme, the secondary spaces are different in size and function, allowing them to adapt to their specific locations (Fig. 67). The space surrounding the church, for example, responds to the historic importance of the church as an activity center in which funerals, weddings, celebrations and gatherings occurred. The Amaliehaven, on the other hand, responds to the designer's goal of providing a place for people to sit and contemplate the water. Though the spaces vary greatly, the axis created by Frederik's Street organizes the entire compilation.

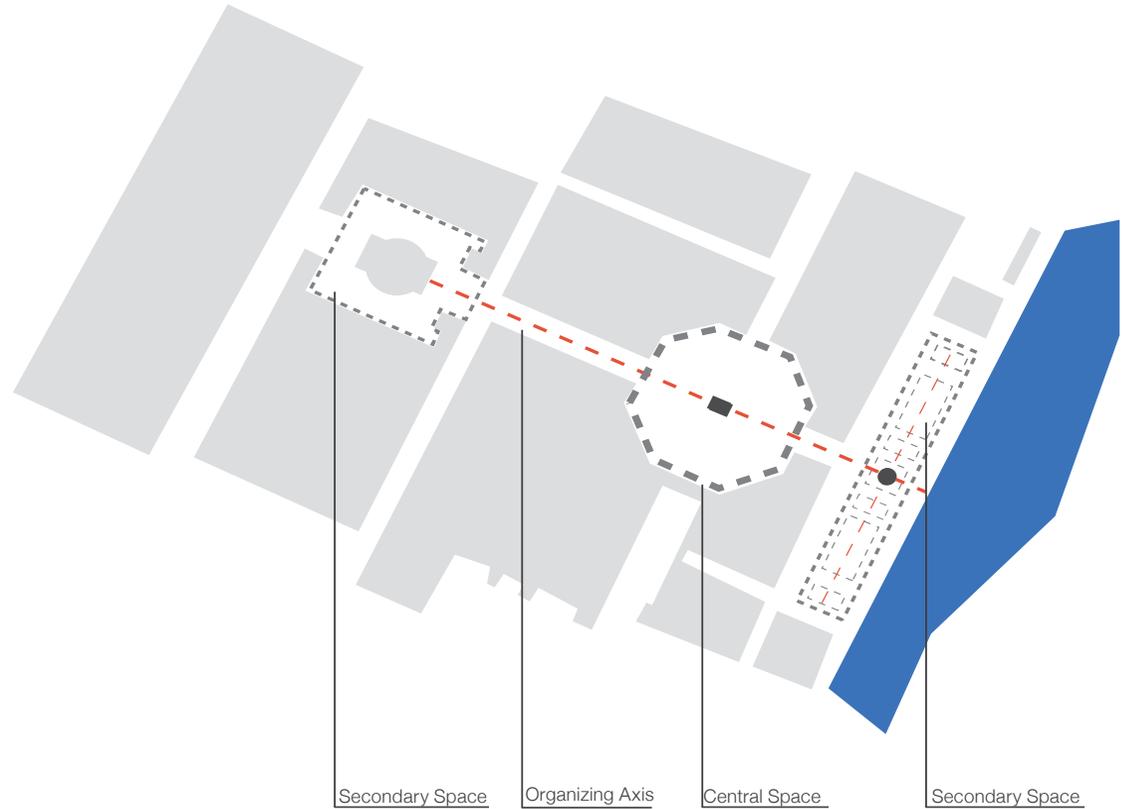


Figure 67 | Spatial organization diagram of The Amalienborg Courtyard (Rader).

## Function

In this precedent, each of the spaces' functions directly responded to their surroundings (Fig. 68). As previously mentioned, the far west space addressed the church's need for a place to hold receptions, events, ceremonies, and gatherings, while the Amalienborg and Amaliehaven provided residents and royalty with places to gather. Specifically, the goal of the Amaliehaven was to provide "a location to sit and rest, to observe the port activities and to contemplate the sea" (Favole 1995, 159).

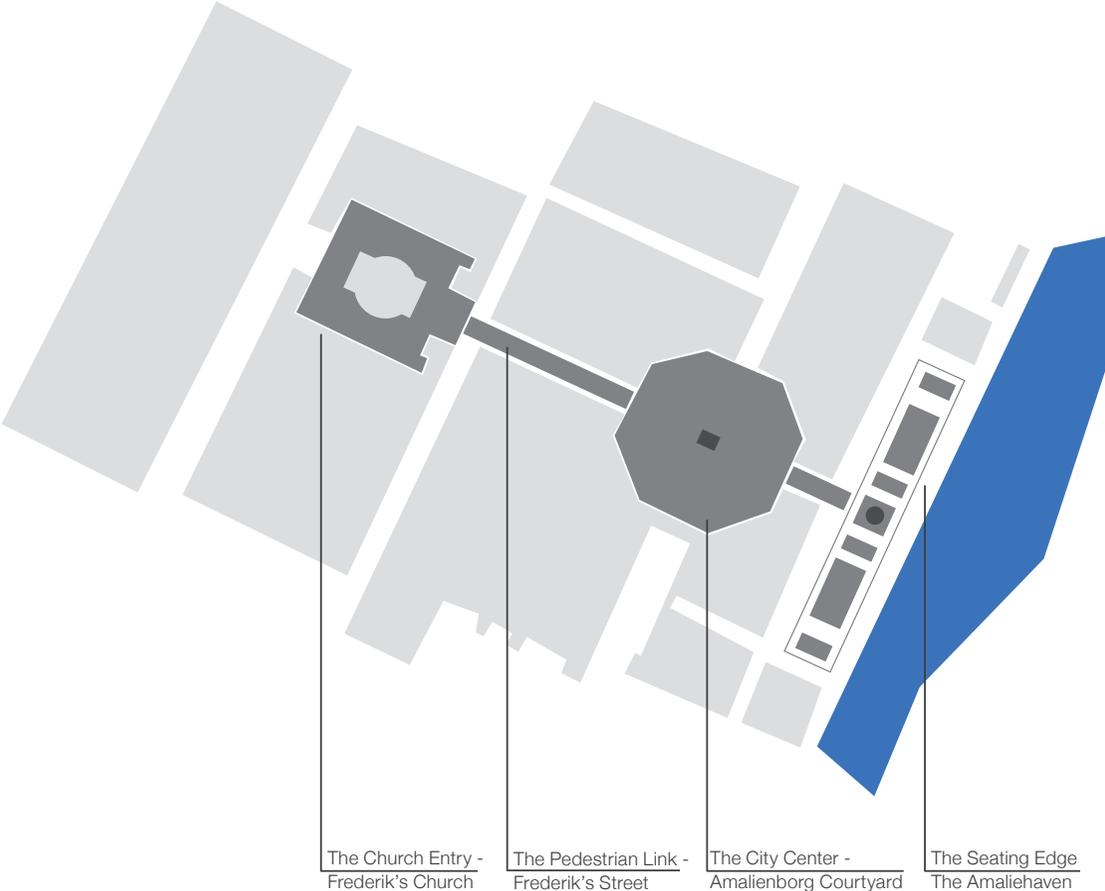


Figure 68 | Function diagram of The Amalienborg Courtyard (Rader).

## Form

Just as the functions of each square were found to be similar, so too were the forms (Fig. 69). Aside from the central Amalienborg Courtyard, each of the spaces were of the Nuclear Square type. In the case of the Frederik's Church space, the church is the centralized element ordering the space. In the Amalieshaven space, the large, centralized fountain acts as the nucleus of the square. And, with Frederik's Street, the church, equestrian statue, and fountain all maintain the tension of the space from a variety of vantage points. The Amalienborg Courtyard, on the other hand, is enclosed by the four similar palace facades surrounding it. Furthermore, it is interrupted only by a single path, and has a strong, regular geometric form.

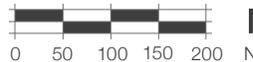
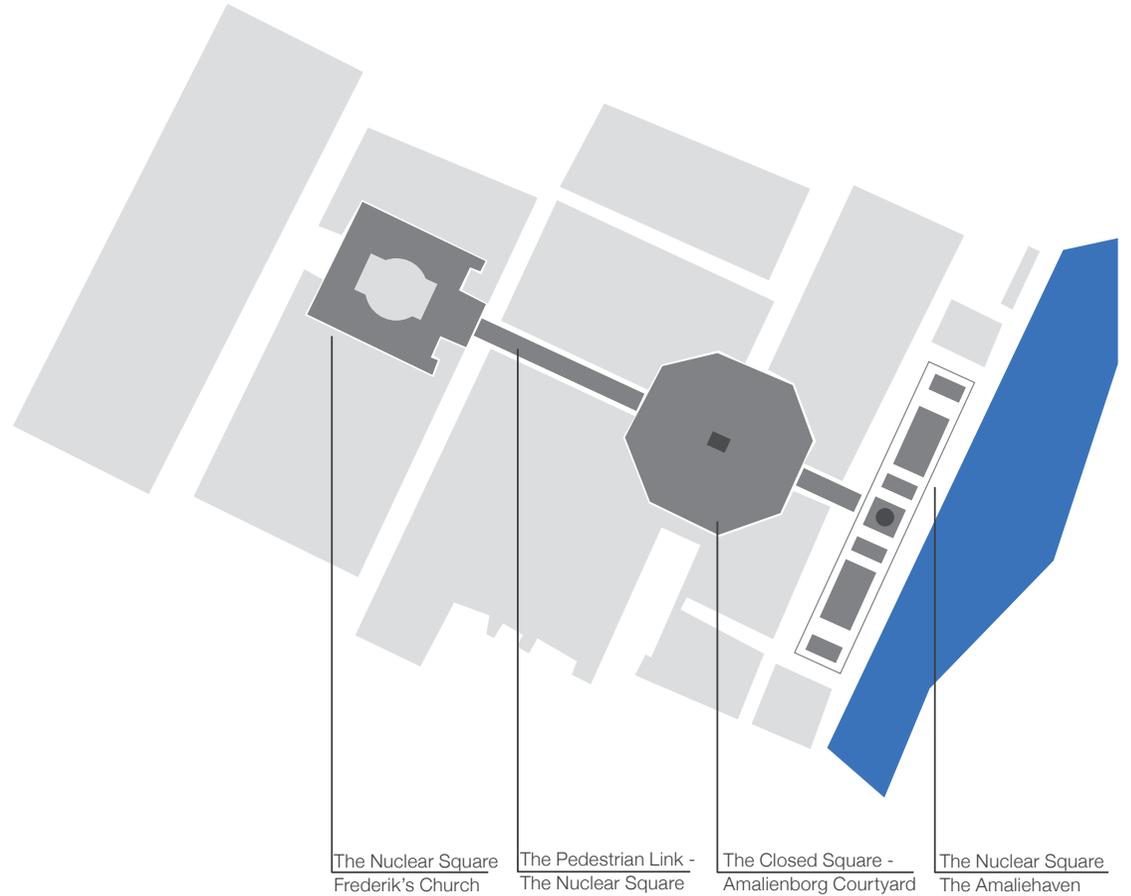


Figure 69 | Form diagram of The Amalienborg Courtyard (Rader).

## Circulation

The circulation of this site is such that Frederik's Street is the main pedestrian thoroughfare, linking the centralized space with the two adjacent spaces (Fig. 70). Secondary pedestrian circulation is then seen in the Amaliehaven space and about the other two squares.

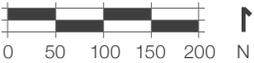
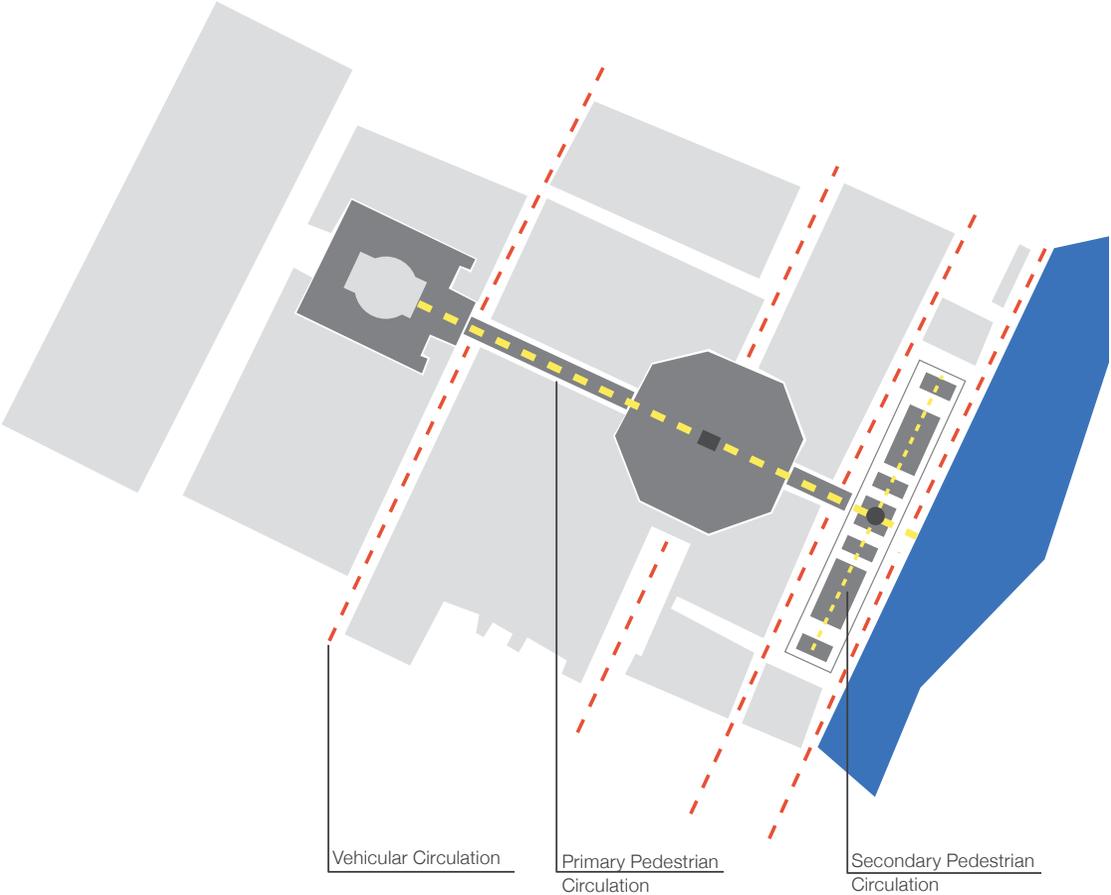


Figure 70 | Circulation diagram of The Amalienborg Courtyard (Rader).

## Walkability

The scale of this precedent is such that it can be walked in less than ten minutes (Fig. 71). This density further reinforces the centralized organization, as this organization type's definition includes a requirement that the secondary squares are in close proximity to the central space. The closeness of the squares also helps to establish the entire site as a single city center.

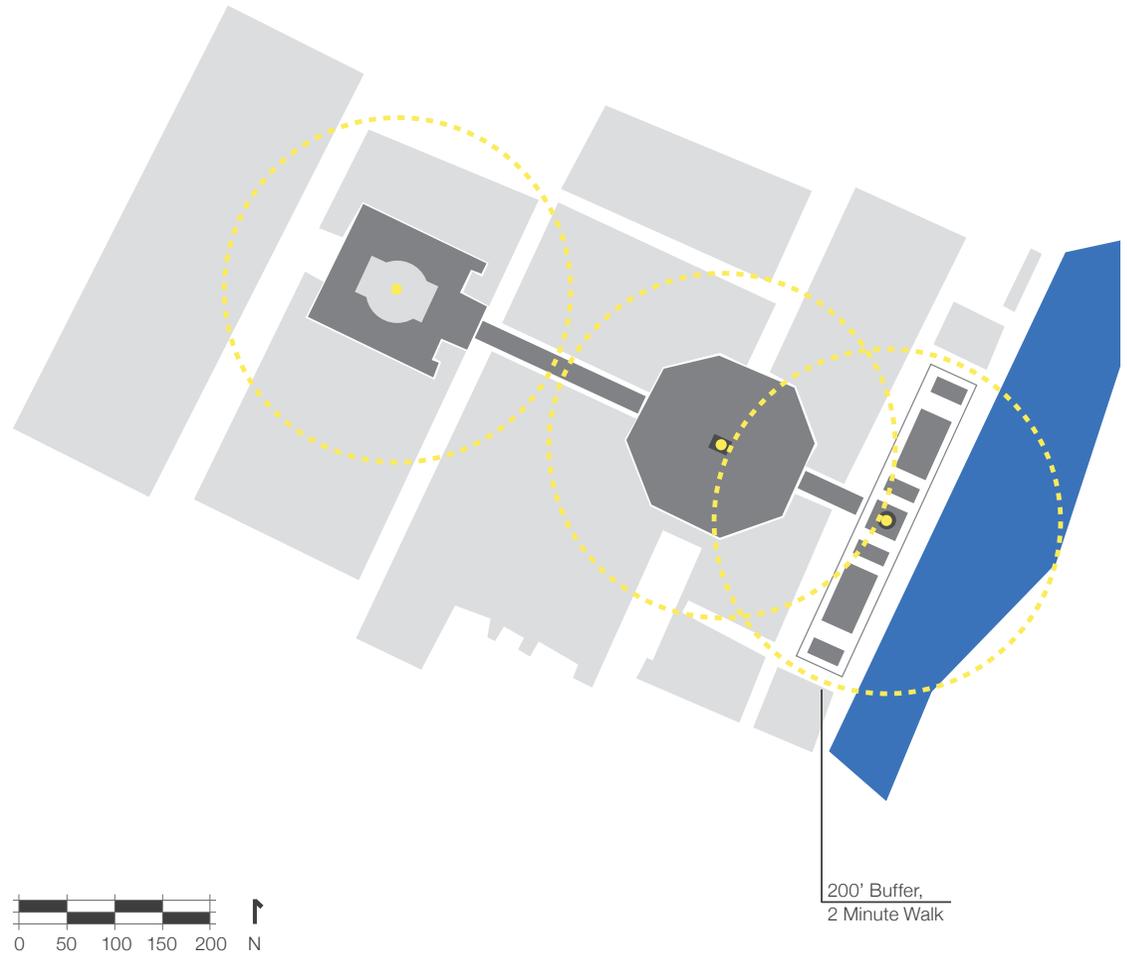


Figure 71 | Walkability diagram of The Amalienborg Courtyard (Rader).

## Synthesis

The Amalienborg Courtyard and surrounding spaces are a strong example of how a central space can create the foundation for a network of squares, particularly at a small scale. Furthermore, this project illustrates how similar functions and forms can help to unify a network of spaces.

Because this project is so small in scale and historic, it is unlikely that a network such as this would occur in Super Neighborhood 22. For one, the Houston neighborhood lacks the historical centers to complete such a project. In addition, Super Neighborhood 22 requires a much larger network in order to formulate strong connections from boundary to boundary. However, the notions of grouping similar functions and forms along an axis can be applied. It is also possible that this type of organization could be implemented as a secondary or tertiary organization type.





## Las Ramblas

Barcelona, Spain

**Historic Linear Organization Precedent**

**Completed in approximately 1856**

**0.8 miles in length**

Las Ramblas (Fig. 72), located in the Barri Gothic district of Barcelona, is a well-know tourist attraction and major connection to the port and other popular destinations.

Las Ramblas was originally a riverbed and the edge of medieval Barcelona. But, by the 15th century, the city had grown past this point. It was not until the 18th century, though, that the famous promenade was constructed. By 1856, the Ramblas was complete, and still remains nearly the same today (Las Ramblas).

Today, the nearly one mile long street is surrounded by a wide variety of shops, eateries, businesses, and cultural venues, found in either five or seven story buildings or small tents and markets.

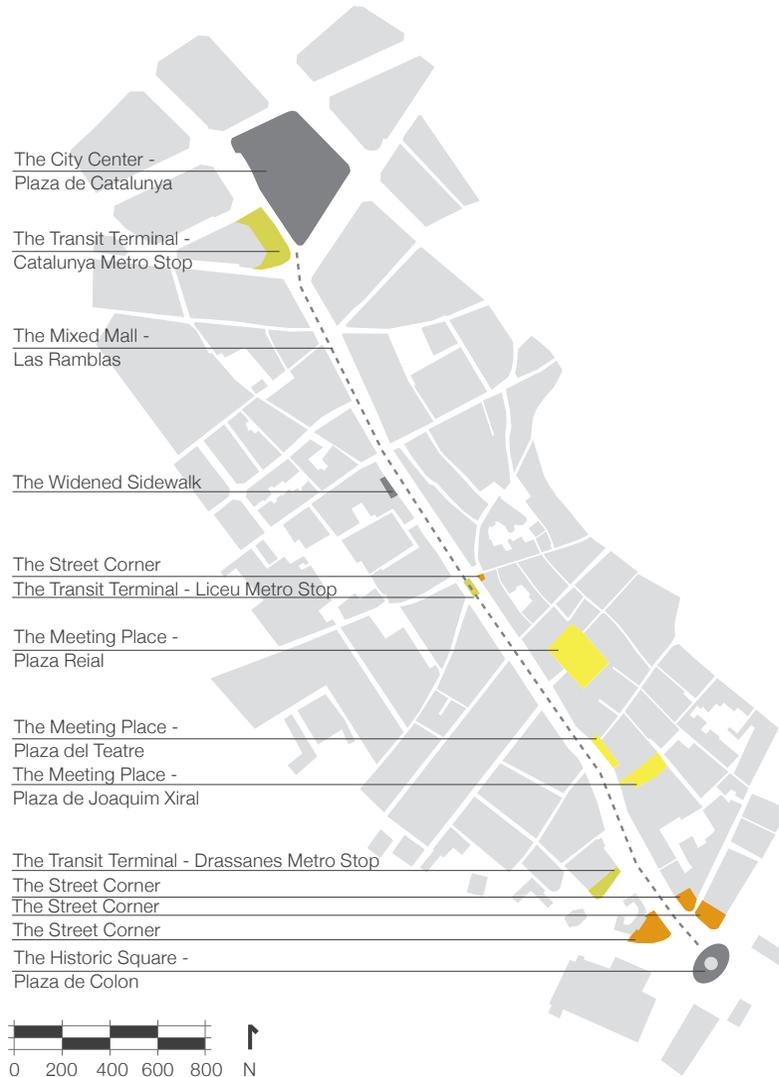
Figure 72 | Figure ground diagram of Las Ramblas (Rader).

## Spatial Organization

Las Ramblas is defined as a linear spatial organization type because of its long axis about which spaces are organized (Fig. 73). Furthermore, it has two major spaces at each end, providing the organization with a clear beginning and end. In addition, several spaces of similar form and function are found within the network, further defining it as a linear type. In all cases, the squares found along the organization have an exterior exposure to the main axis.



Figure 73 | Spatial organization diagram of Las Ramblas (Rader).



## Function

Several spaces along Las Ramblas share the same function types, including The Transit Terminal type, The Street Corner type, and The Meeting Place type (Fig. 74). This is to be expected in a linear organization, for “a linear organization usually consists of repetitive spaces which are alike in size function, and form” (Ching 1996, 198). The two end spaces, however, have unique functions. This helps to further define the beginning and end of the organization and to mark these spaces as ones of greater importance.

Figure 74 | Function diagram of Las Ramblas (Rader).

## Form

Similar to the function diagram, the form diagram illustrates the frequency of two types - The Amorphous Square and The Closed Square (Fig. 75). Because the organizing element - Las Ramblas - is an amorphous form, many of the spaces linked to it are also amorphous in form. The Plaza de Catalunya, however, is amorphous in form because it is so large and offset from surrounding buildings that it lacks a clear spatial definition. Similarly, because of the density of adjacent buildings, many of the squares are fully enclosed. Again, it is not surprising that many of the squares share common forms, as this helps to strengthen the organization of the linear network.

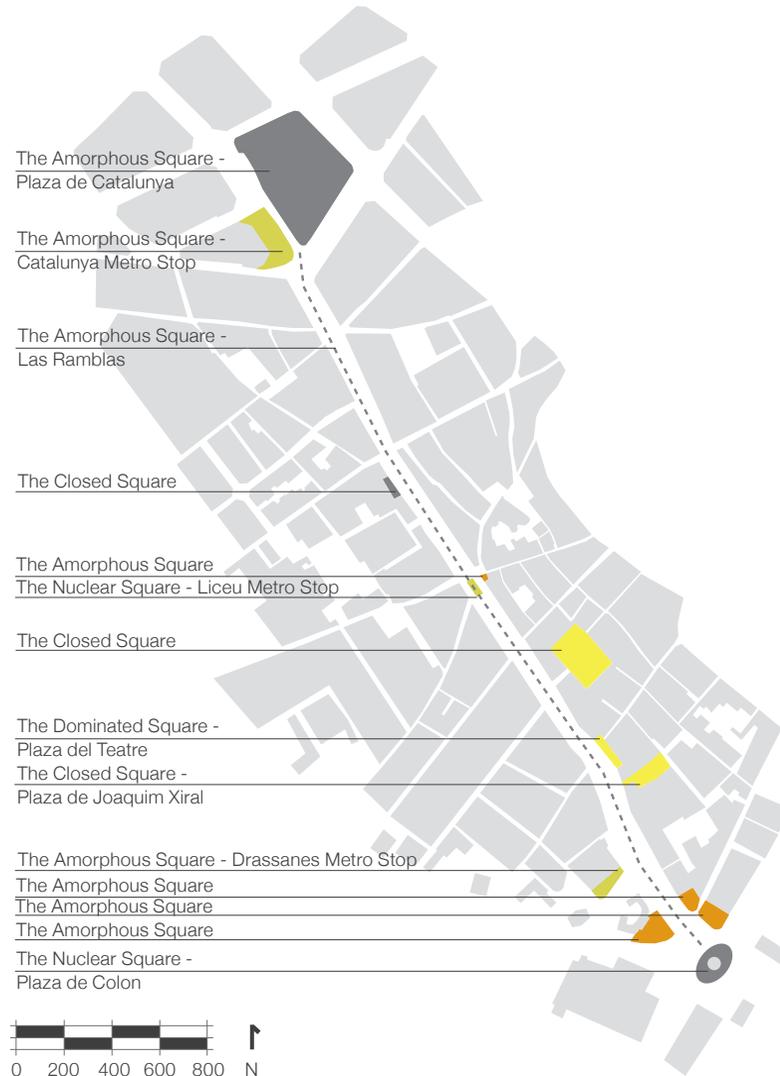


Figure 75 | Form diagram of Las Ramblas (Rader).



## Circulation

Las Ramblas is known by tourists and locals as the main pedestrian thoroughfare in Barcelona (Fig. 76). This is due, in part, to the wide pedestrian space, ample seating, multiple metro stops, and variety of activities. However, the street is also a primary vehicular route with three lanes of traffic on either side of the pedestrian space. Additional vehicular circulation is located on the streets perpendicular to Las Ramblas, allowing residents to easily gain access to this bustling avenue.

Figure 76 | Circulation diagram of Las Ramblas (Rader).

## Walkability

The scale of Las Ramblas allows for a diverse network of lively squares while still maintaining walkability (Fig. 77). The southern end, particularly, is dense with spaces and could be covered in less than ten minutes.



Figure 77 | Walkability diagram of Las Ramblas (Rader).

## Synthesis

The linear organization of Las Ramblas allows for a varied pedestrian experience and the inclusion of multiple spaces. It is easily traversed in less than a half an hour, though, as seen in the previous diagram.

This organization type would be well adapted to suit the needs of the elongated Super Neighborhood 22 site. It would especially be well suited for Washington Avenue, the area's major thoroughfare, as it has a very similar cross-section to that of Las Ramblas. The key strategies to pull from this study are the variety and number of spaces along a nearly one mile long site, and the form of the mixed mall. In addition, the idea of two primary spaces at each end of the organization would be well adapted to the Super Neighborhood site as it features a major park to the west and downtown Houston directly to the east.



# 3rd Street Promenade

**Santa Monica, California**  
**Modern Linear Organization Precedent**  
**Designed by Roma Design Group**  
**1989-1990**  
**\$550 million cost**  
**0.5 miles in length**

The Third Street Promenade (Fig. 78) began as a pedestrian mall in 1961. However, the original design was never a success. In the 1980's, a non-profit group began campaigning for a new mall. The new design was based on the concept that the mall could not thrive as a mere shopping center; rather, it needed to be a city center.

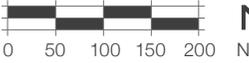
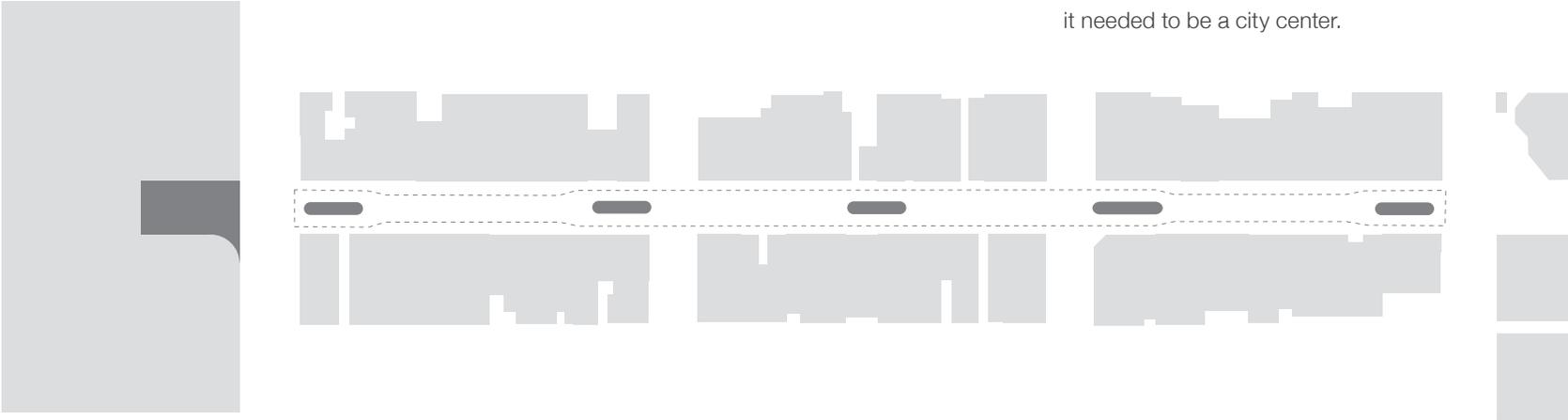


Figure 78 | Figure ground diagram of The Third Street Promenade (Rader).

## Spatial Organization

Like Las Ramblas, the Third Street Promenade is characterized by a major, linear axis along which repetitive spaces are located (Fig. 79). This case is a very literal interpretation of Ching's definition - each of the spaces are identical in function and form, with a major space, different in form and function, marking the end.



Figure 79 | Spatial organization diagram of The Third Street Promenade (Rader).

# Function

The Third Street Promenade contains a series of squares similar in function (Fig. 80). This repetition of activities is part of what Ching defines as a linear organization type. It should be noted, though, that this particular design is intended to provide a wide range of activities - twice a week the entire mall hosts a farmers' market, and the entire site is intended to serve as the city center.

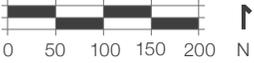
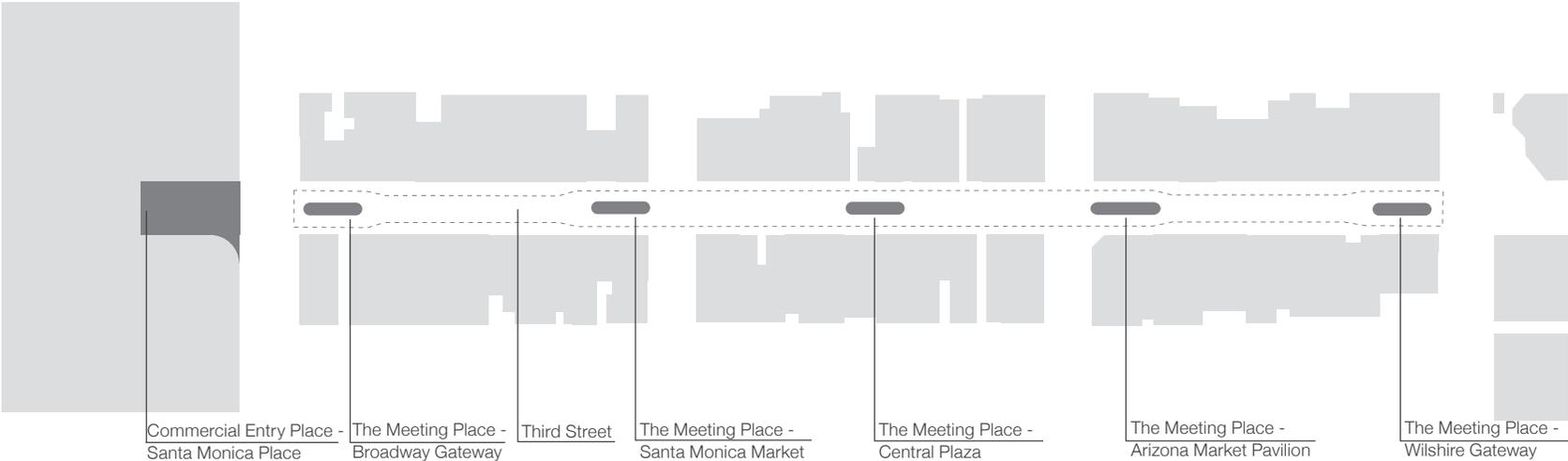


Figure 80 | Function diagram of The Third Street Promenade (Rader).

# Form

All of the spaces along the main axis are identical in form, with a separate form marking the end of the organization (Fig. 81). Like Las Ramblas, nearly all the spaces are classified as amorphous. This is because they are arranged along an amorphous form, which the spaces are directly responding to.

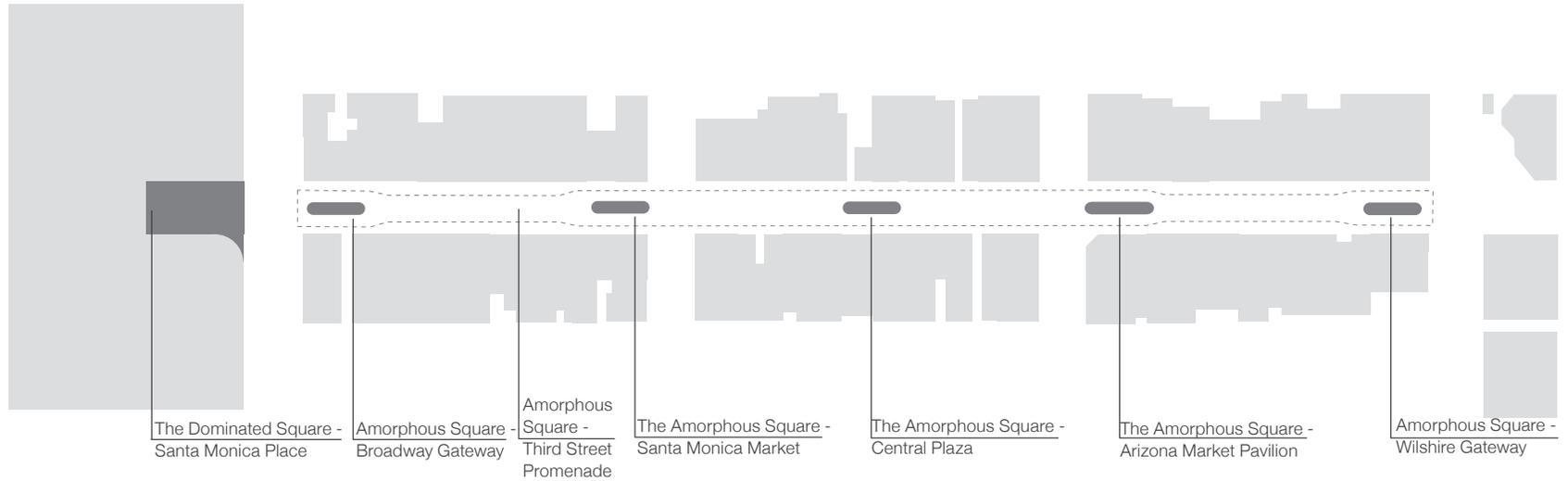


Figure 81 | Form diagram of The Third Street Promenade (Rader).

# Circulation

The Third Street Promenade is entirely closed to vehicular circulation (Fig. 82). Therefore, the promenade itself is the primary pedestrian circulation. It also features separate sidewalk areas that serve as secondary pedestrian routes. The cross streets then provide vehicular access, including delivery trucks, with Wilshire Boulevard and Broadway Boulevard serving as primary routes.

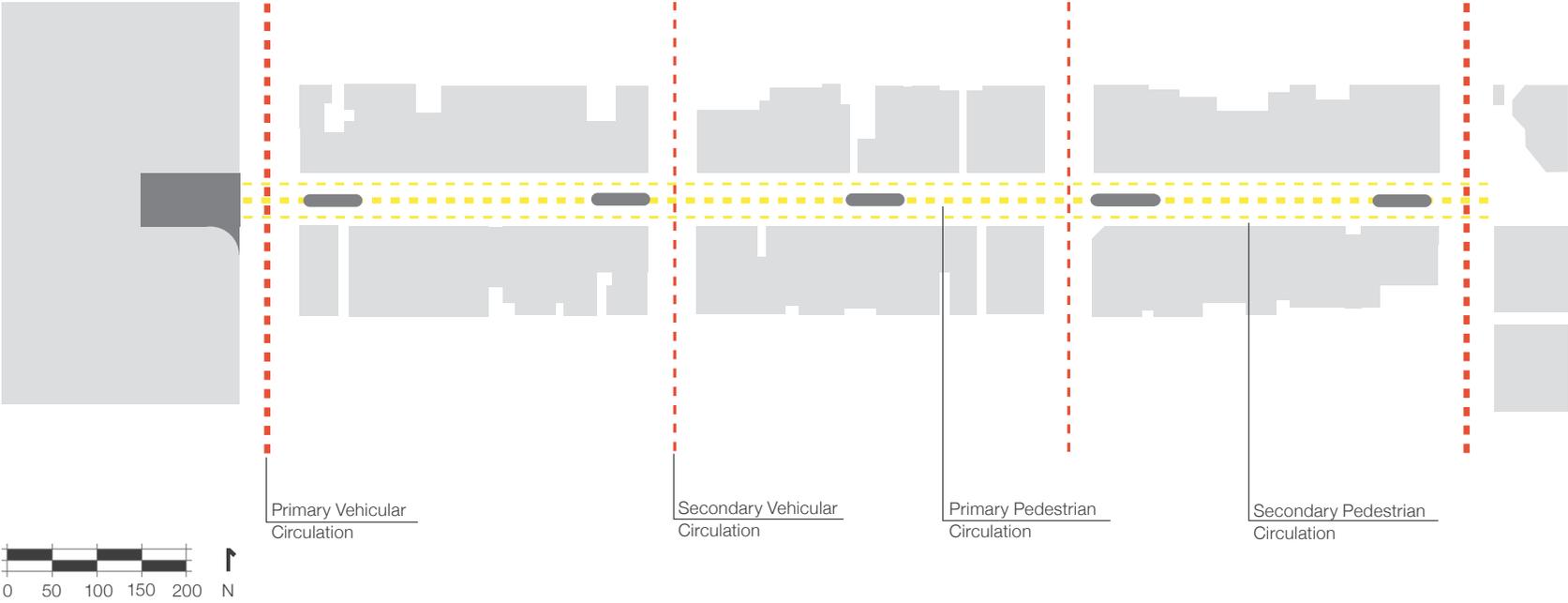


Figure 82 | Circulation diagram of The Third Street Promenade (Rader).

## Walkability

The diagram below illustrates how the repetition of spaces along the promenade are located within less than a two minute walk of one another (Fig. 83). This density provides for increased seating areas, locations for information panels, and vendor kiosks, all contributing to the heightened activity of the site. The overall scale of the site is such that it can be walked in less than ten minutes.

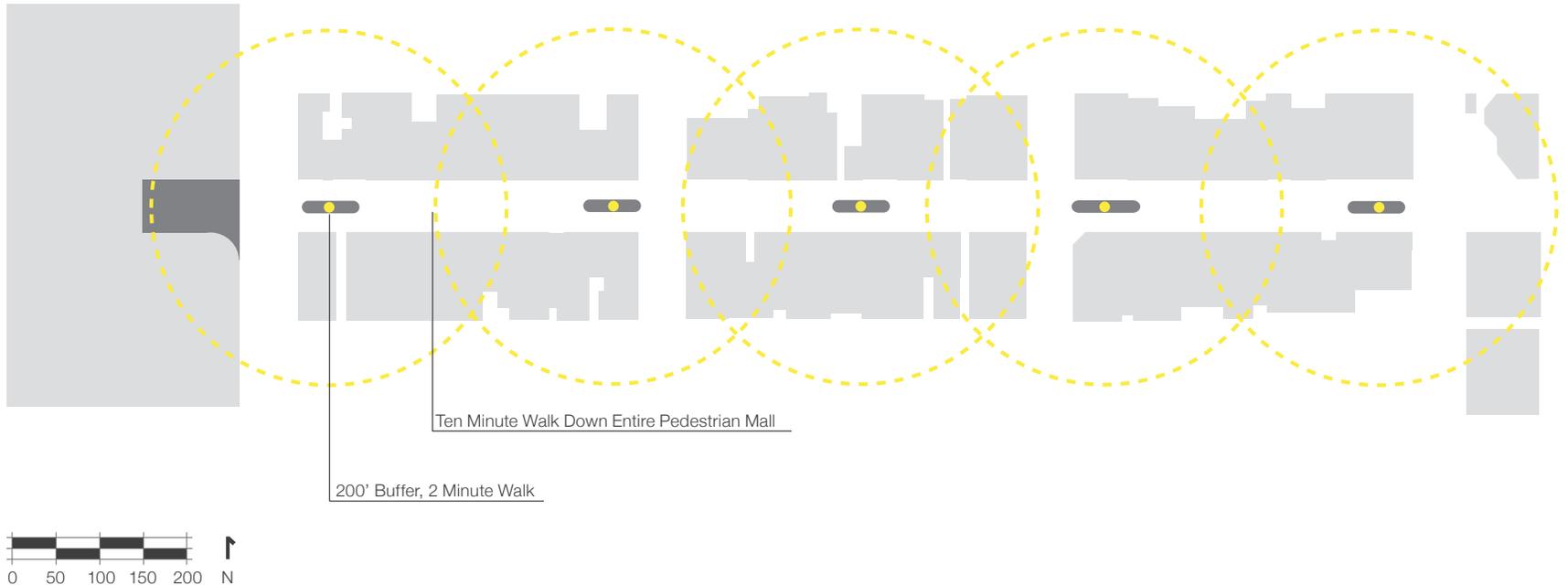


Figure 83 | Walkability diagram of The Third Street Promenade (Rader).

## Synthesis

Like Las Ramblas, many of the elements seen in the Third Street Promenade would apply to the Super Neighborhood site, including the notion of a pedestrian space along a street corridor and the variety of activities and vendors. The promenade is also successful due to its large quantity of pedestrian amenities, a feature which should be present in any subsequent design. However, the scale of the Third Street Promenade would almost certainly need to be increased if it were to be applied to Super Neighborhood 22.



## Florence

Tuscany, Italy

**Historic Radial Organization Precedent**

**Approximately 4.5 square miles**

Florence and the Renaissance period began with the construction of Brunelleschi's Duomo in 1420 (Fig. 84). Not only did this architectural marvel surpass any construction techniques previously seen, but it also provided the budding city with a visual and psychological center which would be built upon for centuries to come (Bacon 1974, 107).

Years later, in the second half of the thirteenth century, when the Servite monks desired a street leading from their church to the Santissima Annunziata, they set into motion an ordering structure based around the central Duomo (Bacon 1974, 107). This radial organization would eventually influence the layout of Rome and its great monuments, obelisks and columns (Bacon 1974, 107).

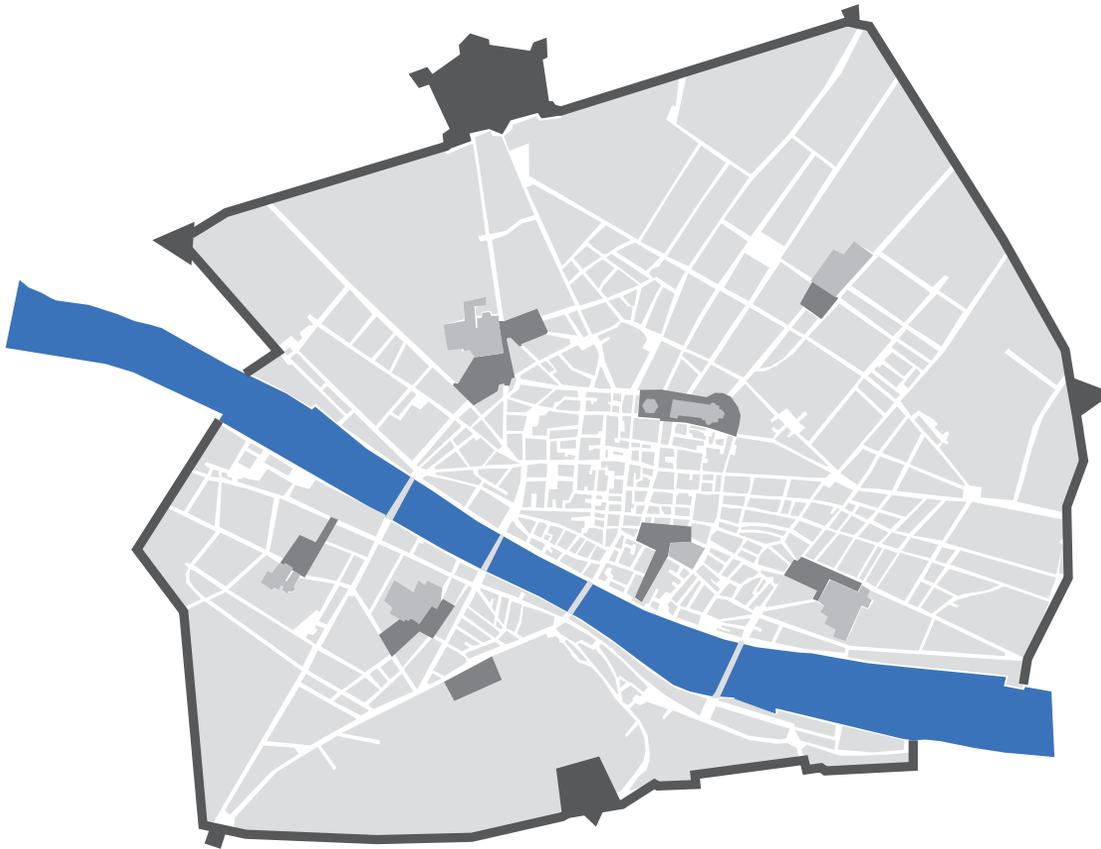


Figure 84 | Figure ground diagram of Florence (Rader).

## Spatial Organization

As mentioned in the introduction, Florence's major churches and civic buildings and their adjacent squares are organized around the Duomo, or central city point, thus making this a radial organization (Fig. 85). Unlike the centralized type, the Duomo extends outward to the surrounding spaces. In this instance, the central space is regular in form while the linear arms branching to the surrounding spaces are irregular.



Figure 85 | Spatial organization diagram of Florence (Rader).

# Function

Nearly all the spaces in this scheme are categorized as The Church Entry type due to the historic nature of the city and cultural importance of religion (Fig. 86). The two additional squares are historic seats of government or the Royal Family.

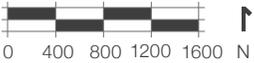
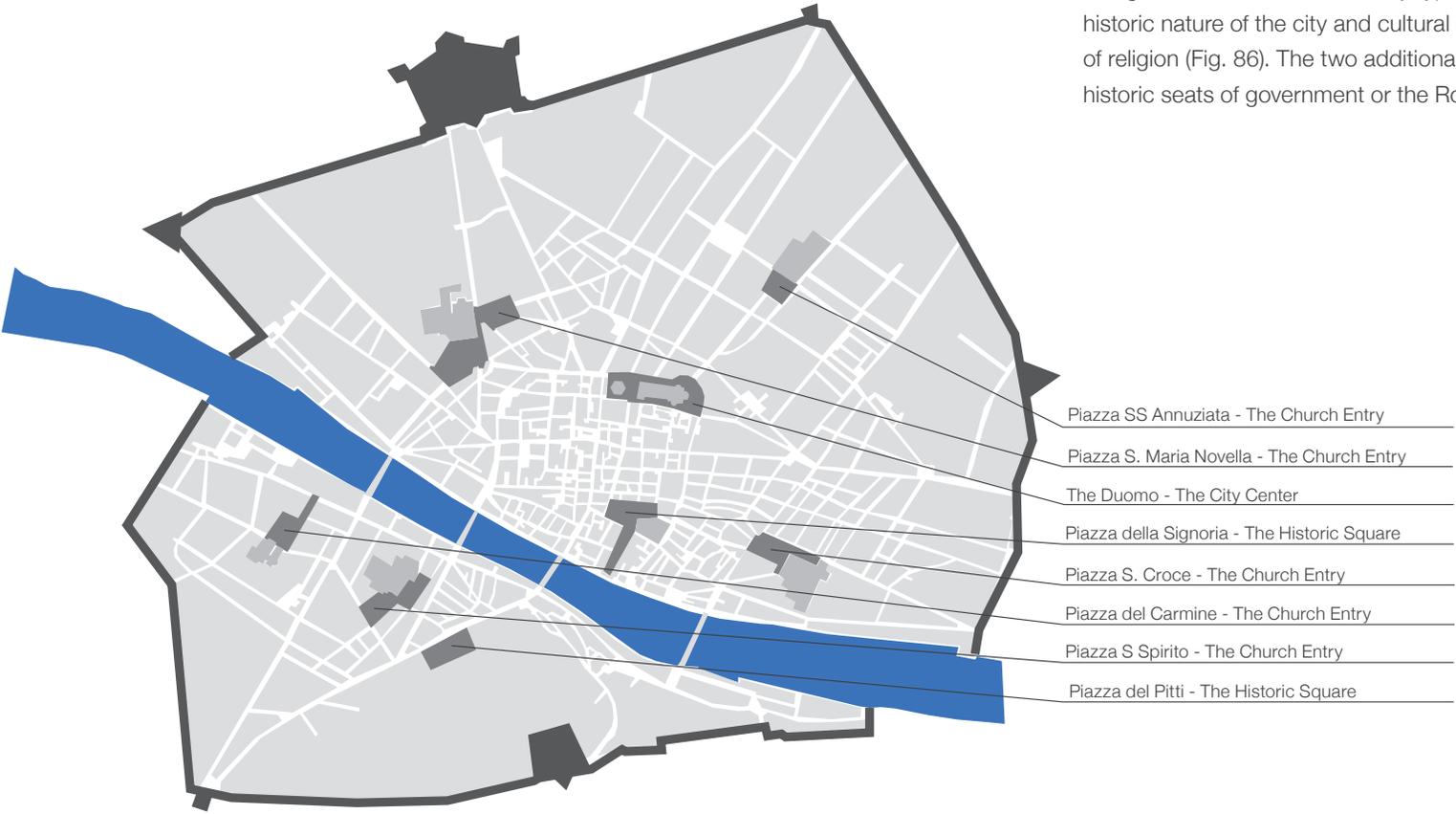


Figure 86 | Function diagram of Florence (Rader).

## Form

Just as the functions are nearly all identical, so too are the form types (Fig. 87). This is because the namesakes of each of the piazzas are the dominate building within the space, therefore classifying the squares as dominated types. The Duomo, on the other hand, is of the Nuclear Square type because it sits directly within the space. The Piazza della Signoria is a Closed Square type because of the density of surrounding buildings.



Figure 87 | Form diagram of Florence (Rader).

### Circulation

The yellow line in the adjacent diagram illustrates the major routes connecting each of the squares (Fig. 88). This shows the radial organization and linear arms. One important feature to note is that the Closed Square type, Piazza della Signoria, only has paths entering at the corners. This further defines the square as a closed type.



Figure 88 | Circulation diagram of Florence (Rader).

## Walkability

The adjacent diagram illustrates the scale of the city and squares within it (Fig. 89). In most cases, the squares are within a 500 foot or five minute walk of one another.

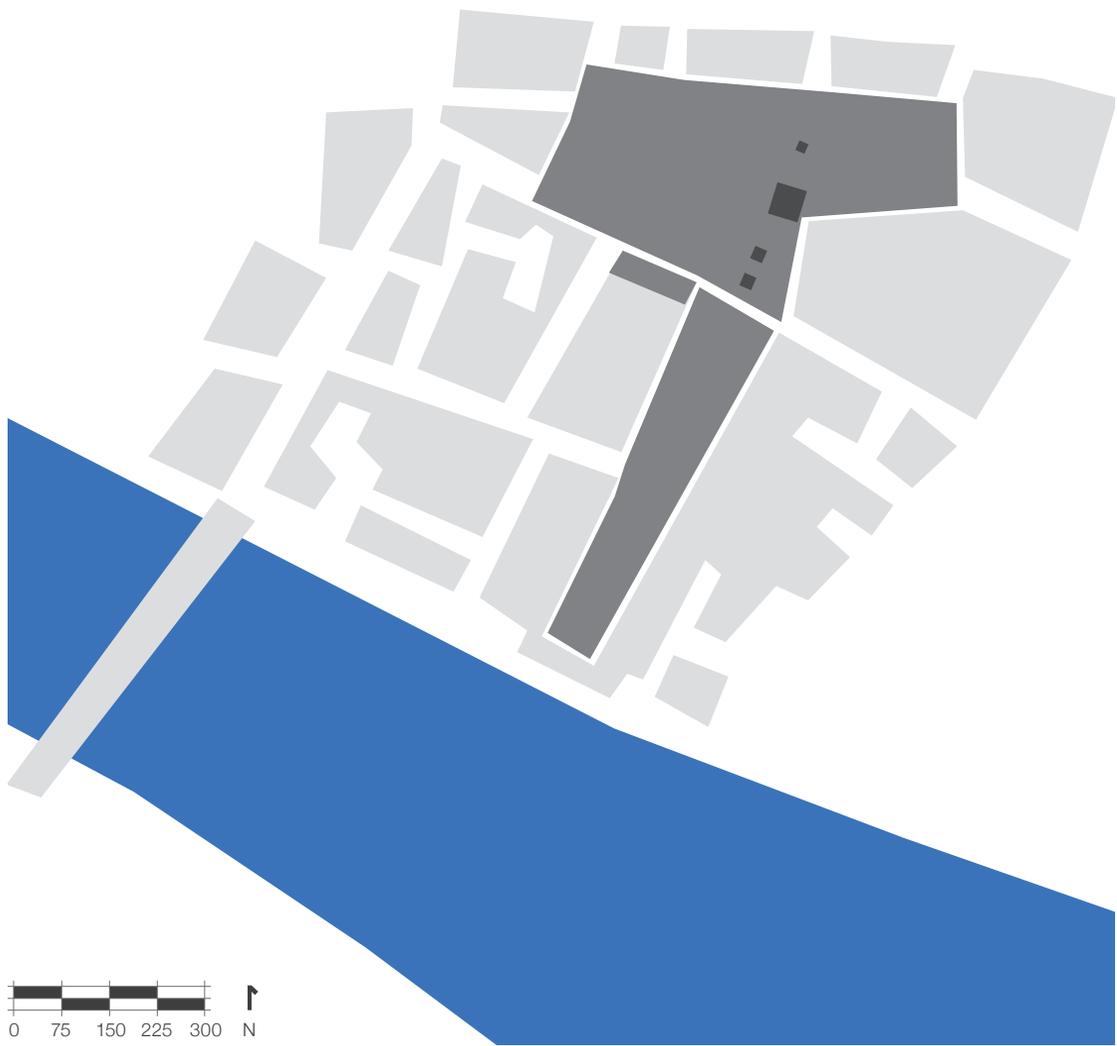


Figure 89 | Walkability diagram of Florence (Rader).

## Synthesis

The city of Florence is an excellent example of a radial organization. It shows how a main central space can unite a series of spaces around it. However, this type would not translate well to Super Neighborhood 22. For one, Super Neighborhood 22 currently lacks a center about which other spaces might be organized. But, if a city center were to be defined, the radial organization may work to unite not only the super neighborhood, but also surrounding centers. A potential center would be the adjacent Downtown Business District.





## Piazza Della Signoria

Florence, Italy

**Historic Clustered Organization Precedent  
Designed by Giorgio Vasari for Cosimo de' Medici**

**13th to 15th centuries**

The Piazza della Signoria “was originally conceived as an entirely self-contained urban center, with no thought of including in its design an expression of the forces of the region which sustains the city” (Bacon 1974, 99) (Fig. 90). It was Cosimo de’ Medici who purposefully chose to cut through an existing mass of buildings to the river. This decision resulted in the Uffizi Palace, “a practical and architecturally symbolic link between the town center and the River Arno” (Bacon 1974, 99). Visually, the addition of the Uffizi Palace to the Piazza della Signoria connects the city center - the Duomo - to the ancient monuments within the square and beyond to the Arno River.

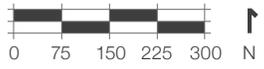


Figure 90 | Figure ground diagram of The Piazza della Signoria (Rader).

## Spatial Organization

The Piazza della Signoria constitutes a portion of Florence's radial organization and the primary space of a series of clustered squares (Fig. 91). The adjacent diagram shows, in red, the axial relationship of the Piazza to the Uffizi Palace and Arno River, while the yellow lines show visual relationships between the entrances to the squares and the piazza's monuments and statues. These relationships link the dissimilar squares. Their close proximity also defines the organization.

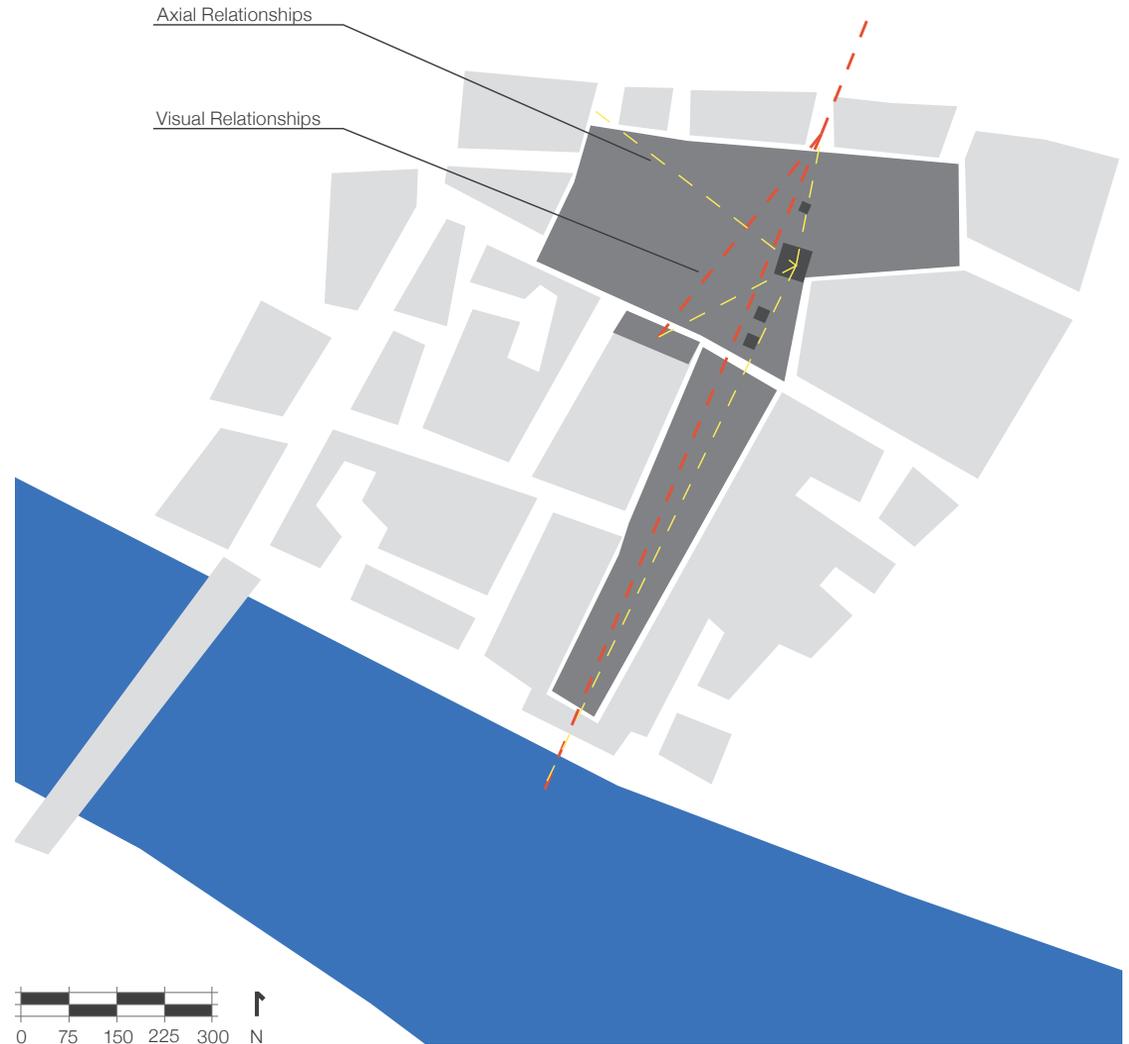


Figure 91 | Spatial organization diagram of The Piazza della Signoria (Rader).

## Function

The three spaces within this clustered organization are entirely different in function (Fig. 92). The Piazza della Signoria is a Historic Square adjacent to the Palazzo Vecchio. The Loggia dei Lanzi, on the other hand, is a covered space and major meeting point. Lastly, the Galleria degli Uffizi is a Pedestrian Link type and is used primarily as a visual and spatial connection from the Piazza della Signoria to the River Arno.



Figure 92 | Function diagram of The Piazza della Signoria (Rader).

## Form

Unlike the function of the three spaces, the forms are all identical (Fig. 93). This is because they are all entirely enclosed by the surrounding buildings, with paths breaking the enclosure only at the spaces' corners.



Figure 93 | Form diagram of The Piazza della Signoria (Rader).

## Circulation

The primary entrance into the organization is from the northwest corner (Fig. 94). This path then continues through the Galleria degli Uffizi and along the River Arno before crossing the Ponte Vecchio. Secondary points of entrance occur to the west, north and east of the Piazza della Signoria.

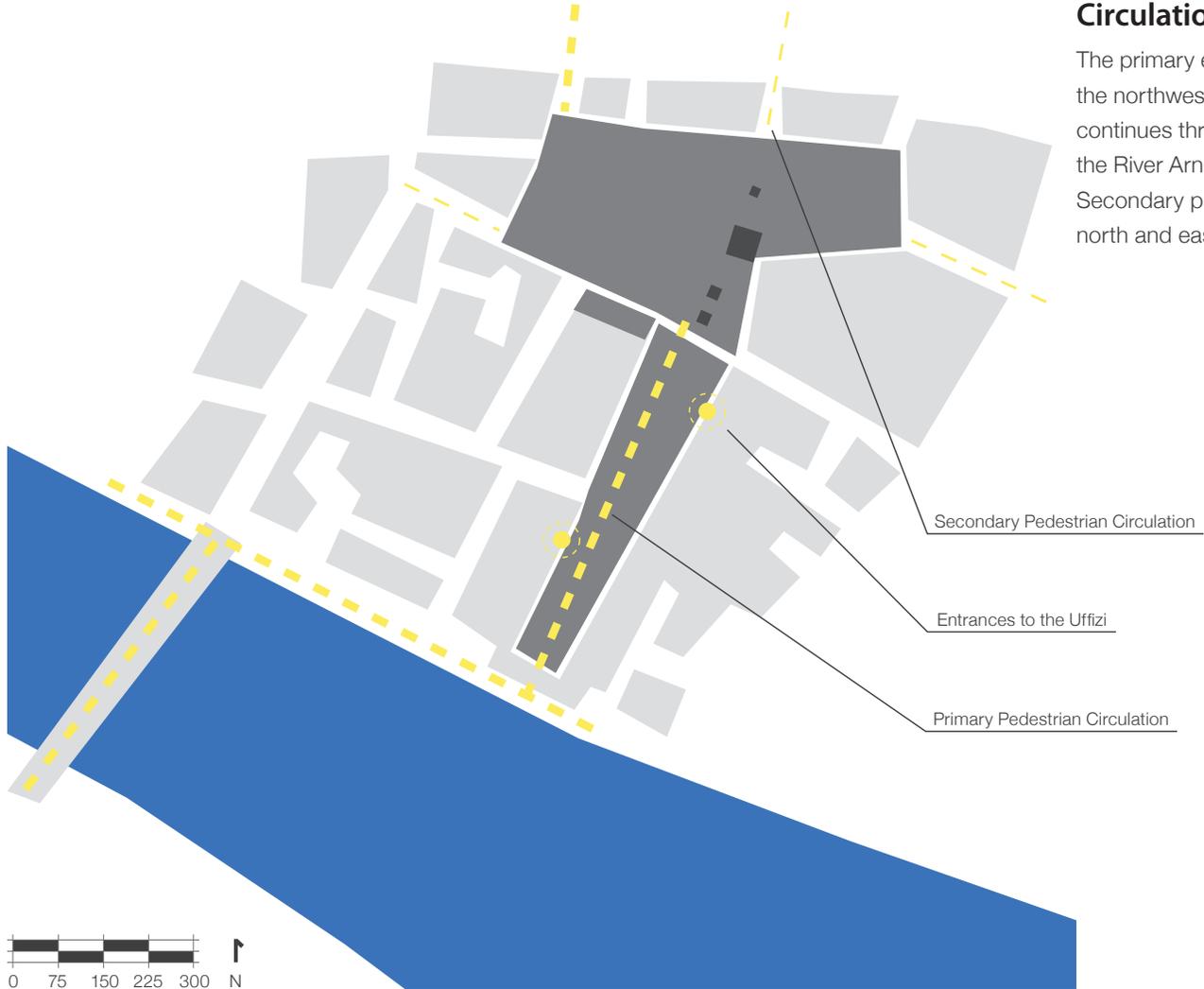


Figure 94 | Circulation diagram of The Piazza della Signoria (Rader).

## Walkability

Part of what makes this organization a clustered type is the close proximity of the spaces (Fig. 95). This diagram illustrates that the three spaces' centers are within 200 feet of one another.



Figure 95 | Walkability diagram of The Piazza della Signoria (Rader).

## Synthesis

While this organization is far too small in scale to link the entirety of Super Neighborhood 22, it could be applied to the site as a secondary organization type. This could occur in predominantly residential areas lacking in open space.



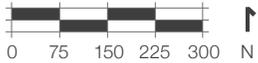
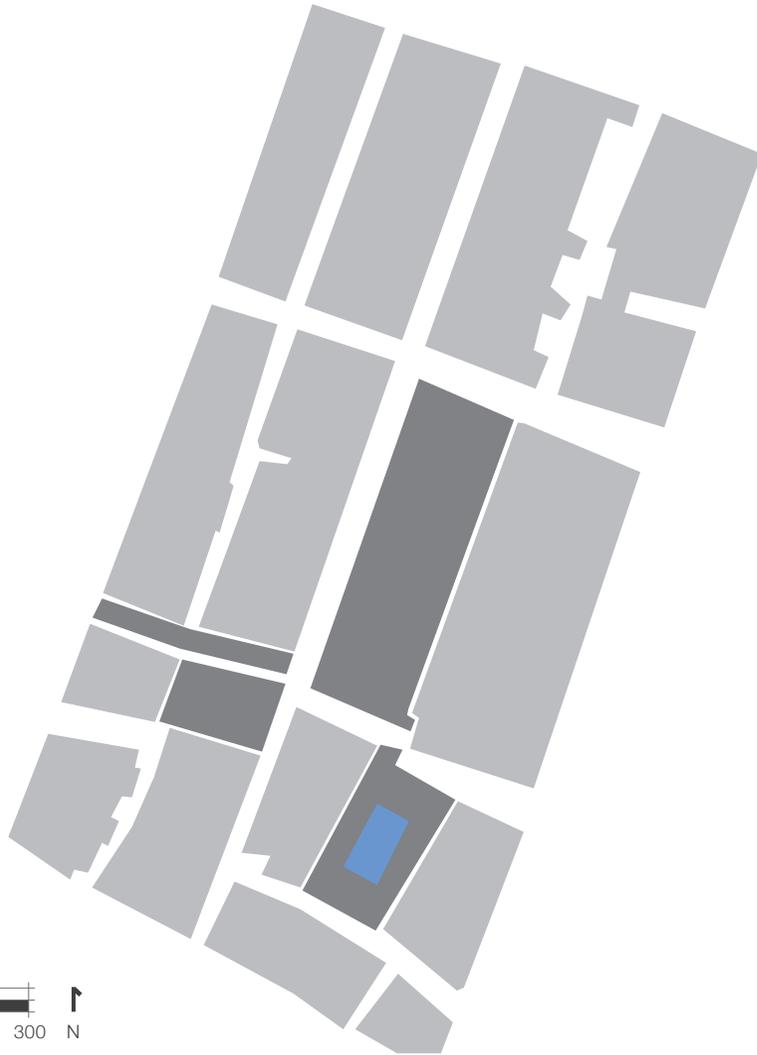


Figure 96 | Figure ground diagram of The Centre Culturel Pompidou (Rader).

## Centre Culturel Pompidou

Paris, France

Modern Clustered Organization Precedent

Designed by Renzo Piano and Richard Rogers  
for George Pompidou

1971-1977

Approximately 240,000 square feet

The Centre Culturel George Pompidou was conceived by President George Pompidou as a centrally located home for modern art (Fig. 96). The winning design proposed a free-flowing design characteristic of 1960's architecture, with a community square, The Plateau Beaubourg, next to the museum. Paolo Favole, in *Squares in Contemporary Architecture*, says that "of all the public squares in Paris, it is the one that most uninhibitedly welcomes and promotes the public and social rituals that are traditionally staged in a square" (Favole 1995, 165).

Adjacent to the main square is the Place Igor Stravinsky, with a large fountain designed by Jean Tinguely and Niki de Saint-Phalle. Unlike the larger space, which sought to "convey a heterogeneous crowd of users," the Place Igor Stravinsky was intended to "give an urban configuration to the uniform terrace covering the underground spaces of the IRCAM" (Favole 1995, 167).

## Spatial Organization

The Centre Culturel Pompidou's Plateau Beaubourg is the central space within this modern example of clustered squares (Fig. 97). Linked to it are the Place Igor Stravinsky, Place Edmund Michelet and the Souterrain Renard East. Unlike the Piazza della Signoria, these spaces are simply clustered about the center space through close proximity.



Figure 97 | Spatial organization diagram of The Centre Culturel Pompidou (Rader).



## Function

In this scheme, both the spaces associated with the Centre Culturel Pompidou are designed as places for meeting and gathering (Fig. 98). The Place Edmund Michelet, on the other hand, is an entry to the adjacent office building. Lastly, the Souterrain Renard East serves as a pedestrian connection to all three spaces.

Figure 98 | Function diagram of The Centre Culturel Pompidou (Rader).

## Form

The central square, The Plateau Beaubourg, is dominated by the exterior facade of the Centre Culturel Pompidou, while the Place Igor Stravinsky is defined by the central fountain (Fig. 99). The Place Edmund Michelet is defined by process of elimination. It is not enclosed enough to be defined as the Closed Square type, nor is it dominated by a specific building. And, nothing sits within the square. Therefore, it is of the Amorphous Square type.



Figure 99 | Form diagram of The Centre Culturel Pompidou (Rader).



## Circulation

The Souterrain Renard East serves as the main pedestrian access point to the series of spaces (Fig. 100). The metro stop in the northeast corner also provides pedestrian access. Vehicular circulation is predominantly found on the streets north and south of the Plateau Beaubourg.

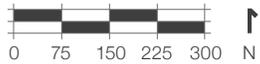


Figure 100 | Circulation diagram of The Centre Culturel Pompidou (Rader).

## Walkability

Similar to the Piazza della Signoria, the spaces surrounding the Plateau Beaubourg are within a two minute walk of one another (Fig. 101). This further helps to define the Clustered Organization type.

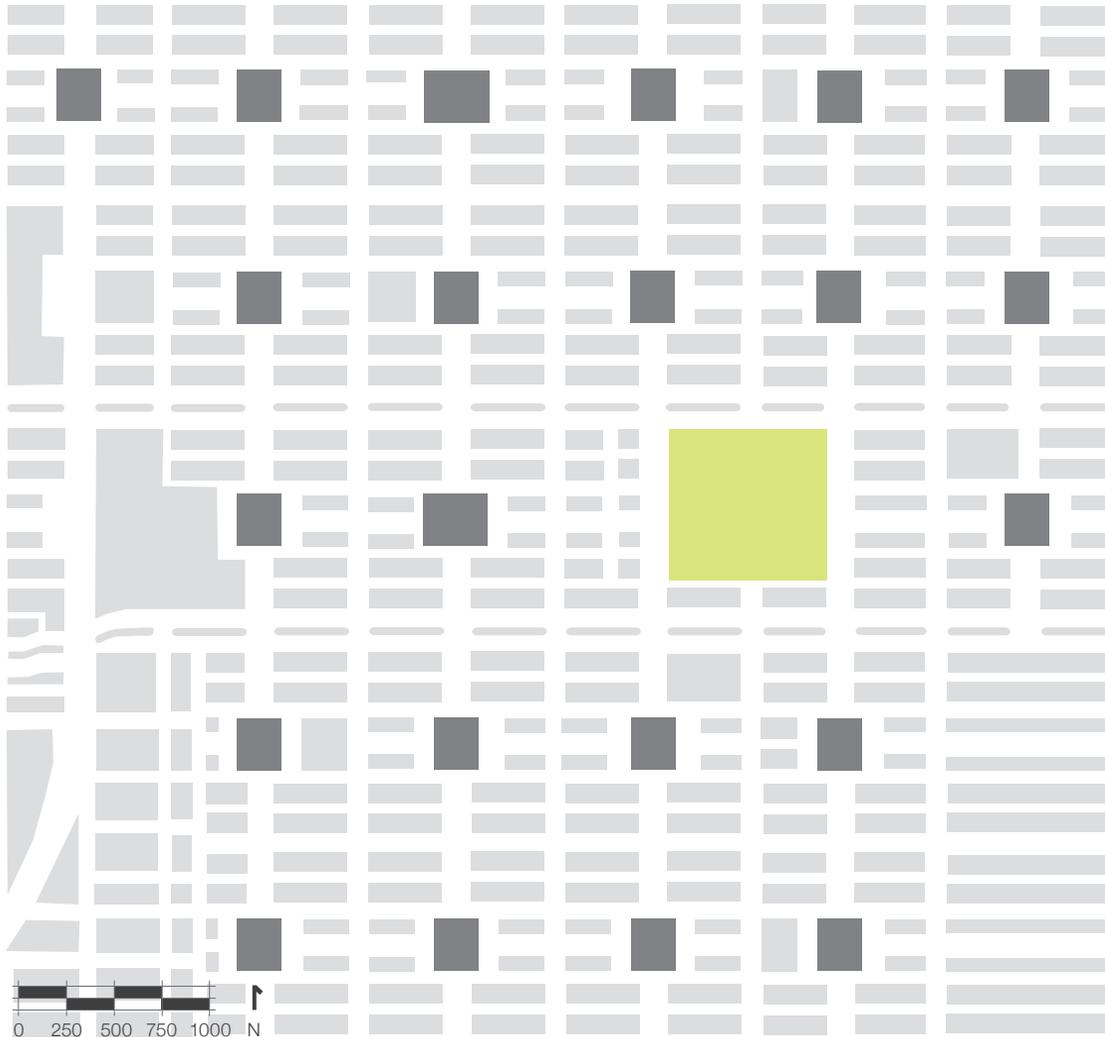


Figure 101 | Walkability diagram of The Centre Culturel Pompidou (Rader).

## Synthesis

As with the Piazza della Signoria example, this scheme would be difficult to implement within Super Neighborhood 22. Not only is it too small of a scale, but it would be difficult to have such a high density of open space within an already developed area. However, this could be applied to secondary or tertiary networks, particularly within residential areas.





# Savannah's Historic District

**Savannah, Georgia**  
**Historic Grid Organization Precedent**  
**Laid out by James Oglethorpe**  
**1753 to 1851**  
**1 square mile**

Realizing the need for a city layout which could easily grow, a module consisting of a central green square and twelve surrounding blocks was developed for Savannah (Fig. 102). The grid pattern was started in 1733 and eventually grew to over thirty cells before the city had reached a point where it could no longer expand. Wide boulevards of trees run east to west and mark significant stages of growth, while the major north-south boulevard cuts through the third cellular unit from the left.

The total effect of this method of organization, then, is “an interaction between two patterns, the gridiron web of streets dividing the basic units, and the web of green spaces and their green links which overlies the geometry of the streets” (Bacon 1974, 220).

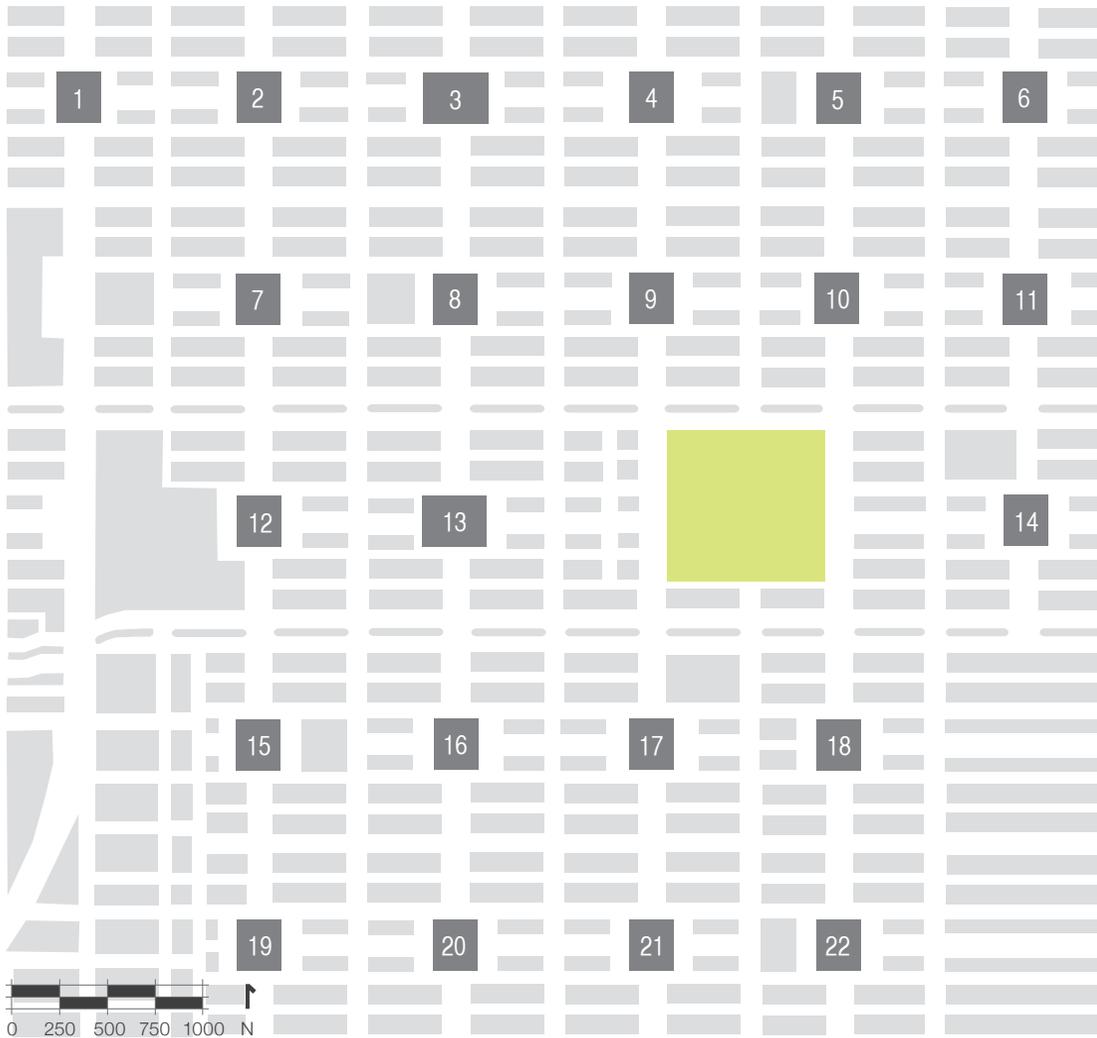
Figure 102 | Figure ground diagram of Savannah's Historic District (Rader).

## Spatial Organization

As previously mentioned, Savannah is based on a unit comprised of a central green and twelve blocks, seen in the grey box (Fig. 103). This pattern was then repeated until the city could no longer support further growth. The adjacent diagram shows the grid's organization and alignment of the central squares.



Figure 103 | Spatial organization diagram of Savannah's Historic District (Rader).



## Function

As the grid was expanded from the mid 1700s to the mid 1800s, the newly added squares were often named in honor of a military or civic figure and adorned with a central statue or monument (Fig. 104). Therefore, majority of the squares are of The Historic Square type. Squares not of this type are of The Pocket Park type, and are densely planted and secluded from the adjacent roadways.

1. Franklin Square - The Historic Square
2. Ellis Square - The Meeting Place
3. Johnson Square - The Historic Square
4. Reynolds Square - The Historic Square
5. Warren Square - The Pocket Park
6. Washington Square - The Pocket Park
7. Telfair Square - The Pocket Park
8. Wright Square - The Historic Square
9. Oglethorpe Square - The Pocket Park
10. Columbia Square - The Pocket Park
11. Greene Square - The Pocket Park
12. Orleans Square - The Historic Square
13. Chippewa Square - The Historic Square
14. Crawford Square - The Pocket Park
15. Pulaski Square - The Pocket Park
16. Madison Square - The Historic Square
17. Lafayette Square - The Historic Square
18. Troup Square - The Pocket Park
19. Chatham Square - The Pocket Park
20. Monterey Square - The Historic Square
21. Calhoun Square - The Pocket Park
22. Whitefield Square - The Pocket Park

Figure 104 | Function diagram of Savannah's Historic District (Rader).

## Form

As previously mentioned, a vast majority of the squares contain historic monuments or statues of their namesake (Fig. 105). Often times, these statues are centrally located, making the squares the Nuclear Square type. Most of the Pocket Park types are defined as the Closed Square type because of the dense trees and vegetation surrounding the squares.

1. Franklin Square - The Nuclear Square
2. Ellis Square - Under Construction
3. Johnson Square - The Nuclear Square
4. Reynolds Square - The Nuclear Square
5. Warren Square - The Closed Square
6. Washington Square - The Closed Square
7. Telfair Square - The Closed Square
8. Wright Square - The Closed Square
9. Oglethorpe Square - The Closed Square
10. Columbia Square - The Nuclear Square
11. Greene Square - The Closed Square
12. Orleans Square - The Nuclear Square
13. Chippewa Square - The Nuclear Square
14. Crawford Square - The Nuclear Square
15. Pulaski Square - The Closed Square
16. Madison Square - The Nuclear Square
17. Lafayette Square - The Nuclear Square
18. Troup Square - The Nuclear Square
19. Chatham Square - The Closed Square
20. Monterey Square - The Nuclear Square
21. Calhoun Square - The Closed Square
22. Whitefield Square - The Nuclear Square



Figure 105 | Form diagram of Savannah's Historic District (Rader).



## Walkability

One disadvantage to the grid organization seen in Savannah is the distance between squares (Fig. 106). While it may be easy to walk from one square to another, it would take more than thirty minutes to walk from a southern square to a northern most square.

## Synthesis

One of the greatest advantages to the grid organization is the potential for flexible growth. However, this does not apply to Super Neighborhood 22. For one, it is already an urbanized area. In addition, it does not have a grid system established from which to build upon. Furthermore, the grid organization lacks the desired walkability outlined in the project goals.

500' Buffer, 5 Minute Walk

Approximately 1 mile, 30 Minute Walk

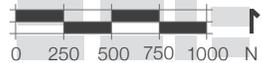


Figure 106 | Walkability diagram of Savannah's Historic District (Rader).



# REFERENCES

Allen, Smout. 2007. *Augmented landscapes*. New York: Princeton Architectural Press.

Background. The Centre Pompidou. <http://www.centrepompidou.fr/pompidou/Communication.nsf/0/88D31BDB4FE7AB60C1256D970053FA6F?OpenDocument&sessionM=9.1&L=2>.

Bacon, Edmund N. 1974. *Design of cities*. New York: Penguin Books.

Beyard, Michael, Anita Kramer, Bruce Leonard, Michael Pawlukiewicz, Dean Schwanke, and Nora Yoo. 2007. *Ten principles for developing successful town centers*. Chicago: Urban Land Institute.

Busquets, Joan, and Felipe Correa. 2006. *Ciudades x formas: Una nueva mirada hacia el proyecto urbanístico*. Boston: Harvard University Press.

Carmona, Matthew, Tim Heath, Taner Oc, and Steven Tiesdell. 2003. *Public places urban spaces*. Oxford: Architectural Press.

Ching, Francis D.K. 1996. *Architecture form space and order*. New York: John Wiley & Sons.

Cisneros, Henry, and John Rosales, ed. 2006. *Casa y comunidad: Latino home and neighborhood design*. Washington, D.C.: BuilderBooks.

Demographics. Downtown Santa Monica & Third Street Promenade. <http://thirdstreetpromenade.org/about/demographics.html>.

Descriptions of Level IV Ecoregions of Texas. EPA Western Ecology Division. [http://www.epa.gov/wed/pages/ecoregions/tx\\_eco.htm](http://www.epa.gov/wed/pages/ecoregions/tx_eco.htm).

Design ideas with limited color. 2004. Tokyo: Pie Books.

Ecoregions of Texas. EPA Western Ecology Division. [ftp://ftp.epa.gov/wed/ecoregions/tx/tx\\_back.pdf](ftp://ftp.epa.gov/wed/ecoregions/tx/tx_back.pdf).

Favole, Paolo. 1995. *Squares in contemporary architecture*. Milan: Architectura & Natura Press.

Francis, Carolyn, editor, and Clare Cooper Marcus, editor. 1998. *People places*. New York: Van Nostrand Reinhold.

Francis Ching, Department of Architecture. <http://depts.washington.edu/archdept/cms/home/index.php?id=2&mid=7&fid=7>.

Francis D. K. Ching. The American Institute of Architects. [http://www.aia.org/pod\\_ching&sselect=bio](http://www.aia.org/pod_ching&sselect=bio).

FY2008 Quarterly Financial & Management Report. METRO. <http://www.ridemetro.org/AboutUs/Publications/Pdfs/FY2008%202nd%20QMR.pdf>.

Gupta, Prema Katari, and Kathryn Terzano. 2008. *Creating great town centers and urban villages*. Chicago: Urban Land Institute.

Hegemann, Werner, and Elbert Peets. 1988. *The American Vitruvius: An architect's handbook of civic art*. New York: Princeton Architectural Press.

Honors & Awards. American Institute of Architects. [http://www.aia.org/aiarchitect/thisweek07/0119/0119n\\_collab.cfm](http://www.aia.org/aiarchitect/thisweek07/0119/0119n_collab.cfm).

Houston Timeline. Houston Institute for Culture. <http://www.houstonculture.org/resources/houstontime.html>.

Lang, Jon. 1994. *Urban design: The American experience*. New York: John Wiley & Sons.

Las Ramblas. Project for Public Spaces. [http://www.pps.org/great\\_public\\_spaces/one?public\\_place\\_id=59](http://www.pps.org/great_public_spaces/one?public_place_id=59).

Latest Crimes in Memorial Park / Washington Avenue. Houston Crime Maps. <http://houstoncrimemaps.com/neighborhood/memorial-park-washington-avenue>.

Le Corbusier Quotes. ThinkExist. [http://thinkexist.com/quotes/le\\_corbusier](http://thinkexist.com/quotes/le_corbusier).

Lynch, Kevin. 1960. *Image of the city*. Cambridge: MIT Press.

Major Capacity Projects. Fight Gridlock Now. <http://www.fhwa.dot.gov/majorcapacity/project03.cfm>.

Moughtin, Cliff. 1992. *Urban design: Street and square*. Oxford: Architectural Press.

Pellegrini, Pietro Carlo. 2005. *Pizze e spazi pubblici: Architetture 1990-2005*. Milan: Arti Grafiche Motta.

Thiis-Evensen, Thomas. 1999. *Archetypes of urbanism: A method for the esthetic design of cities*. Oslo: Scandinavian University Press.

Webb, Michael. 1990. *The city square*. London: Thames and Hudson.

Zucker, Paul. *Dictionary of Art Historians*. <http://www.dictionaryofarthistorians.org/suckerp.html>.

Zucker, Paul. 1959. *Town and square: From the agora to the village green*. New York: Columbia University Press.